

July 17, 2005

Ms. Mary Ann Nau
City Manager
City of Titusville
107 Franklin Street
Titusville, PA 16354

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

Dear Ms. Nau:

This letter provides the City of Titusville with the results of R.W. Beck's evaluation of converting the City's 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 Pay-As-You-Throw (PAYT) for single-family housing units and multi-family establishments with three or less units (residential units). In addition, this letter summarizes the steps that the City of Titusville has begun to take to implement the most appropriate PAYT system for Titusville and recommendations to continue progressing towards a PAYT program.

CURRENT RESIDENTIAL REFUSE AND RECYCLING COLLECTION

Under the current refuse and recyclables collection program, the City of Titusville contracts with a private service provider to collect, transport, dispose or recycle refuse and recyclable materials collected from City residents. Tri-County Industries is the current contractor, providing weekly refuse and bulky waste¹ collection as well as curbside recycling for non-dumpster customers. These customers may be businesses and institutions, as well as homeowners, as long as they do not require dumpster service. For purposes of this report, these customers will be referred to "container customers." Establishments that require dumpsters will contract directly with Tri-County or with another waste hauler. If they contract with Tri-County, the City's solid waste management fee is waived. For purposes of this report, these customers will be referred to as "dumpster customers"

For container customers, Tri-County Industries bills the City for solid waste services, which is financed out of the general fund rather than assessed to residents. Tri-County charges the City \$11.98 per container customer per month. The City provides Tri-County Industries with the number of container customers, approximately 2,550. Thus, the annual cost to the City for container customers is approximately \$366,588.

Titusville container customers are required to contain refuse in standard, water-tight garbage cans or plastic bags having a capacity of not more than thirty (30) gallons each (containers). Currently, there is no limit on the amount of refuse that container customers can set out.

¹Bulky waste includes, but not limited to, appliances, furniture, large auto parts, tree branches and trimmings, household remodeling and repair refuse not in excess of one hundred (100) pounds per month.

With respect to recycling, Tri County Industries collects recyclable metal, aluminum, glass and plastics. The City provides recycling bins. The City also provides vacuum leaf collection services, which costs approximately \$63,500 per year or approximately \$2.00 per residential unit per month.

ISSUES

As discussed, the present contract does not limit the amount of refuse that container customers may set out. This is most likely a contributing factor to the City's recycling rate of only 9 percent², even though the City has a mandatory curbside recycling program. Additionally, all areas contiguous to the City are not mandated to recycle nor do they have curbside refuse collection. Due to this, non-Titusville residents have an incentive to deposit their waste within the City.

To address these issues, R. W. Beck recommends that the City consider contracting for Pay-As-You Throw system that limits weekly residential set-out to two bags and requires the use of designated bags or stickers. Additionally, the City should consider eliminating the vacuum leaf collection program, contracting instead for bagged yard waste collection.

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, PAYT offers individuals an incentive to reduce the amount of waste they generate and dispose.

POTENTIAL BENEFITS OF PAYT

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.

PAYT program can also yield an increase in recycling. Perkasio Borough experienced a 59 percent reduction in the amount of solid waste collected 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.

²This recycling rate is based on 2,040 tons of Titusville waste being disposed and 205 tons of Titusville waste being recycled.

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;
- Administrative costs;
- Perception of increased costs to residents; and,
- 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 more stickers.

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. Household generating solid waste above 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 resident 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 are summarized in Tables 1 through 5.

