INTEGRATED WASTE MANAGEMENT BOARD

PAY AS YOU THROW

UNIT PRICING FOR SOLID WASTE

WHAT IS UNIT PRICING?

The name "Unit Pricing" may not be familiar; however the concept certainly is. Unit Pricing — pricing per unit — is the basic pricing system we face every day for almost everything we buy: dollars per gallon of gasoline, per loaf of bread, per overnight video rental, per kilowatt hour of electricity, or per cubic foot of water. In fact, prices that are not set by the unit are the exception, rather than the rule: all-you-can-eat pizza buffets, copier service agreements, and government services such as police and fire protection.

Municipal solid waste service (household garbage disposal) has traditionally been funded through taxes or flat rate billing. This pricing scheme creates the same incentive as the all-you-can-eat pizza buffet: the smart economic move is to eat — or throw away — all you can, because the more you get for a fixed price, the better deal you're getting. All-you-can-dump solid waste pricing has played a significant part in creating the national solid waste crisis, exemplified by disappearing landfill capacity, rising disposal costs, limited use of recycling programs, and the attitude that unlimited waste service is a right.

Therefore, Unit Pricing for solid waste disposal means charging a fee for each unit disposed. The unit may be measured by the bag, by the can, or by the pound.

WHAT ARE THE BENEFITS OF UNIT PRICING?

Although the transition to a Unit Pricing system can be difficult for agencies accustomed to flat rate billing, Unit Pricing can make a profound change that leads to a variety of benefits. Most importantly, it creates the connection between each customer's cost and disposal habits, and provides an incentive for customers to make smarter choices in how they handle their own waste.

All Unit Pricing systems offer important advantages for both the solid waste agencies and their customers:

- **Increased awareness of solid waste costs.** Traditionally, true solid waste operational costs have been obscured from the consumer by being lumped into one general tax bill that covers many public services. Unit Pricing makes customers aware of the cost of the waste services they use, and reinforces that awareness every time a customer pays a garbage bill or buys a pre-paid garbage bag or tag/sticker.

- **Incentive to reduce waste.** When customers have to pay more for each can or bag disposed, they are likely to think twice before purchasing excessively packaged products at the store, or throwing old lettuce into the trash instead of the compost pile.

- **Incentive to recycle.** If throwing away is more expensive because the

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true costs of disposal are accounted for, recycling becomes a more economically beneficial option. This financial incentive can help increase use of recycling programs, and can reduce total waste management system costs.

- **Reduced dependence on landfills or incinerators.** Unit Pricing will reduce tonnage going to landfills or incinerators. Therefore, the need for expansion of landfills is postponed.

- **Stabilized system costs.** Final disposal is often the most unstable, and sometimes the most expensive, component of solid waste system cost. The incentives created by Unit Pricing by reducing the impact of landfill costs can help stabilize total waste management system costs.

- **Equity among customers.** Flat-rate billing and taxes make no distinction between high- and low-level disposers. With Unit Pricing, customers are charged according to the amount of waste they dispose.

- **Help in meeting legislated diversion goals.** The State of California, as well as other states and counties across the country, has mandated recycling or disposal reduction goals for communities within its jurisdiction. Unit Pricing systems can create incentives that encourage customers to change their disposal habits to help meet these goals.

How do Unit Pricing systems work?

The term "Unit Pricing" does not refer to a particular pricing system, but rather describes any funding system that charges customers according to the amount of waste disposed. Virtually all current Unit Pricing systems can be classified by one of the five types described below. Additionally, minor design elements within each system can be tailored to meet a community's unique solid waste goals.

VARIABLE CAN Customers "subscribe" to a set number and/or varying sizes of cans per collection week. Alternatively, waste collectors can record weekly setouts in a route book and bill the customer accordingly. Service is purchased on a per-can basis.

BAG All refuse set out for collection must be contained in specially marked garbage bags (usually marked with the city logo). Bags are sold at a price that includes some or all of the cost of providing refuse collection and management service. Service is purchased on a per-bag basis.

TAG/STICKER Each container (bag or can) of refuse set out for collection must have an official tag/sticker on it (possibly marked with the city logo). Tags/stickers are sold at a price that includes some or all of the cost of providing refuse collection and management service. Service is purchased on a per-tag/sticker basis.

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WEIGHT-BASED Each can of refuse is weighed as it is dumped into the truck. Computer records bill customers according to the weight of refuse disposed.

HYBRID A set level of service (one can or bag per week, for example) is funded through taxes or flat-rate billing. Additional refuse must be set out in a city logo-marked bag, or in a bag or can accompanied by a city tag/sticker (priced to contribute revenue for solid waste service).

