

February 23, 2001

Mr. Samuel Monticello
Director
City of Hazleton Office of Administration
40 North Church Street
Hazleton, PA 18201

Subject: Analysis of Implementing a Pay-As-You-Throw or Volume Based Program

Dear Mr. Monticello:

This letter is to provide the City of Hazleton with the results of R.W. Beck's evaluation of the City's municipal waste and recycling collection program costs. It also, examines the value of the City converting the municipal refuse collection service to a volume based fee system. The attached pages describe the methods R. W. Beck used to determine the cost of this City service and offers a program for implementing a volume based fee system.

CURRENT REFUSE AND RECYCLING COLLECTION

The current refuse and recyclables collection program in Hazleton involves the City contracting with a hauling company to collect, transport, dispose or recycle refuse and recyclable materials collected from City residents. Waste Management Inc. (WMI) is the selected contractor providing weekly refuse, every other week recycling and an annual bulky waste collection services. The fees charged by WMI to the City for these services are: \$252,000 for refuse collection, \$120,000 for recycling collection and \$470,000 for disposal and a flat fee of \$75,000 for bulky waste collection and disposal, per year for the contract period. The total combined annual cost of all the fees is \$917,000 or approximately \$115 per household per year based on a residential count of 8,000 units served. This cost figure does not factor in administrative costs borne by the City to bill residents and administer the contract. The City also provides leaf collection services (generally costing the City approximately \$9,000 per year) that should be factored into waste management fees since it is a service relating to the collection and recycling of a material discarded by residents. To compensate for these added costs the City assesses a fee of \$30 per quarter to all residential units or \$120 per year.

The contract for collection services is based on a one, three or five year basis. The present contract allows the City to change to a pay-as-you throw fee system if the City determines it is in the best interest of the residents to change to this type of a fee system. The City is considering this type of a fee system to combat the problems with both the hauler and residents not complying with recycling guidelines. By putting in force a pay-as-you throw system, the City hopes to provide a financial incentive for residents to recycle and reduce waste disposal practices.

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. Well over one hundred 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 fifty percent of what it was prior to the per-bag program.

POTENTIAL BENEFITS OF PAYT

Communities that have implemented PAYT programs have reported a number of benefits, which include:

- Waste reduction;
- Reduced waste disposal costs (as suggested above by the City of Wilkes-Barre representative);
- Increased waste prevention;
- Increased participation in composting and recycling programs;
- 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 conscientious 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 they can become more conscientious, thereby making them 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:

- Illegal dumping;
- Recovering expenses;
- Administrative costs;

- Perception of increased costs to residents;
- Multi-family housing; and
- Building public consensus.

While communities have experienced some or all of the barriers identified, measures have been taken to overcome these barriers. For the City of Hazleton, illegal dumping may take the form of household refuse being abandoned on road-sides, empty lots or more commonly in commercial and institutional facility dumpsters. Stricter enforcement can be used and locks placed on dumpsters to combat this problem. Cost issues can be resolved with careful planning, a clear idea of the total service cost and demonstrating to the public that the program will more likely reduce a household's cost for the service. Including public input early in the process can help to build public consensus and understanding of the real benefit to the residents.

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. To stabilize this situation, many communities have split the costs between a fixed rate and variable rate system. Fewer have assigned all the costs associated with a system to a strict variable rate fee.

Additionally, all costs associated with the program must be factored into the rate system. For instance, the costs associated with recycling and leaf waste collection must be factored into the rate system unless a separate fee is charged for these services. Since they supplement the refuse program it is advisable to keep the fees in the rates charged for the overall program.

