

May 11, 2005



Mr. Robert Ihlein  
Assistant Manager  
Borough of Pottstown  
100 East High Street  
Pottstown, Pennsylvania 19464

**Subject: Analysis of Implementing a Pay-As-You-Throw**

Dear Robert:

This letter is to provide the Borough of Pottstown with the results of R.W. Beck's evaluation of converting the Borough's municipal refuse collection service to a volume-based fee system. The key findings and recommendations of our evaluation are as follows:

- When the Borough issues a new RFP for solid waste services in 2006, the Borough will most likely need to pay for the disposal of waste and for the curbside collection of recyclables.
- These new cost centers may increase the Borough's solid waste management rates from \$96.35 per household per year to somewhere in the range of \$205.82 to \$229.82 per household per year.
- In order to decrease disposal and increase recycling, the Borough should strongly consider implementing a Pay-As-You-Throw (PAYT) program. A PAYT system should provide an incentive for residents to be more conscientious about recycling and improve participation and compliance with the Borough's recycling program.
- Implementing a PAYT program could financially benefit the Borough by approximately \$123,016 per year.
- This financial benefit could reduce the annual per household solid waste management rate by approximately \$15.00 or six to seven percent.
- The Borough should also consider reducing the frequency of refuse collection to once a week. Based on another Montgomery County community, limiting refuse collection to once a week could reduce collection costs from \$96.35 to \$71.40.
- Should the Borough choose to do this, citizens and service providers should be incorporated into the planning process because; (1) implementation of PAYT may result in a small increase in solid waste service cost to some residents; and (2) some residents may view PAYT as an attempt to reduce services and increase costs;
- The Borough will need to supplement a PAYT program with a comprehensive education campaign on why PAYT is beneficial to the residents, and to deter illegal dumping; and,

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- A hybrid system is the recommended for the Borough, where the Borough pays for a basic level of weekly service and a per-unit fee is paid for by the residential unit for set outs that exceed basic service levels.

Table 1, compares the financial conditions of the current system to the proposed system

Table 1  
Financial Comparison

	Existing Solid Waste System	Proposed Solid Waste System	Savings
Refuse Collection	\$96.35	\$71.40	\$24.95
Disposal	\$85.47	\$60.79	\$24.68
Recycling	\$36.00	\$36.00	\$0
Yard Waste	Included in Refuse	Included in Refuse	\$0
Total	\$217.82	\$168.19	\$49.63

Attachment A details the methods R. W. Beck used to determine the cost of the Borough's solid waste management system, and the impact that implementing a Pay-As-You-Throw (PAYT) system.

R. W. Beck looks forward to assisting the Borough of Pottstown evaluate a PAYT system. If you have any questions, please contact me at 513-936-8955.

Sincerely,

R. W. BECK, INC.



Karen M. Luken  
Project Manager

KML:ls

Attach.

## ATTACHMENT A

### CURRENT RESIDENTIAL SOLID WASTE MANAGEMENT

#### RESIDENTIAL REFUSE COLLECTION

The Borough of Pottstown contracts with a private service provider to collect, transport, and dispose of refuse materials collected from Borough residents. Previously, Waste Management, Inc. (WMI) was the selected refuse contractor. Effective April 1, 2005, a regional hauling company, J.P. Mascaro (Mascaro), assumed the contract for refuse collection services for the Borough through April 1, 2006. Mascaro annually charges the Borough \$775,000 for residential refuse, bulky waste and yard waste management services.

The Borough of Pottstown currently bills residential customers \$50 quarterly (\$200 annually) on their water and sewer bills for solid waste management services. This covers the cost of the collection contract (\$775,000) plus overhead items and other services the Borough provides such as solid waste code enforcement. Based on 8,044 households<sup>1</sup>, Mascaro's contract costs the Borough approximately \$96.35 per household annually, or \$8.03 per household per month. The remaining approximate \$100 per household per year or \$8.33 per household per month is allocated to fund overhead and other Borough infrastructure services.

Pottstown residents are required to contain refuse in standard garbage cans with lids, having a capacity of not more than thirty (30) gallons each and of a weight manageable for one person to lift the container. The Borough does not currently specify limits on the number of containers residents may place curbside/alley for twice per week trash pickup.

#### RESIDENTIAL REFUSE DISPOSAL

The Borough currently uses the Pottstown Landfill located on Sell Road, which is owned and operated by WMI. The Borough does not pay a tipping fee to the landfill for refuse disposal. Anticipating closure in October 2005, the WMI applied for an expansion. Pennsylvania Department of Environmental Protection (PADEP) denied the expansion request. WMI has appealed the denial and is awaiting a final decision. If the appeal is approved, the Pottstown Landfill will remain open through 2006 or 2007. If denied, the Landfill will close in October 2005. Once the Landfill closes, the Borough will pay Mascaro \$62.50 per ton to dispose waste at Mascaro's Reading, Pennsylvania facility.

