



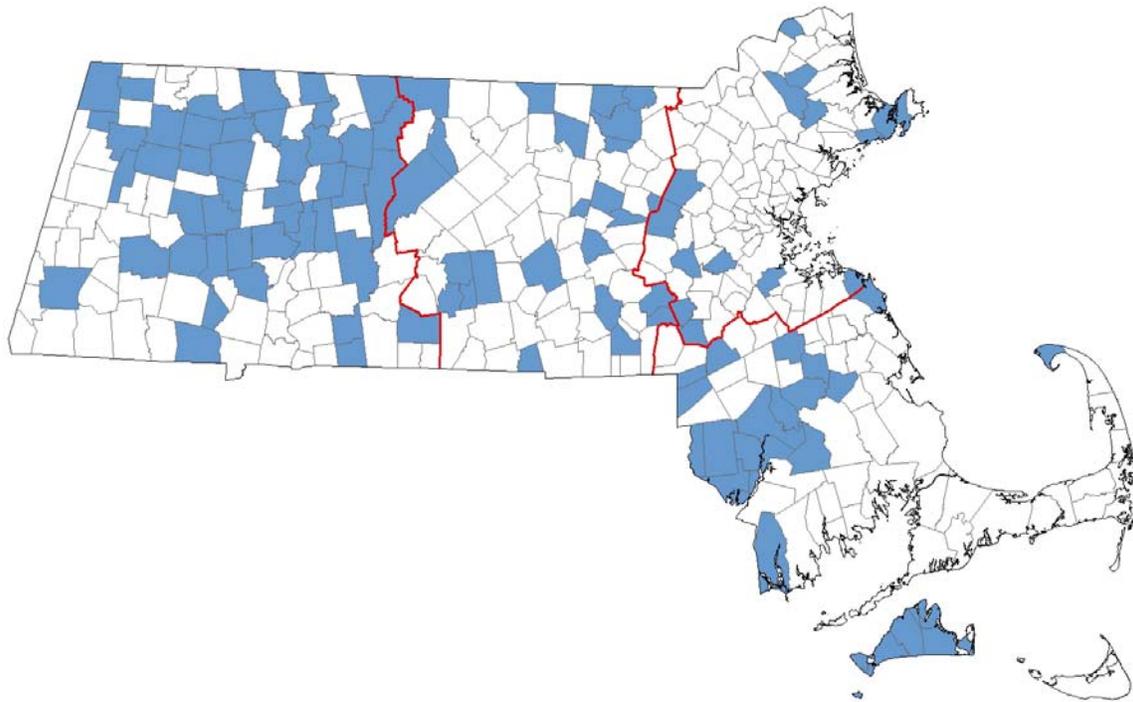
Massachusetts
Department
of
ENVIRONMENTAL
PROTECTION

The Commonwealth of Massachusetts
Department of Environmental Protection

Pay-As-You-Throw:

An Implementation Guide for Solid Waste Unit- Based Pricing Programs

January 2004



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For further information on unit-based pricing and assistance with program implementation, contact:

Joseph Lambert, PAYT Program Manager
Division of Consumer & Transportation Programs
Department of Environmental Protection
One Winter Street, 10th Floor
Boston, MA 02108
Tel: 617-574-6875
Fax: 617-292-5778
E-mail: joseph.lambert@state.ma.us
Website: www.state.ma.us/dep/recycle/

ABOUT THIS GUIDE

This guide provides an overview of solid waste unit-based pricing and assists local decision-makers and citizens in implementing programs in their communities. It explains the process of planning, developing, and implementing unit-based pricing with emphasis on successful strategies employed by selected Massachusetts communities. The guide is divided into six major sections:

SECTION I: TYPES OF SOLID WASTE USER FEES describes the different types of solid waste user fees.

SECTION II: ADVANTAGES OF UNIT-BASED PRICING PROGRAMS discusses the specific advantages of unit-based pricing.

SECTION III: THE ELEMENTS OF UNIT-BASED PRICING PROGRAMS describes the design options and program elements of successful unit-based pricing programs.

SECTION IV: STRATEGIES FOR DESIGNING AND IMPLEMENTING A SUCCESSFUL UNIT-BASED PRICING PROGRAM provides an overview of the design and implementation considerations associated with establishing a unit-based pricing program.

SECTION V: ISSUES TO RESOLVE discusses issues that should be addressed before program implementation.

SECTION VI: STEPS FOR BUILDING CONSENSUS FOR PAYT describes the important process of building consensus for unit-based pricing and educating the public.

While this guide provides an overview of unit-based pricing, more extensive reports available from DEP and US EPA contain worksheets for setting rates and other important information beyond the scope of this guide. Planners should consult **Section 12** of the companion document, *Information, Case Studies, & Sample Documents for PAYT in Massachusetts* to learn how they can obtain these materials. Planners interested in implementing unit-based pricing also are encouraged to speak with people in communities that have successfully adopted programs. The list of "mentors" cited in **Section 7** of the companion document listed above, is provided for this purpose; these individuals welcome your inquiries.

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EXECUTIVE SUMMARY

This guide provides an overview of solid waste unit-based pricing, the system in which residents pay for municipal solid waste (MSW) management services per unit of waste discarded rather than solely through a fixed fee or property tax. It explains the process of planning, developing, and implementing a unit-based pricing program with emphasis on successful strategies employed by Massachusetts communities. The Department of Environmental Protection (DEP) developed this guide to help local decision-makers and citizens implement unit-based pricing in their communities.

Cutting Costs, Saving Money

One hundred and six communities in Massachusetts have adopted solid waste unit-based pricing. Across the country, more than 6,000¹ municipalities have such programs. Unit-based pricing is catching on in Massachusetts and across the nation because it makes sense!

Communities with unit-based pricing save money through reduced disposal costs. They also gain control over their waste management budgets and provide secure funding sources for additional programs, such as recycling and composting. Since residents pay directly for disposal services in proportion to the amounts they use, they have a strong financial incentive to throw away less, while recycling and composting more.

In Massachusetts, communities with unit-based pricing have much higher recycling rates, on average, than those without it. In fact, over one-half of the communities with unit-based pricing showed a recycling rate of 40 percent or greater in the Calendar Year 2002 Municipal Recycling Rates published by DEP. The average recycling rate for municipalities with unit-based pricing (44%) was 13 percent higher than compared to the average recycling rate (31%) for municipalities without unit-based pricing programs. DEP consider unit-based pricing to be a primary vehicle for increasing Massachusetts' recycling rate.

Designing a Program

Pay-As-You-Throw: An Implementation Guide for Solid Waste Unit-Based Pricing Programs provides "nuts and bolts" advice on designing and implementing a program in your community. This publication takes you through each of the key steps and provides suggested timelines for performing them. The guide presents both the advantages and possible disadvantages of the different program types currently being used in Massachusetts, including: bag, sticker, punch card, subscription and "any container" programs. The guide also provides an overview of the different rate programs used in Massachusetts: proportional, variable, two-tiered, and multi-tiered systems.

The guide addresses many issues of particular concern to municipal officials: public perceptions that unit-based pricing is just a new tax, worries about increased illegal dumping, and the challenges of integrating multi-family dwellings into unit-based pricing. Many

¹ This data taken from Lisa Skumatz, Skumatz Economic Research Association, Variable-rate or "Pay-As-You-Throw" Waste Management: Answers to frequently asked questions. July 2002; page 5. Website address: <http://www.rppi.org/ps295.pdf>.

Massachusetts towns and cities with unit-based pricing in place have already successfully addressed these concerns.

Gaining Local Support

The guide also covers how to build consensus for unit-based pricing at the local level, including how to identify and gain the support of key decision-makers. Techniques for gathering public input and performing education and outreach about the program also are provided.

The guide makes suggestions for designing a program that will maximize the potential for waste reduction and recycling while gaining community support. Options are given for phasing-in a program over a period of time so residents can grow accustomed to paying directly for waste disposal.

Learning from the Experiences of Other Communities

The guide contains numerous case studies that spotlight Massachusetts communities with successful unit-based pricing programs. Additional program details and information about how implementation hurdles were overcome can be found in the guide's companion document, *Information, Case Studies, and Sample Documents for PAYT in Massachusetts*.

One hundred six (106) Massachusetts communities now have unit-based pricing. A summary chart describes the type of program in place in each community, and provides contact names and numbers. Other features include a list of "mentors" - individuals who have launched successful programs and now are willing to make themselves available for one-on-one consultations with other communities. These people are your best source of practical, field-tested information. Appendices also include samples of items used in communities with successful programs, including flyers, stickers and various other program samples. These samples can help you design similar materials for your community.

How the State Can Help

DEP is another valuable source of information and assistance on implementing unit-based pricing programs. DEP has established a grant program to assist communities with "pay-as-you-throw" program startup costs. The guide provides information on eligibility and describes the application process. Also included in the guide are a list of free publications, reports, and videos on unit-based pricing, full cost accounting and other relevant information, and an order form for those publications.

INTRODUCTION

Municipalities across Massachusetts are developing strategies to better manage solid waste in a cost-effective manner. Motivated by increased disposal costs, state waste diversion goals, and demand from environmentally aware citizens, nearly all Massachusetts communities have implemented recycling and composting programs. These programs have been highly successful in achieving a 34 percent statewide municipal solid waste (MSW) recycling rate.

One strategy that has contributed to this success and gained widespread popularity involves changing the way waste management services are financed to provide residents with an economic incentive to reduce the amount of waste they discard. Generally referred to as "unit-based pricing," this strategy helps municipalities lower waste management costs and increases recycling and composting. Unit-based pricing coupled with convenient recycling and aggressive education has emerged as the state's top program for increasing recycling and reducing waste generation.

What is Unit-Based Pricing?

Unit-based pricing, also known as "variable rate pricing" or "pay-as-you-throw (PAYT)", is a system in which residents pay for municipal solid waste (MSW) management services per unit of waste discarded rather than solely through a fixed fee or property tax. It is equivalent to putting a price tag on each container of trash that is placed at the curb or taken to the landfill or transfer station for disposal. When residents pay directly for waste disposal services, they are provided with a financial incentive to reduce their waste through recycling, composting, and source reduction.

