

**Town Of Arlington
Pay-As-You-Throw Study Committee
Final Report**

December 1, 2004

Arlington PAYT Study Committee Report

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Executive Summary

In March 2004, the Arlington Board Of Selectmen (the Board) formed the Pay As You Throw (PAYT) Study Committee. (Refer to Appendix A for membership.) The Board requested a report by December 2004. The Committee has met monthly and has received excellent staff support through a State DEP grant. The Board received both a progress report in early summer and an outline of the final report in October. This report follows the October outline.

The Committee has reviewed PAYT programs in other eastern Massachusetts communities. (Refer to Appendix B for program descriptions.) These programs have three goals:

- They seek to reduce the cost of solid waste collection and disposal by increasing recycling and reducing waste volume;
- They seek to cover the cost of solid waste collection and disposal in a more equitable way than is possible using the real estate tax; and
- They seek to free real estate tax revenue that had been used for the solid waste collection and disposal program to use for other municipal purposes.

The emphasis on these goals varies from community to community. In addition to these local community goals, there is a broader state and national goal: to reduce the pressure on the environment caused by incineration and landfills. The Committee made no judgment about the relative importance of these goals. Section 1 of the report discusses these and other background topics.

Arlington has a solid waste program that includes curbside solid waste, recycling, yard waste and appliance collection and disposal funded by our real estate tax. Based on the FY2006 contract, the cost per ton for collection and disposal of solid waste will be \$130, and for recyclable material \$89. The Committee's objective was to offer the Board alternative program options that would work in Arlington. Four such options are introduced in Section 2. They address the same goals as do the solid waste programs in other communities, but each option offers a different balance between these goals. The four options are discussed in Section 3 from both the Town's and the residents' perspective.

Section 4 compares the four options. Table 1 summarizes the strengths and shortcomings of each option. The incentive to reduce waste and recycle is greater in some options than in others. Based on the experience of other communities, Arlington can expect a solid waste volume reduction of 20% for the options that have effective incentives.

Section 5 presents an FY06 financial projection for each option. Table 2 summarizes these projections. The financial information is drawn from the detailed spreadsheet shown in Appendix C. The flat fee option was set to cover the full solid waste program cost. The PAYT options presented represent a range of possibilities from covering very little of the program cost, covering more than half the cost, to covering nearly all of the program costs.

There are many issues that would have to be addressed if the Town were to implement a PAYT program. These issues are discussed briefly in Section 6. One of these issues is illegal dumping. It is the experience of nearly all other communities known to the Committee that illegal dumping does not increase when a PAYT program is introduced although some enforcement is required in the beginning to get a few reluctant residents to follow the rules. Another issue is bulky waste, a term for any item of solid waste which will not fit in a bag and is neither a CRT nor an appliance. As part of a PAYT

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program the Town would have to establish a policy on bulky waste. Arlington could successfully adopt one or more of the approaches used elsewhere.

With some appreciation of the financial difficulties facing Arlington as we struggle to maintain services in the face of reduced State aid and Proposition 2 1/2 limitations, the Committee hopes that the information in this report will help the Board and the community better appreciate the PAYT potential.

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1. Background

In March 2004, the Arlington Board of Selectmen formed the PAYT Study Committee. The Committee included representatives from a variety of Committees and Departments in the Town, as well as a member appointed by each of the five Selectmen. Please refer to the attached list of members, Appendix A. The Committee was aided by staff support through a grant from the Massachusetts Department of Environmental Protection.

As part of its research, from March through September, the Committee gathered information on:

- Arlington's solid waste and recycling system, tonnage statistics and costs;
- The structure, costs and results of PAYT programs in other communities – both programs that are ongoing and ones that have ended;
- The approaches used by other PAYT programs to address potential problems such as illegal dumping, enforcement, and serving multi-family properties;
- The implementation options such as bags or stickers, collection of bulky items, distribution of bags or stickers and pricing considerations.

