PAY AS YOU THROW PRIMER FOR PENNSYLVANIA COMMUNITIES

A practical guide for the development of Variable Rate, Unit or Volume Based Residential Collection Programs

Nestor Resources, Inc.

Nestor Resources, Inc.

Nestor Resources, Inc.
208 Kozy Corner Road
Valencia, PA 16059

Phone: 724-898-3489
Internet: www.nestorresources.com

Table of Contents

PAY-AS-YOU-THROW BASICS **5**

PUTTING THE PAY IN PAYT **5**

TABLE 1-PAYT SYSTEMS AND RATE STRUCTURES **6**

THE FAIRNESS FACTOR 7

Senior Citizens *7*

Low-Income Households *8*

Large Families *8*

UNIT PRICING SYSTEMS 8

Bags *8*

Tags/Stickers *9*

Uniform Tagged Containers *9*

Uniform Wheeled Carts *10*

WEIGHT-BASED FEES 10

VARIABLE RATE PRICING SYSTEMS 11

Variable Tagged Containers *11*

Variable Wheeled Carts *11*

HYBRID SYSTEMS 12

Limited Base Service *12*

Dual-Tiered *12*

Multi-Tiered *12*

TABLE 2-ADVANTAGES AND DISADVANTAGES OF PAYT SYSTEMS **13**

SELECTING A PAYT METHODOLOGY 15

ADDRESSING HAULER CONCERNS 15

Cash Flow 15

Enforcement 16

Billing 16

SOLUTIONS FOR BULKY ITEMS, WHITE GOODS AND DEBRIS 16

RECYCLING, THE HEART OF A PAYT PROGRAM 17

YARD WASTE MANAGEMENT, THE LAST ESSENTIAL COMPONENT 18

APPENDIX A 21

Pennsylvania's Act 101 Leaf Waste Collection Requirements *21*

APPENDIX B 23

Sample PAYT Tags *23*

Pay As You Throw Primer for Pennsylvania Communities

Pay-As-You-Throw Basics

Residents throughout the United States traditionally have paid for waste collection through property taxes or as a fixed fee per household paid to the local municipality or a waste hauler. Each home pays the same regardless of how much - or how little - they throw away and with no consideration or discount for what they recycle. These systems are commonly referred to as "unlimited collection."On the other hand, businesses pay for waste services based on the size and/or weight of their trash containers, along with the frequency those containers are emptied. For example, mom and pop stores generate much less waste and therefore have smaller containers than big box retail outlets. Consequently, their waste services are less expensive. Traditional restaurants with salad bars and buffets produce a high volume of wet kitchen scraps. Fast food restaurants, where most food is take-out, generate primarily lightweight plastic and paper waste. Therefore traditional restaurants pay more for waste service than do fast food restaurants.

Unlimited Collection System

Volume Based Collection System

Over the last ten years, a movement has grown whose advocates promote the concept that, similar to other utilities, people should be charged based on the amount of service used. Advocates argue that these systems allow waste generators to understand the true costs of garbage disposal. Commonly identified as Pay- As-You-Throw (PAYT), and a host of other names: pay by the bag, unit-based, volume-based, variable rate, etc., these terms share one very basic concept: customers that put out more waste for collection pay more than those who put out less. When free or low cost recycling and composting services are included, a Pay- As-You-Throw program becomes ultimately effective. Theoretically, people will recycle more and generate less garbage based on the monetary incentive alone.

Putting the Pay in PAYT

PAYT programs have as many diverse features and rate structures as they do names. It is the flexibility and adaptability to all types of communities and demographics that has gained PAYT increasing popularity. Purists insist that the only true PAYT system is a unit price per bag, while nonconformists favor

Table 1-PAYT Systems and Rate Structures

PAY-AS-YOU-THROW SYSTEMS AND RATE STRUCTURES

PROGRAM TYPE	PRICING STRUCTURE
Bag/Tag/Can	Flat rate per unit or item
Weight Based	Flat rate per pound
Variable Volume	Rate varies with size of container
Limited Base Service	Flat rate that covers collection and a set number of bags or containers
Dual-Tiered Hybrid	Flat Rate (typically for collection) with additional flat rate per container or bag/tag.
Multi-Tiered Hybrid	Flat Rate (typically for collection) with additional flat rate per bag/tag as well as rates that vary with container size.

