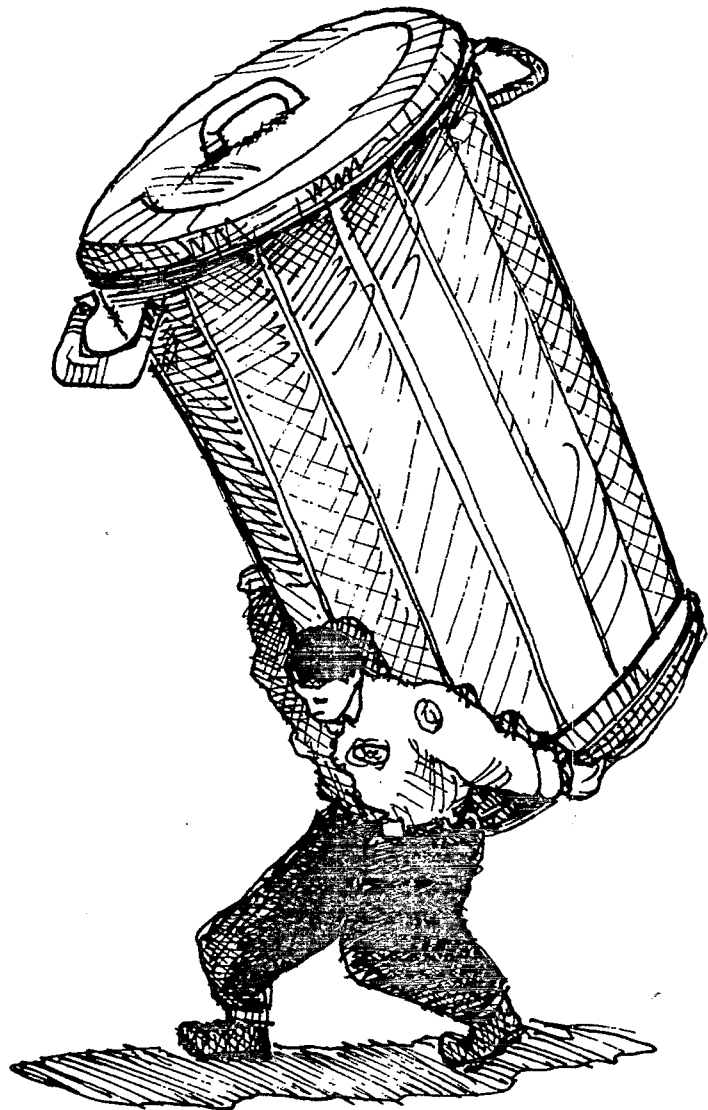


# **EPA Unit Pricing**

Providing an  
Incentive to  
Reduce  
Municipal  
Solid Waste





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## What Is Unit Pricing?

In recent years, solid waste managers across the country have found creative ways to respond to the dilemma of diminishing landfill space and rising costs. *Unit pricing*, also commonly referred to as variable-rate pricing, is one method that has proven effective in both reducing overall waste and conserving economic and environmental resources. Under unit pricing, customers are charged for waste collection and disposal services based on the amount of trash they generate. The theory is that if consumers know they must pay more to produce more garbage, they will take advantage of source reduction and recycling opportunities to reduce their trash—and their trash collection bill. As with other utilities, such as gas or electricity, consumers will limit usage if their actions directly affect the cost of their services. The U.S. Environmental Protection Agency (EPA) encourages local governments and planners to explore unit pricing as a tool for addressing the municipal solid waste needs of their communities.



## How Unit Pricing Works

**M**ost U.S. households currently pay for waste collection directly through a fixed monthly service charge or indirectly through property taxes. Under such programs, people who generate three or four bags of garbage per week pay the same amount as those who generate one-third that amount. Under unit pricing, however, households are charged only for what they throw away, creating an incentive to minimize household waste generation, and to recycle and compost.



