

Pay-as-you-throw: A growing MSW management success story

by Janice L. Canterbury



Thousands of U.S. communities have reduced waste disposal by 20 to 30 percent by charging customers more for larger amounts of trash.

Always on the lookout for ways to improve solid waste services, local solid waste management officials in growing numbers are considering and implementing pay-as-you-throw programs. Also known as variable-rate or unit-pricing programs, pay-as-you-throw systems ask residents to pay for garbage pick-up service based on the amount of waste they generate. For residents, it's simple and fair: The less they toss, the less they pay. Households gain control over the amount they pay for garbage service, and local governments or waste haulers can get a secure stream of revenues for covering waste management costs, a reduction in waste and an increase in the recycling rate.

Recent data support this approach. A study funded by the U.S. Environmental Protection Agency (Washington) identified more than 3,400 communities in 1995 that use some type of pay-as-you-throw system (see "The state of variable rates: Economic signals move into the main stream" in the August 1997 issue). And this number may actually be low, as the tally may include underestimates for several states. (The study, conducted by Marie Lynn Miranda and Sharon LaPalme of Duke University's Nicholas School of the environment, represents a data gathering effort from the municipal, county and state levels for solid waste and recycling administrators and private haulers, as well as trade journals and aca-

demic literature.) The number of individuals served by pay-as-you-throw programs has more than doubled since 1990, from just under 10 million to more than 20 million today, and participating communities report waste reductions of 20 to 30 percent, on average.

Tried and true

The potential for waste reduction appears to be even greater. According to the Institute for Local Self-Reliance (Washington), pay-as-you-throw plays a major role in achieving high recycling diversion rates. In its Waste Reduction Record-Setters Project, ILSR studied a group of communities that have managed to achieve recycling rates of 50 percent or higher. The research shows that more than half of the communities able to achieve such impressive levels credit pay-as-you-throw for getting them past typical recycling ceilings.

Fortunately, local officials considering pay-as-you-throw can get more information from the many communities that have already instituted a program. Cities from San Jose, California to South Kingstown, Rhode Island researched the issues carefully and then developed efficient, successful programs. While their stories can help other communities considering pay-as-you-throw, they also clearly

show that there is no one right way to implement a program. Though their approaches differ, however, most communities have experienced three specific types of benefits from pay-as-you-throw.

It's economically sustainable. Well-designed pay-as-you-throw programs enable communities to generate the revenues they need to cover all solid waste management costs, including the costs of complementary programs, such as recycling and composting services.

It's environmentally sustainable. Reductions in waste resulting from pay-as-you-throw programs mean fewer natural resources to be extracted and the saving of energy.

It's fair. The programs charge residents for only what they throw away, so those who recycle and prevent waste no longer subsidize their neighbors' wastefulness.

EPA contacted a number of communities to learn more about their pay-as-you-throw programs. Information about the development, structure and status of five such programs is provided here to help other communities benefit from their experiences.

Gainesville, Florida

In July 1994, the City of Gainesville moved

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to a cart-based, variable-rate residential collection system. The city entered into a five-year contract with Waste Management of Central Florida, Inc. for the collection of residential solid waste and commingled recyclables. It signed a second contract for the collection of yard trimmings for recycling.

The new contract for solid waste service includes a variable rate for residential collections where residents pay \$13, \$16 or \$20 per month, according to whether they use 35-, 64- or 96-gallon carts, respectively. Additional waste can be disposed of in special yellow bags that can be purchased for \$2 each (sold in packs of five) at local grocery stores. Waste Management owns the carts and provides automated collection. Residents are charged a small fee for switching to a larger container, but are not charged for the first request to switch to a smaller one. Bulky items, such as furniture and appliances, are collected free of charge, but residents must call to schedule a pickup.

Recycling service is unlimited. While residents have had curbside collection of recyclables since 1989, the new program adds brown paper bags, old corrugated containers and phone books to the list of items collected.

In the first year, the amount of solid waste collection decreased 18 percent, by weight, and the recyclables recovered increased 25 percent. The total disposal tonnage decreased

from 22,120 tons to 18,112 tons, and the city saved \$7.95 per household in collection and disposal costs.