Any of these programs may also include tags with variable rates for bulky items and white goods

hybrids. Finding the right answer is similar to determining whether vanilla or chocolate ice cream tastes best. It is purely a matter of user need and preference.

The most important consideration in establishing a PAYT program is the "appropriateness" of the rate structure in relationship to the local community. Essentially, the number of potential PAYT rate structures a community might consider is limitless. Finding the perfect fit is a determination that must be made by local stakeholders. A rate structure that works in one municipality is not necessarily locally appropriate in another community.

Regardless of preference, sufficient PAYT components are available to customize the right system for a municipality. The design of the rate structure will be influenced by how the community prioritizes the answers to a number of questions, which include, but are not limited to the following:

- Can the rate structure cover the total program costs?
- Will the rate structure prevent undesirable disposal practices?
- Do ordinances exist to enforce against undesirable disposal?
- Does the rate structure provide sufficient incentive for recycling?
- Is the variety of recyclables sufficient to offset the rate structure?
- Can the rate structure provide a stable cash flow?
- How will the rate structure impact administrative costs?
- Is the rate structure fair to all segments of the community?
- Will customers find the rate structure convenient?
- Can the contractor easily enforce the rate structure?

The Fairness Factor

For the rate structure to be considered appropriate, it will depend largely on the public's perception that the PAYT rates are fair. To ensure to the public that fairness was a factor in establishing the rate, municipalities should be aware of and carefully consider the impact on three groups: senior citizens, low-income households, and large families

Senior Citizens

Senior citizens tend to be low waste generators so consequently they reap the greatest financial benefit from PAYT rates, which are based on the unit, weight or volume of trash. Launching an early education campaign that clearly describes the economic benefits of PAYT for those producing less waste is a vital step in gaining strong support from senior citizens and their organizations.

Low-Income Households

It is common for officials to be concerned that low-income households will be negatively impacted by PAYT. However, it has been shown in national waste generation and composition studies that the amount of waste a household produces is proportional to its income. In other words, more affluent families buy more new things and thus throw more things away.

Even though the statistics dispel the myth that PAYT will be a burden to low income families, many municipalities still decide to implement safeguard measures. Typically, a community will use economic guidelines for other social assistance programs in providing relief to low-income households. The assistance might come in the form of discounts, vouchers or free service for one or more system components.

Large Families

A PAYT program won't necessarily reduce the amount of potential waste material produced by a household. It does however, offer an incentive to choose an alternative method of handling it than disposal. Large families often object to PAYT programs for fear that the cost will be prohibitive. By offering a comprehensive PAYT program, which includes recycling and yard waste management, a community can ensure that sufficient outlets are available to enable these families to control their waste collection costs.

Table 1 provides a quick snapshot of the basic types of systems and the mechanism by which rates are assessed. The following narrative offers a more detailed look at the variety of choices officials have to consider when implementing PAYT programs.

Unit Pricing Systems

The purest form of a Pay-As-You-Throw System is a unit-based price. The smallest unit offered in each program has an impact on the degree to which residents can be motivated to reduce waste. Other factors such as convenience, cash flow and overall operational issues come into play when selecting a unit-based system. The common types of unit-based systems are described here.

Bags

In this system, residents purchase colored plastic bags imprinted with the name or seal of the municipality, or in some cases the hauler. The price of each bag covers not only the cost of the bag itself but also the cost of waste collection, transportation and disposal. If no other fees are billed to a resident, it should also cover the cost of recycling and yard waste services. Distribution of the bags occurs at municipal offices, from the waste hauler, and/or at local retail outlets. Waste haulers are instructed to pick up only the specially marked trash bags. Bag systems provide the greatest incentive for recycling, composting and waste minimization since the direct relationship between waste and cost is very visible.