The Borough disposes an estimated 11,000 tons of residential waste per year. Once the \$62.50 per ton tipping fee becomes effective, the Borough can anticipate an annual cost increase of \$687,500. This increase translates into an additional \$85.47 per household per year or \$7.12 per household per month.

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<sup>1</sup> Based on Borough Population Data from 2000. Households is defined as single-family units and multi-family units of 6 or less.

### BULKY WASTE

Bulky waste<sup>2</sup> is collected at curbside/alley on the second day of collection each week. Residents must purchase a sticker - \$25.00 for white goods (appliances) and \$15.00 for everything else – from the Borough Finance Department. Residents are required to affix the sticker to the bulky item in order for the item to be picked up. Residents are not limited to the number of bulky items they may set out for collection, providing they have pre-purchased the appropriate sticker for each item.

### RESIDENTIAL RECYCLING

Pottstown is required by Pennsylvania Act 101 to provide residential curbside/alley recycling collection. WMI currently provides curbside residential recycling, and operates a drop-off recycling facilities. WMI does not charge the Borough for these services. Instead, WMI and the Borough have an agreement for exchange of services, where WMI provides residential recycling services at no cost, and does not charge a tip fee at the Pottstown Landfill. In return, the Borough does not charge for the treatment of wastewater from the Pottstown Landfill. There have been no direct costs to the Borough or its residents for recycling services during the course of this agreement.

The current recycling program accepts:

- Commingled collection of metals (aluminum and steel cans), plastic (#1 PETE and #2 HDPE) and glass bottles and jars (any color). The Borough provides 16-gallon recycling containers for these items.
- Fiber recyclables, including newspapers, magazines, telephone books, junk mail, and cereal boxes. Residents are instructed to tie their paper recyclables in bundles, using string. Bundles are restricted to less than twelve inches thick. Loose paper may also be placed in a paper bag and set at curbside/alley for collection. Fibers set out in a plastic bag will not be collected.

Residents on the east side of Pottstown set their recyclables out for collection once per week on Thursday. Residents on the west side of Pottstown set their recyclables out for collection once per week on Tuesday. WMI delivers all recyclables (commingled and fibers) to “The Recyclery,” which is owned and operated by Browning-Ferris Industries (BFI).

Reported recycling tonnage for the 2003 residential curbside program was 1,430 tons. In addition, 4,340 tons of commercial waste was recycled during that time period. Commercial generators contract independently for recycling services.

The recycling agreement between WMI and the Borough expires on December 31, 2005, and the Borough will be faced with:

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<sup>2</sup> Bulky waste is items of refuse including, but not limited to, appliances, furniture, and bundles of tree branches which may require collection in other than conventional compactor refuse collection vehicle. This includes items weighing up to one hundred fifty (150) pounds and not more than seven (7) feet in length, height, or width.

- Issuing a Request for Proposal for residential recycling services; and,
- Determining a fee schedule (user based or tax based) to cover the cost of recycling services.

**YARD WASTE COLLECTION**

The Borough, through the contract with Mascaro, also provides leaf collection services during a specific period of time each fall (usually ten collections beginning in mid-October through early December). There are no yard waste collections during the other times of the year. Leaves must be placed in biodegradable paper bags and set out at the curbside/alley next to the recycling bin on the same day as recycling collection. Paper leaf bags can be purchased from the Borough Hall or Pottstown Public Library, or from local retailers.

**TOTAL RESIDENTIAL SOLID WASTE MANAGEMENT COSTS**

Table 1 summarizes total and per-household solid waste management costs by service on an annual and monthly basis under the previous WMI contract. Table 2 summarizes solid waste management costs for 2005 under the current contract with Mascaro. In the event the Pottstown Landfill is not approved for expansion and the Borough is charged \$62.50 per ton for disposal, Table 3 summarizes the projected total and per household solid waste management costs by service area. Note that recycling services may change after the current agreement with WMI expires in December of 2005, which will affect the projected totals for services.

**Table 1  
2004 Costs under WMI Contract**

Residential Solid Waste Management Service Area	2004 Total Cost	2004 Cost per Household per Month	2004 Cost per Household per Year
Refuse Collection	\$416,613	\$4.32	\$51.79
Refuse Disposal	\$0	\$0	\$0
Recycling Collection and Processing	\$0	\$0	\$0
Yard Waste Collection and Composting	Included in collection cost	Included in collection cost	Included in collection cost
<b>TOTAL</b>	<b>\$416,613</b>	<b>\$4.32</b>	<b>\$51.79</b>