Unit-Based Pricing in Massachusetts

Once hundred six communities (106) in Massachusetts have successfully adopted unit-based pricing programs to manage their MSW services. Across the country, more than 6,000² municipalities have such programs. Unit-based pricing programs in Massachusetts have been implemented in communities with fewer than 300 residents and in large urban communities with close to 200,000 residents. These communities save money through reduced waste disposal costs and the typically lower cost of processing recyclable materials. For example, Worcester cut its annual waste management costs by \$1.2 million and increased its recycling rate from 3 percent to 36 percent with the introduction of Pay-As-You-Throw and a comprehensive curbside recycling program.

DEP considers unit-based pricing to be a primary vehicle for attaining the state's recycling goal. The data speak for themselves. Of the 106 communities that currently have unit-based pricing programs, 55 percent achieved recycling rates of 40 percent or higher on their 2002 Recycling Rates issued by DEP. By contrast, only 21 percent of communities without unit-based pricing achieved a rate above 40 percent.

² This data taken from Lisa Skumatz, Skumatz Economic Research Association; see footnote 1.

To encourage municipalities to adopt unit-based pricing, DEP had a grant program to assist with the start up costs of new "pay-as-you-throw" programs (see Section 3 of the PAYT companion document).



SECTION I: TYPES OF SOLID WASTE USER FEES

There are three primary types of solid waste user fees. **Tax based** fees are those that are collected through local property taxes and are not distinguished from other property tax revenues. **Flat fees** are collected from residents for waste management services on an annual or semi-annual basis. Alternatively, fees can be **unit-based**, meaning they are assessed according to the volume or weight of trash disposed. Unit-based pricing or Pay-As-You-Throw (PAYT) is the focus of this guide. Communities are encouraged to establish unit-based pricing systems because they provide the greatest incentive for residents to reduce waste and recycle more. **Flat** fees and **unit-based** fees are different from **tax-based** fees because they are made explicit to residents.

Finding the right system depends on the characteristics, budget, goals, and needs of your community. The following is an overview of the types of municipal solid waste user fees currently being used in Massachusetts.

Shifting From Tax-Based Fees

Many municipalities utilize tax-based fees. By shifting to a unit-based program the municipality may be able to reduce taxes or divert taxes to other programs. Many communities may use this extra money towards new programs that may not have been possible without PAYT. For example a community could use this money towards a new bulky waste program, hazardous waste program, or a range of other initiatives.

Flat Fees

According to our most recent data (CY 2002), at least 33 communities in Massachusetts finance waste management services through flat fees. Residents are billed directly for services on a periodic basis or are required to purchase an annual pass to bring waste to landfills or transfer stations. Flat fees range from \$1 dollar to \$300 per year. Flat fees help educate residents about the cost of waste management services. However, since all residents pay the same amount regardless of how much garbage they produce, there is no incentive for residents to reduce or recycle their waste.

Communities with flat fee programs are in a good position to shift to unit-based pricing. Residents are already aware that waste management services are not "free" and may welcome a system that empowers them to control their own costs. Some communities in Massachusetts, such as Seekonk, have used flat fees as a way to ease into unit-based pricing. With the flat fee, residents become aware of the inequity of charging all residents the same amount.

Unit-Based Fees (PAYT)

Unit-based fees are determined according to the amount of trash that the individual household leaves at the curb or takes to a drop-off site. Just as they do when buying water, electricity, or telephone service, residents pay for the level of service they receive. Under this system, residents who discard more garbage pay higher fees. In this way, the unit-based pricing system provides a financial incentive for residents to reduce the amount of garbage they discard and to increase recycling and composting.

Almost all unit-based pricing programs in Massachusetts are volume-based, meaning residents are charged according to the volume, not weight, of what they throw away. Most programs require residents to purchase special bags, stickers, wheeled carts, or trash barrels for their waste. While more communities in Massachusetts have bag programs, stickers are gaining popularity because they are cheaper to produce, require less storage space, and residents can attach them to the containers of their choice. Wheeled carts and trash barrels are also being used more frequently. A complete description of program design options and the pros and cons of each is provided in Section III.



SECTION II: ADVANTAGES OF UNIT-BASED PRICING PROGRAMS

In addition to educating residents about the costs of waste management services and providing them and their municipalities with an opportunity to reduce trash costs, unit-based pricing programs also promote:

- Increased Source Reduction, Recycling, Composting, and Reuse
- Cost Control
- Equity (Fairness)
- Environmental quality.

Increased Source Reduction, Recycling, Composting, and Reuse

Communities experience increased recycling, composting, source reduction, and reuse when they implement unit-based pricing programs. As residents come to understand that trash disposal costs more than recycling, they want to recycle, compost reduce and reuse more, and throw away less. And, as participation in recycling programs goes up, waste disposal costs go down.

According to EPA, communities can expect a 25 percent to 45 percent reduction in waste being disposed as residents change their purchasing and waste disposal habits. Residents recognize the links among waste reduction, recycling, and lower costs for themselves and their community. In Massachusetts, municipalities with unit-based pricing programs have shown an average .37 tons per capita disposed by residents in comparison with municipalities without unit-based pricing programs, which shown an average .42 tons per capita disposed.³ Table 1 shows disposal rates for communities before and after the start of their PAYT programs. The Tellus Institute estimated a reduction of 43,130 tons of waste in Massachusetts, in 1997, solely due to Pay-as-you-Throw. EPA's *Source Reduction Program Potential Manual: A Planning Tool* can help you determine the potential of a source reduction program in your community (See Section 12 of the PAYT companion document).

Communities can anticipate an increase in recycling and composting with the start of unit-based pricing, especially if curbside recycling begins at the same time. For example, the recycling rate in the town of Shutesbury increased from 2% to 52% after the start of their unit-based pricing program. A study of nine communities in Massachusetts, as seen in Tables 1 and 2, showed as high a 28% increase in recycling in the first year. All nine municipalities have continued to maintain higher recycling rates in comparison with their recycling rate prior to implementing unit-based pricing programs. The Tellus Institute estimated that, in 1997, PAYT led to an increase in recycling of 29,130 tons in Massachusetts⁴.

³ Tons per capita rates based on CY2002 disposal information from the Municipal Recycling Data Sheets.

⁴ Tellus Institute *Massachusetts Source Reduction Report* (June 1999)

Table 1: Percent Change in Per Capita Waste Disposal for Municipalities After Implementing PAYT

MUNICIPALITY	Start Date	Program	Percent Change in Per Capita Disposal	
			Year 1	Year 2 ⁵
Brockton	October 2001	Curbside	-31%	N/A*
Cohasset	July 2001	Drop-Off	-25%	N/A*
East Brookfield	August 2001	Curbside	-26%	N/A*
Holliston	October 1999	Curbside	N/A*	-31%
Medway	July 2000	Curbside	-26%	-20%
Needham	June 1998	Drop-Off	-41%	-37%
North Attleborough	September 1998	Curbside	-44%	-35%
Shutesbury	July 2000	Curbside	1%	-20%
Topsfield	November 1998	Curbside	-15%	-20%

⁵ Year 2 percentage change for tons per capita of waste disposed was calculated as a cumulative change from the program's base year (before unit-based pricing).

* These communities started programs recently therefore they have no data for year 2.

Table 2: Recycling Rates for Municipalities Before and After PAYT

MUNICIPALITY	Start Date	Program	Before PAYT	After Implementing PAYT		
				Year 1	Year 2	Year ⁶ 3
Brockton	October 2001	Curbside	13%	30%	N/A	N/A
Cohasset	July 2001	Drop-Off	30%	44%	N/A	N/A
East Brookfield	August 2001	Curbside	29%	39%	N/A	N/A
Holliston	October 1999	Curbside	29%	N/A	49%	42%
Medway	July 2000	Curbside	44%	58%	45%	N/A
Needham	June 1998	Drop-Off	37%	50%	47%	54%
North Attleborough	September 1998	Curbside	28%	55%	39%	38%
Shutesbury	July 2000	Curbside	25%	52%	51%	N/A
Topsfield	November 1998	Curbside	28%	40%	40%	46%
Recycling Rates = waste diversion over waste generation. Data taken from DEP Municipal Recycling Data Sheets						

⁶ * These communities started programs recently therefore they have no data for year 3 and sometimes for year 2.

Cost Control

Unit-based pricing programs are an excellent way to control costs through reducing waste. Waste reduction translates into direct savings for residents and municipalities. Residents accustomed to paying flat fees for unlimited trash disposal can lower the amount they pay for trash services simply by recycling or composting more waste. While they previously had no control over what they were paying, unit-based pricing empowers them to lower their waste disposal bills.

Municipalities also realize savings from waste reduction and recycling. Waste disposal costs decline as the amount of waste sent to disposal facilities decreases. For example, Worcester saved \$1.2 million in avoided disposal and reduced labor costs during the first year of its program. While the city spent an additional \$500,000 to implement curbside recycling with unit-based pricing, it realized a net savings of \$700,000 even with these added services.

Equity (Fairness)

Unit fee systems are more equitable than flat fee systems because residents pay only for the level of service they use. Households generating less trash pay less than households that generate more. Once unit-based pricing is implemented, low-volume users such as the elderly no longer subsidize those who generate higher volumes of trash. The Town of Boxford used the issue of fairness to sell residents on the unit-based pricing concept. When the town gave residents a choice between flat fees and unit-based pricing, they voted overwhelmingly for unit-based pricing because it was a more equitable system and offered them the potential to save money by adjusting their waste disposal behavior.

Environmental Quality

By diverting waste through recycling, composting, reduction and reuse, unit-based pricing extends the lives of landfills, decreases greenhouse gas emissions and other pollution from disposal facilities, and reduces the need for new disposal facilities. As communities turn to reuse and recycling, natural resources such as land, air, and water are protected and preserved.

Almost all human activities today have some effect on global warming and climate change, and waste management is no exception.