Establishing the price for bags is difficult and risky. This is particularly true in a start-up program. Although the cost of all services can be figured into the estimate, there are no guarantees on the actual number of bags that will be purchased. Because residents can

purchase bags in advance, but place as many or as few bags at the curb each week, cash flow fluctuates disproportionately to disposal, recycling and composting costs. As recycling increases and disposal decreases, there is risk of a revenue deficit. Additionally, routing must be based on the maximum volume anticipated. So savings in collection efficiencies may not be realized as readily as those for disposal may be.

Tags/Stickers

For a tag/sticker system, residents purchase specially marked labels or tags and affix them to regular commercial trash bags, or in some instance bulky items and white goods. Waste haulers are instructed to pick up only trash bags or items with the specially marked tags attached. Tags are typically backed with a heavy-duty adhesive that holds them firmly around the neck of a bag. Similar to bag programs, the tag price includes the cost of the tag, waste collection, transportation and disposal. Additionally, costs for recycling and yard waste services might also be included.

Distribution of the tags can be more convenient for residents than bags, in some respects, because they can be mailed by the hauler and/or municipality. On the other hand, if they are not also made available at municipal offices, and/or at local retail outlets, complaints may arise from residents that failed to plan ahead for their disposal needs.

Tag systems are equally successful as bags in providing an immediate monetary incentive to recycle. These systems do face the same cash flow and routing issues as those with bags. Sample tags are shown in Appendix B.

Uniform Tagged Containers

Specially marked licenses or tags are sold to residents who affix one to each uniformly sized trash container. Only trash cans with the licenses attached are serviced. Unlike other unit based pricing, these tags may be color-coded indicating that they cover the cost of an extended time period, such as a month, quarter or year. Tags are typically backed with a heavy duty adhesive that hold them firmly to the container. Some communities have residents affix the tag to a curbside mailbox rather than the actual container to prevent conflict in the event of lost or damaged containers. Like other tag prices, waste collection, transportation and disposal, the cost of printing the tag, as well as all recycling and yard waste services costs should be covered.

Distribution of the container tags can be accomplished through a direct billing system and mailed, or residents can purchase them at municipal or retail outlets.

Uniform container systems reduce the incentive to recycle to the smallest billable unit made available. The benefit they provide is a base volume for collection routes and a long-range indicator of revenue to cover predictable disposal, recycling and composting costs.

Uniform Wheeled Carts

Rather than purchasing specially marked trash bags, residents pay a fixed charge each to "rent" one or more uniformly sized carts provided by the municipality or the hauler. These can be wheeled to the curb and serviced by a type of automated vehicle. Only the provided wheeled carts are serviced. A feature that both municipal officials and homeowners find the most appealing is the aesthetic look of the carts at curbside on collection day.

The all-inclusive price should cover all waste, recycling and yard waste services. Carts are a large capital expenditure that should be figured into the fixed rate. However, the normal useful lifetime of a cart is 10 years. Quality manufactured carts experience longer life spans with less than a 10% replacement occurrence per year. Therefore, while the up front cost seems expensive, the long-term investment for carts is less expensive than the ongoing purchase of bags or tags.

Cart Delivery

Because the carts are too large to fit into most vehicles, distribution to each household must be well coordinated and can be labor intensive for the hauler or public works crews.

Like uniformly sized containers, carts only offer disposal savings up to the cost of one cart. However, due to the predictability of cash flow and expenditures, and efficiencies that can be realized through automated collection, the overall rate for combined services is often less than in bag/tag systems.

Weight-Based Fees

Weight-based systems are less commonly implemented than other PAYT programs. However, this system offers the most direct monetary incentive. Waste is weighed at the curb and residents are billed for collection and disposal by the pound. This concept is easier for residents to comprehend and perceive as fair, since every pound of waste has a charge, while material that is recycled or composted results in direct savings.