Table 1
Advantages and Disadvantages of Pre-Paid Bag PAYT Programs

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

**Table 2
Advantages and Disadvantages of Tag and Sticker PAYT Programs**

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

**Table 3
Advantages and Disadvantages of Subscription/Container PAYT Programs**

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

**Table 4
Advantages and Disadvantages of Weight-Based PAYT Programs**

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

**Table 5
Advantages and Disadvantages of Hybrid PAYT Programs**

Advantages	Disadvantages
<ul style="list-style-type: none"> • Offers communities a transition from the traditional financing system to a variable rate option • Mitigates revenue risk by recovering some costs through traditional financing method • Allows time for customers and officials to develop system familiarity • Doesn't "lock-in" a community to a specific type of system • 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 • Allows time for further planning • Allows time for data collection • No new billing system may be needed 	<ul style="list-style-type: none"> • Customer incentives to reduce waste are truncated at the lowest service level • Full costs of household waste collected and disposal of may not be explicitly reflected to customers • Customers may not understand why they have to pay two fees for disposal of solid waste

RECOMMENDED PAYT SYSTEM

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. R. W. recommends that Titusville 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, 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

Titusville residents are currently permitted to use either 30-gallon rigid containers or plastic bags to contain refuse. Because these containers are not clearly identified as being from Titusville residents, the current system does not deter non-residents from depositing their refuse in Titusville.

To address this issue, R. W. Beck recommends that Titusville mandate the use of carts, plastic bags or tags that clearly identify the refuse as being generated in Titusville. While an increasing number of communities are beginning to use 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. The level of competition for Titusville's solid waste may decrease (and costs may increase) if the City requires bidders to collect refuse in carts. However, the City should research the solid waste market place before ruling out the use of carts.



In another option, both tags/stickers and bags specifically produced for Titusville are also used to clearly identify the waste as being generated by Titusville residential units.

Hybrid Case Studies

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 could 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 in Cumberland County contracts with Waste Management Incorporated to provide weekly collection of refuse, recyclables and one bulky item. All single-family homes and multi-family establishments with less than 3 units are charged \$37.43 per quarter (or \$149.72) and provided with a 90-gallon cart. If additional refuse is set out, a tag is required. Each tag costs \$2.57 and can be purchased from the City or Waste Management.

Yard waste is currently collected loose via vacuum by City crews. However, the City yard waste began collecting yard waste in bags in Fall 2004.

Potential Impact on Titusville

As discussed in the case study, the basic service level fee for Elizabethtown is \$114 per household per year. In comparison, the City of Titusville pays \$11.98 per month to Tri-County Industries, plus the \$2.00 per container customer cost of the vacuum leaf collection. Thus, on an annual basis, the current system costs Titusville, \$167.76 per container customer. Based on 2,550 container customers, the current system annually costs Titusville \$427,788.

Conversely, Elizabethtown basic service level fee is \$114 per household per year, and South Middleton Township's annual cost is \$149.72 per residential unit. Based on these program costs, the City of Titusville's annual costs could be reduced to \$290,700 - \$381,786, or a savings of \$130,088 - \$46,002 per year

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 Titusville offers refuse, yard waste, recyclables and bulky waste collection service to its container customers at no direct cost to the customer. 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.

DETERMINE CURRENT SET OUT RATES

It is important for the City 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 vacuum leaf collection service. By determine the average set out rate, the City can decide the number of containers that will be permitted under the base fee. For example, in Kirkwood, Missouri, 60 percent of the residents set out an average of 2- or 3- 30 gallon bags per week. Thus, the City decided that residents could set out up to 3 bags a week for the base fee and additional bags would cost \$1.25. This approach meant that the majority of residents would not be affected by the PAYT program, but the larger solid waste generators would need to pay a higher fee. Conversely, communities that are aggressively trying to increase their recycling rate have established a set out limit that is below what the majority of residents set out. However, these communities experienced a more difficult time obtaining support for the program.

With respect to vacuum leaf collection, it is important to determine the actual number of households that are actually using the program versus the total number that have access to it. As previously discussed, the vacuum leaf collection program costs \$63,500 per year or approximately \$2.00 per housing unit per month if all housing units participate. To be able to compare what the vacuum program costs to the cost of contracting for curbside collection of bagged leaves, it is necessary to determine the cost per household based on participating households.

