Pay-As-You-Throw: The Bonus Beyond Waste Prevention

By Janice L. Canterbury

Municipalities are realizing that, in addition to increasing waste prevention and recycling, pay-as-you-throw can be a better way to pay for their entire MSW program.

You have to create a recycling program, your landfill needs closing and collection costs continue to rise. As the demands increase, you ask, "Who's going to pick up the tab?"

While many communities are scrambling to find ways to cover these and other costs, some solid waste managers have used pay-as-you-throw programs to generate the necessary revenues.

Pay-as-you-throw, also called variable-rate pricing or unit pricing, is an alternative to financing solid waste services through property taxes or a flat fee. Pay-as-you-throw simply charges residents based on the amount of waste they throw away.

This method can be used to finance an entire municipal solid waste (MSW) program or to help overcome budget shortfalls.

Calculating Seekonk's Fixed Rate Fee[1]

Item	Budget
SW/Recycling Collection Contract	$262,833
Landfill Expenses	$8,375
Landfill/Transfer Station Wages	$29,217
Recycling Expenses	$5,000
Recycling Coordinator/Wages	$17,400
Fuel/Equipment Maintenance	$17,800
Tire Removal	$750
Billing/Collection/Wages	$3,500
Billing/Collection/Expenses	$2,500
Recycling/Solid Waste Contingency	$7,500
Equipment Depreciation	$19,800
DPW/Administrative Pool Costs	$24,876
Total Program Costs	$399,551[2]
Adjustment/Non-Users/Uncollected (3%)	$11,987
Total Program And Adjustment Costs	$411,538
Less Estimated Recycling Revenue[3]	$41,600
Net Program Cost	$369,938
Total Households	$4,457
Fixed Fee Rate Per Household	$83

[1]Based on annual costs.
[2]Includes a percentage of the cost of all personnel who contribute to the MSW program.
[3]Estimated income from waste paper sales.

Source: U.S. Environmental Protection Agency

Meet Your Budget

Although several communities do use pay-as-you-throw to cover all program costs, you may question whether this strategy will work in your community. To find out, the first step is to understand your budget. For Pat Vieira, a selectman for the town of Seekonk, Mass., this process began when her 14,000-person community adopted a curbside recycling program.

Initially, Seekonk chose to fund both the recycling and MSW programs by charging an annual flat fee. Some residents, however, opposed this idea, complaining that the program was unfair. While one household might recycle a great deal and generate only one bag of trash per week, they reasoned, another could toss out six bags, recycle little or nothing, and pay the same amount.

After further research, the town decided to try a pay-as-you-throw system. The program levies a two-tiered rate that combines the existing flat fee to cover fixed MSW costs and a per-bag charge to pay for the town's variable, per-ton charge at the landfill.

Next, Seekonk calculated the actual fees. The town planners used full-cost accounting, which includes all system costs — both direct and indirect. "I like sleeping at night," said Vieira, who was the recycling coordinator at the time. "I wanted to know that all my costs were covered."

For the flat fee, Seekonk included every expense in the MSW program, from the private hauler's contract to equipment depreciation (see table at left). Then, planners deducted the anticipated recycling revenues and divided this net cost by the number of households.

The variable costs, primarily landfill costs, became part of the per-bag fee. To cover the tipping fee, the town charged $0.53 per 30-gallon bag. This is based on an average weight of approximately 20 pounds per bag (see table on page 48).

"[Since the program's inception,] we have not had a shortfall," Vieira said. "While some residents disposed of more than 20 pounds of trash in their bags, some dis-

posed of less. In fact, there must have been a lot of bags under 20 pounds because in the first year we had about $40,000 surplus income for disposal."

What did the town do with these funds? Rather than reducing the per-bag fee, which might have discouraged waste reduction, the town eliminated a fee to drop off bulky waste at the transfer station. In effect, officials used the additional funds to add bulky waste service to their pay-as-you-throw program.

Calculating Seekonk's Per-Bag Fee

30-Gallon Bag	
Bag Cost	$0.11
Tipping Fee Per Bag (Based on 20-pound average and a $40/ton tipping fee)	$0.40
Handling Fee for Stores Selling Bag	$0.03
Total for 30-Gallon Bag	*$0.54*
15-Gallon Bag	
Bag Cost	$0.08
Tipping Fee Per Bag (Based on 10-Pound average and a $40/ton tipping fee)	$0.20
Handling Fee for Stores Selling Bag	$0.03
Total for 15-Gallon Bag	*$0.31*

Source: U.S. Environmental Protection Agency

During the same time, the town was facing a shortfall in its overall municipal budget. Because the solid waste program costs were eliminated from the town's overall budget, however, other programs, particularly schools, benefited, Vieira said.

To Tax Or Not To Tax

Revenues from pay-as-you-throw systems also can be used to cover large, unexpected waste management costs. For example, after Littleton, N.H., decided to close its landfill, the town began dumping at a large regional facility. The drawback was increased disposal costs.

The math was simple, according to Tony Ilacqua, the town's solid waste coordinator. The old landfill cost approximately $115,000 per year to operate, while Littleton was now projecting new annual disposal costs of nearly $500,000 — a difference of $385,000 per year.