1.1. Mission of the PAYT Study Committee

The mission for the PAYT Study Committee was to:

- Identify questions and issues associated with the prospect of implementing a PAYT program in Arlington;
- Seek answers to these questions, through analysis of Arlington's current waste management systems and investigation into other communities experiences;
- Identify approaches to PAYT that would be feasible for implementation in Arlington, based on potential to reduce the tonnage of waste disposed; increase the tonnage of materials reused, composted and recycled; share costs of waste management equitably; and create a net financial benefit in terms of the town's cost of waste management.

1.2. General Description of PAYT Programs

The Arlington PAYT Study Committee has researched Pay-As-You-Throw (PAYT) programs that might be suitable for implementation in Arlington. The general principle behind all PAYT programs is that they include a distinct charge for solid waste that is based on volume or weight disposed by the resident. Residents may reduce their costs by reducing the amount of solid waste they generate. The Study Committee discussed several variations of PAYT including:

- "Basic Service" in which each household is allowed to put one bag or barrel (generally limited to 34- to 40-gallons) at the curb each week. Any household needing additional capacity would have to purchase special bags. The bags are specially colored and marked. The Town uses the revenue from bag sales to cover a small portion of the cost of solid waste disposal.
- Pay-As-You-Throw in which everyone using the municipal solid waste system has to put all solid waste into specially purchased solid waste bags. With this system, towns often offer one or two different sizes of bag; the most common system is to offer a 15-gallon and a 33- or 34-gallon bag. The bags are specially colored and marked. The Town uses the revenue from bag sales to cover most or all of the cost of solid waste disposal.
- Pay-As-You-Throw with full cost recovery in which everyone using the municipal solid waste system pays a flat fee to cover some of the fixed costs of the solid waste and recycling program and pays a fee per bag in addition to cover the rest of the costs.

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1.3. Recent History of PAYT Discussions in Arlington

The Town of Arlington has had discussions regarding Pay-As-You-Throw (PAYT) for the past two years. In the 2003 Annual Town Meeting, a warrant article proposing a PAYT program was discussed but did not pass. For Town Meeting in 2004, there were three solid waste-related warrant articles. These proposals were motivated both by the need to reduce the environmental impact of solid waste disposal and the need for more revenue to maintain other Town services. In January 2004, the Arlington Board of Selectmen commissioned the Arlington PAYT Study Committee. In order to allow time for the Committee to conduct its research the Board of Selectmen recommended and Town Meeting voted no action on the three articles.

1.4. Summary of Background Information Gathered by Study Group

1.4.1. Other PAYT Programs in Massachusetts

The Study Committee focused on PAYT programs in operation in communities with curbside solid waste and recycling collection. The committee researched towns that currently have PAYT programs and ones that no longer have PAYT programs. The towns that have or had PAYT programs as part of their curbside collection programs include: Natick, Gloucester, Worcester, Concord, Chelmsford, North Reading, Lexington, Boxford, Topsfield, Taunton, Brockton, Milton, and Holliston. The basic program information for each of the towns studied is included in Appendix B.

The committee focused closely on the experience in Lexington because their PAYT program was stopped. According to a presentation by the Lexington Public Works Director, the issue hinged on a conflict with a local by-law requiring the Town to offer residents “free disposal”. To avoid a similar problem, the Study Committee reviewed Arlington by-laws and found no similar conflicting law.

1.4.2. Arlington Solid Waste Costs

To develop a cost/benefit analysis of PAYT for Arlington, the Study Committee gathered data from the various Town departments on key variables including:

- Number of households served,
- Tons of solid waste and recyclables collected,
- Estimates of municipal building solid waste (schools and town buildings),
- Contract costs for collection and disposal, and
- Current tax levy and average property tax.

In addition, the Committee worked with a Technical Assistance provider funded by a grant from Massachusetts Department of Environmental Protection (DEP) to develop projections for the new costs, potential savings, and new revenues likely to result from implementation of a PAYT program. The financial planning model was reviewed with the committee and the results are summarized in Section 4. For detailed results from the financial planning model, see Appendix C.

Of significant note is that the Town signed a new contract for solid waste and recycling collection in spring 2004. The town requested that bidders give pricing with and without PAYT. This allowed the Committee to use firm costs for solid waste and recycling collection for both the PAYT and non-PAYT scenarios.