CHALLENGES TO BALANCING THE BUDGET

In every program there are fixed costs that exist regardless of the amount of waste that is disposed. These include administrative costs and collection costs. Municipalities have personnel who manage the program—some full time, some as part of a range of duties, so their entire salary and benefits or portion of the salary and benefits attributable to these duties should be assigned to the program. Collection costs are fixed because regardless of the amount of material collected, the collection vehicles must cover the route or routes in the program. This cost is known from the Contractor's bid and includes the \$252,000 refuse collection and \$120,000 recycling collection costs. Because the fee for bulky waste collection is a flat fee of \$75,000 this and the \$9,000 per year for leaf waste collection these should be included. Therefore, the total fixed cost is approximately \$456,000 or \$57.00 per household.

Variable costs include waste disposal and processing of recyclables, which are largely based on the tonnage of materials disposed and/or processed. This cost for the City of Hazleton is approximately \$470,000 as specified in the Contractor's bid package. Currently, the City's Contractor does not pay a fee on materials delivered to a recycling center (Lackawanna County Recycling Center) for processing.

The goal for any system is to ensure that revenues are sufficient to cover program-related expenditures. The best way to do this is to ensure that a fixed amount of revenue is generated that at least covers the fixed costs. Revenue to cover variable cost expenditures

can be variable as well, as long as the charges are set based on good estimates of the variable costs. This can generally be done using historical data.

The City of Wilkes-Barre reports that fee is broken into two parts, the per-bag fee and taxation. Collection costs, or the fixed costs as discussed above are paid through taxes, while the per-bag fees pay for the tipping fee (disposal cost) and bag distribution costs. The City offers two prepaid bags for sale at local grocery and convenient stores. They offer five - 15 gallon bags for \$3.65 and five - 30 gallon bags for \$6.25. The revenue generated by the bag sales is primarily used to pay the variable costs associated with the program.

MAINTAINING PAYT AND BALANCING THE BUDGET

It can be difficult, however, to balance revenues with expenditures in a classic PAYT program, because revenues are solely dependent on the sale of bags. If there is a significant decline in sales for any reason, with no corresponding decline in disposal, there is a good probability that the program's costs will outweigh its revenues. This occurred in the PAYT program implemented by Elizabethtown Borough, in Lancaster County. Raising the cost of bags could only compound this problem and did in the case of Elizabethtown. This is the reason that a majority of municipalities in Pennsylvania with PAYT programs have opted to implement "hybrid" systems which include a flat fee and variable rate (pre-paid bags).

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

- Residents pay a standard base rate per household which covers fixed collection costs—i.e., administrative and personnel costs and the cost for a collection vehicle to service a given area—and then 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 because the fixed costs are spread equally among households, differences in cost per household are less than in a system such as Elizabethtown's.
- Residents pay a base rate per household that includes a fixed number of bags, stickers or containers, 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.

Generally one difficulty with implementing one of these hybrid options is that it requires establishing a system to invoice residents for the base rate, which is not required under the classic PAYT scenario. However, given that this billing system is already in-place in the City, the rate would only need to be adjusted to cover only the fixed program costs. This would be a reduction to the rate currently charged to residents with the difference being made up in the per bag or container fees.

There are two additional 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.

Regardless of the PAYT scenario used, the City should implement controls that help to ensure proper disposal of wastes generated in the City. Improper disposal is less likely under most hybrid scenarios. If residents are required to pay a fee, even if it is only a partial fee to cover fixed costs and purchase of bags is still required, they are more likely to use the service. However, good enforcement is still necessary to ensure compliance.

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 City of Hazleton offers basically an unlimited refuse collection service to its residents which includes recycling, yard waste and bulky waste collection at a cost of \$9.17 per month. 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

Solid waste management can be a confusing business, therefore it is important to carefully consider new programs before implementing a change. Involve the public in this process and solicit their input on structuring the program. The change will be implemented much more smoothly if there is public consensus in favor of the change. Make sure the public knows what is going on, how it will work and what the benefits are to them. Use the media wisely in getting information out 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.

Also, as discussed above there are a number of ways to price a variable rate system. These include four specific options shown in Table 1.