At first, the town considered raising property taxes, which were previously used to finance the entire MSW program. This, however, would have meant a major tax increase for the town's 5,800 residents. Instead, the town proposed a user-fee system.

As a solution to the new cost dilemma, pay-as-you-throw had important advantages. First, residents would be more accepting of a new program than of new taxes. "A pay-as-you-throw program is much more equitable," said Ilacqua. "Although residents still would be paying the additional disposal costs, unlike with a tax, they could control the amount they paid." The residents overwhelmingly approved the user fee system at the annual town meeting.

Pay-as-you-throw also would help to reduce the amount of waste landfilled, lowering costs for both residents and town officials. Estimating the amount by which residents would reduce their wastes, Littleton planners

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Pay-as-you-throw helped Stonington, Conn., to raise nearly $1 million to pay its new tipping fees. In the program's first year, recycling also increased 30 percent.

adjusted the projected $385,000 shortfall and set their per-bag fee to cover this cost.

Actual waste reduction and recycling rates were even greater than anticipated. The town's recycling rate, for example, climbed from 15 to 60 percent; surveys showed that 9 out of 10 residents now drop off recyclables at the same time that they drop off garbage. Ilacqua officials also estimated that waste reduction increased faster than expected.

In the meantime, landfill disposal costs were slashed while increased market prices for the recyclables further lowered overall costs. In fact, in its first year, the pay-as-you-throw program covered the town's additional disposal costs and generated approximately $40,000 in extra funds. This money was used to help fund other municipal services.

Like Littleton, Seekonk also used pay-as-you-throw revenues to help close its disposal facility. Faced with a closure deadline for its unused, unlined landfill, the town stopped using a nearby incinerator and resumed landfilling its waste until the site reached capacity. "It was going to cost us just as much to cap a full landfill as it would a half-full one," Pat Vieira noted.

Although the switch back to its own landfill meant that the town would incur no direct tipping fee, as Vieira noted: "If we were taking the waste elsewhere, we'd still be paying. So we appropriated the revenues from the tipping fee portion of the MSW charge to a receipts-reserved account, [tagging the funds] to pay for landfill capping expenses a couple of years in the future. It gave us a down payment on the closure costs. Out of that $300,000 we saved, we began the engineering and other preliminary steps to close a landfill."

The Best Laid Plans

Although pay-as-you-throw may not be appropriate for every community, it certainly helped one other small New England community out of an all-too-familiar problem today.

After Stonington, Conn., population 16,000, realized its landfill had less than 10 years' remaining capacity, it began looking for options. In 1985, Stonington, along with 11 other communities, formed a regional authority to build a waste-to-energy (WTE) facility. The town also agreed to a minimum waste commitment — a put-or-pay agreement which added up to an annual $900,000 in new disposal charges.

A few months before the new facility was scheduled to come on line, officials realized they needed to raise almost $1 million in less than six months to pay for the new tipping fees, according to John Phetteplace, the town's solid waste manager. "Essentially," he said, "we

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had two options: we could go with a user fee or general taxation."

Phetteplace became familiar with the pay-as-you-throw concept at recycling conferences and, after some planning, he approached the town's Board of Selectmen. The board gave the idea a lukewarm reception, Phetteplace recalled. "They definitely felt this [dilemma] should be handled though general taxation, like costs always were. And there's no question that [a tax] would have been the easiest solution, financially speaking."

To calculate the actual fees, Seekonk, Mass., planners used full-cost accounting. "I like sleeping at night," said Pat Vieira. "I wanted to know that all my costs were covered."

Politically, however, it was another story. Stonington residents typically reject three or four budget referenda yearly before finally accepting one — often with virtually no increase. At that rate, the town's budget would never be able to cover the new disposal costs.

Luckily, pay-as-you-throw provided a viable alternative, and Phetteplace was finally able to convince the board to adopt the program. Still, not everyone in the community was satisfied. Ultimately, a referendum to repeal the program failed by a two-to-one margin.

"Our main goal was to recover the tipping fee and to recover it fairly," said Phetteplace, "and the residents understood this."

How well did it work? Not only did residents find the town's new price per bag to be fair, but the new system also raised the necessary funds to cover the residential tipping fee.

In addition, the program is helping the town to increase recycling rates. In the program's first year, for example, recycling climbed by nearly 30 percent, and waste prevention increased by more than 20 percent.

It was the program's economics, however, that ultimately made it succeed. "The reason this has been so successful," said Phetteplace, "is that the program provided a way to meet the new fee without having to increase taxes."

Considering the success of Stonington, Littleton and Seekonk, communities across the country are taking a second look at pay-as-you-throw. After some tailoring, the benefits may ultimately far outweigh the costs. ■

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This article was based on the Pay-As-You-Throw: Can You Cash in on Waste Reduction? workshops sponsored by the U.S. EPA and the International City/County Management Association. For a copy of the EPA guide Pay-As-You-Throw: Lessons Learned About Unit Pricing *(EPA530-R-94-004), contact EPA's RCRA hotline: (800) 424-9346. For a free copy of the Pay-As-You-Throw Tool Kit, call (617) 674-7275. For more information about EPA's Pay-As-You-Throw Outreach Initiative, contact Janice Canterbury, (703) 308-7264.*