Currently, Arlington’s solid waste and recycling program costs are all paid out of property tax revenues. The costs of this program in FY06 will exceed \$3 million. If the Town were to implement

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one of the various types of PAYT programs, sale of the PAYT bags and possible flat fees (i.e., fees charged on a per-household basis) could offset some or all of these costs. The impact would be to reduce the demand on property taxes. If the demand for property tax revenues decreases, the Town will have the opportunity to decide how to respond – by reducing taxes or by increasing funding to other departments and programs. The normal budgeting and Town Meeting approval process will determine the final allocation, tax levy, and departmental appropriations.

1.4.3. Total Municipal Tonnage

As part of the financial planning model, the Committee looked at the average of the Town's tonnage over the past five years, which is 18,930 tons. The Town has figures provided by the Northeast Solid Waste Committee (NESWC) for tonnage delivered to the waste-to-energy facility in North Andover. The town's hauler does not differentiate between residentially generated and municipally generated solid waste. As a result, the portion of the tonnage used in the financial planning model for municipal waste is an estimate. The estimate may be high but was selected to conservatively estimate the revenues from the sale of bags to residents.

The Town currently has a sticker program for collection of CRTs and appliances. Residents buy stickers from the Town DPW at a cost of \$15 each and make an appointment to have the hauler collect their item on their regularly scheduled solid waste pickup day. The cost to the Town equals the fee charged to the residents, so there is no net revenue to the Town attributable to this program.

1.4.4. Existing Commercial PAYT

The Town of Arlington has a PAYT program in place for commercial entities. It has evolved such that all small businesses desiring solid waste collection by the Town need to purchase the specially designed orange bags at a cost of \$2.10 per bag or \$21.00 for a roll of ten bags. The bags are available from the Town or local retailers. Recyclables are collected at no cost to the commercial entity.

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2. Description of the Options Considered

As part of the study process, the committee projected the costs for the current program for Fiscal Year 2006 (FY06). This provides a point of comparison for the other options considered. For the sake of comparison, the Committee also considered a “Flat Fee” option. The Study Committee reviewed many different variations of PAYT programs and narrowed the options to three PAYT versions. Each of the options is outlined below. Table 1 summarizes the basic elements and the advantages and disadvantages of each option. Table 2 summarizes the financial results from each option. The detailed financial results are included in Appendix C.

2.1. Option 1: No change

In this scenario, the solid waste and recycling collection system continue to be funded by tax revenues. It is assumed in the financial planning model that solid waste and recycling system remains the same, the sticker program continues for appliances, and the number of households and tonnage of solid waste remains unchanged.

2.2. Option 2: Flat Fee for each household

Another option the Study Committee considered was a “flat fee” charged to each household to cover the entire cost of the solid waste and recycling program. This would generate additional revenues for the town and would be an additional cost to the residents separate from their taxes. As a fee, it would not be tax-deductible for residents (the value of which varies by income level, level of other deductions, etc. An annual fee large enough to fund the entire program cost would be less than \$200. If a resident in the 25% income tax bracket could deduct the additional \$200, it would save that resident \$50). It is assumed in the financial planning model that the solid waste and recycling system remains the same, the sticker program continues for appliances, and the number of households and tonnage of solid waste remain unchanged.

2.3. Option 3: PAYT Options

The Study Committee considered several different variations of PAYT. In each case, the financial planning model assumed that the solid waste and recycling collection program would remain essentially the same but the costs would change reflecting a change in tonnages. The experience of existing PAYT programs is that the solid waste tonnage drops by 20-30%, which generates an increase in recycling tonnage and increase in compost activity. The assumption used in the model for each variation is that the tonnage will drop by 20% with the introduction of PAYT. We also computed the results with 10% reduction and 30% reduction in order to show a range of possible outcomes. These calculations are included in Appendix C. The study committee reviewed the variations and determined that a 20% reduction in solid waste represented a reasonable indication of the financial results and was conservative relative to other communities’ experiences with PAYT.

