Feasibility of Pursuing PAYT (Pay-As-You-Throw) Options for Mt. Lebanon

September 2014

Submitted to:
Mt. Lebanon Commission

Note: All attachments are posted on the Mt. Lebanon website at:
http://www.mtlebanon.org/index.aspx?nid=2190

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Executive Summary

On January 10, 2014 Mt. Lebanon Manager, Mr. Stephen Feller, assembled a seven-member PAYT Panel ("Panel") per the request of the Commission to evaluate the feasibility of pursuing PAYT options for Mt. Lebanon ("Municipality"). Mr. Feller provided an overview of the Panel's assignment, as well as a condensed mission statement and action plan outlined below. Mr. Feller also informed the Panel that Gannett Fleming, an engineering consulting company with vast experience in Pennsylvania municipal solid waste and recycling issues, would assist them. The Panel's report will follow the order of the Panel's mission.

One of the goals set forth by the Mt. Lebanon 2013 Comprehensive Plan was to promote sustainability that meets affordability throughout the community (page 68). One of the action items under that goal was to consider implementing the recommendations developed by Nestor Resources, in conjunction with the Environmental Sustainability Board and the Public Works Director for alternative waste and recycling service offerings that could compliment or improve the current system (Action 7, page 69). A bag-based PAYT program was identified as one of the possible options to consider for improving municipal solid waste diversion and increasing recycling.

User pay, also referred to as Pay-As-You-Throw (PAYT), is becoming an accepted method for financing residential waste management services and making householders more directly responsible for their waste generation and disposal habits. While the Panel pursued many different avenues of PAYT, this report focuses on the consensus of the Panel that a bag-based PAYT option would be the most feasible within Mt. Lebanon, if the Commission elects to pursue PAYT.

Panel's Mission: Advise the Commission and Staff on the feasibility of pursuing PAYT options for Mt. Lebanon.

- The action plan required the Panel to evaluate the:
  - Current Mt. Lebanon solid waste and recycling program.
  - Current program design and annual cost.
  - Annual recycling performance vs. annual MSW output.
  - Steps and actions that could increase recycling and decrease MSW.

- What is Pay-As-You-Throw (PAYT) and how is it different from our current municipal solid waste collection system?
  - What are the benefits and costs associated with PAYT?
  - What are the barriers to implementing a PAYT program?
  - Is PAYT a good fit for our community?

Panel's Observations: In August 2014, a survey was conducted to gauge sense of the Panel on aspects of PAYT that had been discussed. A summary of the survey is listed in Attachment 1. Some of the key observations are noted below.

- The majority of Panel members (6 out of 7) agree that PAYT is a powerful monetary incentive that could increase the amount of waste diverted from landfills, increasing recycling and reuse. However they are split when it comes to whether PAYT will result in sufficient fees to offset at least 50% of the current MSW pickup and disposal costs, and result in a savings to the Municipality.
- Six out of seven members either disagree or strongly disagree that PAYT should be implemented solely to promote sustainability and would not support the program if it would cost more than the current traditional program.
- When asked if PAYT would lead to illegal dumping four of the Panel members were uncertain and one thought that it might.
- When asked if implementing a PAYT program would require the Municipality to allocate funding for administration, education and outreach five thought that it would and two disagreed.
- Five members think that weekly recycling services should be added to maximize the benefits of PAYT, six feel that the Municipality should provide additional curbside yard waste and wood waste programs to maximize the benefits of PAYT, and four thought that larger uniform containers should be provided for recycling.

Findings and Implications for Mt. Lebanon: After much deliberation and research, the majority recommendation of the Panel has two possible options. The majority of the Panel agrees that the options set forth below will need to be vetted through the public deliberation process, but in summary PAYT could be a viable option within Mt. Lebanon.

Option 1 – Implement Bag PAYT under the existing contract using a tonnage-based pricing structure

The majority of the Panel feels that a bag-based PAYT system could be a viable option within Mt. Lebanon as long as certain core components of the municipal solid waste program are addressed. A majority of the Panel agrees that alternate waste disposal options need to be made available to residents in a convenient manner. Listed below are some of the potential expanded/additional core component considerations that will impact the potential savings from simply implementing a bag-based PAYT system.

Core Components

- Frequency of recycling (weekly vs. bi-weekly) and/or recycling capacity
- Public education and outreach before, during and after PAYT implementation
- Expanded yard waste collection
- Expanded wood waste collection
- Policy regarding bulk items
- Policy regarding non-bag conforming items
- Expanded administration and compliance enforcement
- Data recovery programs to monitor results of PAYT program
- Rental properties: Current tenant compliance and move-out considerations
- Policy regarding use of the fee for municipal solid waste and establishment of new accounting procedure to account for municipal solid waste costs

If a bag-based PAYT program were to be implemented, other future considerations would need to be examined on an on-going basis.

- Monitoring and ensuring that the proper tonnage is allocated to Mt. Lebanon
- Pricing trends within the South Hills region, as more communities are expanding their recycling programs
- Rate structure for the bag program
- Retail bag availability

Option 2 - Mt. Lebanon Administers Bid Process to Secure a Contract for Curbside Solid Waste Services following the Current SHACOG Contract Period

This option includes using the municipal bidding process to compare contract pricing for programs, each with the same core components of same "base bid" for comprehensive solid waste services. In the last 12-18 months of the current solid waste collection and disposal contract period expiring December 31, 2018, Mt. Lebanon could develop, release, and administer an MSW collection and disposal contract without SHACOG.

The majority of Panel members feel that while solid waste reduction is certainly a worthy goal to achieve, PAYT should not be put on a fast track under the current contract if core components are not addressed. This could result in unintended consequences that would reflect poorly on the Municipality.

Overall, PAYT will result in major changes for our residents as well as the Municipal staff. Time should be spent in developing an implementation plan, involving resident groups, educating the public on the guidelines and operations of the new program, and most importantly making sure that the program is designed to meet the needs of the community.

There are members of the Panel who disagree with portions of these recommendations, and they have substantive reasons for their position. But all members agree that it is paramount to implement a program that will be perceived as a benefit to the residents, not another fee or decrease in service. The program should be rolled out smoothly over an extended period of time without surprising and angering the residents.

Other Panel Considerations: There can be obstacles to implementation of PAYT programs. Perhaps the biggest overall problem is the perception among many residents that trash pick-up is "free" because it is funded out of the tax base and does not appear as separate cost. This was pointed out in the 2012 Nestor Resources PAYT Report prepared for the Municipality (Attachment 2). Residents also may (1) be resistant to change, (2) view the PAYT program as a new tax, (3) be unaware of the benefits of waste reduction and recycling, or (4) fundamentally believe that there are not benefits to waste reduction/recycling. PAYT will require the Commission to remove a portion of the tax revenue of municipal solid waste (MSW) disposal from the budget and impose a fee on residents for the remaining cost.