**Table 2  
2005 Costs under Mascaro Contract**

Residential Solid Waste Management Service Area	2005 Total Cost	2005 Cost per Household per Month	2005 Cost per Household per Year
Refuse Collection	\$775,000	\$8.03	\$96.35
Refuse Disposal	Included in collection cost	Included in collection cost	Included in collection cost
Recycling Collection and Processing	\$0	\$0	\$0
Yard Waste Collection and Composting	Included in collection cost	Included in collection cost	Included in collection cost
<b>TOTAL</b>	<b>\$775,000</b>	<b>\$8.03</b>	<b>\$96.35</b>

**Table 3  
2006-2007 Projected Costs for Alternate Landfill Disposal under Mascaro Contract**

Residential Solid Waste Management Service Area	2006-2007 Projected Total Cost	2006-2007 Projected Cost per Household per Month	2006-2007 Projected Cost per Household per Year
Refuse Collection	\$775,000	\$8.03	\$96.35
Refuse Disposal <sup>3</sup>	\$687,500	\$7.12	\$85.47
Recycling Collection and Processing	Unknown	Unknown	Unknown
Yard Waste Collection and Composting	Included in collection cost	Included in collection cost	Included in collection cost
<b>TOTAL</b>	<b>\$1,462,500</b>	<b>\$15.15</b>	<b>\$181.82</b>

**ISSUES**

The Borough's current refuse and recycling service fees have been below average market cost due to a very favorable arrangement with a local landfill owner. For example, the Borough of Rockledge contracts with a private vendor for refuse, bulky waste, curbside recycling and yard waste management services and pays \$186.96 per household per year.

However, the Borough is current facing several key solid waste management issues which impact its financial sustainability:

- The Pottstown Landfill is scheduled to close by the end of October of 2005. Even if WMI receives a permit to expand, the facility will close sometime between 2006 and 2007. When this facility closes, the Borough will have to begin paying tipping fees for the disposal of their garbage. Mascaro has quoted the Borough a \$62.50 per ton tipping fee. This is

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Where is footnote 3?

relatively inexpensive to what other Montgomery County communities are charged. Rockledge currently pays an \$87 per ton tipping fee.

- The Borough has benefited from an agreement whereby WMI provides residential recycling services at no cost, and in return, the Borough does not charge for the treatment of wastewater from the Pottstown Landfill. When the Pottstown Landfill closes, the Borough will need to contract for curbside residential recycling collection to comply with PA Act 101, which in Eastern Pennsylvania ranges from \$2.00 to \$4.00 per household per month. However, the Borough has the potential to generate revenue from recyclables due to Pennsylvania 904 grants, which provides municipalities with revenue for every ton that they recycle. During 2003, the Borough received \$83,000 or approximately \$14.00 per ton.

Consequently, R. W. Beck recommends that the Borough consider implement a PAYT system to reduce the amount of residential refuse that requires landfill disposal, and provides a financial incentive for residents to participate in the curbside recycling program.

### PAY-AS-YOU-THROW (PAYT)

PAYT is also known as unit pricing or variable rate pricing. Under this type of a system, residents pay for municipal waste management services per unit of waste collected rather than through a fixed fee. PAYT takes into account variations in waste generation rates by charging households or residents based on the amount of refuse they place at the curb, thereby offering individuals an incentive to reduce the amount of waste they generate and dispose of.

### POTENTIAL BENEFITS OF PAYT

Well over 200 municipalities in Pennsylvania have implemented some form of a PAYT program. In fact, Wilkes-Barre has operated a per-bag system for a number of years and reports a significant reduction in the cost of their waste management services. A City representative reported the reduction to be approximately 50 percent of what it was prior to the per-bag program.

PAYT programs can also yield an increase in recycling. Perkasio Borough experienced a 59 percent reduction in the amount of solid waste collected for disposal after implementing a PAYT program, and their recycling rate is between 43 and 45 percent.

Additional benefits may include:

- Increased waste prevention;
- More equitable waste management fee structure; and
- Increased understanding of environmental issues in general.

PAYT programs encourage residents to generate less refuse by charging them for the amount they place out for disposal. They become more cognizant of their disposal habits and look for opportunities to generate less or recover a greater portion of the waste stream through alternative management practices such as recycling and composting. A key here is that as they become more conscientious, citizens become more understanding of environmental issues and the impact of their behavior on the environment. It also provides a mechanism by which the rate paid by an

individual correlates with the level of use of the service. Households generating smaller amounts of refuse pay a lesser rate than those generating larger amounts.

#### POTENTIAL BARRIERS TO PAYT

While there are clearly benefits associated with the PAYT programs, there are also potential barriers that must be overcome to successfully implement this system. These potential barriers include:

- A potential increase in illegal dumping;
- An increase in administrative costs;
- A perception of increased costs to residents for the same level of service; and,
- Challenges associated with building public consensus.

Guidance on overcoming these barriers is included in this report.

#### TYPES OF PAYT SYSTEMS

Five major types of PAYT are available to communities, which include the following:

**Pre-Paid Bag:** In a pre-paid bag system, residents may only dispose of solid waste in special bags sold by the government agency that is responsible for solid waste management or a private waste hauler. The bags are distinctively marked, typically 20 to 30 gallons, and available at government offices, haulers, or local retailers. The fee per bag is used to cover some or all waste management costs. Some communities offer a variety of bag sizes and corresponding bag prices.