- When organic wastes decompose in a landfill or synthetic materials such as plastics are burned in incinerators, greenhouse gasses are emitted. These impacts are all reduced with the introduction of a PAYT program.
- Increased paper recycling from a PAYT program will reduce the harvest of trees. Trees are instrumental in taking carbon dioxide out of the atmosphere and storing it.
- Recycled materials typically take less energy to produce. This increase in efficiency reduces fossil fuel use, which again reduces greenhouse gases. For example, producing an aluminum can from recycled aluminum instead of virgin materials (bauxite) requires 12-20% less energy, and produces 95% less air pollution⁷.

⁷ U-Mass Office of Waste Management, [Environmental Benefits of Recycling](http://www.umass.edu/recycle/environmental_benefits.html) web page: http://www.umass.edu/recycle/environmental_benefits.html. Also see the Ohio Department of Natural Resources website: <http://www.dnr.ohio.gov/recycling/awareness/facts/aluminum.htm>.

Based on calculations conducted using the Northeast Recycling Council’s Environmental Benefits Model⁸, DEP estimated the benefits of increased recycling for two Massachusetts communities. The below table summarizes these results for the first year of implementing PAYT in Brockton and Needham.

Municipality	Reduction in Greenhouse Gas Emissions (metric tons of Carbon equivalent)	Energy Savings: In Terms of # of Households Powered for a Year	Energy Savings: In Terms of Gallons of Gasoline
Brockton	3,400	820	693,000
Needham	72,000	680	580,000

All types of communities, regardless of their size or solid waste management practices, can design unit-based pricing programs that will help them achieve waste reduction and recycling goals while keeping costs to a minimum. There are a number of different volume-based programs that can be established to allow for flexibility in implementation and administration.

⁸ To access the NERC Environmental Benefits Model, go to the NERC web page at www.nerc.org.

DEP Recycling Participation Study

June, 2000 Pay-As-You-Throw Program Results

Recycling Patterns - Recycling participation for individual materials is noticeably higher in PAYT communities:

Material	“Always Recycle” - Statewide	“Always Recycle” - PAYT
Newspaper, magazines	82%	94%
Glass bottles, jars	72%	86%
Plastic containers	71%	82%
Metal cans	71%	84%
Corrugated cardboard	53%	73%
Paperboard	45%	60%
Regular paper	41%	50%

- Residents in PAYT communities are more likely to report “doing all they can” compared to results statewide. In PAYT communities, 70% of residents are “doing all they can,” compared to 50% statewide. Just 14% of residents in PAYT communities are “not participating” compared to 27% statewide.

Category	Statewide	PAYT
Doing all they can ¹	50%	70%
Doing nearly all they can ²	10%	11%
Making an effort ³	13%	5%
Not participating ⁴	27%	14%

¹recycle four target materials, ² recycle 3 target materials, ³ recycle 1-2 materials, ⁴ not recycling or only recycling deposit items. Target materials: newspaper, glass, metal cans, and plastic.

Attitudes Towards Recycling

- Residents in PAYT communities are significantly more likely to say that their household is committed to recycling as compared to residents from the rest of Massachusetts (82% versus 64%)
- Residents from PAYT communities do not have significantly different views about the benefits of recycling.
- Residents of PAYT communities find recycling easier, more convenient, less of a hassle and are less likely to need reminders to recycle than respondents from other parts of Massachusetts.
- Respondents from PAYT communities are significantly more likely to think that it is clear what is recyclable, storing recyclables is not a problem, getting information on recycling is easy.

*Overall survey sample – 750, minimum of 100 respondents from PAYT communities. Study can be found at <http://www.state.ma.us/dep/recycle/files/recsrvey.doc>.



SECTION III: THE ELEMENTS OF UNIT-BASED PRICING PROGRAMS

Once you have determined that unit-based pricing makes sense for your community, the next step is to decide what type of program is best. When deciding what type of program makes the most sense, it is important to remember that any program can and should be modified to suit your community's specific circumstances. Pre-paid unit-based pricing programs that require residents to purchase special bags or stickers are most common in Massachusetts, largely because they reduce billing and collection costs and can be adapted to fit a variety of municipal needs.

Program Design Options

There are six program design options currently in use in Massachusetts: bags, stickers, “any containers”, punch cards, subscription service, and basic service. Each system has possible advantages and disadvantages in terms of perceived equity, the level of economic incentive provided, and revenue stability. In addition, the systems are not mutually exclusive and can be combined to meet a community’s needs.

- **Specially Marked (Imprinted) Trash Bags**

Fifty-five communities in Massachusetts use a bag system for their PAYT program. Residents purchase colored plastic bags imprinted with the name or seal of the municipality. The price of each bag covers both the cost of the bag itself and part or all of the cost of transportation, and disposal. Residents set these special bags out at the curb for collection or bring them to the landfill or transfer station. Waste haulers are instructed to pick up only the specially marked trash bags.

Some municipalities elect to sell their bags at town hall or municipal offices. Others make arrangements with local supermarkets and convenience stores to sell the bags at a small mark up or at no additional cost as a public service. A variety of bag sizes and prices can be offered to allow additional flexibility for low-volume trash generators, such as the elderly. For example, the Town of Colrain charges 75 cents for a fifteen-gallon bag and \$1.50 cents for a 33-gallon bag. See Table 4 for a full description of the advantages and concerns of this system.



Table 4: Bag Systems

Households pay a fee by purchasing “official” distinctively marked, standard-sized trash bags, typically ranging from 10 to 30 gallons in capacity. Residents purchase bags from municipal offices and/or retail stores. Only garbage in “official” bags is collected.

Advantages	Concerns	Massachusetts communities using this system	
<p>Residents find bag systems easy to understand. They just need to buy bags, which they need anyway, instead of a sticker plus a bag.</p> <p>Volume limits are more easily assured with bags than with stickers.</p> <p>Bag systems offer the potential for a stronger waste reduction incentive when small sized bags are used. This flexibility with smaller bag sizes benefits low-volume users, such as senior citizens.</p> <p>Bag collection tends to be faster and more efficient than sticker systems and subscription systems because bags are easy to see and remove.</p> <p>Items that are not in compliance are easily noticed.</p> <p>Bag systems provide the opportunity to offset costs by selling advertising on “official” bags.</p>	<p>Bags are more expensive to produce than stickers.</p> <p>If bags are sold in municipal offices, extra staff time will need to be committed.</p> <p>Residents might view a requirement to buy and store bags as an inconvenience.</p> <p>There may be potential difficulty with retailers who may object to selling the bags and/or insist on a markup.</p> <p>Unlike cans, bags are not reused, adding to the amount of solid waste entering the waste stream.</p> <p>Residents using containers may object to having to switch to bags.</p> <p>The weight of bags after stuffing might be a problem unless weight restrictions are instituted and enforced.</p> <p>Bag systems have greater revenue uncertainty than subscription systems, since the number of bags residents purchase can fluctuate significantly.</p> <p>Animals can tear bags and scatter trash, or bags can tear during lifting.</p>	<p>Ashby Ashfield Belchertown Berkley Bernardston Bridgewater Brimfield Brockton Brookfield Buckland Charlemont Cohasset Colrain Deerfield Dighton East Bridgewater East Brookfield Groton Hadley Halifax Hampden Hawley Huntington Lakeville Leverett Lunenburg Medway Millis</p>	<p>Natick Needham New Ashford New Salem North Adams North Attleborough North Brookfield Northborough Orange Pepperell Petersham Provincetown Russell Savoy Scituate Seekonk Shutesbury Somerset Southampton Spencer Sudbury Swansea Taunton Webster Wendell Williamstown Worcester</p>

Sources: U.S. Environmental Protection Agency. 1994. *Pay-As-You-Throw: Lessons Learned About Unit Pricing*, EPA530-R-94-004; U.S. Environmental Protection Agency. 1999. *Rate Structure Design: Setting Rates for a Pay-As-You-Throw Program*, EPA530-R-99-006; Skumatz, Lisa A. 1993. *Variable Rates for Municipal Solid Waste: Implementation Experience, Economics, and Legislation*; State of Iowa, Department of Natural Resources. 1995. *Implementation Guide for Unit-Based Pricing*.

The City of Worcester has had tremendous success with its bag program. Residents purchase yellow bags imprinted with the city's unit-based pricing slogan "Pay a Little, Save a Lot." The brightly-colored bags are easy to spot, which ensures fast and efficient collection. In addition, trash that is not in a specially imprinted bag is easily noticed.

Worcester's experience with bags, discussed in more detail in Section 1 of the PAYT companion document, highlights the importance of working closely with retailers. Retailers who carry the special bags should benefit through increased store traffic. However, bags carry disadvantages for retailers since they take up shelf space and often must be paid for in advance. Some retailers will be willing to sell bags because they are providing a public service and will benefit from increased store traffic and PAYT program advertising. If not, you may want to allow retailers to charge a markup on the bags. In any case, if retailers are to be involved in distributing bags, they must be invited into the planning process early on.

- **Specially Marked Stickers**

Unit-based pricing programs that use stickers are also common in Massachusetts, with 34 communities using this method. Residents purchase specially marked labels and affix them to trash bags or barrels of their choice. Different colored stickers may be purchased depending on the volume of trash disposed. For example, a six-gallon container (bag or barrel) may require a blue sticker costing 75 cents, a 15-gallon container may require a red sticker costing \$1.30, and a 30-gallon container may require that a resident affix a yellow sticker costing \$2.25. In Concord, residents may pay a lump sum for a sticker that they place on a barrel. This sticker entitles them to pickup of that barrel for 6 months. This option is a unit-based system, but is closer to the system that is already in place in most communities. Alternatively, residents may be instructed to attach a certain number of stickers to their containers depending on the sizes

As with bag programs, this variation allows low-volume users to save money on waste management services and provides an incentive for higher-volume users to reduce their costs through greater source reduction, recycling, and composting. The Massachusetts Department of Revenue has issued a ruling that no sales tax will be charged on the sale of either bags or stickers. In addition, as with bags, waste collection workers are instructed to collect only those containers that are marked with the appropriate label. Bags or barrels without stickers are not collected. By printing sequential numbers on each sticker, municipalities can keep track of the number of stickers used. Some communities also require stickers for bulky items, such as appliances and furniture. Each type of bulky item must bear a predetermined number of stickers based upon its size and level of handling difficulty. See Table 5 for a full description of the advantages and concerns of sticker systems.