Other obstacles to be considered include: (1) the possibility that a PAYT program could lead to illegal dumping by people seeking to avoid the fee and (2) the varying impact on individual households of the change in the revenue structure to fund municipal solid waste.

To implement the program, administrative, enforcement, and education costs will need to be added to the operating budget. Other costs include bag or sticker printing and distribution, although that cost may be absorbed by the provider of the bags or stickers. Furthermore, agreements with retail outlets are needed to ensure availability of the bags or stickers.

Accounting procedures for a PAYT program need to be clearly identified. Any fees and tax revenue associated with MSW collection will be deposited into a separate fund. The Municipality will have to clearly define the program costs associated with such revenue. This should be done as a legislative action in order to ensure that public deliberation process would ensue over any changes to the funding structure of a PAYT program. Ultimately, if a PAYT program is implemented in Mt. Lebanon, the Panel agrees that the Commission should clearly identify a millage reduction for the two major revenue shifts: (1) separate fees collected for bags to cover a portion of the costs for municipal solid waste and (2) the decrease in tax revenue needed to pay for municipal solid waste due to a reduction in municipal solid waste.

There were multiple analyses prepared by the Panel and consultants during the PAYT evaluation process. As evidenced in Table 1, there would be a considerable savings to the Municipality if the only program implemented was a bag-based PAYT program. Table 1 assumes that 50% of the cost for MSW will be supported by tax revenue. The other 50% will be covered by the fees collected for bags. The majority of the Panel agrees with the recommendation of Gannett Fleming that in order to have a successful implementation of a PAYT program, a comprehensive review of all disposal mechanisms needs to be done in order to optimize waste reduction. Once considerations for increases in recycling frequency (conversion to weekly recycling - $318,000 in 2016) and the expansion of the wood waste collections (additional two pickups - $10,710 in 2015), a majority of the potential savings would be exhausted by the expanded services. However, there are other communities across the country that have successfully implemented PAYT programs with every-other-week recycling. Although the potential savings may need to be allocated to expanded services, the Panel agrees that a PAYT system with expanded services would align with the Comprehensive Plan objective to "promote sustainability that meets affordability throughout the community."

Base Information (2016 Pricing)			
% MSW Tonnage Reduction	10.0%	25.0%	40.0%
MSW Tons	13,751	$ 13,751	$ 13,751
% MSW Revenue Recovery via PAYT	50.0%	50.0%	50.0%

Annual MSW Cost - Before & After			
Cost - Unit Basis (Existing Program)	$ 1,692,000	$ 1,692,000	$ 1,692,000
New Cost - Tonnage Based	$ 1,642,901	$ 1,369,084	$ 1,095,267
Additional Recycling Pickup	$ -	$ 318,000	$ 318,000
Savings to Municipality (Existing - New Cost - Recycling)	**$ 49,099**	**$ 4,916**	**$ 278,733**

Net Average Annual Residential Savings (After Adjustments & Add Backs)			
Gross Annual Average Residential Savings/Household	$ 3.42	$ 0.34	$ 19.40
PAYT Vendor Bag Cost ($0.30*# Bags)	$ (19.80)	$ (16.50)	$ (13.20)
Loss of Tax Deductibility (Annual Bag Cost*.15)	$ (12.83)	$ (10.69)	$ (8.55)
Bulk Items (3%-5% avg of MSW)	$ -	$ -	$ -
No Old Trash Bags @$0.20	$ 13.20	$ 11.00	$ 8.80
Net Average Annual Residential Savings (Cost)	**$ (16.01)**	**$ (15.85)**	**$ 6.45**

Retail PAYT Bag Costs (MSW Cost Transfer + Bag Cost & Admin Fee)			
New Cost - MSW Tonnage Based	$ 1,642,901	$ 1,369,084	$ 1,095,267
% MSW Cost Transfer via PAYT	50.0%	50.0%	50.0%
Households	12,500	12,500	12,500
Bags Per Year	66.00	55.00	44.00
Per Bag Revenue from MSW Cost Transfer	$ 1.00	$ 1.00	$ 1.00
PAYT Vendor: Bag Cost & Admin Fee	$ 0.30	$ 0.30	$ 0.30
Per Bag Cost	$ 1.30	$ 1.30	$ 1.30
Annual Bag Cost per Household	**$ 85.52**	**$ 71.26**	**$ 57.01**

Dissenting Opinion: A dissenting Panel member agrees with Option 2 stated above. The member believes that it is in the best interest of the Municipality to wait until the expiration of the current contract. The Panel member believes that the Panel has gathered enough information to prove that PAYT is not right for Mt. Lebanon due to the increased costs or minimal savings, depending on the amount of waste reduction. The Panel member believes that PAYT ultimately provides limited benefit to the Municipality. The use of municipal resources to further vet this issue would be wasteful and the Municipality should not divert these valuable resources from more pressing matters. Six of seven panel members, regardless of their opinion of PAYT, agree that PAYT is not the most pressing issue in the community.

Panel Formation

Panel Background: In mid-November of 2013 then Commission President Matt Kluck, requested Manager Feller to appoint a study Panel to evaluate the Municipal Solid Waste (MSW) and Recycling bids submitted through the South Hills Area Council of Governments (SHACOG) bid process, and to recommend the most beneficial contract for the community. The Panel members included two representatives from the Environmental Sustainability Board Andrew Baram and Kathleen Hrabovsky and staff members Tom Kelly, Keith McGill and Andrew McCreery. Resident Bill Matthews was also appointed to the Panel. Members of the Panel were provided copies of the bid evaluation document prepared by Tom Kelley (Attachment 3). The Panel met on November 21st and discussed the options of the bids as submitted and the benefits and savings of PAYT. The Panel made a brief presentation to the Commission during the discussion session on November 25th and recommended the contract be awarded to the lowest bidder Republic Services, and that PAYT be evaluated during the first 18 months of the contract. If at the end of the study PAYT proves to be a beneficial and practical alternative then it will be pursued. The Commission recommended that the same Panel add an additional member from the community to assist in the evaluation of PAYT options. At their adjourned meeting on November 25th 2013 the Mt. Lebanon Commission awarded the solid waste and recycling contract to Republic Services at a five-year cost of $10,185,000 and reaffirmed their intention to continue to investigate PAYT options over the next 12-18 months. If the Panel decides to pursue PAYT from the current MSW per unit per household service to a per ton basis then Republic will make that change, or the Municipality could contract for additional recycling service (from every other week to weekly collection) if the Panel makes that recommendation.

On January 10th Manager Feller prepared a letter to the members of the original Panel and selected Mr. Edward Reese to fill the open position. The letter provided an overview of the Panel's assignment as well as a condensed mission statement and action plan. Mr. Feller also made note that Gannett Fleming (GF), an engineering consulting company with vast experience in Pennsylvania MSW and recycling issues, would assist the Panel. The Panel's mission is as follows:

Advise the Commission and Staff on the feasibility of pursuing PAYT options for Mt. Lebanon.