Gina Hawkins, recycling coordinator for the City of Gainesville, says, "Pay-as-you-throw did more than just increase the rate of recovery and minimize disposal needs. The distribution of system costs is more equitable." It's more equitable because residents choose service delivery based on their individual waste-generation habits. This reduces the level of subsidy created by unlimited, flat-rate collection systems.

San Jose, California

Until four years ago, the City of San Jose provided unlimited weekly garbage collection service at a flat monthly rate of \$12.50 per household. Residents set out an average of three 32-gallon cans per week. The city fully implemented its Recycle Plus residential integrated waste management program for 186,000 single-family dwellings in July 1993. The program was designed to enable the city to reach the goal of 50 percent waste reduction by 2000.

The new recycling and garbage collection program resulted from over three years of planning that included extensive research on all major policy changes. It includes a fully automated garbage collection system, an ag-

gressive pay-as-you-throw rate structure, a four-sort recycling system and a contractor payment mechanism with financial incentives that encourage contractors to promote recycling.

The public was involved in the design of the program in several ways. The city mailed a questionnaire to all 186,000 households, held community meetings throughout the city, developed pilot projects in 17 neighborhoods to collect yard trimmings and mixed papers, and set up a public review committee to decide which firms would receive six-year contracts for collecting garbage and recyclables, and for processing recyclables.

A comprehensive public outreach campaign aimed at single-family households explained the new variable rates for disposal, the new categories of recyclables being added to the existing services and the benefits of participating. All outreach materials were produced in three languages. The campaign was guided by the information gained during a series of focus groups, baseline and follow-up telephone surveys, and shopping mall intercept surveys. More than 250 community meetings were held in 1993, and a block leader program and school education program were organized.

To ensure that the city had sufficient quantities of wheeled garbage carts in the sizes that residents would request, officials sent all sin-

gle-family households a return reply card in January 1993 with the estimated rates. Residents were informed that no reply would result in the delivery of a 32-gallon cart.

The program has an aggressive unit-pricing structure, which includes a slight break for each additional 32 gallons of capacity to help residents make the transition from the flat rate. The monthly prices for the four cart sizes are \$13.95 for 32 gallons, \$24.95 for 64 gallons, \$37.50 for 96 gallons and \$55.80 for 128 gallons. Residents are charged \$15 for switching to a different size container. For overflow waste, residents can purchase stickers at convenience stores for \$3.50 per each 32-gallon bag. For bulky goods pickup, residents pay \$18 for up to three items. In addition, about 3,800 households participate in a comprehensive low-income rate-assistance program. Eligible residents — based on household size and income — receive a 30-percent discount on their bill.

"We did not anticipate how quickly residents would change their recycling participation to accommodate the 32-gallon size cart," says Jo Zientek, supervising environmental services specialist, "especially since, prior to the Recycling Plus program, the average household setout was three garbage cans." Since implementation of pay-as-you-throw, 87 percent of households have requested the 32-gallon cart. The volume of

collected recyclables and yard trimmings more than doubled the levels recorded before Recycling Plus. Most importantly, according to Zientek, residents reported wide satisfaction with the program and its results.

Already the city has reduced costs by more than \$4 million annually through contract renegotiations that extended the Recycling Plus and yard trimmings collection contracts through June 2002.

South Kingstown, Rhode Island

Residents in South Kingstown and its neighbor, Narragansett, can dispose of solid waste by either contracting with a private refuse hauler or by taking waste directly to the Rose Hill Regional Transfer Station (RHRTS). Before the pay-as-you-throw program, residential users purchased an annual vehicle pass for \$92, which allowed them unlimited disposal at the transfer station. This system, however, was easily abused by residents pooling together and buying one sticker for multiple households. In fact, after operations began at RHRTS in 1993, disposal costs to residential users escalated. This was due, in part, to increasing tipping fees, higher processing costs and abuse of the annual vehicle pass program. Because of these problems, South Kingstown and Narragansett initiated a volume-based disposal system and a voluntary

recycling program for RHRTS residential users.