Table 5: Sticker Systems

Households pay a fee by purchasing “official” stickers. The stickers are attached to a specific size container. Stickers are purchased from municipal offices and/or retail stores. Only containers with the “official” stickers are collected.

Advantages	Concerns	Massachusetts communities using this system
<p>Sticker systems are less expensive to implement than bag systems because the cost of producing stickers for sale to residents is lower than for bags.</p> <p>Selling stickers at local retail establishments and municipal offices offers lower distribution, storage, and inventory costs than subscription systems and less resistance from retailers than bags.</p> <p>Stickers can be used to indicate payment for bulky items or white goods.</p> <p>Residents can choose between bags or cans BUT size and type of can or bag still have to be restricted to a specified size/type.</p>	<p>To avoid confusion among residents, the municipality must establish and clearly communicate the size limits allowable for each sticker.</p> <p>It is more difficult for residents to visualize size limits with stickers than with bags.</p> <p>If stickers are sold in municipal offices, extra staff time will need to be committed.</p> <p>Residents might view a requirement to buy and store stickers as an inconvenience.</p> <p>Stickers sometimes do not adhere to containers in rainy or cold weather.</p> <p>Extra time might be needed at the curb for collectors to enforce size limits.</p> <p>Stickers are not as noticeable as bags or other prepaid indicators and may slow down collection.</p> <p>There is greater revenue uncertainty than with subscription systems, since the number of stickers residents purchase can fluctuate significantly.</p>	<p>Ayer Becket Bolton Boxford Chester Clinton Concord Dalton Dunstable Gill Gloucester Great Barrington Hatfield Holliston Manchester Maynard Mendon Merrimac Milton Montague Norfolk Northampton Oak Bluffs Plainville Raynham Royalston Shelburne Tisbury Topsfield Upton Warwick Westhampton Whately Wilbraham Worthington</p>

Source: See Table 4.

Stickers have an advantage over bags in that they require less storage space. This may make them more desirable to retailers and municipalities with limited storage capacity. A disadvantage with stickers is that there is less control over the total volume of waste disposed. Bags have definite volume limits, whereas stickers can be placed on bags or barrels of varying sizes. Haulers may find it difficult to ensure that a certain volume of trash has the correct sticker. To encourage the use of appropriate containers, communities may want to establish weight limits along with the volume requirements. Containers over the weight limit would require two stickers or else will not be collected.

Another disadvantage of stickers is that they are not as easy to identify as specially marked bags. In order to make stickers more visible, town residents could use stickers that attach to the neck of tied bags or to the handle of trash barrels. The stickers are easy for the waste haulers to identify.

Some communities have mixed both bags and stickers in their program. Within Massachusetts, Cheshire and Foxborough have this type of program. This can be used as an alternative option for residents who wish to use their own container instead of town bags. This program may increase administrative or implementation costs due to the added complexity, but the added flexibility may outweigh these costs.

- **“Any Container” Systems**

In Massachusetts, eight drop-off communities have unit-based programs that allow for containers supplied by the resident. Instead of requiring bags or stickers, the residents bring containers to the drop-off site and pay per container. These containers are assumed to be an average size, though they in fact vary in size. For example the Martha’s Vineyard Refuse Disposal District, which includes Aquinnah, Chilmark, Edgartown, and West Tisbury, has this type of system for their residents. This is a weight based system which is different than the volume-based system that most of Massachusetts uses. The residents pay by the number of containers they bring. These containers must be approximately 32-gallon containers, which equals about 40 lbs. of trash. The residents can either pay \$4.00 in cash at the site for each container or buy coupon books in advance for a certain number of containers. The largest problems they have had involve weight limitations. They have a maximum weight of 40 lbs. per trash barrel, but residents often fill trash barrels with more weight than allowed. Because these landfills do not have scales there is no clear way of verifying weights. However residents located within the disposal district may exercise the option of using the scale located at the Edgartown transfer station at a disposal cost of \$141 per ton of solid waste. This system works well for the areas with many seasonal residents.

Table 6: “Any Container” Systems

Households can use container of their choosing assumed to be an average size. These containers are brought to a drop-off facility and the resident is charged per container

Advantages	Concerns	Massachusetts communities
<p>Revenues are stable and easy to forecast.</p> <p>Containers generally will not tear and can prevent animals from scattering waste.</p> <p>New containers may not be necessary when residents already own cans of roughly uniform volume.</p> <p>Enforcement can be assisted with address labels on the container.</p> <p>Easier for use with automated and semi-automated equipment (34 gallon wheeled cart).</p>	<p>May have higher implementation costs particularly if new containers must be purchased.</p> <p>Limited incentive for reduction of waste due to the same price for a container whether it is full or not and no savings below smallest size trash can.</p> <p>Complex billing systems are required to track residents’ subscription level.</p> <p>Non-automated collections can make it more difficult than collecting waste in bags.</p>	<p>Aquinnah (also known as Gay Head)</p> <p>Chilmark</p> <p>Edgartown</p> <p>Hudson</p> <p>Phillipston</p> <p>Rehoboth</p> <p>West Tisbury</p>

Source: See Table 4

- **Punch Card Systems**

Five communities in the state use punch cards as the mechanism to charge residents on a per-unit basis for the amount of waste they discard. Residents purchase a card which can be used a set number of times for a particular amount of waste. For example, in Granville, a card costs \$60 and can be used for thirty 30-gallon containers. This system is convenient for communities that offer drop-off waste management services. The card is punched by a landfill or transfer station attendant when the container is brought to the drop-off center.

Granville has been extremely pleased with its punch card program. Residents can choose from among four different punch cards: they can purchase the \$60 card for thirty 30-gallon punches, a \$25 card for 52 five-gallon punches, a \$64 card for sixteen 55-gallon drums (ideal for businesses), and a card good for one, two, or three pickup loads for \$50 a load. Granville requires residents to recycle and charges \$25 annually for a recycling card. However, residents who participate in the punch card program do not have to pay the \$25 recycling fee since recycling costs are included in the cost of the punch cards. Residents who use private haulers for curbside trash service and do not participate in the punch card program must purchase recycling cards and bring their recyclables to the community’s transfer station.

Table 7: Punch Card Systems

Households purchase a card that can be used a set number of times to discard a pre-determined amount of waste. A community will typically sell a variety of cards that can be used for a range of disposal amounts. Waste containers (bags or barrels) are brought to a landfill or transfer station and the card is punched by an attendant.

Advantages	Concerns	Massachusetts communities
<p>Punch card systems are easy to implement and easy for residents to understand.</p> <p>Punch cards require very little storage and are inexpensive to produce.</p> <p>Punch cards can be used over and over again until all the punches are used. This cuts down on waste.</p> <p>Residents can use any type of container as long as containers comply with volume and weight restrictions.</p> <p>Selling punch cards at local retailers and municipal offices offers low distribution and storage costs and less resistance from retailers than bags.</p>	<p>Punch cards can only be used at the landfill or transfer station where an attendant is available to punch the card.</p> <p>To avoid confusion among residents, the municipality must establish and clearly communicate the size limits allowable for each card type.</p> <p>If punch cards are sold in municipal offices, extra staff time will need to be committed.</p> <p>Residents might view a requirement to buy punch cards as an inconvenience.</p>	<p>Chesterfield Goshen Granville Plainfield Westport</p>

Source: See Table 4

- **Franchise Systems**

With a franchise system, households sign up for collection and disposal of a specific number or size of containers of garbage based on the amount of waste they generate per billing period. The municipality or the private hauler then bills residents depending on the type of program to which they subscribe. Households generating garbage above their subscribed level of service must purchase stickers and attach them to additional containers if they want them to be collected. Two municipalities in Massachusetts have a franchise system.

Franchise systems require a billing and tracking system. Communities can avoid the problems associated with complex billing by requiring residents to contract directly with haulers. This is the method in place in the Town of Amherst. Residents are required to have weekly waste management services and must contract with one of the two private haulers approved by the Board of Health. Local regulations require that waste haulers offer residential customers a unit-based fee, which covers all waste collection and disposal costs. Residents can subscribe for one trash barrel per week for \$325 per year, two trash barrels per week for \$350 per year, and three trash barrels per week for \$377 per year.

Table 8: Franchise Systems

Households sign up for collection of a specific size or number of containers of garbage per billing period. Charges are based on the amount of service chosen, with higher service levels costing more. Bags or stickers are required above the subscription level.

Advantages	Concerns	Massachusetts communities
<p>Revenues are fairly stable and easy to forecast.</p> <p>If residents already own containers of roughly uniform volume, new containers may not be required.</p> <p>Containers may be labeled with addresses to assist in enforcement.</p> <p>This system does not add more plastic (garbage bags) to the landfill.</p> <p>Municipalities can easily amend subscription systems to include bags or stickers for additional units of trash.</p> <p>This system also works well with automated collection programs.</p>	<p>Subscription systems often have higher implementation costs, including the purchase and distribution of containers.</p> <p>Customers have a limited incentive to reduce waste. Since residents are usually charged on a subscription basis, there is no incentive not to fill containers already purchased. In addition, no savings are possible below the smallest size trash container.</p> <p>Relatively complex billing systems are needed to track a resident's selected subscription level and bill accordingly.</p> <p>At the outset, residents may find it difficult or confusing to select a subscription level. There may be disputes with residents on the number of containers set out.</p>	<p>Amherst Georgetown</p>

Source: See Table 4

Maximum Weight Requirement Option

Regardless of the PAYT program type, DEP strongly recommends placing a maximum weight requirement as well as the volume-based requirement. A weight restriction will keep residents with trash compactors from unfairly benefiting. Also, a weight restriction protects the bags from being overfilled and breaking open. Also many haulers require through contract a limit on the weight their employees lift because of Workmen's Compensation requirements of 50 lbs. maximum. When determining the rate for your program, the average weight per bag is determined. Setting a maximum weight will help in keeping this weight down and therefore preventing collection amounts from exceeding estimates.