- The action plan required the Panel to evaluate the:
  - Current Mt. Lebanon solid waste and recycling program.
  - Current program design and annual cost.
  - Annual recycling performance vs. annual MSW output.
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- What is Pay-As-You-Throw (PAYT) and how is it different from our current municipal solid waste collection system?
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  - Is PAYT a good fit for our community?

To assist the Panel Mt. Lebanon entered into an agreement with Gannett Fleming (GF) for consulting services to support Mt. Lebanon in evaluating the feasibility of PAYT, with specific

emphasis on economic analysis and impacts. GF was provided with the following documents for review and analysis:

- 2013 SHACOG Garbage Bid Documents
- Cranberry Township PAYT Documents
- Prior PAYT Studies
- Contract Analysis (xls File)
- Evaluation of Bid for Municipal Services (10/12/13)
- PAYT Meeting Notes
- PAYT Questions-Bill Matthews
- Various PAYT Economic Analyses – Bill Matthews, Andrew McCreery
- Work Plan – Bill Matthews

Also members of the GF team participated in Panel meetings via conference call. GF also had access to PAYT information from other sources including reports that they had prepared for other Pennsylvania communities and information provided by Panel members. In summary, GF was contracted to review the existing curbside MSW contract and its tax based structure and perform economic analysis to determine if one or more PAYT structures would be economically feasible for Mt. Lebanon to implement with the next 18 months. The analysis included:

- Waste generation and waste diversion estimates for a baseline and several PAYT scenarios.
- Estimates of additional administrative and other program costs of two or three PAYT program scenarios.
- Total contract, administrative and other costs and or user fee revenues for two or three PAYT alternatives and under several performance scenarios for each alternative.
- Discussion regarding which costs to include in the PAYT fee and cost to continue to recover through tax revenue.

The report submitted by GF is Attachment 4 to this document.

Panel Meetings: Panel membership: The Panel members included two representatives from the Environmental Sustainability Board Andrew Baram and Kathleen Hrabovsky, staff members Tom Kelly, Keith McGill and Andrew McCreery, and resident Bill Matthews and Edward Reese. The Panel met on the dates listed below to discuss PAYT, hear presentations provided by Republic Allied Waste, the Municipality's waste and recycling hauler, and WasteZero, a privately held company working with communities to reduce the volume of MSW. Also, staff members visited with officials of Millcreek Township in Erie PA, and spoke with officials from Cranberry Township, Murrysville, McCandless Township and several other Western PA communities about their recycling and PAYT programs. Other Panel members spoke with various municipalities and vendors about the effectiveness and viability of PAYT programs. All Panel meetings were spirited and well attended. Debate was civil and at times very passionate.

The Panel kickoff meeting was held on February 3rd, 7:30 PM-9:30 PM. The group discussed the mission of the Panel-work plan development, and reviewed current program and past recycling performance from 2008 through year-end 2013. Also reviewed was the recently completed Student Recycling Survey completed by Mira Shenouda (Attachment 5). The Panel was provided with copies of the Power Point presentation used at the meeting and The Reason Foundations, Variable-Rate or "Pay-As-You Throw" Policy Study 295, by Lisa Skumatz (Attachment 6). The

entire Panel attended the meeting, as well as representatives from Gannett Fleming. The group agreed to develop a work program that would be reviewed at the next meeting. The meeting dates and topics are summarized below:

Date	Start	End	Topics
5-Feb-14	7:30 PM	9:45 PM	Kick Off Meeting
3-Mar-14	7:30 PM	9:30 PM	Reviewed Work Plan-Waste Stream Composition
17-Mar-14	7:30 PM	9:30 PM	Presentation by WasteZero-Break Even Analysis
21-Apr-14	7:30 PM	9:30 PM	Republic Services Presentation-PAYT Analysis Part 2
12-May-14	7:30 PM	9:30 PM	PAYT Financial Analysis
2-Jun-14	7:30 PM	9:30 PM	Economics of PAYT-WasteZero Proposal
30-Jun-14	7:30 PM	9:30 PM	Report Format
22-Jul-14	6:15 PM	8:00 PM	Review report draft-GF cost analysis draft
27-Aug-14	6:00 PM	8:00 PM	Survey-GF Memorandum-Report Progress
4-Sep-14	6:00 PM	8:00 PM	Review Report-Final Edits -Prepare for 9/9/14
9-Sep-14	6:30 PM	8:00 PM	Presentation to Commission

Evaluation of the Current MSW and Recycling Program

Overview of Program: In Mt. Lebanon, the Public Works Department is assigned with the responsibility of advising the Manager on Municipal Solid Waste (MSW) and recycling issues and concerns, and to oversee the operations of contractors providing residential MSW and recycling services. Public Works also collects recycling statistics for both residential and commercial service and submits annual reports to Allegheny County and PA DEP, and applies for grant funding offered through PA Act 101. MSW and recycling statutes and regulations are listed in Article VIII of the Municipal Waste of the Pennsylvania Code and Chapter XIV, Solid Waste of the Mt. Lebanon Code and Home Rule Charter. Under the 1988 Pennsylvania Recycling Act 101 Mt. Lebanon is what is referred to as a "Mandated" recycling community, which required the following:

- Mandated curbside recycling programs in communities with more than 5,000 people.
- Set up The Recycling Fund, which provides grants to local PA governments that need financial help to create and implement recycling programs in their communities.
- Landfill and waste-to-energy facilities (trash incinerators) to create recycling drop-off centers.
- Mandating that all commercial, institutional, and municipal establishments and sponsors of the community (such as fairs, concerts and organized sporting events) that are in mandatory recycling communities must recycle aluminum, high-grade office paper, corrugated paper and leaves.

Communities with over 5,000 residents are required to provide curbside pickup for at least three of the following materials:

- Clear glass containers
- Colored glass containers
- High-grade office paper
- Newsprint
- Corrugated paper
- Aluminum cans
- Steel and bi-metallic cans
- Plastics

