

US EPA ARCHIVE DOCUMENT

Pay-As-You-Throw

What signal are we sending to the American public when we offer them free or unlimited trash disposal? Are we telling them that it is okay to consume as much as they want, and we will just take their waste and bury it somewhere? Aren't our natural resources worth more than that? There is another signal, a price signal, that communities are using to encourage residents to pay attention to what they discard—pay-as-you-throw (PAYT).



PAYT charges residents for trash collection based on how much waste they throw away. PAYT (also called variable-rate or unit-based pricing) continuously reminds and financially motivates people to reduce waste.

Today, over 4,000 communities serving 20 million individuals—up from 10 million individuals since 1990—have implemented PAYT programs while averaging waste reductions of 14 to 27 percent. Also, according to a recent Institute for Local Self Reliance (Washington, D.C.) study, PAYT achieves high recycling rates when combined with comprehensive recycling programs. Over half of the sampled communities with a 50 percent recycling rate credit PAYT.

Planners and local officials need information on how to determine the appropriate price to charge residents for each unit of garbage collected, a process called rate structure design. EPA reviewed the rate structure design methods used by various communities and developed this article to

Janice Canterbury

Ms. Canterbury is an Environmental Specialist with the Municipal Waste Reduction Branch of the Environmental Protection Agency, Washington, D.C.

explain the key elements they considered in setting their PAYT rates.

Communities commonly choose among three basic types of PAYT pricing systems—proportional, variable, or multi-tiered.

Proportional Systems—Residents are charged the same amount of money for each unit of waste they set out for collection. These are usually bag- or tag-systems, with the bags sold at local retail stores or municipal offices.

Variable Rate Pricing Systems—Residents are charged different amounts per unit of garbage. Container capacities range from 10- to 96-gallons.

Two-Tiered or Multi-Tiered Systems—Residents pay a flat fee for a base level of service, and then pay a "second-tier" fee based on how much

waste they set out. Second-tier fees can be either proportional or variable rate.

Decisions about pricing systems and other rate structure components depend on a community's circumstances and goals for its PAYT program. Clear goals help determine a community's approach. To maximize recycling, for instance, some communities use variable rates that charge substantially more for a second or larger trash can. If a more equitable system is a primary goal, implementing a bag system allows residents to be charged for exactly what they dispose of in small increments (e.g., 32-gallon bags instead of 96-gallon carts). If covering solid waste management costs is the concern, a two-tiered system can help ensure a reliable revenue stream. Here, basic "fixed" costs (expenses not tied to the amount of MSW generated) can be recovered through a utility or tax bill, while "variable" costs such as landfill disposal fees are recovered through a separate per-unit fee.

APPROACHES TO RATE STRUCTURE DESIGN

In general, solid waste planners follow one of three methods when choosing a community's rate structure: drawing from comparable communities, building from community data, and analyzing full MSW costs.

Drawing from comparable communities. Some communities start by examining successful payt programs, particularly those cities or towns with similar demographic profiles. Sometimes this is sufficient to arrive at an appropriate fee.

Oconee County, Georgia (population 25,000) looked south to Tift County before deciding on a proportional system that set its fee at \$1.50 per bag. "Tift County guided us a bit (on setting the price), but we also felt that \$1.50 was probably the maximum people were going to pay to cooperate with this program," said John McNally, executive director of the Oconee County Clean and Beautiful Commission. The county concluded that \$1.50 was about right after doing an informal, man-on-the-street type interview.

Oconee County had two goals for its PAYT program—to cover the cost of using neighboring Clark County's landfill (Oconee County recently closed its landfill) and to encourage recycling. McNally said the public's desire to recycle surprised the county commissioners. "We sent survey forms home with school children asking them to have their parents fill them out. The public was pretty much aware of the need to recycle. They wanted to do it." The county established six one-acre fenced and manned collection sites that included recycling centers and switched to a 32-gallon blue bag system for household trash. Residents take both their trash bags and recyclables to these locations. They pay \$1.50 for the trash bags, but recycling is free.

McNally said the \$1.50 charge per bag is covering the county's solid waste costs, even though blue bag sales are decreasing as residents recycle more. "People are finding out if they recycle they don't have to buy as

many blue bags." Although the overall MSW tonnage remains the same (about 200 tons per month), McNally credits the PAYT program with offsetting the waste that is generated by a rapidly increasing population.

Building from community data. Other communities use data on their waste generation amounts, program costs, and other factors to calculate PAYT rates. This approach provides a more accurate rate than examining programs in similar communities, yet it does not require the more extensive analysis required by the full MSW cost method.