Implementation of weight-based systems tends to be more costly than other forms of PAYT. Special equipment and a more complex computerized billing system are required. Truck mounted scales to record weights and a reader to link the billing identification scanned from bar codes or RFID tags, which are attached to containers, are essential pieces of equipment. Weights are either stored in an onboard computer to be downloaded when the vehicle returns from the route or relayed live via radio waves. A municipality or hauler may provide uniform containers, if automated vehicles are used for collection. In manual systems, residents may be allowed to use a container of their choice

Unlike the pre-paid bag, can and sticker system, residents are billed in arrears for this service, which may increase a municipality's staffing needs as well as risk of non-payment.

Variable Rate Pricing Systems

A variable rate PAYT system bases its fees first on the capacity or volume of the container used, and then on the number of containers of each size. Although containers may not offer as high a degree of waste reduction incentive as a per bag system, residents often enjoy not having to worry about having special bags or tags on hand.

Variable Tagged Containers

Residents purchase specially marked licenses or tags and affix one to each specific size of trash container. Unlike other unit based pricing, these tags may be color-coded indicating not only a select time period, but also the size of the container. Because manufacturers differ, it is important to define the acceptable range of container dimensions for each category of sticker. Waste haulers are instructed to pick up only trash cans with the tags/licenses attached.

All other aspects of the variable tagged container system are similar to the uniform tagged container system except the resident's ability to control costs by selecting a smaller or larger container based on their personal needs. This flexibility offers residents the opportunity to downsize as recycling increases, thus realizing a tangible outcome for their efforts.

Variable Wheeled Carts

Rather than purchasing specially marked bags, residents pay a monthly charge based on capacity, to "rent" each cart provided by the municipality or the hauler. Carts normally range in incremental sizes from 32 to 64 to 96 gallons. The all-inclusive price should cover all waste, recycling and yard waste services.

96, 64 and 32 Gallon Carts

Distribution of carts of differing sizes can be complicated and requires a proactive education and promotional plan prior to implementing the program. The diversity in container size is appealing because it provides choice, however it also requires maintaining a larger inventory to satisfy the changing needs of users.

The variable wheeled cart system differs from the uniform wheeled cart system due to the resident's ability to control costs by selecting not only the number, but also the size of carts. Like the variable container system, residents can opt to downsize once their disposal needs decrease due to recycling.

Hybrid Systems

The least risk PAYT pricing systems are likely the hybrids. These systems focus on ensuring that all fixed costs in a program have a guaranteed source of revenue. Hybrids are often criticized because there is a limit to how much savings each household can experience, regardless of how much they recycle. Nevertheless, because of the constant cash flow, they often result in the lowest overall net cost for integrated waste management systems.

Limited Base Service

Limited base service is a familiar pricing mechanism for waste management. Because it does control, to some extent, the volume of waste that can be disposed for a set fee, it is a form of PAYT. In this system, residents are assed a flat fee that covers not only the costs associated with administration and collection, but also a limited volume of containers or bags that can be placed at the curb for disposal. Residents must purchase specially imprinted bags or tags to dispose of additional material.

Dual-Tiered

Probably the most common PAYT hybrid pricing, dual-tiered systems charge multiple fees for solid waste management services. The base fee covers the general administration and operation of the program. This fixed rate fee typically accounts for all of the costs associated with collection, recycling, composting, billing, education, and capital recovery. Of course, these vary depending on the types and levels of services offered in any one community. All customers pay the same base fee, which can be assessed through the tax base, water and sewage bills, or a separate garbage bill.

The second variable fee is set to cover the costs of disposal and therefore differs from customer to customer based on the waste placed at the curb. The disposal component incorporates one or more of the unit based pricing mechanisms. In some communities, the disposal fee will be a per bag basis. In another community, the disposal fee is established per can and tags are sold for the occasional extra bag. In yet another scenario, the disposal fee is set based on weight.

Dual-tiered systems are similar to phone or cable television bills in that the customer is charged a specific amount (fixed base fee) for the privilege of having the service available regardless of use, and long distance calls or pay for view movies (variable costs) are determined based on actual use.