Below is a chart displaying the strengths and weaknesses of each system. **Note: Some incentives to reduce waste and recycle (a strength), as well as potential risk of illegal dumping (a weakness), are common to all.**

Unit Pricing System Characteristics

System	Strengths	Weaknesses
VARIABLE CAN	System rewards consistent waste reduction; compatible with automatic and semi-automatic collection systems; fairly stable revenue stream; waste agency has many options in the design of rate structures.	Most expensive system currently in operation, because of billing, inventory, and customer service costs; fixed subscription level removes week-to-week incentive to reduce waste below that level; collectors must insure that refuse is in approved containers that are not over-weight.
BAG	Easy to implement and operate; can be implemented rapidly; no billing system needed; compatible with franchise or contract haulers; allows customers flexibility in their disposal level, while providing an incentive to reduce even below one bag of refuse; improves collector efficiency; gives neighborhoods a tidy appearance, with no empty cans on the street; limits need for Customer Service Representatives (CSRs) and enforcement.	Less compatible with automatic or semi-automatic collection systems; provides unstable revenue stream; has potential for problems with animals scattering garbage from damaged bags; may encourage customers to keep excess garbage for following collection.
TAG/STICKER	Easy to implement and operate; can be implemented rapidly; no billing system needed; compatible with franchise or contract system; allows customers flexibility in their disposal level, while providing an incentive to reduce even below one unit of refuse; improves collector efficiency; limits need for CSRs and enforcement; low purchase and distribution costs.	May be incompatible with automated or semi-automated collection systems; provides uncertain revenues; difficult to enforce container size limits at the curb; has potential for animals scattering garbage when used with bags; may encourage customers to keep excess refuse for later collection; confusion regarding assigned value of tag/sticker can cause customer service problems; tags/stickers can fall off in cold weather.
WEIGHT-BASED	Offers flexible billing system options; pound-by-pound charging system creates a clear waste reduction and recycling incentive at all disposal levels; requires no collector judgment at the curb; generates excellent data to target waste diversion and management program modifications.	Currently implemented on a pilot basis only; new approach with minimal data available—may be tough political sell; is potentially expensive to set up, including computer systems, cans, and scales; results in slower work for collectors under some system designs.
HYBRID	Fairly stable revenue stream; low implementation cost; politically easier to implement than other systems; natural transition step to other systems; discourages illegal dumping.	No incentive to minimize waste below base level; requires two-part revenue recovery system (fixed and variable recovery); total costs may not be apparent to customers.

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Are Unit Pricing systems operating successfully?

In the 1980s, only a small number of Unit Pricing systems were operating in places like Olympia, Washington; Plantation, Florida; and Santa Clara, California. As of January 1993, Unit Pricing systems had spread to more than 1,000 communities with the potential to expand to 1,800 communities by early 1994. At the time of this writing, more than 20 Unit Pricing systems are in operation in California.

The current surge of Unit Pricing systems can be attributed to their proven success records in various communities. For example:

- **Santa Monica, California,** population 88,000, implemented a variable can garbage rate system in April 1992. Santa Monica reports a 32 percent decrease in residential tonnage disposed and a 13 percent increase in tons recycled.

- **Quincy, Illinois,** population 40,000, requires customers to place a payment tag/sticker on each unit of refuse set at the curb. Quincy reports a 20 percent decrease in disposal tonnage (200 fewer tons per month), and a 50 percent increase in recycling program tonnage.

- **Capital Regional District, British Columbia (Victoria),** includes four "core" municipalities (total population 200,000), each of which limits collection of refuse funded through property taxes to 100 liters per week. Additional refuse must be accompanied by a separate pre-paid garbage tag/sticker. The Regional District currently diverts 34 percent of its waste stream and is approaching its goal of 50 percent diversion by the year 2000.

- **Seattle, Washington,** population 500,000, has a variable can billing system for refuse. Thirty percent of Seattle's waste stream was diverted in 1988, and 40 percent was recycled by 1991. Even before Seattle's curbside recycling program began in 1987, variable rates helped inspire residents to recycle 24 percent of the city's residential waste stream.

Where can we learn more about Unit Pricing?

The California Integrated Waste Management Board has a series of documents on the entire Unit Pricing process, from initial consideration of a new system to final implementation. *Unit Pricing for Solid Waste: An Introduction for Decision Makers* (Document #100-93-001) helps solid waste managers decide whether some kind of Unit Pricing system can benefit their community. *Beyond the Decision: Unit Pricing System Design and Implementation* (Document #100-93-003) helps solid waste managers to focus on one system and begin the planning process. The *Resource Guide to Unit Pricing for Solid Waste: Case Studies and References* (Document #100-93-004) includes case studies and lists additional sources of information about Unit Pricing systems.

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