2.3.1. Option 3a: PAYT with “Basic Service” or one bag or barrel funded by tax base

In this variation of PAYT, each household is allowed to put at the curb one bag of solid waste or one barrel of equivalent size (33-gallon) each week. The cost for collection of the first bag or barrel is included in the tax base. Households that need additional disposal capacity are required to purchase the specially designated bags and set them out beside their barrel or in another barrel. (The special bags can be put inside solid waste barrels in order to avoid problems with animals or birds.) The driver is instructed to collect only one bag or empty only one barrel per household without the special

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bags. At multi-family dwellings, the residents are instructed to mark their barrels to indicate to which units they belong. Recycling is collected at no added cost on a bi-weekly basis.

2.3.2. Option 3b: PAYT with no “free” bag or barrel

In this variation of PAYT, each household pays for every bag needed each week. It is likely that two different bag sizes would be offered – one 33-gallon and a 15-gallon available at a lower price. The solid waste truck driver only collects solid waste that is in the specially designated bags. (The special bags can be put inside solid waste barrels in order to avoid problems with animals or birds.) Recycling is collected at no added cost on a bi-weekly basis.

2.3.3. Option 3c: PAYT with an annual fee plus a lower bag fee, covering 100% of recycling and solid waste budget

In this variation of PAYT, each household pays a fee, billed quarterly or semi-annually, to cover the fixed costs of the solid waste and recycling program. In addition, each household would purchase the specially designated bags at a price set to cover the disposal costs. (The special bags can be put inside solid waste barrels in order to avoid problems with animals or birds.) Recycling is collected at no added cost on a bi-weekly basis.

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3. General Projected Results

The results from each of the options considered are summarized below from both the perspective of the impact on the Town and its budget and operations and also from the perspective of the resident and the cost to the individual household.

3.1. Town Perspective

From the Town perspective, each of these options impacts the budget differently due to the different incentives created and the dependence on the real estate tax. This section outlines the expected changes in solid waste, recyclables, compost and bulky waste generation. The changes attributed to each option are outlined in terms of cost reductions, new revenues, new costs, staffing and the need for new regulations.

3.1.1. Changes in Solid Waste, Recyclables, Compost

In the No Change and Flat Fee Options, there is no incentive to reduce waste generation. In fact, it can be argued that there may be no incentive to recycle because residents are paying for disposal services and want to “get their money’s worth”.

In all the PAYT options, the financial cost of buying solid waste bags provides an incentive to minimize the number of bags needed. The results from existing programs in other communities show that residents recycle more, compost more, avoid bringing home waste, and find ways to reduce the amount of waste they generate. There are also indications that some residents find alternatives such as bringing bags of solid waste to work or using a solid waste compactor to minimize their volume of solid waste.

According to U.S. Environmental Protection Agency research, the research nationwide indicates a predictable decrease in annual tonnage ranging from 14% to 27%. In the examples of PAYT reviewed by the Committee (Appendix B), which includes mostly programs in Massachusetts with curbside solid waste and recycling collection, the research shows comparable or greater percent tonnage reduction.

Research done for Massachusetts Department of Environmental Protection by the Tellus Institute indicates that communities can predict that 1/3 of the tonnage reduction will show up as additional tonnage in the recycling stream, 1/3 as additional composted material, and 1/3 source-reduced or avoided in various ways. This pattern has been confirmed in the recent experience of several Massachusetts communities with curbside collection PAYT programs.

3.1.2. Bulky Waste

If a PAYT option is implemented, the Town will need to establish a policy for bulky waste. The impact on bulky waste depends on the program details, such as whether a fee is charged for collection at the curb. In PAYT communities where residents must pay to dispose of bulky items (couches, grills, lawn furniture), they are more likely to give it away, request that a retailer remove it when delivering a new item, or pay someone else to remove it. If the town allows residents to put out bulky items at no charge, it would be expected that there would be no reduction in the amount of bulky waste.

3.1.3. Cost Changes

In the No Change and the Flat Fee options, there are no cost reductions predicted.