Multi-Tiered

Very similar to Dual-Tiered systems, this form of PAYT hybrid pricing establishes a base fee that covers the costs of administering and operating the waste management services offered by that community, except for the cost of disposal. It also offers a menu of fees that include a simple unit such as a bag/tag along with charges that vary based on the size and number of containers or carts. This program provides the most choices of all of the hybrids and thereby has the greatest ability to motivate residents toward recycling and waste reduction through monetary incentives.

Table 2-Advantages and Disadvantages of PAYT Systems

Systems	Advantages	Disadvantages
Bag or Tag	No billing system required Start–up costs are minimal Residents have direct control over their level of service Education is simple Direct monetary incentive for recycling and waste reduction Faster, more efficient collections than cans Easy to monitor compliance	Assuring sufficient inventory is available in all points of purchase Necessity to preplan bag/tag purchases Imprinted bags can tear Adhesive tags can become detached Cash flow can be unstable and routing is less predictable
Containerized Units	Standardized units are more aesthetically pleasing Reusable and last longer Prohibit destruction by animals more than bags. Compatible with automation for efficiency and cost reduction Convenient for residents-no preplan bag/tag purchases New cans may not be required if residents already own cans of roughly uniform volume Ensures all costs are covered in one monthly bill	Container capacity may deter waste reduction Standardized containers are upfront capital expense More difficult to implement and enforce compliance Collection time greater than with bag systems Difficult to communicate uniform volume restrictions Advanced billing detaches potential incentive from activity Residents are tied to pre-set levels

Systems	Advantages	Disadvantages
Containerized Variable	Standardized units are more aesthetically pleasing Reusable and last longer Prohibit destruction by animals more than bags. Compatible with automation for efficiency and cost reduction Can manipulate variable disposal fees to encourage recycling Ensures all costs are covered in one monthly bill. Provide more choices than uniform containers	Billing is more complicated with variable rates Requires larger inventory of containers Advanced billing detaches potential incentive from disposal activity Residents are tied to pre-set levels
Weight Based	Results are more immediate and precise. Residents do not benefit from over-compacting their waste Residents are not tied to pre-set levels	On-Board equipment is costly On-Board scales are difficult to calibrate and maintain Requires sophisticated billing software Revenue can be unstable

Selecting a PAYT Methodology

The details of any one community's PAYT system is likely different from the next. Decisions are based in part on the type of vehicles that will be used for collection. Often, lack of staff or a sophisticated program for billing will be the determining factor. Finally, the choice might simply come down to public preference and habit.

In making a selection, officials will want to consider the experience of other municipalities. Table 2 provides an overview of advantages and disadvantages of each method. The table reflects comments expressed by those selecting one system over another.

Addressing Hauler Concerns

Misconceptions about PAYT create concern among many waste haulers. Primarily they fear the complexity of the billing system; the difficulty for their crews in enforcing variable rate or volume based systems; and potential loss of revenue. These doubts often translate into rates for PAYT programs, which are unnecessarily quoted higher than for traditional unlimited collection programs. Municipalities should meet with haulers to address these issues early in the planning stages.

It is crucial for haulers to feel confident that they will be compensated for their efforts in collecting solid waste, recyclables, and/or yard waste. If not, the attempt at PAYT may fail before it begins, based solely on prohibitive bid results. Once a municipality understands the root of these fears, each becomes easier to overcome with the hauler.

Cash Flow

In unit pricing systems, haulers are often not responsible for marketing the tags or bags. The hauler's responsibility is only to collect the appropriately marked containers, along with recyclables and/or yard waste. In these systems, the fears are twofold. The first is a trust factor regarding a municipality's ability to accurately account for and pay the hauler based on the number of bags/tags sold in relation to the volume of items actually collected at the curb. Paying the hauler on bags/tags regardless of whether they are used is important. Using serialized tags/bags along with an accounting method that tracks sales by the serial number is crucial. The serial numbers of the items sold should be provided each month to the hauler along with payment. If the municipality desires a full unit pricing system, or even one that utilizes tags/bags for excess waste, officials should come to an agreement with haulers on the best method to track sales, which will alleviate fear of non-payment. In some systems, haulers also share responsibility for selling bags/tags.