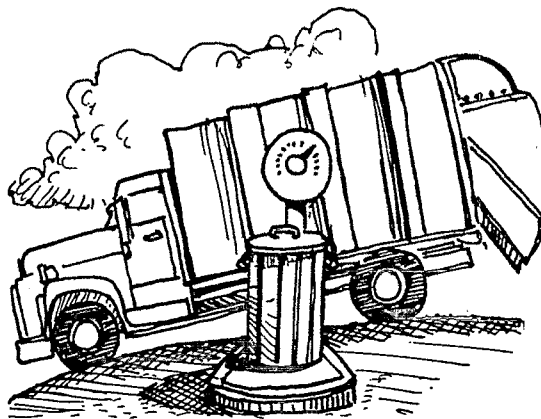
*Consumers turn down thermostats and turn off lights to save on gas or electric bills; with unit pricing, they have an economic incentive to limit their use of waste management and disposal services as well.*

The *unit price* is the cost customers must pay to dispose of a specific quantity of waste. Unit prices are based either on the volume or the weight of waste generated. Currently, most unit pricing programs are based on the *volume* of waste produced. Typically, there are two types of volume-based rates: a *subscribed variable can* system and a *pre-paid bag, tag, or sticker* system. In a variable can system, customers subscribe to a level of service based on the number of cans they normally leave at the curb each week. The lower the subscription level, the lower the bill.

In a bag system, customers purchase "official" trash bags, or tags to attach to their own bags, from the town hall or local stores. The fee for the bag or tag pays for the cost of collection and disposal. Municipal waste collectors then pick up the specially designated bags on collection days. Again, the fewer

the number of bags put out each week, the fewer special bags or tags must be purchased, and the less the customer pays.

*Weight-based* rates may provide an even greater incentive to reduce waste. With volume-based systems, citizens must reduce their trash by an entire can or bag to see a difference in their rate structure. With weight-based systems, every item of trash makes a difference. Although weight-based rate systems may be technically more complicated to implement, some communities are exploring the feasibility of programs that weigh garbage as it is collected. One, for example, is retrofitting garbage collection trucks with scales and electronic bar-coding equipment to enable the city to charge customers by the pound.



Whichever unit pricing method a community chooses, the key to its effectiveness is establishing a link between a customer's solid waste disposal practices and the fee the customer pays for waste management services. This link provides the incentive for customers to reduce their waste through source reduction and recycling.

## The Benefits of Unit Pricing

**W**ith unit pricing, members of a community share responsibility for solid waste issues, working together to accomplish waste management goals. Potential benefits of unit pricing programs include:

- Reduced waste generation.
- Extended life for existing disposal sites.
- Reduced labor costs for waste management.
- Improved utilization of recycling programs and resulting economies of scale.
- Increased resource conservation due to recycling and source reduction.

Communities currently using unit pricing have reported decreases in overall waste generation of 10 percent or more, reductions in the frequency of waste collection service, and increased participation in voluntary or mandatory recycling programs. Seattle, Washington, for example, has achieved significant results with its combined volume-based unit pricing and recycling systems. Since the program's introduction in 1981, households have reduced the average number of trash cans filled per week from 3.5 to just over 1 can.



The prospect of cost savings leads many waste managers to explore the implications of unit pricing for their communities. Although the collection costs for a volume- or weight-based system may exceed those of a flat fee or tax-funded system, waste managers have found that the switch to unit pricing usually results in a *net savings in terms of "avoided" waste disposal costs*. Less waste is generated under a unit pricing system, largely because more waste is recycled and composted; therefore, there is less waste to collect and dispose of. As a result, communities will save substantially on *tipping fees* charged by landfills and incinerators to dispose of waste, which can run over \$100 per ton. In some communities where unit pricing is in effect, overall waste management costs have decreased by as much as 10 percent.

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## Implementing Unit Pricing

**C**ommunities have varying waste management needs depending on their size, location, and economic resources. Because of this diversity, solid waste managers must consider many issues in deciding whether to implement unit pricing and in tailoring a unit pricing program to their own needs.