Under the new system, residential users self-hauling waste to the transfer station must purchase refuse tags (\$10 for 10 tags) and place a tag on each garbage bag (with a 25-pound and 33-gallon limit each) prior to disposal. Refuse tags were chosen in lieu of bags to allow residents to choose the size and type of refuse bag they want to use. Residents can dispose of bulky waste and yard trimmings at rates of \$.05 and \$.035 per pound, respectively. They may also purchase yard trimmings bags for \$.75 each, which includes the disposal fee. Proceeds from the sale of the refuse tags support the operational expenses of a solid waste enterprise fund.

Residents who maximize their recycling efforts can minimize tag purchases and reduce their overall solid waste disposal costs. The recycling center, which began operating in 1994, accepts a wide variety of materials that can be deposited by residents at no cost, including old newspapers and metal, glass and plastic containers. Yard trimmings, clean wood waste, and ferrous and non-ferrous metals are also recycled, but are assessed a tipping fee to cover the cost of processing.

Under the pay-as-you-throw program, RHRTS residential users disposed approximately 2,175 tons during fiscal year 1994-95, as compared to 7,608 tons in fiscal year 1991-

92 under the former vehicle-sticker program. The average family of four has reduced its solid waste stream to one tagged bag and one bag of recyclables per week. That equates to a total annual refuse disposal cost of \$52, which is a \$40 savings over the vehicle-sticker program cost. Elderly and single residents have reduced solid waste disposal to as low as one refuse bag every two weeks, for an annual disposal cost of \$26.

The success of both the volume-based disposal system and the enhanced recycling facility has exceeded all pre-operational expectations, according to Jon Schock, utilities director. The capture rate of recyclables from residential users of the transfer station has consistently reached approximately 40 percent, with periodic levels as high as 51 percent. If yard trimmings and bulky waste are counted, the capture rates approach 60 percent.

Vancouver, Washington

The City of Vancouver found that volume-based rates encourage residents to examine their disposal habits, to recycle more and to decrease their garbage service levels. Vancouver is located in Clark County, the southernmost county in the state of Washington, along the north shore of the Columbia River. Garbage collection in the city is mandatory, and is a contracted service for both residen-

The Pay-As-You-Throw Tool Kit

A number of products are available to inform communities about the experience of pioneering pay-as-you-throw communities. One is the *Pay-As-You-Throw Tool Kit*, a collection of resource that includes two guidebooks, a workbook, a videotape and software designed to help solid waste decisionmakers learn more about pay-as-you-throw and, if they choose, to plan and implement a program of their own. Another important product for communities is the document, *Pay-As-You-Throw Success Stories*, a collection of testimonials offering interested planners stories of how other municipalities made the program work for them.

To learn more about the products and tools available free of charge from EPA, contact the Pay-As-You-Throw helpline, (888) 372-7298. You can also access most of these items online through the Pay-As-You-Throw homepage (www.epa.gov/epaoswer/nonhw/payt).

tial and business waste. The city has different contractors for each aspect of the solid waste program: trash, recycling and yard

trimmings collection.

In 1989, the state passed the Waste Not Washington Act, which required cities and counties to implement programs aimed at reaching a statewide goal of 50 percent waste reduction and recycling by 1995. To reduce its reliance on landfill disposal and to meet local and statewide goals, the City of Vancouver adopted the philosophy, "The more you use, the more you pay."

Consequently, in 1990, the city introduced an incremental rate structure that made the rate for a second trash can 84 percent higher than the first can. In just 15 months, the city experienced a 13-percent increase in the number of customers choosing the one-can basic service and a corresponding decrease in customers choosing the two-can service.

Since then, the city has expanded the number of service options and adjusted the price according to the Consumer Price Index each year. Now, residents can choose from one 32-gallon cart per month at \$5.18, one 20-gallon mini-can every other week at \$6.90, one 32-gallon cart every other week at \$8.63, one 20-gallon mini-can every week at \$8.63, or one 32-gallon cart every week at \$11.51. Residents are charged \$4.60 for each additional 32-gallon equivalent set out for collection. For billing purposes, the trash collection contractor uses a computerized database system to record the overfill amounts set out

by each resident.