Secondly, haulers fear the possibility that as recycling increases, the number of units sold may decrease and have a negative impact on revenue sufficient to cover their costs. If these concerns are high, officials might want to consider a hybrid PAYT program.

Enforcement

In volume based or variable rate systems, haulers have concern with enforcement issues. Hauling crews are typically trained to ensure that streets have been fully serviced before leaving an area. Essentially, in unlimited collection systems, that means a crew must remove all material from the streets, regardless of how much. In PAYT systems, with varying rates and volumes allowable, crews must be careful to adhere to the program guidelines and billing rate for each home.

Mistakes can be on two levels. Costly missed pick-ups occur when diligent enforcement crews inaccurately leave behind one or more containers that are legitimately part of a resident's service level. Revenue losses occur when residential offenders of the system get by paying for less service than used, because cautious crews try to avoid missed pick-ups. If these concerns surface, officials will want to get input from haulers on procedures that could alleviate mistakes. The municipality will also want to ensure haulers that an aggressive education program will occur to better inform residents on proper service level selection to minimize abuses.

Billing

Billing issues arise more commonly in variable rate and volume based systems. Haulers operating unlimited collection systems, simply have to know accurate house counts to ensure their compensation for services provided. When service levels vary from house to house, particularly if service levels are adjusted periodically, billing accuracy has more margins for error and lost revenue. If the municipality bills residents and pay the contractor directly, it will be necessary to devise a mechanism to account for service level changes throughout the term of the contract. Hauler feedback on the best method to communicate these changes to their staff will ensure better customer service and alleviate fear of non-payment.

Solutions For Bulky Items, White Goods and Debris

Homeowners commonly generate waste materials other than those resulting from day to day food preparation and household maintenance. Appliances and furnishings eventually reach the end of their useful life; carpeting must be replaced; toys break; and a variety of odds and ends accumulate. Proactively planning for the management of these items in a PAYT program can mean the difference between success and unwanted problems.

Bulky items and white goods, along with construction debris, make up a significant portion of material found in illegal dumping areas. Since residents will not suddenly stop discarding old stoves, refrigerators and the like, providing a proper outlet for the material, is a good frontline defense for preventing mismanagement and illegal dumping.

In unlimited collection systems, residents often have the ability to place as many bulk items at the curb as they desire each week. Inclusion of this service in municipal contracts is often perceived as a convenience and entitlement. In reality, it is a costly luxury, which when incorporated into the flat monthly bill, benefits a few and is subsidized by those who may never have use for it. Unlimited collection is often abused by carpet installers, landlords, and home remodelers. Such businesses already have the ability and resources to properly dispose of material and do so in neighborhoods where unlimited collection is

unavailable. In PAYT systems, these materials can still be handled properly, but in a more equitable fashion that should reduce the overall cost of collection.

A simple way to manage bulky items and white goods, which is directly complimentary and compatible to a PAYT program, is to use a tag system. Using tags for these items continues to reinforce the message that those who throw more away, pay more than those who don't. Tags can be printed for a variety of items and rates.

White Goods

Large appliances, commonly referred to as white goods, might have a tag with a different rate for items with or without Freon removed. Tags for varying sizes of bulky items could be offered. Very large pieces of furniture such as sofas, mattresses, dressers might cost more than a kitchen chair or a vacuum cleaner. Lastly, for attic or garage clean-ups or moving day, tags with rates for volume pick-ups are a desirable solution. (See examples in Appendix B)

There are other methods that do not provide as great an incentive as tags to reduce each item disposed, but still offer enough limits and constraints to motivate residents to find alternative outlets or uses.