EDUCATE THE PUBLIC ON THE NEED FOR PAYT

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

- Titusville is mandated by Pennsylvania law to provide curbside recycling. However, Pennsylvania law also enables Titusville 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 Titusville.
- Titusville residents are paying for solid waste services, and individuals from contiguous areas are using Titusville to deposit their refuse. Thus, it is essential to develop a system where Titusville residents do not pay for non-residents' garbage collection.

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.

EDUCATE THE PUBLIC ON THE PAYT PROGRAM

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

- PAYT brochure
- Recycling “How To” flyers
- Wire-tie warning tags
- FAQs on City website

In addition, Titusville 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 and accommodate with a collection if appropriate.

Additionally, if Titusville selects a PAYT program that uses bags or cans, residents must be educated on not over-packing them. Examples of educational messages that address this are provided in Attachments A and B.

DEVELOP A PROACTIVE CAMPAIGN TO PREVENT ILLEGAL DUMPING

In general, illegal dumping should not be a significant problem. In fact, a study of 14 cities³ 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 Titusville.

Even though illegal dumping should not be a problem, a proactive campaign should be introduced concurrently with the implementation of the PAYT program since Titusville already experiences a problem with non-residents dumping in the community. This initiative could include:

- “Report illegal dumping” decals such as the one shown in Attachment C;
- “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”;

³~~Daniel Blume, “Under What Conditions Should Cities Adopt Volume-based Pricing for Residential Solid Waste Collection?”~~

- Monday morning “Garbage” conference calls; and
- The ability for City Staff to issue civil citations.

AMEND ARTICLE 929

If Titusville opts to implement a PAYT program, Article 929 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. Finally, container customers need to be defined, as the current definition of residential units now includes commercial, institutional and industrial establishments regardless of whether they are container or dumpster customers.

SELECT PREFERRED SYSTEM

Regardless of the system selected, the collection of refuse in the City of Titusville 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, but material will still need to be collected weekly. The real choice is which system is best for increasing waste reduction and deterring non-residents from disposing refuse in Titusville.

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.

INITIAL IMPLEMENTATION STEPS TAKEN BY TITUSVILLE

Titusville has begun the process of implementing a PAYT program by surveying residents to ascertain information on the following solid waste management practices/issues of Titusville residents:

- Types of refuse containers used;
- Number of refuse set-outs each week;
- Bulky waste set-out frequency;
- Percent of residents who participate in the curbside recycling program;
- Reasons for not participating in the curbside recycling program;
- Recyclable waste set out frequency;
- Recyclable waste container capacity requirements;
- Willingness to convert to every other week curbside recycling;
- Concerns about open/illegal dumping; and,
- Additional solid waste management issues.

The City direct-mailed surveys to all residents and promoted its existence and purpose. The City received 473 returned surveys, a response rate of approximately 19 percent.

SURVEY RESULTS

CONTAINERS

Of the survey respondents, 74 percent indicated that they set out their refuse in cans rather than garbage bags. It should be noted that if the respondent indicated that they used bags and placed the bags in a can at the curb, they were included in the cans category.

With respect to why survey respondents preferred cans or bags, their responses were as follows:

Cans

- Easier to bring to the curb – 214 responses
- Prefer a more rigid container – 214 responses
- Keep animals out – 170 responses
- More cost-effective – 108 responses
- Looks better in front of my house – 57 responses
- Easier/smaller to store – 25 responses

Bags

- Easier to bring to the curb – 91 responses
- Easier/smaller to store – 45 responses
- Don't have to carry the can back to the house – 33 responses
- Looks better in front of my house – 12 responses
- Prefer a more rigid container – 5 responses
- More cost-effective – 5 responses

SET-OUT RATES

Table 6 summarizes the weekly set-out rate for survey participants who use cans.