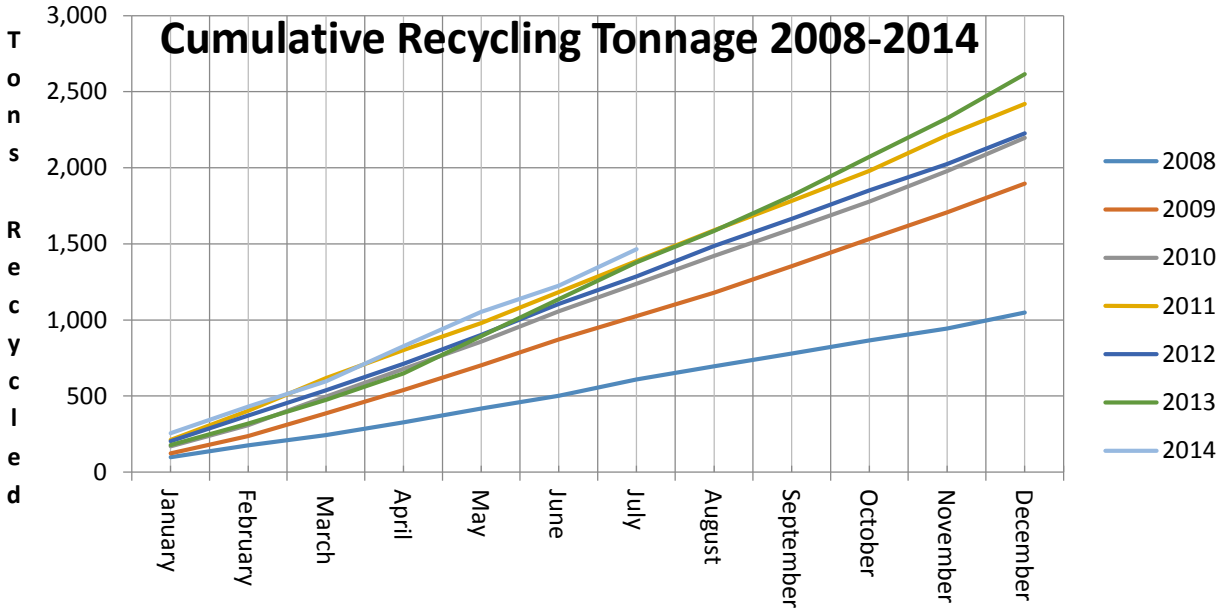
Mt. Lebanon's recycling program exceeds the requirements of Act 101 and is currently undertaking an effort with the Pennsylvania Resources Council to increase the rate of recycling among commercial and institutional entities. Since 2008, Mt. Lebanon has been providing single stream recycling. Single-stream (also known as "fully commingled" or "single-sort") recycling refers to a system in which all paper fibers, plastics, metals, and other containers are mixed in a collection truck, instead of being sorted by the depositor into separate commodities (newspaper, paperboard, corrugated fiberboard, plastic, glass, etc.) and handled separately throughout the collection process. All items listed above are picked up at the curbside. Since implementing single stream the annual recycling statistics have dramatically increased as evidenced by the below chart.

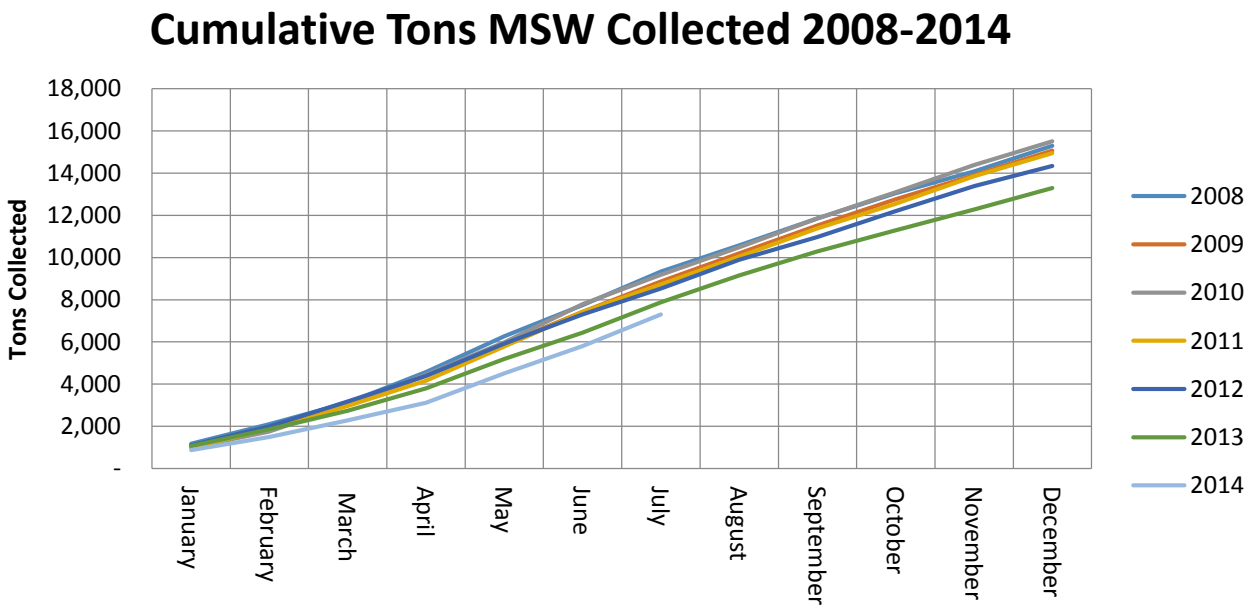
The benefits of single stream recycling are as follows:

- Reduced sorting effort by residents may mean more recyclables are placed at the curb and more residents may participate in recycling;
- Reduced collection costs because single-compartment trucks are cheaper to purchase and operate, collection can be automated, and collection routes can be serviced more efficiently;
- Greater fleet flexibility which allows single compartment vehicles to be used for refuse or recycling, providing greater fleet flexibility and reducing the number of reserve vehicles needed. To avoid confusing customers, a large sign or banner is sometimes used to distinguish when a refuse truck is being used for recycling.
- Changing to single stream provided an opportunity to update the collection and processing system and to add new materials to the list of recyclables accepted; and
- More paper grades are now collected, including junk mail, telephone books and mixed residential paper.

Baseline Materials Quantities from 2008 Before Single Stream and Additional Organic Recovery			**Baseline Materials Quantities (Average of 2012 and 2013**		**Baseline 2008 Compared to Baseline 2012-2013**	
Materials	**Tons**	**Percent of Total**	**Tons**	**Percent of Total**	**Tonnage Increase (Decrease) Over 2008**	**Percent Increase (Decrease) Over 2008**
MSW Disposed	15,293	75%	13,751	67%	(1,542)	-10%
Curbside Recycling	1,048	5%	2,421	12%	1,373	131%
Organics Recovery (Leaf waste, Christmas Trees, Drop-off)*	4,100	20%	4,253	21%	153	4%
Totals	**20,441**	**100%**	**20,425**	**100%**	**(16)**	**0%**

*Average from 2000-2008





In general, there has been a steady increase in rate of recycling since implementing single stream as well as a decline in the annual tonnage of MSW (see charts above). In addition to single stream recycling the Municipality also provides a complete leaf pickup program in the fall that generates over 4,000 tons of compost annually; curbside and drop off wood waste services account for another 200 tons of compost, and drop off programs for shredding, electronic waste and batteries which recycle another 80 tons of materials.