This maximum weight requirement may seem difficult to enforce. Drop-off communities can install scales at the transfer station, although this may be costly and slow down traffic in and out of the station. If a scale is not an option or the municipality runs a curbside collection then the best enforcement is instructing the collectors to watch for overstuffed bags. If a bag is noticeably heavier than the weight limit, it is not accepted or picked up. For curbside collections a notice can be left giving the reason the bag was not collected (See Section 9 of the PAYT companion document). After notifying the resident of the maximum weight, the resident will often make an effort not to stuff as much in the bags.

Convenient Recycling Options

Convenient and comprehensive recycling must be part of any unit-based pricing program. The cost of the recycling program can be covered through the flat fee or the unit-based fee. By allowing "free" recycling, residents who choose to recycle are rewarded for their efforts through lower disposal costs. In fact, without convenient and inexpensive alternatives to managing trash, a program could potentially fail. For example, when the town of Chelmsford added a separate fee for recycling one year after instituting a unit-based pricing program, the recycling charge was overwhelmingly rejected by residents and the entire unit-based pricing program was subsequently repealed.

- **Add-on Program Elements: Bulky Items, Composting and Source Reduction**

Communities with unit-based pricing programs should also provide source reduction programs and convenient collection of yard waste and bulky items, such as refrigerators, major appliances (also referred to as white goods), and furniture. Special stickers (with additional fees) can be printed and used for those items that will not fit in bags or barrels. This type of program can encourage the reuse of bulky items, especially if a swap shop is located in town and provides for free drop-off of these items. Some communities collect bulky items for at additional cost, while others charge a nominal fee. The provision of a free bulky waste program helped Worcester build support for its unit-based pricing program and has contributed to a decrease in illegal dumping. Maynard also offers bulky waste pickup, but requires that residents attach five stickers to each bulky item (for a total cost of \$10). Both communities consider these "add-ons" to be integral components of their unit-based pricing programs. Bulky wastes are a large part of any illegal dumping that occurs during unit-based pricing. These programs are considered to be very helpful in reducing this type of illegal diversion.

Communities also can inform residents of on-site management methods of organic materials such as backyard composting, mulching and grasscycling (leaving grass clippings on the lawn). Brochures on home composting and grasscycling are available from DEP and may be mailed or handed out to residents. Communities can encourage increased composting by providing residents with the opportunity to purchase rodent-resistant home composting bins.

These bins can be made available to residents at a discounted rate with the assistance of DEP grants. These bins could be sold for as little as \$15 to \$20 and are simple for any resident to use. Residents can compost nearly 50 percent of their waste including yard trimmings, food scraps and certain paper products. To help reduce waste, promotion of residential on-site composting should be a part of every unit-based pricing program. To learn about the bins available through the state, please refer to the DEP publication, *Compost! Make a World of Difference!*

Section 12 of the PAYT companion document lists a manual released by the EPA that can help with a source reduction program.

- **Apartment Buildings and Yard Waste PAYT Program**

Residential housing comprised of multiple units can be a challenge to communities implementing unit-based pricing. This is particularly true in apartment buildings where households dispose of trash in large centrally-located dumpsters, and trash removal is paid for by the landlord, not the residents. This makes it difficult to charge individual households per unit of trash disposed unless a bag or sticker program is used. Moreover, when there are many families in a building, it is easy for a single household to try to "cheat the system" by disposing of trash without the requisite bag or sticker. When this happens, it is difficult to determine who is responsible.

Multi-family dwellings with six or fewer units do not present this problem to the extent that large apartment buildings do. Residents in dwellings of six or fewer units generally receive the same waste management service received by residents in single-family or two-family homes. These residents usually do not use centrally-located dumpsters to dispose of trash, due to the smaller number of units within the dwelling. In addition, these residents are less likely to try to "cheat the system" because they don't have the same level of anonymity as residents of large buildings. As a result, households in multi-family dwellings with six or fewer units should generally be included in unit-based pricing programs.

Several Massachusetts communities with unit-based pricing include multi-family dwellings in their programs. Some communities make special arrangements to ensure compliance by residents in these dwellings, while others do not. For example, Worcester includes residents living in dwellings of six or fewer units, but makes no special arrangements. Since these residents are included in the municipal trash and recycling collection programs, they are expected to purchase the special yellow bags.

While many communities choose to exclude apartment buildings and condominiums from unit-based pricing programs, this example demonstrates that it *is* possible to include these residents, particularly those in smaller buildings. Communities might also consider a phased-in approach to dealing with apartment buildings. For example, single-family houses and multi-family dwellings comprised of six or fewer units could be included in the first year, while larger apartment buildings can be brought on board once the program is running smoothly. Condominiums can also be allowed to participate by allowing the condo association to distribute stickers or bags.

- **Seasonal/Transient Populations**

Communities with large seasonal or transient populations, such as coastal or college communities, may be concerned that these populations will not comply with their unit-based pricing programs. While these communities face additional implementation hurdles, they can be overcome with proper planning and education.

Generally populations comprised of students present less of a problem because students are more amenable to the environmental arguments in support of unit-based pricing. Communities with large off-campus student populations must reach out to these groups in their outreach efforts. For example, Worcester officials contact the 10 colleges in the city and mail brochures to departments in charge of off-campus populations in August, before the students return to campus. The brochures describe the pay-per-bag program and inform

students where they can purchase bags and pick-up recycling bins. Communities with large student populations may also arrange a place on campus, such as the college bookstore or a convenience store, where students can purchase bags or stickers, and prepare area retailers for the times of year when they will need to stock up.

Seasonal residents on vacation present an educational barrier because they tend to visit for short periods of time and have no prior knowledge of waste management practices in the community. Nonetheless, they should be responsible for participating in the program, just as they are expected to recycle and properly dispose of the trash they generate while on vacation.

In communities with unit-based pricing, the obligation for educating tourists falls on the owners and agents who rent property to tourists. This is the case in Gloucester, a coastal community where the population swells by 6,000 in the summer months. Rental agents inform tourists of the unit-based pricing program and often provide them with two stickers per week. Tourists are instructed on how the program works, how to recycle, and where to purchase additional stickers if needed. As a result, Gloucester has not experienced any compliance problems with summer residents.



SECTION IV: STRATEGIES FOR DESIGNING AND IMPLEMENTING A SUCCESSFUL UNIT-BASED PRICING PROGRAM

Developing a unit-based pricing program takes time and commitment, as the program needs to be tailored to the specific needs of your community. This means determining whether a bag, barrel, or sticker program makes the most sense, designing a rate structure, developing an implementation schedule, and gathering the key support necessary for approval of unit-based pricing. This section provides an overview of design and implementation considerations that will maximize the potential for waste reduction and recycling while gaining community support. Planners can accomplish this by taking certain steps, such as adopting a hybrid system and designing a rate structure that is revenue-neutral. See Section 5 of the PAYT companion document for a chart of procedures required to fully design a unit-based pricing program.

At the design stage, you should also refer to EPA's *Pay-As-You-Throw Tool Kit*. This guide contains fact sheets, worksheets and other valuable information to help you implement a unit-based pricing program from beginning to end. There are a set of 7 worksheets that are very helpful in designing a program. The worksheets cover various aspects of the program from the planning stage through until the monitoring stage, including:

-  **Worksheet 1:** Program Goals
-  **Worksheet 2:** Potential Barriers
-  **Worksheet 3:** Public Outreach
-  **Worksheet 4:** Container & Pricing Choices
-  **Worksheet 5:** Rate Structure Design
-  **Worksheet 6:** Implementation Checklist
-  **Worksheet 7:** Monitoring & Evaluation

These worksheets and other sections of the tool kit can be downloaded individually at <http://www.epa.gov/payt/tools/toolkit.htm>.

Another useful tool is the EPA's *Rate Structure Design: Setting Rates for a Pay-As-You-Throw Program*. It contains valuable information on what is necessary to determine proper fees and rates. (See Section 12 of the PAYT companion document for information on ordering a free copy of these publications.)

Design a Unit-Based Pricing Rate Structure

One of the most important elements in designing a unit-based pricing program is establishing an appropriate rate structure. Along with raising sufficient revenues to cover the fixed and variable costs of the solid waste program, unit-based rates should send clear price signals that will encourage residents to throw away less. The three major rate systems are proportional, variable, and hybrid rates. The hybrid rate system is considered by the DEP to be the most effective unit-based pricing system.

- **Proportional Rate System**

The simplest type of system is a proportional rate system. The proportional system simply includes one uniform charge per container set out. This system provides a large incentive to reduce waste and keeps administrative costs low. However with proportional rates, the correct rate is often difficult to determine, as residents recycle more and throw away less. Revenues may decrease as the program is implemented so the rates may need to be set somewhat higher initially to account for this decreased revenue. These decreases will be due to a much higher recycling rate. The rate may be decreased later as long as it is still possible to cover MSW costs. If the rates are set too high the municipality risks increased program opposition.

Table 9: Proportional Rates		
<i>This is a simple pricing system with uniform container sizes and prices.</i>		
Advantages	Concerns	Massachusetts communities
Strongest incentive for reducing waste due to price of each bag	Not based on MSW costs, but based on quantity of trash discarded.	Aquinnah Ashby Brimfield
Simple to manage due to purchase of bags from municipality or retail outlets.	Will cause uncertain revenue due to unknown response from residents	Chilmark Edgartown Taunton
Possibly lowers MSW program costs because no billing mechanism required.	Revenues likely to be too high or too low, may not meet solid waste costs Possibility of storage of bags may cause fluctuations in revenue.	Webster West Tisbury

Source: See Table 4.

- **Variable Rate System**

Variable rates are more complicated but are also more flexible. This system includes different costs for different containers. There are various options that fit within a variable system.