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In the PAYT options, costs for disposal, collection of solid waste, and collection of recyclables can change. The experience of other PAYT towns indicates that PAYT reduces the solid waste tonnage significantly. Given that Arlington pays by the ton for disposal of its solid waste (starting at the end of the present contract in FY06), PAYT will result in reduced cost for disposal. If the tonnage for the year drops by 20%, the Town will save \$242,307 in the first year at the disposal cost of \$64/ton. According to pricing in the recent contract, the collection of solid waste will also cost less because it is assumed that PAYT will result in reduced tonnage of solid waste. The savings in the solid waste collection contract are \$84,350 per year. The contract also specifies an increase in the cost of collection of recyclables of \$136,000. The net impact of PAYT on the Waste Management contract for collection is a cost increase of \$51,650 in the first year which partially offsets the disposal cost savings of \$242,307 mentioned above.

3.1.4. New Revenues

The No Change option projects no new revenues.

The Flat Fee option projects new revenue based on the fee charged per household. Some towns have found that about 5% of the residents “opt out” of the municipal solid waste system by using private haulers or by being able to prove that they have legal access to a business dumpster. In addition, about 5% of residents delay payment until the town liens their property and then make the payment, which delays payment into a future year. The financial planning model uses the simplifying assumption that those who opt out will not have a significant net impact on the “Appropriation Required” because they will reduce both the revenues to the Town and the costs to the Town for disposal. Those who delay payment are expected to pay in a future year. Prior to implementing any flat fee option, more detailed projections would be required.

In the PAYT options, the amount of new revenues will vary depending on the number of bags sold and whether residents have to pay a flat fee in addition. In a PAYT program with “basic service”, residents are likely to purchase an average of 5-10 bags per year because they will have the first bag or barrel picked up without needing the special bag. In a PAYT program in which residents pay for every bag, residents normally use between one and two bags per household per week. Given the town’s historical tonnage, a 20% reduction in tonnage after the start of PAYT, and the average weight of bags of solid waste in other PAYT towns (25 pounds), the model projects an average of 45 bags per year per household. The revenue projections vary significantly between these two options.

The revenue projections vary slightly with the degree to which residents recycle. To some extent, if residents recycle more than expected, there are fewer bags sold and less new revenue. However, the extra recycling results in a reduction in the tons disposed, which reduces the cost of disposal. If the price of the bag reflects the cost for approximately 25 pounds of solid waste (based on the tipping fee plus the cost of the bag), then the variations in revenue are offset by comparable variations in the cost of disposal.

3.1.5. New Costs – Start-up costs and ongoing costs

There would be no new costs associated with the No Change option.

With either the Flat Fee or one of the PAYT options, some new costs can be anticipated – both start-up or one-time costs and ongoing costs.

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For the Flat Fee option, start-up costs would include public awareness efforts, software changes, and staff time required to develop a mailing system to send bills to each household using the municipal solid waste system. In the case of multi-family homes with more than 3-units, the bills would be sent to the landlord. Ongoing costs would be the annual printing, mailing, list maintenance costs, and the staff time to deal with exceptions and address changes but these are similar to the current program of billing for water and sewer. The committee researched the potential new costs associated with a Flat Fee, discussed them with the Treasurer's office, and determined that the additional costs would be negligible.

For the PAYT options, start-up costs would include publicity and the same costs as listed above if there were a flat fee as part of the PAYT program. The start-up costs are primarily for public awareness efforts and could possibly be offset by grant funds from the Massachusetts Department of Environmental Protection. (A cost has been included in the model for publicity but no assumption was included about grant funds.)

Ongoing costs associated with a PAYT program would include the costs of the bags, accounting for the revenue from sale of the bags, a margin for retailers (if needed) and enforcement.

3.1.6. Staffing Impacts

It is anticipated that the DPW would implement PAYT with the addition of one full-time equivalent staff person. The additional costs for this are included in the financial planning model.

3.1.7. New Regulations

The Town may need to implement new regulations regarding illegal dumping. Some towns have instituted a policy that makes illegal dumping a misdemeanor, which can be handled through a non-criminal disposition, such as through the Housing Courts.

3.2. Residents' Perspective

3.2.1. New Costs

The No Change option would have no direct new cost impact on residents.

The Flat Fee option would have a direct impact on residents and would have the same effect on all residents regardless of the amount of solid waste they generate.