Many issues, such as who will operate the program, how often waste will be collected, and whether service will be backyard or curbside pickup, are



*Public education through brochures and the media can help explain the new system, allay concerns, and increase public support through understanding of solid waste issues.*

similar for conventional and unit pricing collection systems. Other considerations, such as the following, are unique to unit pricing:

- **Selecting a unit pricing rate.** The choice of rates involves balancing waste reduction and recycling incentives with the need to cover program costs. With higher unit prices for waste disposal, customers will probably choose to produce less waste and recycle more. Waste managers need to keep this in mind so that the rates they choose will guarantee a minimum revenue, no matter how little waste each household disposes of.
- **Ensuring community support.** The program must also be designed so that it is appealing and convenient for customers to use. At the same time that they encourage waste reduction, rates must be perceived as fair, and alternatives to disposal, such as recycling, must be available and cost-effective. Public education through brochures and the media can help explain the new system, allay concerns, and increase public support through understanding of solid waste issues.
- **Enforcing and monitoring compliance.** Waste managers may also need to address problems that could arise if residents try to avoid paying extra for waste services through littering, burning, or dumping their garbage into sewer systems or commercial

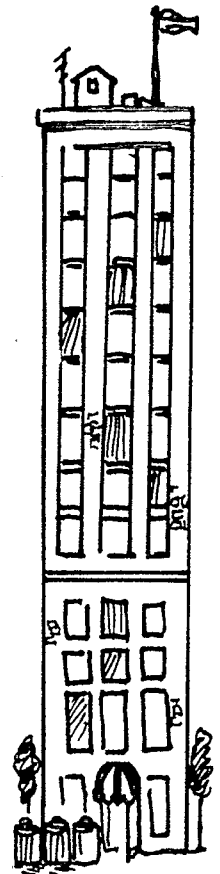


or public receptacles. To combat such "waste diversion" tactics, communities may opt to ban such activities as backyard burning and impose stiff fines for dumping and littering. Proper enforcement and compliance monitoring can significantly reduce such problems.

- **Choosing a system design.**

Successful unit pricing programs have been based on weight, volume, or some combination of both. As discussed earlier, there are two major types of volume-based systems: the "variable can" and the "bag/tag" system. The type of unit pricing program selected depends on the funds available for implementation, customer cooperation, and flexibility of revenue requirements.

- **Determining special rate options.** In some situations, waste managers may need to develop alternative rate options. *Multi-family buildings*, for example, present a complex problem. These buildings can vary widely in size from two-family houses to apartment buildings composed of 100 units or more. Garbage is usually disposed of in a joint area, and the tenant, or garbage generator, is often not the one paying the bills. Ideally, a system should be set up so that the waste reduction incentives are passed on from the building owner to individual tenants. Special rates, such as those used by some electric and water utilities, may also be appropriate for *low-income*



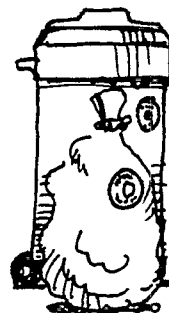
*customers or for senior citizens.* Waste managers might consider the need to subsidize lower rates or special services, the effects of alternate rates on cost and efficiency, and methods for determining eligibility for such special rates.

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## The Roles of Source Reduction and Recycling

**C**ase studies show that unit pricing programs reduce conventional waste collection most effectively when used in conjunction with recycling and composting programs. Removing recyclables such as yard waste, glass bottles, tin, aluminum, newsprint, corrugated cardboard, plastics, and paper from the waste stream can drastically reduce the amount of waste requiring conventional disposal. When people have access to convenient recycling options, such reductions can be substantial.

In communities where unit pricing is used in combination with recycling and composting programs, residents give more thought to the waste they throw away. Consumers may also try to reduce the amount of garbage they generate by purchasing fewer packaged goods and throwaway items. Households often find themselves saving money as well.



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## How Communities Perceive Unit Pricing Programs

**M**ost communities with unit pricing programs have embraced them enthusiastically. Overall, communities perceive unit pricing as more equitable than conventional flat fees or tax-based programs because households pay only for what they throw away. In addition, the programs are viewed as "cleaner" because they encourage habits that reduce garbage generation. The bag or closed cart system also restricts the size and type of waste receptacles and ensures that containers are not left open at the curb, which could attract flies and other pests. In the longer run, unit pricing may lower the costs of service, while at the same time allowing customers to participate in solving community solid waste problems.