The first option is to periodically, quarterly or semi-annually, provide a curbside clean-up day. Many municipalities do this in conjunction with a community–wide yard sale or swap meet. The yard sale is held the day before collection, unsold items can then be left at the curb. Not surprisingly, more items find new homes than are ultimately disposed.

A more frequent option is to offer a week each month in which homeowners may place at the curb for collection one bulk item or white good. These curbside alternatives can be expensive for a municipality, unless the cost is built into the collection fee or the PAYT unit pricing for regular weekly waste.

Another method is to hold periodic drop-off collections where residents can bring items for free. Like curbside collection, the cost can be built into the regular curbside or unit fees. Unfortunately, all of theses options still require every resident to pay regardless of usage. With drop-off programs, a more equitable way to handle costs would be for residents to pay a nominal fee per item, or per pick-up truckload of items. The municipality would have to determine to what degree the "free" option is necessary as a deterrent to illegal dumping.

Recycling, The Heart of a PAYT Program

The primary premise of a PAYT program is to motivate residents to divert material from their trash container to their recycling bin. Without adequate outlets for material, PAYT cannot achieve its full potential. Additionally, residents may view the program as punitive rather than promising, if there are few opportunities to reduce the amount of waste they throw away. Therefore, it is important to be aware of the types of materials that are accepted by recycling facilities in the local market and the methods by which haulers can collect them.

Newspaper, aluminum cans, bi-metal cans, glass and plastic containers are recycled by many municipalities today. New technology and a vital commodities market have expanded the possibilities of material Pennsylvania municipalities collect in their recycling programs. Facilities exist that will accept magazines, cardboard, junk mail and office paper, as well as a variety of other plastics generated by residents.

Mechanical and optical sorting equipment enable facilities to recover more material at less cost, even if the material is commingled, rather than separated. In single stream recycling systems, all types of paper and plastics can be commingled with bottles, and cans in one container. In a dual stream system, all types of paper are placed in one container and the bottles, cans and plastics are mixed together in another. Automated collection equipment that can service wheeled containers is typically used in these systems. It offers haulers the luxury of collecting larger and heavier containers without injury to workers. It also provides residents with a convenient method to get recyclables to the curb.

Single Stream Recycling

Paper, cardboard, metal cans, glass bottles & plastics are all collected in the same container.

Although these programs require a significant capital investment in wheeled containers, the results are dramatic. Carts, particularly for PAYT programs, are eligible for Act 101 902 grant funding. Cranberry Township in Butler County and Pine and Marshall Township in Allegheny County have implemented single stream collection as part of their PAYT programs. Each achieved an average of a 40% residential recycling rate within months of start-up and has sustained those rates since then. Prior to that recovery hovered near 10% -12%. There are some single stream and dual stream systems that still use classic recycling bins. However, the recovery is less due to the smaller capacity of the bin.

If it proves to be cost prohibitive to add more material to the curbside collection, there are other options. Many municipalities offer drop-off collection sites at their municipal buildings or other facilities for one or more of these materials: cardboard, magazines, junk mail and office paper. The cost of servicing the drop-off containers can still be included in the residential collection contract.

Residents are more approving of a PAYT program when they can readily understand how to reduce their waste. By offering more materials to be recycled and making it convenient, either at curbside or with centrally located sites, transition to PAYT is more successful.

Yard Waste Management, the Last Essential Component

Yard waste contributes to approximately 24% of the material disposed in landfills. In a PAYT program, residents may experience significantly higher costs for disposal if there are no outlets for yard trimmings. It is important for a municipality entering into a PAYT

system to determine how it will handle this material. A combination of a collection system and an education program that encourages other practices is essential.

Collection of yard waste for composting can be included as part of a residential contract; provided by municipal employees; or offered in some part through a drop-off site. Expenses can be covered through user fees in the residential contract, taxes, the sale of composting bags, or direct fees at a drop-off site. In whichever manner fees are assessed, they must be less than the cost of disposal in order for the program to work.

Vacuum Leaf Collection

Backyard composting is another way to reduce the amount of yard waste disposed. Many counties offer periodic classes in backyard composting to interested residents. Typically, backyard composting bins are distributed at little or no cost to participants.