Lansing, Michigan (population 130,000) added together all of its solid waste program costs and divided the total by the number of bags it expected to collect to arrive at a \$1.50 per bag fee. Although residents annually pay an additional flat fee of \$50 per household for curbside recycling, this represents a proportional pricing system, since the fee covers all MSW collection and disposal costs. According to Robert Moyer, solid waste supervisor, the rate structure's main goal is to cover the program's costs, since it operates from an enterprise fund. Because the city competes with private haulers for residential customers, however, the rate must also be low. Moyer said it actually costs, including labor and disposal fees, closer to \$1.45 per bag, but rounding to \$1.50 gives the city a small cushion and keeps it from having to raise the rates every year.

Platteville, Wisconsin (population 10,000) residents are charged \$1 for each extra bag of trash that is set out beyond a 35-gallon limit. The \$1 per bag fee reflects the cost of collecting, hauling, and tipping "excess" MSW, as well as the cost of the bags, the incentive for stores to carry the bags (\$0.10 each), administrative tasks, and the yard waste collection and composting operation. Residents that request yard waste collection are required to bag their yard trimmings.

Platteville's program encourages recycling. According to Director of Public Works Howard Crofoot, a city ordinance states that setting out more than 35 gallons per week of trash is excessive. (This is 10 gallons a week less than the Wisconsin Department of Natural Resources' guidelines, which mandate PAYT for any quantities over 45 gallons per week). Residents are provided with weekly collection of one 35-gallon clear bag or 50-lb garbage can. City taxes pay for both this service and curbside recyclables collection. This is a two-tiered pricing system since residents are charged on two levels—a base service charge on the tax bill and unit-fees on excess garbage.

Crofoot explained that the first thing to consider when establishing a rate structure is the actual cost of service. He cautioned that it also is important to get input from the public, explaining that too high a price can create problems with illegal dumping. The city thus determined

PAYT Tools and Full Cost Accounting

Various products are available from EPA to inform communities about the experience of pioneering PAYT programs. The Pay-As-You-Throw Tool Kit includes detailed guidebooks, an extensive workbook, and a videotape to help solid waste decision makers learn more about PAYT and to plan and implement their own program. Another important resource for communities is Pay-As-You-Throw Success Stories, a collection of testimonials by various PAYT municipalities.

To learn more about these free products and tools contact the PAYT Helpline at 888 EPA-PAYT (372-7298). You also can access most of these items online through the PAYT Web site at www.epa.gov/payt.

More detailed information on analyzing MSW costs is provided in EPA's *Full Cost Accounting for Municipal Solid Waste Management: A Handbook*, (EPA530-R-95-041), September 1997, available from the RCRA Hotline at (800) 424-9346. Also, visit EPA's Full Cost Accounting Web site at www.epa.gov/fca.

the best rate to be \$1 per bag, although the actual costs are slightly lower, said Crofoot. The city's recycling rate is about 35 percent, or about 10 percentage points higher than the state's 25 percent goal.

Trinity County, California (population 13,000) residents pay \$5 per cubic yard, or \$1 a bag (the sixth bag is free, since the county estimates that there are six bags in a cubic yard), for solid waste disposal. The

PAYT system was implemented because a \$100 annual benefit assessment collected from households was insufficient to run the county's landfill and eight collection centers. Although it might have been easier to raise the assessment, the county's supervisors were against it. Instead, they estimated their additional costs at about \$5 a cubic yard and opted for the unit-based system. The fee was set as low as possible to discour-

age illegal dumping. The county also felt a per-bag fee would be fairer and hoped it would encourage recycling.

The combination of the benefit assessment and per-bag (or cubic yard) fee make this a two-tiered system. According to Barbara Rapinac, lead gate attendant, the system is successful, although the fee will soon increase to cover the cost of transferring waste to another disposal facility after the county's landfill closes.

The fees are covering expenses, residents pay only for what they generate, and recycling has increased.

Waste generation has also decreased. To reduce their disposal fees, more residents are requesting permits from the U.S. Forest Service to burn yard trimmings in their backyard when seasonal conditions permit.

Analyzing full municipal solid waste costs. A third approach to rate structure design is to analyze costs to Wilmington, North Carolina, used a calculate an appropriate unit price. form of full cost accounting to identify all costs before establishing its pricing system. According to Bill Reed, superintendent of operations, the city's fees must cover program costs, since it operates from an enterprise fund. Reed explained that "setting your fees depends on how exact you want or need to be."

The city's main goal was to reward residents that generate less trash. Consequently, the city offers several options in its variable rate pricing system, from weekly collection of a 40-gallon cart (\$12.75 per month), to weekly collection of a 90-gallon cart (\$15.75 per month), to weekly collection of two 90-gallon carts (\$22.35), to twice weekly collection of one 90-gallon cart (\$31.30). Residents can buy stickers for overflow trash for \$1 per 33-gallon bag. Making trash rates more equitable increased recycling. Reed would like to switch to an all bag system, though. He believes that with carts, people feel, "If I'm paying for it, I might as well use it." People have more incentive to recycle with bags, contended Reed. Consequently, the city is switching to a bag system in its central business district this year. PW