Table 6
Number of Cans Set-Out Per Week
by Households Using Cans

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%

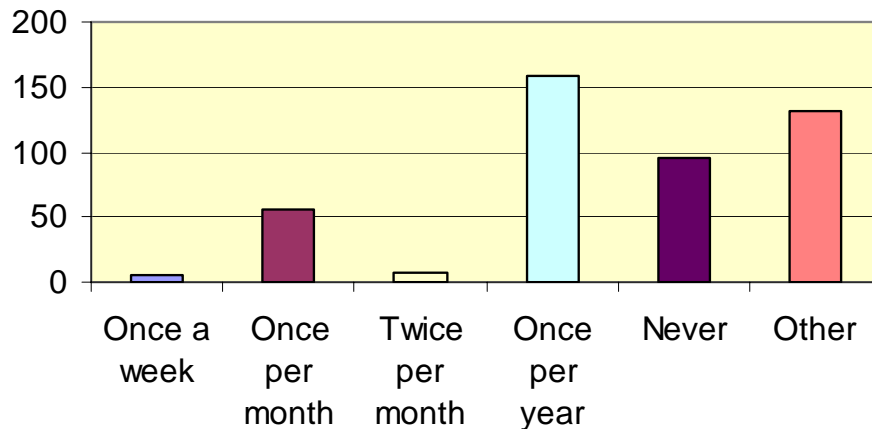
Table 7 summarizes the weekly set-out rate for survey participants who use bags.

Table 7
Number of Bags Set-Out Per Week
by Households Using Bags

Number of Bags	Percent of Holds
0.5	2.70%
1.0	36.94%
1.5	9.05%
2	21.62%
2.5	7.21%
3	9.91%
3.5	3.60%
4	3.60%
5	4.50%
6	0.90%

With respect to bulky waste, Figure 2 shows that the majority of survey respondents only require service “Once per year”. The response “Other” received the second highest number of responses, most of which indicated that they very rarely require bulky waste collection service.

Figure 2
Set-Out Frequency – Bulky Waste



RECYCLING

The vast majority of survey respondents, 96 percent, indicated that they participate in the City's curbside recycling program. However, this reported participation rate may be higher than the actual participation rate. Based on our experience, recyclers tend to respond to surveys at a higher rate than non-recyclers. More accurate information would be obtained by conducting field observations to determine the actual number of households that participate in curbside recycling.

According to the survey results, non-participants cite the following are reasons for not participating in the curbside recycling program:

- Don't know about it – 3 responses
- Too complicated – 2 responses
- Too time consuming – 3 responses
- Other – 11 responses

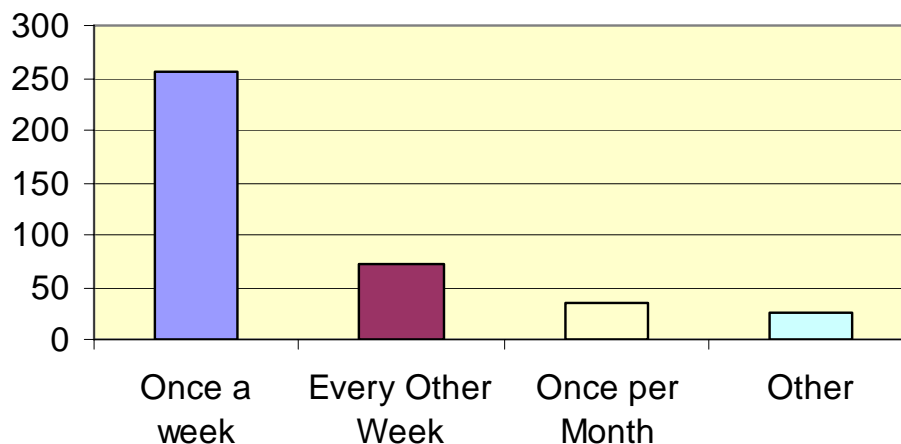
“Other” responses included:

- Don't generate enough recyclables – 8 responses
- Don't have a recycling container – 1 response
- Hauler never picks them up – 1 response
- Not worth the effort – 1 response

R. W. Beck cross-queried the survey data to determine if a correlation exists between the number of containers/bags a survey respondent sets out and whether or not they recycle. Based on the survey data, this correlation does not appear to exist; as some respondents who set out large quantities of cans or bags also indicated that they participate in the curbside recycling program.