**Pre-Paid Tag or Sticker:** With a pre-paid tag or sticker program, only solid waste containers bearing the correct tag or sticker are collected. As with a pre-paid bag system, the tags or stickers are sold by the government agency, haulers, and designated offices or local retailers. The fee per tag or sticker provides for collection and disposal of a specific size of container with a volume and/or weight limit. Some communities also use tag/stickers for bulky items, such as appliances and furniture, but these items require a different ??? or higher valued ??? sticker.

**Subscription/Containers:** In a subscription system, households sign up for collection and disposal of a specific number or size of containers for each billing period or setout. Households generating solid waste beyond their subscribed level of service must purchase additional tags, stickers or cans if they want additional materials to be collected.

Within subscription systems, two sub-systems exist for containers – one standard size container and a variable can system, where residents have an option of choosing from graduated can sizes. Typically, in variable can programs, the size of the container can range from 20 to 60 gallons. However, some communities provide containers as small as 10 gallons and as large as 120 gallons.

**Weight-Based System:** With a weight-based system, residents pay a fee per pound of solid waste collected. The solid waste is weighed using scales and possibly, electronic identification and billed to the household. This program can either require residents to use standard, government-supplied cans or allow them to continue using their own cans.



**Hybrid System:** A hybrid system combines a flat fee with some type of fee per unit. Under this system, residents are charged for a basic level of service and above this level the resident must pay for an additional container or purchase a tag, bag or sticker.

**ADVANTAGES AND DISADVANTAGES OF EACH PROGRAM TYPE**

No two communities are exactly alike, and therefore numerous variables will impact your decision in designing the best program for your community. However, within each of the five types of programs advantages and disadvantages exist. These advantages and disadvantages are summarized in Tables 4 through 8.

**Table 4  
Advantages and Disadvantages of Pre-Paid Bag PAYT Programs**

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• Residents find bag systems easy to understand</li> <li>• Bag systems might offer a stronger waste reduction incentive than subscription systems because fees typically are based on smaller increments of waste</li> <li>• Accounting costs are lower than with subscription systems, since no billing system is needed</li> <li>• Bag systems have lower distribution, storage, and inventory costs than subscription systems when bags are sold at local retail establishments and municipal offices</li> <li>• Bag collection tends to be faster and more efficient than non-automated subscription collections</li> <li>• Bags can be used to indicate that the proper fees have been paid for bulky items or white goods, because communities often assess fees for pick up of these items. Communities can ask residents to attach a certain number of bags to the items according to the cost of disposal (for example, two bags for a couch and three-bags for a washing machine)</li> <li>• Opportunity to offset costs by selling advertising on "official" bags</li> </ul>	<ul style="list-style-type: none"> <li>• Greater revenue uncertainty than with subscription system, because the number of bags residents purchase can fluctuate significantly</li> <li>• If bags are sold in municipal offices, extra staff time will be required</li> <li>• Residents might view a requirement to buy and store bags as an inconvenience</li> <li>• Bags are more expensive to produce than tags or stickers</li> <li>• Bags often are incompatible with automated and semi-automated collection equipment</li> <li>• Animals can tear bags and scatter trash, or bags can tear during lifting</li> <li>• Unlike cans, bags are not reused, adding to the amount of solid waste entering the waste stream</li> <li>• Residents currently using containers may object to having to switch to bags</li> <li>• Weight of bags due to "stuffing" might be a problem unless weight restrictions are instituted and enforced</li> </ul>

**Table 5  
Advantages and Disadvantages of Tag and Sticker PAYT Programs**

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• Tag and stickers are easier and less expensive to implement than subscription systems</li> <li>• Residents often find tag or sticker systems easier to understand than subscription systems</li> <li>• These systems offer a stronger waste reduction incentive than subscription systems because fees are based on smaller increments of waste</li> <li>• Accounting costs are lower than with subscription systems, since no billing system is needed</li> <li>• Selling tags or stickers at local retail establishments and municipal offices offers lower distribution, storage, and inventory costs than subscription systems</li> <li>• The cost of producing tags or stickers for sale to residents is lower than for bags</li> <li>• Stickers can be used to indicate payment for bulky items or white goods, because communities often assess fees for pickup of these items</li> <li>• Residents can choose between bags or cans</li> </ul>	<ul style="list-style-type: none"> <li>• There is greater revenue uncertainty than with subscription systems, because the number of tags or stickers residents purchase can fluctuate significantly</li> <li>• To avoid confusion among residents, the municipality must establish and clearly communicate the size limits allowable for each sticker</li> <li>• If tags or stickers are sold in municipal offices, extra staff time will be required</li> <li>• Residents might view a requirement to buy and store stickers or tags as an inconvenience</li> <li>• Tags and stickers often do not adhere well in rainy or cold weather</li> <li>• Extra time might be needed at the curb for collectors to enforce size limits. In addition, there may be no incentive for strict enforcement if haulers are paid based on the amount of waste collected</li> <li>• Tags left on trash at curbside could be removed by vandals or by other residents hoping to avoid paying for waste services</li> <li>• Tags and stickers are not as noticeable as bags or other prepaid indicators and may slow down collections</li> </ul>