Some communities include grass clippings in the materials they collect and compost. Act 101 only requires communities to deal with leaves, tree and hedge trimmings and garden residues, but not grass clippings. Appendix A includes Pennsylvania's Act 101 Leaf Waste Collection Requirements.

Grass Clippings Bagged for Collection

It is not uncommon to see upwards of 10 bags of grass clippings per home per week at the curbside in suburban communities. Grasscycling education advises residents to use mulching mowers and leave grass clippings on the lawn. It can alleviate the amount of material bagged and collected. The size of and the degree to which residents manicure their lawns, as well as the availability of facilities to handle the material, will dictate whether a community desires to handle the issues of collecting grass clippings. In a community that experiences large volumes of grass clippings at the curb, it could be an issue that makes a difference between public approval and disapproval of a PAYT program.

Forest Hills will need to consider the current practices of its residents, the requirements of Act 101 and capabilities of available facilities in order to provide the best fit for yard waste management in its PAYT program.

It takes time to design a good collection contract, particularly when a new PAYT program will be introduced. Gathering public input, alleviating hauler fears, building support from all stakeholders and launching an aggressive education campaign requires great effort. To ensure the program will succeed, Municipalities should begin planning from 6 months to a year in advance of its next contract expiration.

Appendix A

Pennsylvania's Act 101 Leaf Waste Collection Requirements

Act 101, Section 1501(c)(1)(ii) and (iii), requires persons in mandated municipalities to separate leaf waste from other municipal waste generated at residential, commercial, municipal and institutional establishments. "Leaf waste" is defined in the Act and its regulations as "Leaves, garden residues, shrubbery and tree trimmings, and similar material, but not including grass clippings." Source separated leaf waste, as with other recyclable material, is to be collected at least once per month as set forth in Act 101 Section 1501(c)(2) and (3) and processed at Pa. DEP-approved composting facilities.

Act 101 mandated municipalities with programs that collect leaves only in the fall are not in compliance with the Act. Mandated municipalities desiring to establish leaf waste collection programs in compliance with Act 101 must, as a minimum:

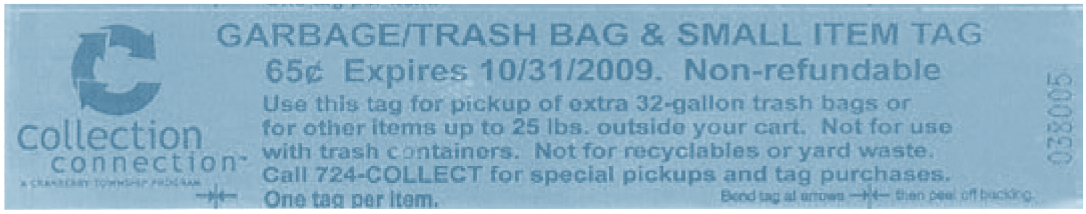
1. Require by ordinance that leaf waste consisting of leaves, garden residues, shrubbery and tree trimmings, and other similar material are targeted for collection from residences and commercial, municipal and institutional establishments; <u>and</u>

2. Establish a scheduled day, at least once per month, when leaf waste is collected from residences; <u>or</u>

3. Establish a scheduled day, not less than twice per year and preferably in the spring and fall, when leaf waste is collected from residences, <u>and</u> facilitate a drop-off location or other collection alternative approved by Pa. DEP that allows persons in the municipality to deposit leaf waste for the purposes of composting or mulching at least once per month. The leaf waste drop-off location may be located in a neighboring municipality or at a private sector establishment provided that an agreement is in place to utilize that location and the municipality keeps residents and commercial, municipal and institutional establishments informed of the option at least once every six months.

4. Ensure that commercial, institutional and municipal establishments generating leaf waste have collection service.

5. Municipalities are encouraged to manage source separated Christmas trees as leaf waste for processing at Pa. DEP-approved composting facilities.

Appendix B

Sample PAYT Tags