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## Sources of More Information

**I**n cooperation with the City of Seattle, Washington, EPA has produced a handbook for solid waste officials that explores the feasibility, design, and operational considerations of different types of unit pricing programs. This two-volume

publication, *Variable Rates in Solid Waste: Handbook for Solid Waste Officials*, is intended to assist communities nationwide in implementing similar programs geared to their specific needs. To order a free copy of *Volume I- Executive Summary* (EPA/530-SW-90-084A), call the RCRA/ Superfund Hotline at (800) 424-9346, Monday through Friday, 8:30 a.m. to 7:30 p.m. EST, or write to:

**The RCRA Docket (OS-305)  
U.S. Environmental  
Protection Agency  
401 M Street, SW.  
Washington, DC 20460**

*Volume II - Detailed Manual* (EPA/530-SW-90-084B) is available from the National Technical Information Service (NTIS). To obtain copies of this publication (PB90-272 063), call NTIS at (703) 487-4650 or write to:

**National Technical  
Information Service  
5285 Port Royal Road  
Springfield, VA 22161**

EPA has published another report, *The Effects of Weight- or Volume-Based Pricing on Solid Waste Management* (EPA/530-SW-90-047). This report describes in detail how unit pricing works, and explains the effects of such a system on households and communities. It also presents case studies from several communities where unit pricing systems have been implemented. This report (PB91-111 484) can also be ordered from NTIS by calling (703) 487-4650 or writing to the above address.

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## Other Available EPA Publications

**Bibliography of Municipal Solid Waste Management Alternatives** (EPA/530-SW-89-055). A listing of approximately 200 publications available from industry, government, and environmental groups, including a section on educational programs/curricula.

**Characterization of Municipal Solid Waste in the United States: 1990 Update.** The most recent report in a series characterizing the national solid waste stream based on data through 1988. The report contains a breakdown of the waste stream by both weight and volume, and presents statistics on recovery for recycling, composting, and combustion. The **Executive Summary** (EPA/530-SW-90-042A) is available for free from the RCRA Docket (see ordering information below). The full **Report** (EPA/530-SW-90-042B) is available from NTIS at (703) 487-4650.

**Decision-Maker's Guide to Solid Waste Management (Volume I)** (EPA/530-SW-89-072). A guidebook designed to help local and state decision-makers evaluate and resolve their municipal solid waste management problems.

**The Environmental Consumer's Handbook** (EPA/530-SW-90-034B). A handbook designed to help consumers make environmentally aware decisions about the products and packaging they purchase, use, and ultimately dispose of. A pamphlet, **Be an Environmentally Alert Consumer** (EPA/530-SW-90-034A), is also available.

**Let's Reduce and Recycle: Curriculum for Solid Waste Awareness** (EPA/530-SW-90-005). A curriculum package that presents lessons and activities to teach students in grades K-12 about solid waste generation and management.

**Recycling Works! State and Local Solutions to Solid Waste Management Problems** (EPA/530-SW-89-014). A booklet describing 14 successful state and local recycling programs in the United States.

**Sites for Our Solid Waste: A Guidebook for Effective Public Involvement** (EPA/530-SW-90-019). A guidebook for developing a municipal solid waste facility siting strategy that involves the community.

To obtain copies of any of the publications listed above; for a complete listing of available documents; or to get on the mailing list for **Reusable News**, the newsletter of the Municipal and Industrial Solid Waste Division, write to:

**The RCRA Docket (OS-305)  
U.S. Environmental Protection Agency  
401 M Street, SW.  
Washington, DC 20460**

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## **EPA Regional Offices**

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| <b>U.S. EPA/Region 1</b><br>(HEE-CAN 6)<br>JFK Federal Building<br>Boston, MA 02203<br>(617) 573-9656    | <b>U.S. EPA/Region 6</b><br>(6H-H)<br>First Interstate Bank<br>Tower<br>1445 Ross Avenue<br>Dallas, TX 75202<br>(214) 655-6760 |
| <b>U.S. EPA/Region 2</b><br>(2AWM-HWP)<br>26 Federal Plaza<br>New York, NY 10278<br>(212) 264-3384       | <b>U.S. EPA/Region 7</b><br>(STPG)<br>726 Minnesota Avenue<br>Kansas City, KS 66101<br>(913) 551-7666                          |
| <b>U.S. EPA/Region 3</b><br>(3HW53)<br>841 Chestnut Street<br>Philadelphia, PA 19107<br>(215) 597-0982   | <b>U.S. EPA/Region 8</b><br>(8HWM-RM)<br>999 18th Street<br>Suite 500<br>Denver, CO<br>80202-2405<br>(303) 293-1667            |
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