The survey also requested participants in the curbside recycling program to specify how frequently they set out recyclables at the curb. Their responses are reflected in Figure 3.

Figure 3
Setout Frequency - Recyclables



“Other” responses included:

- When the container is full;
- When the tenant vacates the property; and,
- When I have enough saved.

Approximately 11 percent of the survey respondents who participate in the curbside recycling program reported that they sometimes have more recyclables than can be contained in their bin. Of this 11 percent, approximately 92 percent recycle every week and 61 percent said they would recycle more if they had a larger or additional recycling bin. Of all survey respondents who participate in curbside recycling, approximately 18 percent indicated they would recycle more if they had a larger or additional recycling bin.

If recycling collection were changed to every other week, 88 percent of survey respondents who participate in recycling would continue to participate. However, only 68 percent of respondents who set out their recyclables every week would continue to participate. Respondents’ reasoning for not wanting to participate in every-other-week recycling included:

- | | |
|---|--------------|
| ▪ Don’t want to store recyclables that long – | 49 responses |
| ▪ Every other week would be confusing – | 26 responses |
| ▪ Don’t have a big enough bin – | 15 responses |
| ▪ Other – | 4 responses |

“Other” responses included:

- Would only work if there was an additional container;
- Would still have to pay the same for garbage service; and
- Why not make it every 2nd and 4th week?

ILLEGAL DUMPING/DISPOSAL

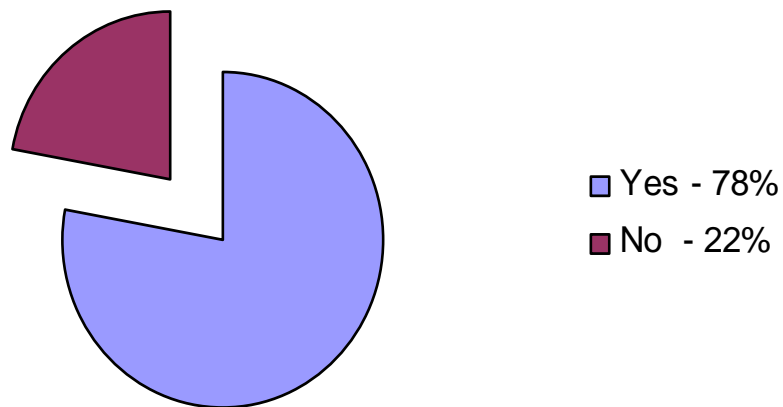
Approximately 10 percent of survey respondents answered in the affirmative to the following two survey questions:

“Have you have ever seen someone from outside of the City putting their garbage in someone else’s garbage can?” and,

“Have you have ever seen someone from outside of the City illegally dumping on City or private property?”

As shown in Figure 4, the majority of survey respondents would report someone illegally dumping or improperly disposing of garbage in another resident’s can.

Figure 4
Survey Respondents’ Willingness to Report Illegal or Improper Dumping



ADDITIONAL SOLID WASTE ISSUES

Finally, the survey provided the opportunity for respondents to identify any solid waste issues that they would like the City to address, which are presented below.