- The first option is charging different costs for different container sizes, For example, Halifax charges \$1.20 per 15-gallon container and \$1.80 per 30-gallon container.
- Another option is to charge different amounts for the second or third size container. For example the first 30 gallon container may cost \$1.00, but the next 30 gallon container may cost \$1.50.
- The final option would be supplying basic service, which is supplying the first bag at no cost to the resident and then charging for each additional bag. The Town of Maynard provides one container per week for free and then charges \$2.00 for each additional container.

The majority of municipalities in Massachusetts with this system selected disposal amounts of approximately 15 and 30 gallons.

Table 10: Variable Rates

<i>This system charges residents different amounts for different amounts of garbage depending on either size of container or number of containers.</i>		
Advantages	Concerns	Massachusetts communities
<p>Allows the municipality to control the incentive level to reduce waste.</p> <p>The price for additional containers may be higher if the municipality wishes to create a stronger incentive, or, if there is a problem with illegal dumping the municipality may lower the cost for additional containers.</p>	<p>Managing different subscription levels could increase municipal administrative costs.</p> <p>There may be more work for the haulers including counting set outs during collection, which may also increase costs.</p>	<p>Amherst Bridgewater East Bridgewater East Brookfield Georgetown Granville Halifax Maynard Somerset</p>

Source: See Table 4.

- **Hybrid Pricing System**

The final system is a hybrid system, which can be categorized into a two-tiered or multi-tiered system. The two-tiered hybrid system is the most common rate system in Massachusetts. DEP recommends some form of hybrid rate system as the preferred Unit-Based Pricing Program. A hybrid pricing system combines a flat fee to cover the fixed costs of trash collection and a unit-based fee to cover costs that vary by the amount of trash that is disposed. To cover the variable costs, a municipality can use either a proportional rate to create a two-tiered system or a variable rate to create a multi-tiered system (more than 2 tiers).

The flat fee provides revenue stability and ensures that fixed costs (direct and indirect) such as the capital costs of equipment, collection costs, employee salaries, administrative costs, insurance, and overhead are covered. The unit-based fee provides the proper price signal to residents. Many municipalities with hybrid systems offer a basic level of service, such as the collection of one container of trash per week, as part of the flat fee. Any additional containers must bear the appropriate bag or sticker and are charged on a unit basis. Other municipalities with hybrid systems require residents to purchase a bag or sticker for each trash container, but have a flat fee in place to cover fixed costs. Also, hybrid systems provide the flexibility to combine design options such as bags for regular trash and stickers for bulky items.

Communities are encouraged to design hybrid systems for a number of reasons. In addition to providing revenue stability, a hybrid system helps eliminate the incentive to illegally dump trash. Since residents are already paying something for the service, they are more inclined to use it. Furthermore, a hybrid system is often easier to sell politically since it can diffuse some of the resistance to unit-based pricing, especially in communities that are unable to reduce property taxes to compensate for additional trash charges. In addition, the per-unit cost of bags or stickers will be lower because a portion of waste management services will be financed from property taxes or flat fees.

Table 11: Two-Tiered or Multi-Tiered Hybrid Rates

DEP strongly recommends hybrid systems. *This system is useful for revenue stability. The ‘first-tier’ includes a basic level of service that is covered by a flat fee paid through taxes or separate bills, the next tier(s) is a unit-based fee. These additional charges could either be a proportional rate system, which would mean a two-tiered rate, or variable rate system that would be a multi-tiered rate.*

Advantages	Concerns	Massachusetts communities with two-tiered rates	Massachusetts communities with multi-tiered rates
<p>Ensures revenue stability regardless of how much waste is reduced.</p> <p>Offers communities a transition from the traditional financing system to a proportional or variable rate option.</p> <p>Provides more flexibility to mix and match design components, such as bag and sticker programs.</p> <p>Does not “lock in” a community to a specific system and enables customers and officials to become familiar with unit-based pricing.</p> <p>Can be implemented quickly, inexpensively, and easily and can later be replaced or modified into a full subscription, bag or sticker system.</p> <p>Incentive for illegal dumping decreased.</p> <p>When fixed fee is in property taxes, residents may continue to deduct this amount from federal taxes.</p> <p>Generally easier to “sell” to public officials.</p>	<p>Could possibly lower incentive for reduction of waste.</p> <p>Much of the cost is hidden in taxes or flat fees, which do not show the residents the total cost of trash services.</p> <p>Customer understanding can be reduced with the necessity to pay two fees for garbage disposal.</p>	<p>Ashfield Becket Bernardston Bolton Boxford Brookfield Buckland Charlemont Cheshire Chester Clinton Cohasset Concord Deerfield Dighton Dunstable Gill Gloucester Goshen Hampden Hawley Holliston Hudson Huntington Lunenburg Manchester Mendon Merrimac Millis Milton</p> <p>Montague New Salem Norfolk North Brookfield Northampton Northborough Oak Bluffs Orange Pepperell Petersham Phillipston Plainville Provincetown Raynham Rehoboth Royalston Savoy Seekonk Shelburne Shutesbury Tisbury Topsfield Upton Wendell Westport Whately Wilbraham</p>	<p>Ayer Belchertown Berkley Brockton Chesterfield Colrain Dalton Foxborough Great Barrington Groton Hadley Hatfield Lakeville Leverett Medway Natick Needham New Ashford North Adams North Attleborough Plainfield Russell Scituate Southampton Spencer Sudbury Swansea Warwick Westhampton Williamstown Worcester Worthington</p>

Source: See Table 4.

Section 4 of the PAYT companion document contains more information about the different rate system options available and how to design a rate.

Develop an Implementation Schedule

Many tasks need to be performed during unit-based pricing design and implementation. While the details may vary from community to community based on program design and local conditions, certain tasks pertain to everyone. These include: gathering public support for the program (discussed in section VI), procuring containers, assisting groups with special needs, launching complementary programs, and establishing enforcement procedures.

Organizing the many steps involved in designing and implementing a unit-based pricing program into a clear schedule is essential. While the schedule should be viewed as flexible, establishing an overview of the entire process will help eliminate the possibility of any serious omissions and help ensure a more timely and smoother implementation process. (Section 5 of the PAYT companion document presents a detailed sample timeline as well as examples of implementation schedules from Needham and Merrimac.)

The dates presented in the timeline are based on the experiences of communities that have implemented unit-based pricing. Local conditions and needs will inevitably affect the exact timing of your program's development. Many factors can come into play: equipment needs, contractual changes, financing requirements, and political developments. While most steps can be completed fairly routinely in nine months, some communities need a longer phase-in period to gain greater support among residents and municipal officials and ensure the program's success.

Options for Phasing-in a Unit-Based Pricing Program

- **Provide Basic Service, One “Free” Bag, Sticker, Wheeled cart or Trash Barrel Per Week**

Communities can ease residents into unit-based pricing by providing one free bag or sticker per week. This can be used both during phase-in for the first year, or can be permanent throughout the program. The cost for the first container can come out of the flat fee or general tax levy. The DEP equipment grant program can assist by providing municipalities with a supply of stickers or bags for the first year of the unit-based pricing program. Municipalities can pass along the savings to residents by providing them with one “free” bag or sticker per week.⁹ After the first year of the program, the number of “free” stickers or bags may be decreased from 52 to 40, then from 40 to 30 the following year. By decreasing the amount of stickers provided each year, the program will continue to provide a signal to residents to reduce waste.¹⁰

In the Town of Topsfield residents receive one annual decal for free to place on a barrel. This decal is good for a full year and allows them one bag of waste per week with no sticker needed. The price of this decal is included in the property taxes paid by the resident. After

⁹ The disposal costs for the “free” container must still be paid for by the resident, either in the tax base or the flat fee.

¹⁰ If a community chooses to adopt this strategy, the impact on low-income households that generate more than one container per week must be addressed, either through “lifeline” rates or reduction in the tax or flat fee.

the first bag the resident must purchase stickers at \$1.50 each and place them on each additional bag of trash.

- **Switch to Flat Fee Pricing as a Possible First Step**

Communities that have stopped paying for waste management services from property taxes and instead charge residents flat user fees on an annual or semi-annual basis have an easier time selling the idea of unit pricing. Residents become aware of the costs of waste management services and of the fact that they may be subsidizing their neighbors if they are all paying the same but using the service to varying degrees. This strategy also allows residents to get accustomed to the idea of paying directly for waste management services. Seekonk used this strategy to implement its unit-based pricing program. (See Section 1 of the PAYT companion document for more information on the Seekonk program.)

Communities that charge flat user fees for waste management services are moving in the right direction in terms of making costs known to the users. Switching to flat fee pricing as an interim measure is preferable to financing waste management services through a "hidden" charge in the general tax levy. Communities that already finance trash services through flat fees should consider providing residents with the option of adopting a hybrid unit-based pricing program. They should demonstrate how unit-based pricing can reduce the flat user fees that residents all have to pay no matter how much waste they produce. At the very least, communities unable to switch to flat fees or unit-based pricing should consider placing solid waste costs as a separate line item on tax bills. This step will increase residents' awareness and pave the way for future acceptance of unit-based pricing.

Accounting System Options

Communities can track solid waste management costs in a variety of ways. Many communities manage these costs as a line item within the overall municipal budget. Increasingly, however, communities are revising the way in which solid waste management costs are tracked and budgeted through the use of full cost accounting such as revolving and enterprise funds. Also, Massachusetts General Law, Chapter 40: Section 8H, allows a recycling fund to be set up. This fund may include:

- Appropriation of funds for recycling programs
- Any income that comes in through the sale of recyclables

This recycling/MSW fund, can also be used to deposit funds received through the sale of bags, stickers or any other revenue coming in to the MSW/PAYT program.

- **Full Cost Accounting**

Full Cost Accounting (FCA) is an accounting practice that can help local governments identify and manage the actual costs of municipal solid waste services. Through FCA, decision-makers systematically identify, analyze, and report all the monetary costs of resources associated with municipal solid waste management, such as acquisition of equipment, landfill closure, and administrative costs.

FCA is different from cash flow accounting, a common government accounting practice which is based on cash outlays (when the cash flows), not on costs (when the resource is used). Cash flow accounting can give a distorted picture of the actual costs of municipal solid waste management because it does not include *all* costs, such as future costs that are directly related to current activities. Full cost accounting, on the other hand, accounts for all monetary costs at the time resources are used or committed.