**Table 6**  
**Advantages and Disadvantages of Subscription/Container PAYT Programs**

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• Revenues are fairly stable and easier to forecast.</li> <li>• Unlike bags, containers work well with semi-automated or automated collection equipment</li> <li>• In a manual collection system, residents already own containers of roughly uniform volume, new containers might not be required</li> <li>• Containers may be labeled with addresses or unique indicators to assist in enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Subscription systems often have higher implementation costs, including the purchase and distribution of containers</li> <li>• Customers have a limited incentive to reduce waste. Because 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</li> <li>• Relatively complex billing systems are needed to track resident's selected subscription level and bill accordingly</li> <li>• Complex storage, inventory, and distribution systems are required to provide new containers to households that change their subscription level</li> <li>• A method of collecting and charging for waste beyond subscription levels and for bulk waste collections needs to be established</li> <li>• At the outset, residents may find it difficult or confusing to select a subscription level</li> <li>• There may be disputes with residents on the number of containers set out</li> <li>• Manual collection with containers usually requires greater time and effort on route than collecting waste in bags</li> <li>• A cash flow problem may exist due to lag time between paying waste contractor and collecting fees for service based on use</li> </ul>

**Table 7  
Advantages and Disadvantages of Weight-Based PAYT Programs**

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• Weight-based systems measure more precise increments of waste generation than volume-based systems, which offer better recycling incentives</li> <li>• Encourages waste reduction at all waste-generation levels</li> <li>• Fair and easily understood. Favorable customer survey reaction</li> </ul>	<ul style="list-style-type: none"> <li>• At present, weight-based residential systems exist only in pilot program form in the U.S.</li> <li>• Requires more complicated billing system</li> <li>• Special trucks, labeling of cans require extra expense</li> <li>• Compatibility between onboard scales and computers and other operational systems can be challenging</li> </ul>

**Table 8  
Advantages and Disadvantages of Hybrid PAYT Programs**

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>• Offers communities a transition from the traditional financing system to a variable rate option</li> <li>• Mitigates revenue risk by recovering some costs through traditional financing method</li> <li>• Allows time for customers and officials to develop system familiarity</li> <li>• Doesn't "lock-in" a community to a specific type of system</li> <li>• Can be implemented quickly, inexpensively, and easily, and can be later replaced or modified into a full subscription, bag, or tag system, under a hand dump, semi-automated, or fully automated system</li> <li>• Allows time for further planning</li> <li>• Allows time for data collection</li> <li>• No new billing system may be needed</li> </ul>	<ul style="list-style-type: none"> <li>• Customer incentives to reduce waste are truncated at the lowest service level</li> <li>• Full costs of household waste collected and disposal of may not be explicitly reflected to customers</li> <li>• Customers may not understand why they have to pay two fees for disposal of solid waste</li> </ul>

**RECOMMENDED PAYT SYSTEM FOR POTTSTOWN**

Because all or part of the revenue required to operate the system is raised through a fee attached to a unit that varies with the level of usage, revenues are subject to fluctuations not common to the flat fee system. Since Pottstown residents are already accustomed to setting a container at curbside/alley for collection and paying a fee to purchase a sticker for bulky item collection in addition to their quarterly solid waste services fee, R. W. Beck recommends that the Borough consider using a hybrid system.

There are two basic hybrid options used throughout the Commonwealth. These include:

- Residents or the municipality pay a standard base rate per household, and residents purchase bags or stickers, or use specific containers at a set rate per container. The cost to residents still varies by the amount of waste they dispose, but the fixed costs are spread equally among households.
- Residents pay a base rate per household that includes a fixed number of bags, stickers or containers per set out or specified timeframe, then purchase additional bags or stickers, or use specific containers at a set rate per container. Depending on the number of containers allowed, many residents may be able to manage all their wastes without purchasing additional bags or stickers. Limiting the number of containers allowed during a given collection provides some incentive for residents to recycle, compost, or reduce waste generation as a means of avoiding additional cost for collection and disposal.

By providing the contractor with a funding mechanism that covers their fixed costs, they will assume less risk. This increase level of financial assurance often results in lower contract costs.

There are two additional hybrid variations on PAYT that other municipalities have employed: (1) some PAYT programs offer more than one container size option; and (2) some programs also offer price reductions to low and fixed income residents.