The PAYT options would have a direct but variable impact on residents. The amount paid by a resident would depend on the type of PAYT program. In addition, the amount paid by a resident would depend on how much solid waste they generate and how much they recycle and compost. In a program with Basic Service, residents buying 5-10 bags per year would pay a minimal amount. In a PAYT program in which residents are required to put all their solid waste in special bags, residents needing 2 or more bags per week could pay over \$100 (depending on the final price per bag and exact number of bags).

3.2.2. Potential for Cost Reduction

The No Change Option has no significant potential for cost reductions except to the extent that the Town does more outreach and public awareness to encourage recycling.

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The Flat Fee option likewise has no significant potential for cost reductions and has the potential, instead, to cost the town more if residents increase their solid waste generation levels or reduce their recycling rates because they are “already paying for it” in the flat fee.

Based on the Committee’s research, (see the PAYT program summaries in Appendix B) it appears that the PAYT options have significant and proven potential to reduce the cost of disposal. With the new disposal contract starting in FY06, over the next five years, Arlington will be paying \$64, \$68, \$69.50, \$71.50 and then \$73 per ton. Each ton that is recycled, composted, reused or avoided instead of thrown out as solid waste saves the town the disposal cost per ton. Based on the FY2006 contract, the cost per ton for collection and disposal of solid waste will be \$130, and for recyclable material \$89. The basic projection used in the financial planning model is that the tonnage will drop by 20%. We looked at a range of possible results, from 10% reduction to 30% reduction in solid waste to assess the significance of this variable and determined that it did not significantly affect the outcome. The detailed results are included in Appendix C.

3.2.3. Changes to Service

There would be no change to services provided as part of the curbside solid waste collection system under the No Change option or under the Flat Fee option.

Under the PAYT options, the solid waste collection service would be unchanged except for the requirement to use the specially designated bags. The recycling collection would be unchanged. With any of the PAYT options, it is possible the Town will introduce a fee for bulky items similar to the fee for appliances.

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4. Overview of Options

Table 1 presents the options considered, several key variables for each option and financial and the non-financial comparisons for each one. Non-financial factors considered include equity, environmental considerations (primarily in terms of the amount of incentive to reduce or recycle inherent in each option), and the need for change required.

4.1. Equity Considerations

The No Change Option and the Flat Fee Option are considered to be less equitable than the PAYT options because the cost to the resident does not reflect the resident's use of the municipal solid waste system. The primary advantage of a PAYT system is that residents pay for the level of solid waste that they generate.

4.2. Environmental Considerations

PAYT creates a financial incentive to recycle and compost which has the effect of decreasing the solid waste generated and thereby reduces resources consumed and conserves capacity at waste management facilities.

4.3. Comparative Advantages of Different Options

The primary advantage of Option 1, the "No Change" scenario, is that it is easy because there is no change from the current municipal solid waste collection system.

The primary advantage of Option 2, the "Flat Fee" scenario, is that it is easy to implement because there is no change from the current municipal solid waste collection system.

Option 3a, PAYT with Basic Service, is more equitable than a flat fee while requiring minimal change in behavior for those with a small amount of solid waste. The financial benefit to the Town is minimal. Likewise, the cost to most residents is minimal.

Option 3b, PAYT, is the most equitable of the options considered. Residents generating less solid waste pay less. The revenue from bag fees usually covers the cost of solid waste disposal and property tax revenue covers the rest of the costs.

Option 3c, PAYT with a Flat Fee, represents a combination of advantages and disadvantages. It has the primary advantages of Option 3b, i.e., equity. There is an incentive to reduce and recycle because residents pay for every bag of solid waste, although some residents may feel a diminished incentive due to the requirement to pay the annual fee. This option offers new revenue for the town and it is more equitable than a flat fee alone or a tax funded program. It has a lower cost per bag, which may help ease the cost to those needing a large number of bags.