Tons By Disposal Stream									
	Recycle	**MSW**	**Abitibi**	**Woody Waste (Pickup)**	**Woody Waste (Drop Off)**	**Electronic Recycle**	**Leaf Pickup**	**Paper Shredding Drop Off**	**Total**
2013	2,616	13,162	377	25	35	43	3,460	38	19,755
	13.2%	**66.6%**	**1.9%**	**0.1%**	**0.2%**	**0.2%**	**17.5%**	**0.2%**	**100.0%**
2012	2,227	14,340	461	27	40	62	4,918	11	22,085
	10.1%	**64.9%**	**2.1%**	**0.1%**	**0.2%**	**0.3%**	**22.3%**	**0.0%**	**100.0%**
2011	2,420	14,941	651	19	15	14	4,075	35	22,170
	10.9%	**67.4%**	**2.9%**	**0.1%**	**0.1%**	**0.1%**	**18.4%**	**0.2%**	**100.0%**
2010	2,197	15,507	833	-	14	5	3,565	32	22,153
	9.9%	**70.0%**	**3.8%**	**0.0%**	**0.1%**	**0.0%**	**16.1%**	**0.1%**	**100.0%**
2009	1,897	15,068	670	-	15	4	3,183	-	20,837
	9.1%	**72.3%**	**3.2%**	**0.0%**	**0.1%**	**0.0%**	**15.3%**	**0.0%**	**100.0%**
2008	1,048	15,293	1,000	-	5	-	3,600	254	21,200
	4.9%	**72.1%**	**4.7%**	**0.0%**	**0.0%**	**0.0%**	**17.0%**	**1.2%**	**100.0%**

Current Republic Services Contract 2014-2018: Currently Mt. Lebanon is in the first year of a five year residential curbside MSW and recycling contract with Allied Republic Services. The annual cost of the first two years of the contract is less than the final annual cost of the 2013 contract with Waste Management. This is a budget certain contract meaning that we will know each year the exact amount that we need to budget for MSW and recycling services.

It is a traditional program where the garbage person manually lifts bags or cans of municipal solid waste or recycling onto the back or front end of a garbage or recycling truck. Mt. Lebanon had the option to participate in an automated program using large standardized carts for recycling pick up but the topography of the community and tree lined streets would make it very difficult to implement automation. Numerous communities in the Allegheny County area have purchased large recycling carts and have dramatically improved upon collection of recyclable material while reporting substantial reductions in the tonnage of municipal solid waste being collected within the community. Communities have reported that their rates of recycling have increased since implementing a large capacity standardized cart programs. The costs of the program are detailed below.

Republic Services
Price Per Unit Per Month
Weekly MSW Pickup

Year	Collection and Removal	Disposal	Total	Residential Units	Annual Cost
2014	$ 8.00	$ 2.79	$ 10.79	12,500	$ 1,618,500
2015	$ 8.15	$ 2.85	$ 11.00	12,500	$1,650,000
2016	$ 8.36	$ 2.92	$ 11.28	12,500	$ 1,692,000
2017	$ 8.60	$ 3.00	$ 11.60	12,500	$ 1,740,000
2018	$ 8.86	$ 3.09	$ 11.95	12,500	$ 1,792,500
					$ 8,493,000

Republic Services
Price Per Unit Per Month
Bi-Weekly Recycling Collection

Year	Cost/Unit	Residential Units	Annual Cost
2014	$ 2.15	12,500	$ 322,500
2015	$ 2.19	12,500	$ 328,500
2016	$ 2.25	12,500	$ 337,500
2017	$ 2.31	12,500	$ 346,500
2018	$ 2.38	12,500	$ 357,000
			$ 1,692,000

To assist the Commission in evaluating the bids received through the SHACOG bid process a detailed assessment was prepared by the Public Works Department (Attachment 3). PAYT was listed as one of the primary service options in the SHACOG Bid and both contractors agreed to provide service to any municipality interested in developing and implementing a PAYT Program. It was up to the municipality to design and implement the PAYT Program that met its own particular set of objectives. Any of the service models listed in the bid could have been used for PAYT MSW or recycling services. Under the current contract with Republic Allied, the municipality has up to eighteen months to decide if it wishes to proceed towards PAYT, design the method of PAYT to implement, and educate the public on the program.

Pay-As-You-Throw[1]

What is Pay-As-You-Throw?: Pay-As-You-Throw(PAYT) (also called trash metering, unit pricing, variable rate pricing, or user-pay) is a usage-pricing model for disposing of municipal solid waste. Users are charged a rate based on how much waste they present for collection to the municipality or local authority.

A variety of models exist depending on the region and municipality. Waste is measured by weight or size while units are identified using different types of bags, tags, containers or even RFID. Services for waste diversion are often provided as a part of PAYT systems.

There are three main types of PAYT programs:

1. Full-unit pricing: Users pay for all the garbage they want collected in advance by purchasing a tag, custom bag, or selected size container.

2. Partial-unit pricing: The local authority or municipality decides on a maximum number of bags or containers of garbage, with collection paid for taxes. Additional bags or containers are available for purchase should the user exceed the permitted amount

3. Variable-rate pricing: Users can choose to rent a container of varying sizes (some programs offer up to five), with the price corresponding to the amount of waste generated.

Communities across the U.S. are radically changing their approach to garbage collection and disposal. As of 2011, over 9,500 local governments have adopted Pay-As-You-Throw systems in various forms. Traditionally, the costs of garbage collection and disposal have been covered by residents' property taxes or through annual or monthly fixed fees charged to each household. With Pay-As-You-Throw systems, the fee charged for collection and disposal increases with the amount of garbage thrown away. This provides a financial incentive for residents to reduce waste, which can in turn lead to lower transportation and disposal costs for the municipality.

Properly structured PAYT programs have been proven to significantly increase recycling participation and have resulted in increased waste diversion rates for some municipalities in Pennsylvania and in other states. PAYT programs vary considerably from one program to the next. The municipality will need to consider the different types and structures of PAYT programs and then customize a PAYT model that is suited for the municipality and its residents. After examination of many different types of programs, the focus of the Panel has been on a PAYT program that includes a bag-based PAYT program in conjunction with additional disposal services.

Bag PAYT Program: In a bag PAYT program, residents will be required to purchase <u>every</u> bag that is used for curbside setout of residential waste. Bag PAYT programs offer a direct financial incentive to residents to reduce their waste bill by decreasing the volume of waste disposed (via increased recycling). Since residents will be responsible for purchasing bags, this reduces or eliminates billing administration (and associated costs) by the municipality. There will still be

[1] The information provided in this section is a summary of information obtained from various sources. Sources include, but are not limited to, Environmental Protection Agency, Department of Environmental Protection, State and Federal websites and other internet searches.

administration and coordination needed for procuring bags and for implementing a distribution system for PAYT bags. Residents should be able to buy bags at a number of local stores and at the Municipal Building. The municipality should work with local stores prior to implementing the program so that the stores will carry a supply of bags at the outset of the program. The amount paid to the stores for each bag sold varies widely among the PAYT programs. It is critical that Residents have recycling containers with adequate capacity to conveniently collect and store recyclables between pick-ups.