### RECOMMENDED TYPE OF CONTAINER/ STICKERS/ OR TAGS FOR POTTSTOWN

Pottstown residents are currently permitted to use 30-gallon rigid containers to hold refuse. Because these containers are not clearly identified as being from Pottstown residents, the current system would not deter non-residents from depositing their refuse in Pottstown.

To address this issue, R. W. Beck recommends that Pottstown mandate the use of tagged containers or carts that clearly identify the refuse as being generated in Pottstown. While an increasing number of communities are beginning to use lidded, wheeled carts such as the ones shown in Figure 1, they require the use of fully- or semi-automated refuse collection vehicles. Local service providers may not have fleets that contain these vehicles. If this situation exists, the Borough may consider designing tags to affix to the residents' existing containers. In this type of volume based system using the residents' existing containers, the resident would pay a base fee and receive a specified number of tags (i.e. 120 per year). Once the residents use all of the allocated tags, they would purchase additional tags.



Figure 1. Example of types of wheeled carts

## HYBRID CASE STUDIES

### ELIZABETHTOWN BOROUGH

Elizabethtown Borough in Lancaster County initially implemented a PAYT program in which revenues were solely dependent on the sale of bags. Elizabethtown experienced a significant decline in the sale of bags and the program's costs began to outweigh its revenues. Raising the cost of bags would only compound the problem.

Consequently, Elizabethtown modified their program to a hybrid subscription/tag program. Under the new system, all homeowners are assessed \$114 per year and are permitted to set out one, 32-gallon bag or container per week. If homeowners set out more than this amount, they must purchase a \$2.00 tag for each additional bag or container. Homeowners are permitted to set out one bulky item per week, also requiring a \$2.00 tag. Tags can be purchased at Borough offices or designated retail outlets. Tires and white goods are collected curbside twice a year. Each tire requires on \$2.00 tag, but white goods require a special \$12.00 tag.

Bagged leaf collection occurs six times per year. Bagged leaves do not require a tag. However, homeowners must contain the leaves in Kraft paper bags which are distributed at a Borough park eight days a year.

### SOUTH MIDDLETON TOWNSHIP

South Middleton Township in Cumberland County contracts with WMI to provide weekly collection of refuse, recyclables and one bulky item. All single-family homes and multi-family establishments with less than three units are either charged \$37.43 per quarter or \$149.72 per year. Each household is provided with a 90-gallon wheeled cart, or may purchase tags, which are to be placed on each bag of refuse, for \$2.60 each. If residents opt for the 96-gallon container, they must purchase a tag for each additional bag of refuse that can not be contained in the cart. If residents exclusively use tags rather than the 96-gallon cart, each household must purchase a minimum of 18 tags per year. Tags may be purchased from the Township or Waste Management. The Township began collecting yard waste during the fall of 2004.

### POTENTIAL IMPACT ON POTTSTOWN

Under the new April 1, 2005 contract with Mascaro, residential solid waste management services annually cost the Borough of Pottstown a total of approximately \$775,000 or \$96.35 per household, which is lower than the average for the case study communities that have implemented a PAYT program. However, once the Borough begins to pay a landfill tipping fee of \$62.50 per ton, residential waste collection and disposal costs will increase to \$181.21 annually, which is higher than the annual cost of PAYT in the case study communities. It is also important to note that the case study communities have factored in the cost of recycling collection and processing into their program fees. When the Borough's current recycling services agreement with WMI expires in December 2005, the Borough may have to contract and pay for these services, which may increase the annual cost of residential services by \$24 to \$48

per year. Thus, the total cost could be \$205.82 to \$229.82 per household per year or \$17.15 to \$19.15 per month.

By implementing a PAYT program, the primary source of savings for the Borough would be reduced landfill fees, as residents have an incentive to provide greater refuse diversion. In addition, by providing a financial incentive to recycle, the Borough may offset at least portion of the curbside recycling costs through revenue received from the Pennsylvania 904 grant.

To illustrate, Table 9 shows that approximately 29 percent or 3,175 tons of the disposed waste stream is currently comprised of materials that are eligible to credit toward the State’s 35 percent waste reduction goal. If the institution of a PAYT program annually diverts an additional 50 percent or an approximate 1,587 tons of these materials, the Borough’s disposal costs (using the projected \$62.50 tipping fee) could be reduced by \$99,206. In addition to the avoided disposal costs, the Borough could generate an additional \$23,810 in revenue form the Pennsylvania 904 Grants by increasing their diversion quantity, generating a total of approximately \$123,016 in savings/revenues.