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Table 1. Overview of Options

	Option 1 No Change	Option 2 Flat Fee¹	Option 3a – PAYT w/ Basic Service²	Option 3b – PAYT³	Option 3c – PAYT + Flat Fee⁴
Flat Fee	\$0	\$164	\$0	\$0	\$75
Cost per Bag	NA	NA	\$2.00	\$2.00	\$1.00
Annual Cost per Household ⁵					
Average	\$0	\$164	\$10	\$90	\$45
High	\$0	\$164	\$104	\$208	\$179
Appropriation Required	\$3.2 million	\$0	\$2.9 million	\$1.4 million	\$0.9 million
Advantages	No change	Easy implementation; New revenue	Small incentive to reduce, recycle; Minimal change; Reasonably equitable; Limited new revenue	Greatest incentive to reduce, recycle; Most equitable; New revenue;	Moderate incentive to reduce, recycle; Reasonably equitable; New revenue
Disadvantages	No incentive to reduce or recycle	New cost for residents ⁶ ; No incentive to reduce	New cost for residents ⁶ ; Change is required for residents	New cost for residents ⁶ ; Change is required for residents	New cost for residents ⁶ ; Change is required for residents

¹ In this option, the Flat Fee was set to cover the full cost of solid waste collection, disposal and recycling collection.

² In this option, the price of large bags is assumed to be \$2.00 per bag but residents can put one bag or barrel out each week at no cost.

³ In this option, the price of large bags is assumed to be \$2.00 per bag but residents are required to use a special bag for all solid waste.

⁴ In this option, the price of large bags is assumed to be \$1.00 per bag and each household pays a flat fee of \$75 per year.

⁵ The average cost per household is derived by dividing the total revenues from bag sales and flat fees over the total number of households. The “high” cost per household is derived by assuming a total of 2 bags per week needed. In the case with Basic Service, it is assumed that every household will buy one package of five bags.

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		or recycle			
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⁶ Assuming real estate taxes formerly used for the solid waste and recycling program are diverted to other Town programs.

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5. Comparison of Financial Projections

In general, each option that has a financial benefit to the town has a financial cost to the residents. Both perspectives are summarized below and in Table 2. The bottom lines are the “Total Appropriation Required” which is a sum of all the financial changes, and the “Average cost per household”, which is a sum of the total amounts paid by residents for flat fees and bag fees averaged over the total number of households. The average cost per household reflects only the costs over and above the costs included in the property taxes.

5.1. Financial Impact of Each Option on Town and Residents

Option 1, the No Change option, continues the current practice of paying for the solid waste and recycling services out of the property tax revenues. For FY06, the current level of service is projected to cost the Town \$3.2 million. The average cost per household would be included in the property taxes.

For Option 2, the Flat Fee option, the fee was set to cover 100% of the costs of solid waste and recycling, or \$164 per year per household. If additional costs were to be covered (such as for household hazardous waste, electronics, etc), the flat fee would need to be set higher. With the fee set at this level, the net financial impact on the Town is essentially \$0 for recycling and solid waste.

Option 3a is a PAYT option with “basic service” which is defined as allowing each household to put out one bag or barrel per week at no added cost. Anytime a household needs more than the one bag or barrel, they have to buy a specially designated bag at \$2.00 per bag. The bag fee covers the cost of disposal for those extra bags but tax revenue would have to cover most of the costs of solid waste collection and disposal and recycling collection. The net financial impact on the Town is a cost of \$2.9 million for recycling and solid waste. The average cost per household (outside of property taxes) is projected at \$10 per year, assuming that every household buys at least one package of five bags. This option also has a variable impact on residents depending on their level of solid waste generation, recycling and composting. Smaller households and those with avid recyclers would not need additional bags. Households needing one bag per week in addition to the first bag or barrel would spend \$104 per year.

Option 3b is a PAYT option with residents paying \$2 for every bag. This bag fee covers the cost of disposal and some of the fixed costs of collection and recycling but not all of those costs. Tax revenue would have to cover the cost of disposal of municipally generated solid waste plus the cost of collection for recycling and solid waste. The net financial impact on the Town is a cost of \$1.4 million for recycling and solid waste. The average cost per household (outside of property taxes) is projected at \$90 per year. This option has a variable impact on residents depending on their level of solid waste generation, recycling and composting. With this type of program, it is possible to offer two sizes of bag. For smaller families and avid recyclers, this would be advantageous. A 15-gallon bag could be priced at \$1.00 and the 33- or 35-gallon size at \$2.00. Households needing one large bag every other week or one small bag every week would spend \$52 per year or less. Households needing 2 bags per week would spend \$208 per year. The experience of other PAYT programs suggests that residents put considerably more solid waste into each bag than they would if they were not paying for each solid waste bag. In the comparable PAYT programs in Massachusetts, residents put an average of 25-35 pounds of solid waste into each PAYT bag. Given the tonnage of solid waste generated in Arlington, and an average of 25 pounds per bag, the average household would need 45 bags per year. The financial planning model uses the assumption that the revenue from the large bags will be proportional