Setting the Bag Rate: The municipality must be very careful in setting the per-bag rate. In a bag PAYT program, bag purchases may be the municipality's only source of revenue generated by the waste collection program. It will be tough to accurately calculate how many bags will be sold, especially in the first year of the program. It is recommended that PAYT bag prices are set so that revenues from bag sales cover all program costs. The Panel recommends that if a bag PAYT program is implemented, the cost of MSW collection should be split 50-50 between real estate tax revenue and the bag fee.

Key Considerations for Pay-As-You-Throw programs

Implementation: One of the first tasks to be performed when implementing a Pay-As-You-Throw system is preparing and adopting an ordinance that requires residents to use the system and makes any other form of disposal illegal. Many communities will also need to pass an ordinance setting forth the rates to be charged for collection services. In some cases, a great deal of effort may need to go into educating elected officials on the need to adopt a pay-as-you throw system and related ordinances. Other implementation tasks include:

- **Educating the public:** For a Pay-As-You-Throw system to be successful, customers of the system must be made aware of collection schedules, rates, billing cycles, penalties for noncompliance and, if applicable, locations for purchasing bags or tags/stickers. There are numerous methods for conveying such information, including press releases, public service announcements on radio and TV, newsletters, direct mailings, flyers, utility bill inserts and public speaking engagements.
- **Buying and distributing containers/bags:** After deciding upon the type, size and design of containers to be used, vendors of cans, bags or tags/stickers should be contacted for price quotes and other pertinent information. If bags or tags/stickers are selected, arrangements probably will need to be made with local retailers for distribution, although in some cases, government offices can serve as convenient, acceptable outlets for the sale of bags or tags/stickers. If cans are selected, a place for storing excess cans and a system for either delivering the cans or having residents pick them up will be needed. Consideration for can repair and maintenance will also need to be considered.
- **Starting or expanding recycling programs.** For most people to take advantage of a Pay-As-You-Throw system, they must have access to recycling programs. In some communities, implementing Pay-As-You-Throw has generated so much demand for recycling that additional recycling coordinators have had to be hired, new equipment purchased and new recycling markets identified. New or enhanced programs for composting and bulky waste collection are also common in Pay-As-You-Throw communities.
- **Making the necessary administrative changes.** Training existing staff, hiring new employees, setting up a new billing system, developing a process for handling customer

questions and complaints-these are all examples of administrative changes that may be required by the switch to a Pay-As-You-Throw system. Making these changes should begin several months prior to the start of the new system. During the change-making process, the EPA recommends identifying all administrative functions to be performed once the Pay-As-You-Throw system is fully operational and, where necessary, hiring employees skilled in economics, public relations, financial management and enforcement.

- **Monitoring and evaluating the Pay-As-You-Throw system.** Monitoring the pay-as-you throw system should begin immediately. Participation and waste reduction rates along with cost and revenue data should be analyzed as soon as such data is available and on a monthly, quarterly or yearly basis thereafter. When evaluating the performance of the new system, communities should consider using customer surveys and analyzing the problems and issues raised in customers' phone calls and letters. Local governments may have to undertake numerous other implementation activities, depending on the type of collection system currently in place, the existing administrative arrangement of the solid waste department and the current level of residents' education about waste management issues. Examples of other activities frequently carried out by communities with Pay-As-You-Throw systems include:
    - establishing full cost accounting and enterprise funds;
    - developing complementary programs such as special recycling events (e.g., Christmas tree, phone book recycling) and household hazardous waste programs;
    - employing qualified personnel to enforce anti-litter and illegal dumping laws;
    - implementing special procedures for residents of multi-family and elderly households.

Selecting a System: Before choosing one of the systems identified above, the municipality should establish goals for the system based on the solid waste management needs of the community. Some common goals of communities that have Pay-As-You-Throw systems include encouraging waste minimization and recycling, raising sufficient revenue to cover solid waste costs, and subsidizing other waste related activities (e.g., anti-littering campaigns).

The Environmental Protection Agency (EPA) recommends communities use a six-step process when developing a Pay-As-You-Throw system and designing an associated rate structure. The six steps are as follows:

Step 1: Estimate the total amount of waste that will be generated once the Pay-As-You-Throw system is fully established.

This first step is important in light of the need to ensure that revenues received under the Pay-As-You-Throw system will cover the system's costs. To obtain this estimate:

a. Examine current waste hauling records to determine the amount of waste collected from residents during the most recently completed fiscal year.
b. Develop projections of total population and other important demographic patterns (e.g., low-income, elderly and multi-family households) to determine the demand for waste services over the coming one- to two-year period. Assistance in developing such projections can be obtained from private planning consultants, regional development centers or DEP.

c. Estimate the likely reduction in waste generation rates that will result from implementing the Pay-As-You-Throw system. In forming this estimate, it is important to take into consideration such factors as the availability of recycling and composting programs, the scope and intensity of public education efforts planned, and the reductions in rates achieved in similar communities with Pay-As-You-Throw systems in place.

Step 2: Determine the waste collection methods and other services to be offered under the Pay-As-You-Throw system.

Decide on the type and size of the containers (bags, cans, tags/stickers, combination) to be used as well as the ideal frequency of garbage collection for the community. Identify additional collection services that might need to be offered, such as picking up furniture, white goods and other bulky items. Consider whether or not recycling, composting and other waste reduction programs should be started or enhanced, and determine how the community can extend Pay-As-You-Throw pricing to residents of multi-family dwellings.

Step 3: Estimate both the start-up and ongoing costs of the proposed Pay-As-You-Throw system.

Some of the one-time costs that communities typically run into when establishing pay-as you-throw systems include developing and carrying out intensive media/public education campaigns, educating and training collection and administrative personnel, and purchasing new collection vehicles, containers and billing software. Ongoing costs are the salaries and benefits of sanitation workers, landfill tipping fees, replacement containers, fuel, vehicle maintenance, utilities and numerous other items. All of these costs should be estimated before proceeding with the remaining steps.

Step 4: Develop a preliminary Pay-As-You-Throw pricing rate structure.

Develop rough estimates of rates to be charged to cover the costs associated with each of the components identified in Step Two. Identify the rate discounts, if any, to be given to elderly and low-income residents. For simplicity, EPA suggests starting with rate structures already being used in communities with a similar mix of services. The preliminary rates can be adjusted as needed in the remaining steps.

Step 5: Estimate the revenues that the Pay-As-You-Throw system will generate once it is fully operational.

This step can be performed using the equation:

$R = (W \div V) \times P$ where, R = revenues the Pay-As-You-Throw program will generate;
W = waste generated when fully operational (estimated in Step One);
V = volume of bags or cans to be used (as determined in Step Two); and
P = price per bag or can (as established in Step Four).

It is relatively easy to estimate revenues for a Pay-As-You-Throw system offering a minimal number of services or container types and an uncomplicated rate structure. Estimating revenues for more complex systems, however, can be considerably more difficult.

Step 6: Establish a more realistic Pay-As-You-Throw pricing rate structure.

Modify, if necessary, the preliminary pricing rate structure set in Step Four, based on a comparison of the cost data generated in Step Three and the revenue figures calculated in Step Five. If the estimated costs and revenues are significantly different, a review and rearrangement of the program components identified in Step Two may need to occur.