FCA can help communities establish an equitable unit-based rate structure that will generate the revenues needed to cover the costs of providing solid waste services. This type of accounting helps a community ensure that enough revenue will be generated to cover the complete costs of the unit-based pricing program. With FCA, communities can more accurately set the per bag, sticker, wheeled cart or trash barrel rates, track expenses and revenues, and track the overall success of the program over time. The EPA has many publications regarding FCA, see Section 12 of the PAYT companion document for a list of various FCA publications.

- **Enterprise and Revolving Funds**

Another way for communities to better account for solid waste management costs is to set up an **enterprise or a revolving fund**. These are independent, self-sustaining funds established to account for program operations. These funds are usually established when a community wants to:

1. Demonstrate to the public the portion of the total costs of a service that are recovered through user charges, or
2. Allow the retained earnings generated by the operation to remain in the fund rather than revert to the general fund.

With an **enterprise fund**:

- Costs and revenues of the unit-based pricing program are treated as though the program is run as a private business
 - Costs and revenues of the unit-based pricing program are accounted for under a separate budget.
 - All activities must be approved annually.
 - Any interest earned in an enterprise fund is kept for that fund
 - This fund budget, however, needs to be approved yearly by town meeting.
- Massachusetts municipalities can establish enterprise funds by following the procedures set out in Chapter 44, Section 53 ½ F of the Massachusetts General Laws.

A **revolving** account is similar to an enterprise fund in that it is a separate budget from the general revenue.

- The major difference is that after the initial approval a revolving fund does not need the budget approved annually at town meeting.
- This difference gives revolving funds more flexibility compared with enterprise funds.
- Any interest earned in a revolving account returns to the general account.
- The procedures set out for revolving funds for Massachusetts municipalities can be found in Chapter 44, Section 53 ½ E of the Massachusetts General Laws.

While these types of accounting systems are not required of communities that want to adopt unit-based pricing programs, they can help municipal officials better manage their solid waste finances and provide an improved basis for rate setting. (See Section 12 of the PAYT companion document for information on how to order documents that describe full cost accounting and enterprise funds, including the EPA's *Full Cost Accounting for Municipal Solid Waste Management: A Handbook* as well as the EPA's *Rate Structure Design: Setting Rates for a Pay-As-You-Throw Program*.)



SECTION V: ISSUES TO RESOLVE

Effective unit-based pricing programs are not achieved without considering and resolving a number of issues. Although these issues often turn out to not be major problems, it is still important to address them. These issues include: the program's impact on large and/or low-income families, the potential for illegal dumping, increased administrative costs, coordination with multi-family dwellings and apartment buildings, the effect of mechanical trash compactors, and customer confusion or resistance to change. These issues are explained below, along with suggestions for addressing them.

Effects on Low-Income Households

Because unit-based fees for trash service represent a higher percentage of a low-income family's income, steps should be taken to minimize the impact on these households. Just as electric, gas, and water utilities provide special rates for low-income users, a solid waste unit-based pricing program may include "lifeline" rates. Lifeline rates could be discounted rates, such as reduced flat fees, free bags or stickers, or a combination. Many municipalities provide "Basic Service" to all residents, which is a certain number of free stickers or bags per year. This basic service is useful for all residents, but can help diminish the costs to low-income households. The cost of the free stickers is included in the flat fee charges that are separate from the sticker cost. The town of Seekonk can reduce or waive the flat fee portion of the hybrid system for residents who demonstrate hardship. Residents must still pay the per-bag fee of 60 cents for a 15-gallon bag and \$1.00 for a 30-gallon bag, so the incentive exists to save even more by cutting down on what they throw away.

Illegal Dumping

Many solid waste managers perceive that unit-based pricing will lead to illegal dumping. They fear that residents charged a fee for waste disposal will improperly discard their waste in commercial waste bins or public trash cans to avoid paying fees. Studies of communities in Massachusetts and around the nation with unit-based pricing programs indicate that increased illegal dumping is typically *not* a major problem and can be easily addressed. Composition analysis of illegally dumped materials shows that the largest components are commercial construction and demolition debris. The primary household component is bulky waste. Therefore, it is important to have a bulky goods program in place.¹¹



When a hybrid pricing system is in place, the incentive to illegally dispose of trash is practically eliminated. Since residents are paying a portion of the service from property taxes or flat fees, they are more inclined to use it and less inclined to discard trash illegally. And, potential violations can be averted through advanced preparation, such as establishing fines,

¹¹ Addition information on illegal dumping can be found in: Skumatz, Lisa A., Hans Van Dusen, and Jennie Carton, *Illegal Dumping: Incidence, Drivers, and Strategies*, Skumatz Economic Research Associates (SERA) Research Report 9431-1, Seattle, Washington, November 1994 as well as EPA *Illegal Dumping Prevention Guidebook*, EPA905-B-97-001 (March 1998)

hiring enforcement officials, and notifying commercial establishments to lock dumpsters. In fact, municipal officials in Taunton feel that illegal dumping has become less of a problem due to the city's public awareness campaign and the threat of fines.

According to the EPA, the major factors that contribute to illegal dumping are demographics, physical characteristics of local land area, lack of alternative disposal and lack of codes and ordinances. The problem of demographics can include low-income families that cannot afford to pay for disposal. When setting the rates for the unit-based program there may need to be money set-aside for subsidizing these low-income families. Problematic areas include open lots or unlit areas, which can cause problems regardless of how the program is financed. The unit-based pricing program can be combined with ordinances prohibiting illegal dumping, which can include a series of fines for non-compliance. The Commonwealth of Massachusetts released a guide to help write these codes titled, *A Guide for Using Non-Criminal Disposition for Bylaw Enforcement*. These codes combined with education and outreach can greatly reduce illegal dumping. EPA also publishes a guide on illegal dumping that can be of assistance to municipalities when trying to deal with this problem (See Section 12 of the PAYT companion document).

Administrative Costs

Unit-based pricing programs can create additional administrative costs for a municipality. For instance, the distribution of bags or stickers may require inventory control and new accounting mechanisms. Additional staff time may be needed to accomplish these tasks. Communities should consider administrative expenses when setting rates to ensure that any additional costs are recovered. Worcester's administrative costs increased substantially, but overall the program saved the municipality money (See Section 1 of the PAYT companion document). While it is common to incur additional up front costs, these costs are generally recovered in the long run through cost savings associated with increased recycling and reduced waste disposal. DEP grants can also help to cover or at least greatly reduce startup costs. These grants can be used for a variety of items including educational materials, stickers or bags, and the salaries of selected personnel required to coordinate the unit-based program implementation (See Section 3 of the PAYT companion document).

Mechanical Trash Compactors

Households that have trash compactors can unfairly benefit from volume-based unit pricing. Because trash compactors allow more waste to fit into a single bag, these households may be able to dispose of more trash without paying additional fees. Communities have minimized this problem by establishing strict weight limits on containers of refuse (See Section 9 of the PAYT companion document). Trash haulers can be enlisted to enforce these limits, although they generally don't require extensive enforcement.

Customer Confusion/Resistance to Change

This is the most important set of issues to deal with when implementing and operating a unit-based program. These issues must be dealt with both before approval of the program as well as once the program has been implemented. As an example, the Town of Norton started a

program, which was voted down shortly afterwards due to misinformation on the program. Some of the potential areas of customer confusion or resistance to change are:

- **Perception that the existing MSW program is free**

The majority of solid waste collection programs are simply funded out of the tax-base and therefore do not appear as a cost to the resident. Residents must be made aware that this does not mean that their waste is collected and disposed at no charge to them. Some municipalities have set up enterprise or revolving funds for solid waste management that segregate these funds from the general revenue. Williamstown was the first community in Massachusetts to do so and thus begin to address this perception. In 1987, they set up enterprise funds for their municipal solid waste program as well as other municipal programs. This helped them ensure that enough money was being raised to support these programs. It also helped with the implementation of their PAYT program in 1991. With an enterprise and revolving fund in place, costs are tracked much more carefully, surplus funds are much simpler to handle, and full cost accounting can be used. These funds are simple to set up and are discussed later in this guide.

- **Perception that fee is a “tax”**

At times, unit-based pricing programs are regarded as a new tax. To avoid this perception, communities should consider making the program *revenue-neutral*. With a revenue-neutral system, property taxes or flat fees are reduced by the amount that unit-based fees are expected to generate. Seekonk went revenue-neutral when designing their program. The amount of revenue generated from the PAYT program was reduced from the tax-base. As a result, residents do not view unit-based trash fees as taxes. In fact, many residents will find that they pay no more for trash services than they previously paid through property taxes or flat fees. For many residents, the program actually provides them with a way to reduce their expenses. Either way, residents assume control over their waste management bills and pay according to their waste disposal habits only.

A community may not be able to design a revenue-neutral rate structure because tax dollars previously earmarked for waste management may be needed for more pressing municipal needs. In this situation, the community can make the case that by implementing unit-based pricing it can hold the line on property taxes or provide additional services. For example, this is how Seekonk "sold" its two-tiered bag program to residents. Before unit-based pricing, financing for the \$500,000 solid waste program came from the general fund. After the program, the \$500,000 was redirected to the school department where it was badly needed. Residents understood and appreciated that the new trash fees enabled the redistribution of tax dollars within the levy limit imposed by Proposition 2-1/2. Similarly, Worcester reduced the solid waste budget as a result of the \$700,000 net savings with unit-based pricing and then allocated the savings to other important municipal projects.

- **Purpose/Benefits of the Program**

Residents may resist the program simply due to a lack of knowledge about why PAYT is needed or how PAYT benefits them. This may occur either when the community is to vote on the program, or after the program starts. In either case, residents must be informed on why

the program is being implemented or voted on. Every municipality has different reasons to implement PAYT. Some can be due to the closure of a town landfill, others to reduce disposal costs. Sometimes this program is implemented as a way to keep residents within the municipal program as opposed to them using private haulers. Seekonk experienced this problem with a large percentage of residents moving to private haulers. By implementing a unit-based program, they were able to create a program that would cost less for residents than the private haulers. Residents must also be informed of the various benefits of a PAYT program, including environmental benefits, cost reduction, and equity (See Section II).