Table 9  
Waste Stream Composition

Material	Percent of Waste <sup>1</sup>	Tons Disposed
Newspaper	4.10%	451
Corrugated Cardboard	7.52%	827
Office	4.73%	520
Magazine/ Glossy	2.50%	275
Polycoated/Aseptic Containers	0.50%	55
Mixed Paper	4.40%	484
Non-Recyclable Paper	10.42%	1,146
<b>All Paper</b>	<b>34.18%</b>	<b>3,760</b>
#1 PET Bottles	0.83%	91
#2 HDPE Bottles	0.58%	64
#3-#7 Bottles	0.15%	17
Expanded Polystyrene	0.80%	88
Film Plastic	3.99%	439
Other Rigid Plastic	3.50%	385
<b>All Plastics</b>	<b>9.85%</b>	<b>1,084</b>
Clear Glass	1.61%	177
Green Glass	0.74%	81
Amber Glass	1.16%	128

ATTACHMENT A

Material	Percent of Waste <sup>1</sup>	Tons Disposed
Non-recyclable Glass	0.63%	69
<b>All Glass</b>	<b>4.14%</b>	<b>455</b>
Steel Cans	0.76%	84
Aluminum Cans	0.58%	64
Other Ferrous	2.85%	314
Other Aluminum	0.41%	45
Other Non-Ferrous	0.53%	58
<b>All Metals</b>	<b>5.13%</b>	<b>564</b>
Yard Waste- Grass	1.23%	135
Yard Waste- Other	5.78%	636
Wood- Unpainted	5.53%	608
Wood- Painted	1.63%	179
Food Waste	10.55%	1,161
Textiles	3.51%	386
Diapers	2.05%	226
Fines	0.93%	102
Other Organics	1.90%	209
<b>All Organics</b>	<b>33.10%</b>	<b>3,641</b>
Electronics	2.44%	268
Carpet	1.84%	202
Drywall	0.92%	101
Other C&D	5.72%	629
HHW	0.23%	25
Other Inorganics	2.08%	229
Furniture	0.37%	41
<b>All Inorganics</b>	<b>13.61%</b>	<b>1,497</b>
<b>All Disposed Waste</b>	<b>100%</b>	<b>11,000</b>

<sup>1</sup> Composition derived from data provided in PA DEP Waste Characterization Study, 2002.

**IMPLEMENTING A PAYT PROGRAM**

When developing a program that will result in a significant change, it is important to have a solid plan of action. Presently, the Borough of Pottstown offers nearly unlimited refuse collection, as well as curbside recycling and leaf collection service at a cost to the Borough of \$96.35 per household per year. These costs, as discussed, are projected to increase to somewhere in the



range of \$205.82 to \$229.82 per household per year, unless the Borough of Pottstown's solid waste management system is changed. Suggesting a change to this system could be met with strong public opposition -- residents may feel they are getting less service at a greater cost. Therefore, it will be imperative to involve the public in the process that ultimately structures the new system.

### PLANNING THE PROGRAM

It is important to carefully consider new programs before implementing a change. It is important to involve the public in this process and solicit their input on structuring the program. Change can be implemented smoothly if there is public consensus in favor of the change. It is imperative to make sure the public knows what is going on, how the program will work and what the benefits are. Use the media wisely in disseminating information to the public as the process is taking form.

The first action should be the formation of a committee to oversee the planning and implementation of a program change. The committee's role would include:

- Setting goals;
- Defining the system;
- Developing a public information strategy; and
- Overseeing implementation.

### DETERMINE CURRENT SET OUT RATES

It is important for the Borough to determine the average number of containers that single-family households currently set out as well as the number of households that are using the leaf collection service. By determining the average set out rate, the Borough can decide the number of containers that will be permitted under the base fee. For example, as shown in Table 10, the vast majority of Titusville, Pennsylvania residents set out an average of two or less containers per week.

**Table 10**  
**Number of Cans Set Out Per Week**  
**By Titusville Households**

Number of Cans	Percent of Households
0.5	0.48%
1.0	64.20%
1.5	1.5%
2	22.67%
2.5	2.63%
3	2.63%
4	0.48%
5	0.48%

Thus, if Pottstown wants to implement a PAYT program with minimal public resistance, the base number of cans that can be set out should be 2. However, if Pottstown wants to implement a PAYT with a greater impact on waste reduction, then the set out limit should be limited to one can per week.

**EDUCATING THE PUBLIC ON THE NEED FOR PAYT**

It is essential that the public understand the issues and reasons for considering a modification to the existing solid waste management system. Thus, it is important to convey the following messages:

- Pottstown is mandated by Pennsylvania law to provide curbside recycling. However, Pennsylvania law also enables Pottstown to receive funding based on the performance of the recycling program. Thus, developing a system, such as PAYT, that encourages people to recycle is financially beneficially to Pottstown.
- Residential refuse collection will be equitably priced (i.e., those requiring fewer container set outs will pay less for them, thereby encouraging diversion by recycling.)

It is suggested that, in addition to newspaper articles, public meetings be used to disseminate these messages, thereby allowing participants to make recommendations on how to resolve these issues.