Since some residents prefer to haul the waste themselves, they pay the minimum amount for the mandatory collection program — \$5.18 per month for one 32-gallon container. At the transfer station, there is a minimum charge of \$5.18, although the tipping fee is \$74.50 per ton.

In 1992, the city also implemented a curbside recycling collection program in cooperation with the county. The program is mandatory for single-family households, which are billed \$3.10 per month for weekly recycling collection as part of their garbage service.

A separate city contractor operates a voluntary yard trimmings collection service for \$5.69 per month for up to 96 gallons of debris. Each household is supplied with a 64-gallon cart for bi-weekly collection. Residents can place up to an additional 32 gallons worth of material out with the cart, but they are billed \$2.50 for every 32-gallon equivalent in excess of 96 gallons. Since the program is voluntary, it does not conflict with residents' efforts to compost at home or to self-haul to a local composting facility.

One of the challenges cited by city staff is receiving accurate and up-to-date data from the garbage and recycling services contractors. The monthly reports required by the city enable city staff to track the activities and monitor progress of the program.

City staff also cite the need to ensure that all residents are informed about new and existing programs and the different service levels available to them. "Our ongoing challenge has been finding sufficient time and resources to dedicate to frequent, targeted public relations campaigns," says Tamera Kihs, the city's solid waste manager. The city also realizes that the variety of service options, although positive from a waste reduction and customer standpoint, reduces the stability of the revenue stream for the service providers and makes enforcement of mandatory collection more difficult.

By the end of 1995, the city had achieved a 51 percent recycling rate, thereby exceeding the 50 percent goal. "Although volume-based linear rates pose challenges," remarks Kihs, "we believe that they are the driving force behind our success in meeting our waste reduction and recycling goals."

Mount Vernon, Iowa

In Mount Vernon, pay-as-you-throw played a major role in motivating waste reduction and nearly doubling the city's recycling rate.

A small college town located in eastern Iowa, Mount Vernon began directly billing residents for trash collection in July 1991. At the same time, bins were distributed to begin curbside recycling collection. The city expected these two steps to work together: charging for each container would provide a financial incentive to move material from trash

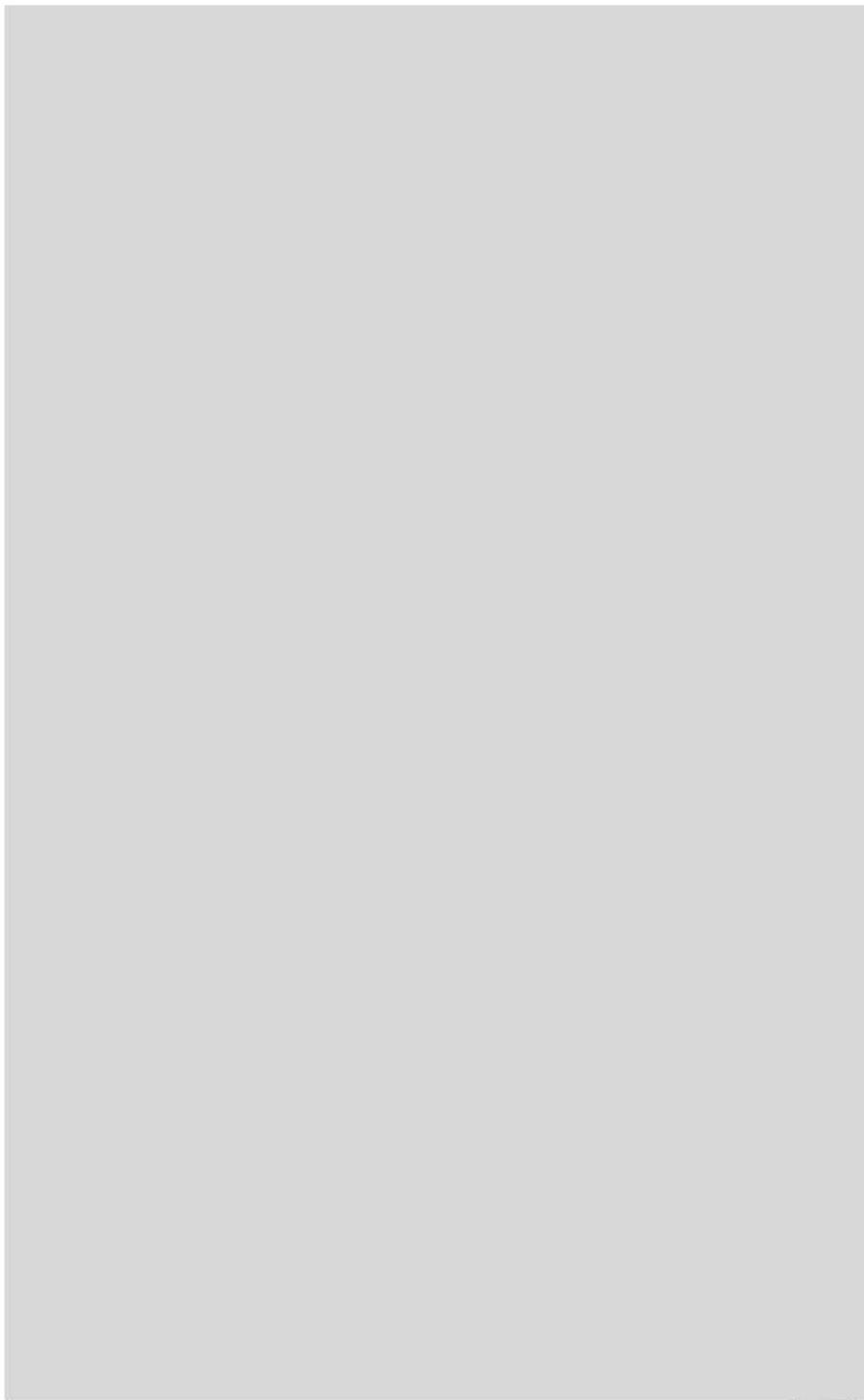
containers to recycling bins, since recyclables would be collected free of charge.