**TABLE 1
PRICING OPTIONS**

System	Rate
Proportional (linear)	Flat rate per container
Variable Container	Different rates for different size containers
Two-tiered	Flat fee (usually charged on a monthly basis) and flat rate per container
Multi-tiered	Flat fee (usually charged on a monthly basis) and different rates for different size containers

PROPORTIONAL RATE SYSTEM

This is the simplest and purest form of a PAYT and involves the household paying a flat price for each container of waste they place out for collection. This is the system used by Elizabethtown Borough discussed above.

VARIABLE CONTAINER RATE

With this system a different rate is charged for different size containers. Like the Proportional rate, the entire cost of the service is made up through the revenue generated on the container prices. While this system creates strong incentives for residents to reduce waste, it requires that communities carefully set their rates to ensure revenue stability.

TWO-TIERED RATE SYSTEM

This system assesses households both a fixed fee and a per container fee. The fixed fee ensures that revenue is generated for the fixed costs while the per-container fee is used to cover the variable costs. Some communities use this two-tiered approach as a transition to the purer totally variable rate system.

MULTI-TIERED RATE SYSTEM

This system charges a fixed fee plus variable fees for different container sizes and is a hybrid of all the systems presented above. This is the structure used by Wilkes-Barre where tax dollars pay the fixed costs and two different size bags are available for purchase in local retail outlets. Here residents that generated a smaller amount of waste can pay less for a smaller bag and set the material out on a weekly basis.

SELECTING PREFERRED SYSTEM

Regardless of the system selected the collection of refuse in the City of Hazleton will not functionally change. Refuse trucks will still need to drive by each residence on a weekly basis. The amount of refuse collected from each household may decrease, however, material will still need to be collected on a weekly basis. The real choice is how best to structure collecting the fees required to fund the operation up to just under one million a year based on the cost calculations in this evaluation.

This is where the City will need to consider the goals of the change and evaluate the costs and benefits of the different options. Ultimately, the City wants a program that will be generally acceptable to the public at large.

To help with this evaluation, this report provides some preliminary cost estimates for different PAYT programs. Regardless of the form, the City needs to generate up to one million dollars to pay the costs associated with the total collection program including recycling, yard waste and bulky waste collections. Table 2 presents the estimated fees for each rate structure scenario.

All scenarios illustrated in Table 2 are designed to generate the full amount of revenue required to operate the collection services based on current annual costs.

In the first two scenarios the total program cost is paid through the fees charged for the bags. The assumption in the proportional example is that each household (approximately 8,000 residential units) will use two 30-gallon bags per week, though what is more likely is that some households will use less than two bags per week, and some will use more. These variations are why a PAYT program is difficult to administer. Two bags per household per week, however, is a reasonable average to use for these projections.

TABLE 2
ESTIMATED FEES FOR DIFFERENT RATE STRUCTURES

Rate Structure	Assumptions	Fees
Proportional (linear)	2 30-gallon bags per household per week	\$1.10 per bag (\$115/HH/year)
Variable Containers	25 percent of households—15-gallon bag per week	\$1.10 per bag (\$57.20/HH/year)
	75 percent of households—2 30-gallon bags per week	\$1.30 per bag (\$135.20/HH/year)
Two-Tiered System	\$57 per household per year flat fee	\$456,000 generated through flat fee
	2 30-gallon bags per household per week	\$0.56 per bag Approx. \$115.24/HH/year
Multi-Tiered System	\$57 per household per year flat fee	\$456,000 generated through flat fee
	25 percent of households—15-gallon bag per week	\$0.56 per bag Approx. \$86.12/HH/year
	75 percent of households—2 30-gallon bags per week	\$0.66 per bag Approx. \$125.64/HH/year

NOTE: The costs per bag presented above are estimated based on the City's program costs. If the bags are sold through local retailers, they will probably include a set markup per bag to cover their handling costs.

In the two-tiered and multi-tiered scenarios, the fixed fee of \$57 per household per year will be used to generate the approximately \$456,000 required to cover all program costs other than disposal. The variable costs—tipping fees for waste disposal—are paid through the revenues generated by the per bag fees.