- Commending the service provided by the waste hauler – 33 responses
- Satisfied with current system–don’t change it – 18 responses
- Neighborhood aesthetics on collection day – 25 responses
- Collection schedule – 19 responses
- Collection efficiency – 14 responses
- Need a system to manage household hazardous waste, especially paint – 13 responses
- Restrict how long garbage cans/bags are permitted to be at the curb – 13 responses
- People who set out more garbage should be charged more – 12 responses
- Hauler damages cans or litters during collection – 11 responses
- Noise from vehicles – 7 responses
- Hauler litters during recycling collection – 6 responses
- Collect more types of paper for recycling at the curb – 5 responses
- Vehicle traffic – 4 responses
- Wasn’t a separate bin for newspapers/magazines – 3 responses
- Missed recycling collection – 2 responses
- Collect C&D at the curb if it is in a can – 2 responses
- Observed recyclables being included in garbage vehicle – 1 response
- Garbage trucks need to slow down – 1 response
- Periodic collection days for materials that can be donated to charity – 1 response
- Don’t collect before sunrise – 1 response
- Haulers should not take off for holidays – 1 response
- Should send self-addressed, stamped envelopes with surveys – 1 response
- Do not go to a yellow bag system like Pleasantville – 1 response
- Ask haulers to put lids back on empty cans – 1 response
- No backdoor/front porch collection – 1 response
- Like the backdoor collection option – 1 response
- Increase recycling collection – 1 response
- Haulers consolidate alley pick-ups outside of their vehicles at the corner of the street, which is in my front yard. Because of this litter is always left behind – 1 response
- Parking by students causes haulers to miss some pick-ups – 1 response

SURVEY CONCLUSIONS

The following observations, based on the results of the residential solid waste management survey, are significant with regard to switching to a PAYT system:

- The majority of Titusville residents, 77 percent, opt to use a rigid container when they set their refuse at the curb, rather than a plastic bag. Ease of bringing the container to the curb and a rigid container’s ability to keep animals out were the primary reasons stated by survey respondents. The remaining residents, who use bags, indicated the ease of bringing the bag to

the curb and storing bags as the primary reasons for selecting a bag over a rigid container. They also like the convenience of not having to bring an empty container back to the house.

- Over 60 percent of survey respondents who use cans only set out one can per week. Approximately 70 percent of survey respondents using bags set out two or fewer bags of refuse per week. Based on initial review, it would appear that survey respondents that use bags set out more refuse than survey respondents who use rigid containers. However, most of the residential refuse bags set out by Titusville residents are kitchen versus heavy duty bags. In general, kitchen refuse bags can hold approximately 15 gallons of solid waste while most steel or plastic garbage cans hold approximately 33 gallons of solid waste. Thus, the majority of Titusville residents require 30 to 35 gallons of solid waste capacity per week regardless of their set out method.
- There does not appear to be a difference between responding recyclers and non-recyclers in the amount of refuse they each set out, regardless of whether they use cans or bags. It might be expected that since recycling removes materials from the trash, recyclers would set out less trash, but this was not found to be the case among survey respondents.
- Survey data indicated that most Titusville residents require bulky waste service once a year or less. Currently, Titusville's contract with Tri-County requires Tri-County to collect bulky waste on a weekly basis.
- The vast majority of survey respondents, 96 percent, indicated that they participate in the City's curbside recycling program. However, this reported participation rate may be higher than the actual participation rate because recyclers tend to respond to surveys at a higher rate than non-recyclers.
- Eighty-eight percent of the self-reported curbside recycling participants would continue to recycle if the collection frequency were cut back to every other week; however, only 68 percent of respondents who set out their recyclables every week would continue to participate. Respondents' concerns include having to store recyclables for a longer period, possible confusion over remembering the week, and not having a big enough bin.
- Only 10 percent of survey respondents reported that they had ever seen someone from outside of the City putting their garbage in someone else's garbage can or seen someone from outside of the City illegally dumping on City or private property.
- In general, survey respondents are happy with the current solid waste management system and the solid waste service provider. Some survey respondents are concerned about neighborhood aesthetics on collection weeks, and others more specifically would like the City to limit the amount of time that garbage cans are permitted to be at the curb. Some respondents expressed concern about litter left behind by the recycling hauler. Also, 11 respondents expressed an interest in assessing a higher garbage fee to residents who set out larger quantities of waste.