Benefits of PAYT

Recycling is the Right Thing to Do: Landfill space continues to shrink and will become more expensive. Recycled materials represent usable manufactured materials that require less energy and manufacturing to reuse, resulting in a cleaner environment and a move efficient use of resources.

Increase Recycling and Reduce Municipal Solid Waste Disposal: Will increase the rate recycling and amount of materials recycled by using economic disincentives to encourage residents to evaluate their waste stream and consider the recyclability of items before they are placed at the curb. Some single stream communities have experienced 50% or greater increase in recycling and 20 to 40 percent decreases in MSW.

Cost Savings: Reductions in waste disposal costs and reduction tax revenue needed to cover such costs.

Cons of PAYT

Opposition to Change: Moving from a tax funded to a user fee based service will require an extensive outreach and education of residents. PAYT programs are often perceived as complicated and require residents to be aware of guidelines regulating disposing of waste. For the system to be successful residents will need to have a full and complete understanding of how the system works and their responsibilities.

Winners and Losers: Some groups (renters, large families and residents on fixed incomes) may find it difficult to reduce the amounts of MSW that they place at the curbside and/or pay for the bags or tags that will be required by the program.

Administration Costs: The new system will require adequate ongoing funding for supervision, billing, enforcement, outreach, and education. These costs may offset gains from savings.

Dumping and Collection of Unmarked MSW: If some residents choose not to pay for excess MSW bags, or tags, the MSW will still have to be collected and disposed. This will be a direct cost to the municipality. In some rental area this will be a constant problem.

Mt. Lebanon PAYT Studies

Nestor Resources, Inc. (2012): In 2012 Nestor Resources Inc., was awarded a DEP Technical Assistance Gant to determine the feasibility of introducing some type of PAYT mechanism into the residential collection program in Mt. Lebanon. Nestor Resources has a long history in the waste diversion industry and has helped other communities in Western Pennsylvania to implement PAYT programs and other measures to divert MSW and increase recycling.

The study evaluated the impact of shifting a system currently funded via the real estate tax base to one potentially reliant on direct user fee mechanisms, and whether PAYT requirements and enhanced recycling methods could be incorporated into the local SHACOG bid specifications. The completed report is attached, (Attachment 2) and a portion of the recommendations are as follows**:**

> **"**Nestor Resources finds that a full shift to a direct user fee and/or PAYT rate structure would be complicated for Mt. Lebanon and politically charged in the current economy. If the municipality had any inclination to experiment with such a system, Nestor Resources believes that it could be done on a small scale. The municipality could continue to participate in the SHACOG contract. It could continue to pay the hauler directly and generate revenue via the real estate tax base. However, as a PAYT trial, the community could require that all waste placed at the curb for collection must be contained in a bag sold by the municipality for a nominal fee (less than if the tax base were not covering the true costs). Conversely, the municipality could sell tags that could be affixed around the neck of any bag the resident opted to use. This eliminates the need for a complex billing system and it tests the residents' willingness to pay. It would require enforcement by the hauler to ensure that unofficial or untagged bags would not be collected. Whatever rate structure is implemented by Mt. Lebanon, the recycling program should provide standardized recycling containers. To optimize a single stream program these containers should be wheeled and with a storage capacity of no less than 65 gallons. Due to the physical/geographic constraints, Mt. Lebanon cannot require fully automated collection throughout the entire municipality; however, semi-automated service seems feasible. Therefore, the carts should be designed with universal service capabilities by full and semi-automated vehicles."

Mt. Lebanon High School Student Survey (2013): In the winter of 2013, Mira Shenouda, Mt. Lebanon Junior Commissioner undertook a survey of Mt. Lebanon High School students to gauge their opinions of what she termed as the "Carrot or Stick" approaches to increasing recycling and reducing MSW. A copy of the report is listed as Attachment 5 to this report. In summary:

> "The results of the survey are extremely robust and unequivocal with respect to students' feelings about PAYT. Students consistently ranked this option as least desirable, with 62.1% ranking it as least desirable (ranking of 4), and only 10.7% of all surveyed students ranking it as their number 1 choice. The survey results indicate that the majority of students prefer a carrot instead of a stick approach to recycling. In other words, policies that offer positive reinforcement for behavior modification as opposed to penalty for failure to modify behavior are more like to be well received, at least theoretically. Of course, if this intellectual preference were to manifest itself as actual behavior remains to be seen."

Gannett Fleming PAYT Evaluation (2014): To assist the Panel in completing its mission of "Advising the Commission and Staff on the feasibility of pursuing PAYT options for Mt. Lebanon." the engineering and consulting firm of Gannett Fleming (GF) was contracted to provide consultation services regarding Pay-As-You-Throw (PAYT) feasibility and implementation.

Consultation included background and case study information review, financial analysis of PAYT alternatives, meeting attendance, interviews with solid waste experts, and curbside program evaluation. Also, during the course of Panel meetings an unsolicited proposal from a firm offering a guaranteed PAYT program was received, and GF was asked to evaluate the proposal and offer comment to the Panel. GF is a leading expert in Municipal Solid Waste (MSW) and recycling and has prepared numerous waste management studies for the Pennsylvania Department of Environmental Protection (DEP), and Pennsylvania communities seeking to implement PAYT programs or improve their recycling programs. The key consultants were Steven Deasy, a solid waste and sustainability expert with 15 years of experience in solid waste, energy and sustainability programs, and Kathryn Malarich, a senior economist with over 25 years' experience in economic impact analysis, cost benefit analysis specializing in solid waste systems and economic analysis.

On August 14thGF issued a draft evaluation of PAYT in memorandum format. The memorandum was circulated to the members of the Panel for review and comment and was discussed at their August 27th meeting. At the meeting members suggested that language regarding illegal dumping be modified, and that the MSW and recycling averages used in the analytical charts be reduced to a two years average from the three year average that was listed in the Memorandum. The changes were incorporated in a revised Memorandum sent on August 28th. At the meeting on August 27th the majority of the members of the Panel were in agreement with the findings and recommendations made by GF. However, two of the seven members were critical of the report and did not support the recommendations.

The findings and recommendations are summarized below, and detailed in Attachment 4.

Findings:

1. Gannett Fleming agrees with many industry experts that bag PAYT programs can increase solid waste diversion from slightly to substantially more than other standard curbside collection programs.