**EDUCATING THE PUBLIC ON THE PAYT PROGRAM**

If Pottstown implements a PAYT program, it is essential that a comprehensive education campaign be developed that includes the following informational materials:

- PAYT brochure;
- Wire-tie warning tags;
- FAQs on Borough website; and

- Recycling “How To” flyers.

In addition, Pottstown may want to establish an environmental task force during the first year whose members:

- Volunteer to answer phones; and,
- When a problem location is identified, knock on the door or phone the residence, talk to the people, explain the program, ask for their cooperation.

Additionally, if Pottstown selects a PAYT program that uses bags or cans, residents must be educated on not over-packing them.

### DEVELOP A PROACTIVE CAMPAIGN TO PREVENT ILLEGAL DUMPING

In general, illegal dumping should not be a significant problem. In fact, a study of 14 cities<sup>4</sup> found 42 percent of communities with PAYT programs reporting no problems, 29 percent reporting minor problems, and another 29 percent reporting notable problems. The analysis of contributing factors found that three of four communities with problems were rural. Not all rural communities in the sample, however, had problems with illegal dumping. Openly illegal dumping may be somewhat notable when there is no base level of curbside refuse or recycling service. These communities report that some residents illegally dump refuse due to economic constraints. However, this is not the system that R. W. Beck is recommending for Pottstown.

Though illegal dumping should not be a problem, a proactive campaign should be introduced concurrently with the implementation of the PAYT program. This initiative could include:

- “Report illegal dumping” decals;
- “3 Strikes And You’re Out” crew enforcement;
- Shared databases with Housing, Health, Street, Zoning, and Police Departments;
- Shared interdepartmental violation notifications that serve to identify chronic “illegal dumpers”;
- Monday morning “Garbage” conference calls; and
- The ability for Borough Staff to issue civil citations.

### AMENDING ORDINANCE 20

If Pottstown opts to implement a PAYT program, Ordinance 20 will need to be amended to limit the amount of refuse that residential units may set out for the base fee, and set-outs that exceed that limit will not be collected without the specified tag or sticker. Additionally, language which limits the weight of the container must be included.

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<sup>4</sup> Daniel Blume, *Under What Conditions Should Cities Adopt Volume-based Pricing for Residential Solid Waste Collection?*

#### REDUCE THE FREQUENCY OF REFUSE COLLECTION

When the Borough issues the RFP for refuse, recycling, bulky waste and yard waste management services, R.W. Beck recommends reducing refuse collection to once a week and offering curbside recycling services once a week.

#### FINDINGS AND RECOMMENDATIONS

- When the Borough issues a new RFP for solid waste services in 2006, the Borough will most likely need to pay for the disposal of waste and for the curbside collection of recyclables.
- These new cost centers may increase the Borough's solid waste management rates from \$96.35 per household per year to somewhere in the range of \$205.82 to \$229.82 per household per year.
- To decrease disposal and increase recycling, the Borough should strongly consider implementing a PAYT program. A PAYT system should provide an incentive for residents to be more conscientious about recycling and improve participation and compliance with the Borough's recycling program.
- Implementing a PAYT program could financially benefit the Borough by approximately \$123,016 per year.
- This financial benefit could reduce the annual per household solid waste management rate by approximately \$15.00 or six to seven percent.
- The Borough should also consider reducing the frequency of refuse collection to once a week. Based on another Montgomery County community, limiting refuse collection to once a week could reduce collection costs from \$96.35 to \$71.40.
- Should the Borough choose to do this, citizens and service providers should be incorporated into the planning process because; (1) implementation of PAYT may result in a small increase in solid waste service cost to some residents; and (2) some residents may view PAYT as an attempt to reduce services and increase costs;
- The Borough will need to supplement a PAYT program with a comprehensive education campaign on why PAYT is beneficial to the residents, and to deter illegal dumping; and,
- A hybrid system is the recommended for the Borough, where the Borough pays for a basic level of weekly service and a per-unit fee is paid for by the residential unit for set outs that exceed basic service levels.

Table 11, compares the financial conditions of the current system to the proposed system

Table 11  
Financial Comparison

	Existing Solid Waste System	Proposed Solid Waste System	Savings
Refuse Collection	\$96.35	\$71.40	\$24.95
Disposal	\$85.47	\$60.79	\$24.68
Recycling	\$36.00	\$36.00	\$0
Yard Waste	Included in Refuse	Included in Refuse	\$0
<b>Total</b>	<b>\$217.82</b>	<b>\$168.19</b>	<b>\$49.63</b>

A number of Pennsylvania municipalities have found PAYT to be a useful tool in reducing waste, controlling costs, and boosting recycling rates. PAYT will provide an incentive for Borough residents to reduce waste generation. The greatest hurdle, if the Borough decides to implement PAYT, will be avoiding the view that PAYT is an attempt to reduce services and increase costs. It is a decision that will require significant attention to citizen concerns and consideration of citizen input to ensure that it is accepted and embraced by Borough residents.