RECOMMENDATIONS

Based on this survey data, R. W. Beck recommends that the Titusville PAYT program should allow residents to have the option of using rigid containers or bags. Residents should be permitted to dispose of 35 gallons of refuse per week at no charge, which is equivalent to approximately one rigid garbage can or two 15-gallon garbage bags. If a resident required more weekly capacity than this, they would be required to purchase tags from the City and affix these tags to either the extra cans or bags for collection and billing.

Alternatively, Titusville's current solid waste service provider has expressed interest in the option of using carts and automated collection in Titusville. With this scenario, Titusville could implement a PAYT program in which residents could choose from two different cart capacities, with those residents who selected a larger capacity cart paying a higher fee. R. W. Beck recommends that Titusville offer residents the choice of a 48- or 64-gallon cart, to facilitate keeping all refuse in the cart. If residents periodically require additional capacity, they would purchase tags from the City. If residents consistently require additional capacity, they will be required to sign up for a larger or additional cart.

Although the vast majority of survey respondents indicated that they would continue to recycle if the collection frequency was reduced to every other week, that question was asked under the premise that the residents would have no limitations on the amount of refuse they could set out. Additionally, approximately 30 percent of the survey respondents who reported that they recycle every week indicated that they would not longer participate in the curbside recycling program if it were only offered every other week. In order to provide residents a convenient way to reduce their trash, and therefore keep their costs down by using the smallest capacity bag or container, R. W. Beck recommends that weekly curbside collection of recyclables be continued as a component of Titusville's PAYT program. To emphasize the connection between the new PAYT trash program and the ability of recycling to keep residents' costs down, the City will need to expand recycling promotion and education efforts, including an emphasis on which materials can be recycled. Several survey respondents were not aware of the ability to recycle various fiber (paper) products, a significant component of the residential waste stream.

With respect to bulky waste, R. W. Beck recommends that Titusville modify its next RFP to require the vendor to provide bulky waste collection quarterly rather than weekly. If during the contract period residents still indicate that this level of service is excessive, Titusville should evaluate reducing the collection schedule for bulky waste to an annual or on-call versus a quarterly schedule. Alternatively, Titusville may want to provide residents the option of setting out bulky waste at other times, if they purchased a tag from the City.

BID SPECIFICATIONS

Based on the results of the solid waste survey, R. W. Beck recommends that Titusville issue a Request for Proposal (RFP) that includes the following four bid options:

OPTION 1

- Contactor will provide weekly refuse collection with no limit on the number of containers or bags residents may set out.
- Contractor will provide the option of backdoor collection. Contractor may charge an additional fee for this service.

- Contractor will provide blue bag recycling with commingled containers collected every other week, and newspaper, magazines, cardboard and office paper collected during alternate weeks.
- Contractor will provide weekly yard waste collection from April through October. Residents must contain yard waste in kraft paper bags.
- Contractor will provide bulky waste collection at no additional charge to the residents four times a year.
- Contractor will provide bulky waste collection at an additional charge to the residents when residents schedule a collection. Residents will purchase labels from the City. Collection must be provided within one week of the service request.

_____ Cost per household per month for refuse, recycling, yard waste and bulky waste collection

_____ Cost per household per month for backdoor collection

_____ Cost per bulky waste tag

OPTION 2

- Contactor will provide weekly refuse collection.
- Residents will be limited to 35 gallons of refuse capacity per week.
- If residents require additional capacity, they will purchase tags from the City. One tag will be required for every 35-gallons of refuse.
- Contractor will provide the option of backdoor collection. Contractor may charge an additional fee for this service.
- Contractor will provide blue bag recycling with commingled containers collected every other week and newspaper, magazines, cardboard and office paper collected during alternate weeks.
- Contractor will provide weekly yard waste collection from April through October. Residents must contain yard waste in kraft paper bags.
- Contractor will provide bulky waste collection at no additional charge to the residents four times a year.
- Contractor will provide bulky waste collection at an additional charge to the residents when residents schedule a collection. Residents will purchase labels from the City. Collection must be provided within one week of the service request.