The cost per bag in each case has been rounded up to the next cent to accommodate the cost to purchase and distribute the bags through local retail outlets. Of course, the fees presented in this table are estimates, and the City would need to refine them once a preferred system and container or containers are selected.

ADDITIONAL CONSIDERATIONS

The fee structure presented above is designed to cover all costs associated with the program as it exists now, which includes weekly refuse collection, every-other week recycling, annual collection of leaf yard waste during the fall months, and an annual spring cleanup in the spring. The only difference is that residents would be required to purchase special bags for disposal.

One difficult area to manage using a PAYT program will be collection of waste from multi-family dwellings. If residents of such complexes share dumpsters, it would be difficult to prevent individual tenants from using other bags. These complexes will probably need to be treated like commercial facilities, with a fee set per unit that is approximately equal to the cost estimated for single family dwellings.

CONCLUSIONS

- The City of Hazleton has secured a contractor that offers a comprehensive refuse and recycling program.
- The \$110 annual fee currently charged per household covers most, but not all, of the actual cost to operate the current refuse/recycling program. The actual per household cost to the City for all services in the waste/recycling collection program is \$115 per household annually, and would be slightly higher if costs attributable to billing residents was factored into this cost.
- The City is interesting in implementing a Pay-As-You-Throw program as an economic incentive to combat hauler and residents not complying with recycling guidelines.
- Implementing a Pay-As-You-Throw program would result in a fairer fee system, with customer fees based on actual use of services, similar to other utilities.
- Based on current program costs as illustrated in the Bureau of Refuse and Recycling budget, some residents could experience significant savings, while others would see some increase in cost. The greatest increase projected, however, is approximately \$25 per household.
- Currently Contractor billing system (separating collection fees and disposal), makes implementation of a multi-fee system (flat rate for collection, per bag for disposal) simpler to implement.
- Collection fee in the multi-fee scenarios presented in this report includes the full cost (including disposal) for the annual cleanup.
- A PAYT program may result in reduced waste generation by encouraging residents to reduce, reuse and recycling municipal waste.
- Given the high level of service offered, it may be that residential customers will view PAYT as an attempt to reduce services and increase costs.

RECOMMENDATIONS

- The City of Hazleton's current refuse and recycling program is available at a reasonable cost to residents, based on rates assessed to residents in other Pennsylvania cities. The City should, however, review the customer fee with respect to the City's actual cost to operate the refuse and recycling program and make an adjustment to ensure that revenues from the fee to residents covers program costs (the difference is actually approximately \$5.00 per household per year or \$40,000).
- Based on the analysis of the current budget and potential costs to City residents, the City should strongly consider implementing a PAYT program as a means of distributing program costs more fairly among residents based on actual use of services. A PAYT system should provide an incentive for residents to be more conscientious about recycling and improve participation and compliance with the City's recycling guidelines.
- Should the City choose to do this, citizens should be incorporated into the planning process because; (1) the current cost to residents is low and implementation of PAYT will result in greater cost to some residents; and (2) some residents may view PAYT as an attempt to reduce services and increase costs.
- Given the breakdown of the Contractor's present fee system into collection and disposal costs, the preferred program for the City should be a multi-fee system, with a flat annual fee charged for collection services and the per-bag fee paying disposal costs.

A number of Pennsylvania municipalities have found PAYT to be a useful tool in reducing waste, controlling costs, and boosting recycling rates. The current system operating in the City of Hazleton is working with the exception of compliance with recycling guidelines. PAYT will provide an incentive for City residents to reduce waste generation. The greatest hurdle, if the City were ever to decide 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 inputs to ensure that it is accepted and embraced by City residents.

Sincerely,

Richard M. Schlauder, Jr.
Regional Director of Environmental Services

cc: Kathleen Kilbane, SWANA
Carl Hursh, DEP
W. Edward Latinski, Luzerne County