2. Mt. Lebanon's baseline material quantities for MSW disposed, curbside recycling (non-organics), and organics recovery is broken down as follows:

Baseline Materials Quantities (Average of 2012 and 2013)		
Material	Tons	Percent of Total
MSW Disposed	13,751	67 %
Curbside Recycling	2,421	12 %
Organics Recovery (Leaf waste, Christmas Trees, Drop-Off	4,253	21 %
Total Materials	20,425	100%

3. Implementing a bag PAYT program in Mt. Lebanon will result in increased diversion of solid waste away from landfill disposal. Actual diversion rates will be impacted by curbside collection frequency, recyclables container capacity, and many other "core components."
4. Bag PAYT implementation may potentially increase undesirable disposal activities because residents and property owners have a financial incentive to reduce the amount of trash placed at the curbside.
5. The quoted solid waste disposal fee in the SHACOG contract is $27.00 per ton. Gate rate tip fees in western PA are typically $35 - $40, which is still low compared to central and eastern PA where disposal fees range from $55 to $75 per ton.
6. Within the current solid waste collection contract term, if Mt. Lebanon changes from a unit-based fee to per ton fee structure for MSW, the waste hauler would not have a financial incentive to reduce waste disposal or increase recycling.
7. Under historic disposal conditions (reported tonnages), a tonnage based fee structure would be more expensive than a unit fee structure based on the number of units.
8. Based on our financial analysis, a bag PAYT program with a unit-based fee structure more effectively aligns the incentives of Mt. Lebanon and the waste hauler to increase waste diversion.
9. Based on analysis of the current solid waste system performance and structure Mt. Lebanon is not in a preferred position to implement bag PAYT and optimize waste diversion through waste reduction, reuse, and recycling, and effectively manage illegal or undesirable disposal activities.
10. Without capacity, services, and incentives properly aligned to address a substantial peak in solid waste diversion there are real implications for PAYT implementation and public perception of PAYT in Mt. Lebanon.
11. WasteZero Proposal (Attachment7) -Based on Gannett Fleming's review of the Waste Zero proposal, there is not sufficient information provided by WasteZero to clearly understand the basis of its claims and proposed financial arrangements

Options: The following Options were discussed and are presented below in summary form. The full text is listed in Attachment 4.

Option 1 – Implement Bag PAYT under the Existing Contract Using a tonnage-based Pricing Structure: Under Option 1 Mt. Lebanon would move from a per-housing unit fee

to a tonnage based fee and bag PAYT program. Under this option it is intended that 50% of the MSW contract costs will be recovered through bag sales representing all of the quoted disposal fees and a portion of the quoted MSW collection fees. Remaining costs would continue to be funded through property tax revenues. Gannett Fleming does not recommend Option 1 due to financial risks and curbside program implementation and performance risks.

Option 2 – Implement Bag PAYT under the Existing Contract Using a Unit-based Pricing Structure: During the current solid waste collection and disposal contract that expires December 31, 2018, implement bag PAYT using a per unit pricing structure. Under the per unit pricing structure, the incentives for waste diversion are better aligned between the waste hauler and Mt. Lebanon when compared with tonnage based pricing. Aligned incentives lower risks and contribute to improved program implementation and service by the waste hauler. Although unit based pricing can improve hauler cooperation, effective delivery of bag PAYT in Mt. Lebanon is still at risk without adding at least some of the core components of sustainable solid waste program (noted above).

Option 3 – Mt. Lebanon Administers Bid Process to Secure a Contract for Curbside Solid Waste Services following the Current SHACOG Contract Period: Option 3 includes using the municipal bidding process to compare contract pricing for program, each with the same core components of same "base bid" for comprehensive solid waste services. In the last 12-18 months of the current solid waste collection and disposal contract period that expires December 31, 2018, Mt. Lebanon could develop, release, and administer an MSW collection and disposal contract without SHACOG.

Conclusions

The Panel and Gannett Fleming agree that bag PAYT programs have the potential to significantly increase waste diversion in Mt. Lebanon. It is the recommendation of Gannett Fleming that it would be in the best interest of Mt. Lebanon to wait until the expiration of the current contract (December 31, 2018) before implementing a bag PAYT program. If the Commission decides to move forward with a bag PAYT program, the majority of the Panel agrees that there would be no need to wait for the expiration of the contract to implement a bag PAYT system as long as core components are addressed.

On the cost side, Gannett Fleming's alternatives analysis along with the consideration of contractor incentives, indicate that there is a distinct risk that converting to tonnage based MSW pricing with a bag PAYT program. Our cost analysis (Attachment 8) shows this increased cost to be $133,445, over 8% higher than the cost using a per unit basis (2016 - $1,692,000). Without implementing a PAYT program, it would not be prudent to switch to a tonnage based pricing system.

If a PAYT program is implemented, adding core components to capture diverted materials would likely increase diversion rates and reduce tonnage based contract costs, but the additional components come with their own costs. On the curbside collection performance side, Gannett Fleming strongly cautions against implementing bag PAYT (GF Option 1) without expanding the current solid waste program's core components. The majority of the Panel agrees with this recommendation. These services and program features address the impacts expected from a rapid increase in waste diversion***. Core components like weekly recycling, larger recycling containers, and waste reduction and reuse programs assure adequate service and capacity is available to enable residents to conveniently and effectively increase waste diversion.*** These services and capacity improve the opportunities and convenience for residents to realize the PAYT financial incentives, and to do so sustainably without resorting to undesirable disposal practices.

As an example, our analysis shows weekly recycling can increase diversion during the SHACOG contract term, but it adds cost. Although negative public feedback regarding any community change is normal, PAYT implementation without adequate service and capacity can lead to serious challenges for Mt. Lebanon, particularly in the first year of the program. There is a potential for disgruntled residents, undesirable disposal practices, and unwanted problems with curbside collection program implementation. Potentially, negative feedback can be elevated during initial bag PAYT program implementation when compared with other solid waste programs. This occurs because residents have the added responsibility of buying bags, and diverting waste in a variety of ways to manage their trash bill. However, Mt. Lebanon's unique solid waste circumstances are different than typical communities converting to PAYT where buying bags only replaces paying a monthly or quarterly trash bill. In Mt. Lebanon, the act of buying bags and the act of paying for trash are both new activities because solid waste is included in property taxes.

Arguably, the unique circumstances of Mt. Lebanon elevate the importance of having expanded core components in place to streamline implementation. Visible impacts like multiple ad-hoc recycling containers at each residential unit, recyclables spilled on curbsides and in streets, and similar impacts affect public perception, participation, and diversion. A negative PAYT implementation experience in Mt. Lebanon now could deter the broader adoption of PAYT programs in western Pennsylvania communities in the future.

Lastly, the majority of the Panel feels that the current program could be modified to increase diversion, recycling and reuse without implementing PAYT. This would require an increase in recycling service from every other week to weekly pickup, increased curbside yard waste and wood waste pick up service and perhaps the purchase and distribution of larger standardized recycling containers. All of the increases in service would come at varying costs.

Next Step: If it is the desire of the Commission to further consider PAYT, the Panel agrees that the next step would be to begin public outreach. This process should include public comment and resident education forums regarding PAYT. The Panel recommends involving the Public Information Office and other stakeholders in developing a 6-month plan for outreach and comment. After the outreach has been conducted and the feedback has been received, the Commission should decide whether or not PAYT is appropriate for Mt. Lebanon by the July 1, 2015 deadline.