_____ Cost per household per month for refuse, recycling, yard waste and bulky waste collection

_____ Cost per refuse tag

_____ Cost per household per month for backdoor collection

_____ Cost per bulky waste tag

OPTION 3

- Contactor will provide weekly refuse collection.
- Residents will be limited to either a 48-gallon cart or 64-gallon cart per week.
- If residents periodically require additional refuse capacity, they will be required to purchase tags from the City for refuse that cannot be contained in the cart. One tag will be required for every additional 35-gallons of refuse.
- If residents consistently require additional refuse capacity, they will be required to convert to a 48-gallon cart if they are using a 64-gallon cart or request an additional cart.
- Conversely, if residents consistently require less weekly capacity, they will be permitted to convert to a 48-gallon cart if they are using a 64-gallon cart.
- Residents will be permitted to increase or decrease cart capacity once a year.
- Contractor shall provide, distribute and maintain all carts.
- Contractor will provide the option of backdoor collection. Contractor may charge an additional fee for this service.
- Contractor will provide blue bag recycling with commingled containers collected every other week and newspaper, magazines, cardboard and office paper collected during alternate weeks.
- Contractor will provide weekly yard waste collection from April through October. Residents must contain yard waste in kraft paper bags.
- Contractor will provide bulky waste collection at no additional charge to the residents four times a year.
- Contractor will provide bulky waste collection at an additional charge to the residents when residents schedule a collection. Residents will purchase labels from the City. Collection must be provided within one week of the service request.

_____ Cost per household per month for 48-gallons of refuse per week, recycling, yard waste and bulky waste collection

_____ Cost per household per month for 64-gallons of refuse per week, refuse, recycling, yard waste and bulky waste collection

_____ Cost per household per month for each additional 48-gallons of refuse per week

_____ Cost per household per month for each additional 64-gallons of refuse per week.

_____ Cost per refuse tag

_____ Cost per household per month for backdoor collection

_____ Cost per bulky waste tag

OPTION 4

- Contactor will provide weekly refuse collection.
- Residents will be limited to either a 48-gallon cart or 64-gallon cart per week.
- If residents periodically require additional refuse capacity, they will be required to purchase tags from the City for refuse that cannot be contained in the cart. One tag will be required for every additional 35-gallons of refuse.
- If residents consistently require additional refuse capacity, they will be required to convert to a 48-gallon cart if they are using a 64-gallon cart or request an additional cart.
- Conversely, if residents consistently require less weekly capacity, they will be permitted to convert to a 48-gallon cart if they are using a 64-gallon cart.
- Residents will be permitted to increase or decrease cart capacity once a year.
- The City shall provide, distribute and maintain all carts.
- Contractor will provide the option of backdoor collection. Contractor may charge an additional fee for this service.
- Contractor will provide blue bag recycling with commingled containers collected every other week and newspaper, magazines, cardboard and office paper collected during alternate weeks.
- Contractor will provide weekly yard waste collection from April through October. Residents must contain yard waste in kraft paper bags.
- Contractor will provide bulky waste collection at no additional charge to the residents four times a year.
- Contractor will provide bulky waste collection at an additional charge to the residents when residents schedule a collection. Residents will purchase labels from the City. Collection must be provided within one week of the service request.

_____ Cost per household per month for 48-gallons of refuse per week, recycling, yard waste and bulky waste collection

_____ Cost per household per month for 64-gallons of refuse per week, refuse, recycling, yard waste and bulky waste collection

_____ Cost per household per month for each additional 48-gallons of refuse per week

_____ Cost per household per month for each additional 64-gallons of refuse per week.

_____ Cost per refuse tag

_____ Cost per household per month for backdoor collection

_____ Cost per bulky waste tag

I hope you find this report helpful in the pursuit of a PAYT program in Titusville. If you have any questions, please contact me at 513-936-8955.

Sincerely,

Karen M. Luken
Senior Director