Under the program, residents receive weekly garbage pickup from the contract waste hauler, and can use either bags or containers that do not exceed 33 gallons and 40 pounds. Each container must have the Mount Vernon garbage tag attached to it. Tags can be purchased for \$1.75 each from City Hall and participating local businesses. Homeowners are also billed \$7 per month for solid waste service. This monthly fee and the tags are discounted for low-income households.

The city decided to use tags because they

cost little to print, enable residents to continue using their containers within the volume and weight limits, adhere securely to containers in all temperatures, are convenient for participating merchants to handle and can easily be removed when trash is collected. Theft of tags and illegal dumping, which is subject to a \$1,000 fine, have not been a problem.

From March through November, the city provides weekly yard trimmings pickup. Again, material must be in 33-gallon containers not exceeding 40 pounds (no bags are allowed for yard trimmings) with a garbage tag attached. The price for yard trimmings is



the same as for solid waste (\$1.75 per container). Brush and leaves, however, are collected at no charge. Brush that is stacked neatly in piles no more than four feet wide and four feet tall is collected once a month from March through November. Leaves that are

piled by the curb are collected every Monday in April and October at no charge.

The city also provides residents with a price list for bulky waste collection. Residents must call to schedule a pickup and attach one to eight tags, depending on the item.

In addition to putting more into recycling bins, city officials say residents have reduced waste by recycling appliances and by taking materials not accepted at curbside to drop-off facilities. City officials insist that informing households about alternative ways to deal with waste goes hand in hand with pay-as-you-throw to maximize the effectiveness of the financial incentives.

The city estimates that residential trash sent to the landfill decreased by 40 percent, from 45 pounds per person per week in 1990 to 27 pounds in 1995. The total reduction of residential trash and all yard trimmings per household exceeds the 50 percent waste reduction goal set by the state legislature for 2000.

According to Rick Elliott, mayor of Mount Vernon, "Our program has been very successful due to the initial involvement of a large number of citizens, continued expansion of recycling opportunities, community education and ownership of the program, and a very civic-minded, cooperative recycling and refuse vendor. This program works, and it works well."

Altogether, by recycling and reducing trash, and by leaving grass clippings on the lawn or by composting them, the average household saved \$47 last year in tag fees, a total savings of some \$46,000 for the city's 980 households. **RR**