SECTION VI: STEPS FOR BUILDING CONSENSUS FOR PAYT

Building consensus is the most important component of a successful unit-based pricing program. Key players from the municipal government and from the community at large must be identified and involved from the beginning of the planning process. Taking the time and committing the resources to build support within both the government and the community up front will reduce unnecessary obstacles to successful implementation later in the process.

Step 1: Establish an In-House Unit-Based Pricing Advisory Committee

To gather support for the proposed program, you should assemble an advisory committee comprised of key players in the community, including:

- The town administrator or city manager
- Representatives from the Mayor's office, City Council, or Selectman's office
- Public works and/or solid waste management staff
- Members of the finance/budget department/committee
- Members of the recycling committee
- Community activists and other residents.

It is critical to gain support among these individuals before the program is brought to a vote at town meeting or by the city council. Since the proposed unit-based pricing plan will need to go through multiple stages of review, the advisory committee should be formed and key players consulted at least nine months before an expected vote.

The advisory committee should designate working groups to perform the initial research and program analysis required to develop the program and gain support. Members of a solid waste advisory committee or recycling group, or municipal officials involved in solid waste issues, will likely take the lead in these working groups, researching such issues as cost savings with unit pricing, concerns about illegal dumping, and effects on low-income households.

Step 2: Sell the Program to Key Decision-Makers

Specific actions that the advisory committee and working groups might take to "sell" the program to key decision makers include:

- Discussion of EPA's three E's, Environment, Equity, and Economy;
- Preparing implementation plan and briefing documents to analyze costs and address potential concerns;
- Charting out the approval process; and
- Developing a number of program options from which to choose.

These steps are described below. Once support among key decision-makers has been established, steps should be taken to build community awareness and support for the unit-based pricing program.



◆ Discussion of EPA's three E's, Environment, Equity and Economy¹²

- Environmental sustainability
PAYT has shown decreases in waste through source reduction and increased recycling. This can help alleviate many environmental problems including global warming and increased extraction of natural resources (See Section 10 of the companion document for a factsheet about the relationship between PAYT and climate change).
- Economic sustainability
PAYT reduces costs for residents as well as the municipality. Overall waste disposal costs can be reduced because there will be less waste, which means less paid out in tipping fees.
- Equity
PAYT keeps costs in the open and enables residents to control their own disposal costs. They will not have to pay more because other residents dispose more.

◆ Prepare Implementation Plan and Briefing Documents

Next, prepare an implementation plan for municipal officials and other key stakeholders. This implementation plan can include a budget, a timeline, information on the type and cost of program and information on the number of households the program will serve (See Section 5 of the PAYT companion document for samples). This plan is critical to help guide the process for all parties involved. An implementation plan of this type is required when applying to the DEP for a Unit-Based Pricing Assistance Grant.

DEP also recommends creating a series of briefing documents. These briefing documents should include the cost per unit of trash managed, an overall cost analysis that includes any savings that may result, examples of communities similar to yours that have successful unit-based pricing programs, and key concerns of the community and how they will be addressed. For example, since illegal dumping is often perceived as a potential problem, information on proposed enforcement policies should be presented. The briefing documents also should address the effects the proposed program will likely have on a typical household, the elderly, and low-income families. By addressing these issues up-front, planners can show that the program has been well thought-out. (Section 8 of the PAYT companion document provides some examples of the types of documents that have been prepared for this purpose.)

◆ Chart Out the Approval Process

Because each municipality is different, it will be necessary to consult municipal by-laws or ordinances to determine how a unit-based pricing plan should be presented for approval. Municipalities may require that such proposals be approved solely by board of selectmen, board of health, or DPW commissioners or addressed at town meetings for changes in solid waste management budgets.

¹² This information was taken from EPA at www.epa.gov/payt/intro.htm

Once the approval process is understood, the key decision-makers can be identified and included in program planning. Later, when a proposed unit-based pricing plan has been finalized, decision-makers will be familiar with the concept and be able to make more educated decisions about whether unit-based pricing makes sense for your community.

◆ **Develop a Number of Program Options**

The plan initially presented to key officials should be flexible enough to invite comments and/or modifications. Providing options helps convey the message that their input/feedback is important in designing and implementing the plan. For example, instead of deciding that a sticker program best suits the needs of the community, planners could propose two options - stickers or bags - but recommend that one of them be adopted (See Section 9 of the PAYT companion document for examples).

◆ **Other Steps to Involve Key Players**

In addition to providing key players with implementation plans, there are a number of educational and promotional activities that can help further the understanding of the proposed unit-based pricing program. For example, locally relevant information can be used to show how unit-based pricing can help lower waste disposal costs and reach a higher rate of recycling. The task force should calculate the current and projected average waste generation levels of typical households and present the information at meetings. Details about the cost savings and cost control expected as a result of the plan should be stressed. And, if a municipality has an ordinance that mandates recycling or sets recycling goals, planners should show how unit-based pricing can make these goals more attainable.

Demonstrations and visits to communities with unit-based pricing programs can also help individuals understand the implications for your municipality. Field trips on trash pick-up days can help decision-makers visualize PAYT programs in practice. Other field trips to landfills and combustion facilities can help them understand what happens to trash and how the solid waste management budget is spent.

Step 3: Gather Public Input

Community awareness and support is a key to your ultimate success. Without the public "on board," unit-based pricing has little or no chance of becoming a reality. After all, citizens will make the program work by following the rules, and where town meeting approval is required residents determine whether PAYT will be passed in the first place. Therefore, citizen input is crucial in developing a successful program.

An effective public outreach campaign will create opportunities for an open dialogue with residents and key neighborhood and association representatives. These groups should be approached early in the process, soon after key public officials have approved the concept of PAYT, to ensure that their concerns are addressed in the final recommendations. For example, elderly residents may express interest in smaller-sized bags to maximize their cost savings. Consequently, program planners may decide to add a smaller bag, in addition to the "standard" 15-18 gallon or 30-33 gallon bags. Your community's Advisory Committee

should play a major role in this process. Specific strategies for gathering public input include the following:

- ◆ **Solicit Comments from the Public:** Before embarking on a public education campaign, municipal officials should solicit feedback from key residents and opinion leaders about the concept of solid waste unit pricing. There are numerous ways to introduce the idea and solicit public comments. For example, the proposed program can be introduced in solid waste or recycling newsletters or in "stuffers" that come with utility bills. Comments received will help identify misperceptions about unit-based pricing and reasons for opposition, and put program planners in touch with the pulse of the community.
- ◆ **Hold Public Hearings:** Public hearings can provide an additional avenue for residents to voice their concerns and raise new issues. These should be well publicized and held approximately six months before the anticipated program startup date.
- ◆ **Discuss the Program with Community Groups and at Community Events:** Individual briefings are suggested for key community leaders, such as those representing elderly and low-income groups and other such stakeholders. In addition, presentations should be given to civics groups such as the chamber of commerce, Rotary Club, women's club, and others active in the community. These briefings and meetings should be held early enough so that stakeholders have the opportunity to suggest modifications to the program. Support from these groups will help build the backing needed to make unit-based pricing a success.

Step 4: Educate the Public

The final step in the process of building local support for unit-based pricing is to educate the public about program specifics. Explaining the objectives and offering information on waste reduction and recycling are important elements of this effort. If residents believe the pricing structure is arbitrary and are unaware of ways to reduce their costs, the program is likely to fail. If your community already has a well-established recycling program, be prepared to inform residents about the need to further reduce waste and encourage them to use the unit-based pricing program in conjunction with recycling, composting, and source reduction. By getting the public to support your program and explaining how people can save money by discarding less garbage, you can influence long-term changes in behavior.

Many methods exist to disseminate program specifics to the public and create a dialogue with residents. Community mailings, public notices, and public meetings are good ways to "get the message out." Local newspaper articles, cable television, and radio programs also should be used to educate citizens about the PAYT program and how it will benefit them. Several outreach strategies are discussed in more detail below.

- ◆ **Obtain media coverage:** Submit articles to the local papers explaining the proposed unit-based pricing program and notifying residents of public hearings. Explain the program to newspaper editors and encourage them to write positive editorials.

Develop media spots for local radio and cable television and arrange for coverage of the public hearings on local cable access.

- ◆ **Establish a telephone hotline:** A telephone hotline with detailed program information can provide residents with immediate answers to their questions. Larger communities with multilingual populations can produce the hotline in a number of different languages to ensure access.
- ◆ **Develop posters and flyers for distribution in public places throughout the community:** Flyers and posters can be distributed in stores, libraries, schools, and even door-to-door. Support from retail stores will be especially valuable if the program plans to use bags, wheeled carts, trash barrels or stickers that will be distributed through those outlets.
- ◆ **Develop a Brochure to be sent to all households in the community:** These brochures should describe the new program, its benefits and what it means to citizens. Communities that are awarded a PAYT start-up grant from DEP will receive a customized educational mailer for residents.

Some communities opt to conduct public education campaigns using existing in-house staff or volunteers. Others hire one or more qualified individuals or pay public relations firms to perform public outreach. This decision is typically based on the size of the community, the scope of the program, and the resources available. For example, Worcester opted for hiring a public relations firm and worked out a deal with the firm where for every dollar spent, Worcester received two dollars in service. Through this agreement, Worcester spent \$50,000 on a high-profile public outreach campaign. On the other hand, Taunton assembled a core group of volunteers to take the lead.

Public education is an ongoing process and will continue well into the maintenance phase of the unit-based pricing program. A continuous flow of information will maintain public interest and address important issues and changes that arise as the program develops. It will also be important to continue to raise awareness about new ways to prevent or reduce wastes.

Included in DEP's startup grants are education brochures to be mailed to residents. These brochures include necessary information about the new program (see Section 9 of the PAYT companion document for examples of grant funded education brochures).