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to the revenue from small bags (half the weight of solid waste at half the cost per bag) and the revenue will not be significantly different with two bag sizes offered.

Option 3c is a PAYT option with a Flat Fee and a lower price per bag. This Option includes bags selling for \$1 each and a flat fee of \$75 per household per year. The bag fee covers most of the cost of disposal and the flat fee covers most of the costs of collection but not all. The option has a net financial cost to the Town of \$0.9 million. The average household would need 45 bags per year at a cost of \$45 plus the \$75 annual fee for a total cost of \$120. Like Option 3b, this option also has a variable impact on residents depending on their level of solid waste generation, recycling and composting. Many smaller households and those with avid recyclers would need fewer bags. A household needing two bags per week would spend \$104 plus the \$75 annual fee for a total of \$179 per year.

Table 2. Summary of Financial Implications of Each Option
(See Appendix C for details)

	Option 1 No Change	Option 2 Flat Fee	Option 3a - PAYT w/ Basic Service	Option 3b - PAYT	Option 3C - PAYT + Flat Fee
Assumptions					
Annual Fee	\$0	\$164	\$0	\$0	\$75
Bag Price	NA	NA	\$2.00	\$2.00	\$1.00
Solid Waste Tons ⁷	18,930	18,930	15,144	15,144	15,144
Recycling Tons ⁸	4,894	4,894	6,156	6,156	6,156
Bags Needed ⁹ per household	0	0	5	45	45
Costs					
Collection ¹⁰	\$1,962,250	\$1,962,250	\$2,013,900	\$2,013,900	\$2,013,900
Disposal ¹¹	1,211,533	1,211,533	969,226	969,226	969,226
Implementation Costs ¹²	0	0	60,000	60,000	60,000
Bag Costs ¹³	0	0	16,005	143,341	143,341
Subtotal Costs	\$3,173,783	\$3,173,783	\$3,059,131	\$3,186,467	\$3,186,467
Revenues					
Bag Revenues	\$0	\$0	\$194,000	\$1,737,466	\$868,733
Flat Fee Revenues	0	3,173,783	0	0	1,455,000
Subtotal Revenues	\$0	\$3,173,783	\$194,000	\$1,737,466	\$2,323,733
Required Appropriation	\$3,173,783	\$0	\$2,865,131	\$1,449,002	\$862,734
Average Cost per Household (outside of property taxes)	\$0	\$164	\$10	\$90	\$120

⁷ The solid waste tonnage is assumed to be reduced by 20% in PAYT options, a conservative estimate based on experience of other PAYT programs.

⁸ The tonnage of recyclables increases by 1/3 of the number of tons reduced from solid waste; the rest is assumed to be composted or source reduced.

⁹ The number of bags needed for the “average” household is based on dividing the town’s solid waste tonnage into 30lb units. Some households will need more and other fewer bags per year than the “average”.

¹⁰ Cost in FY06 for solid waste collection, recycling collection and yard waste collection. For PAYT, the cost of collecting solid waste is lower but the recycling collection is higher, resulting in a higher total cost of collection, according to the current contract with Waste Management Inc.

¹¹ Cost in FY06 for disposal of solid waste at \$64/ton as set in the new contract with Wheelabrator North Andover.

¹² Implementation for PAYT includes publicity, staffing for enforcement and outreach, and program oversight.

¹³ Bags cost \$0.165-0.17 each when the cost of distribution to retailers is included.

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6. Logistical Considerations if a PAYT program were to be implemented

Most of these items require a decision that is best made after deciding to go ahead with a PAYT program. A brief review of the considerations is provided for each item.

6.1. Payment Mechanism - Bags, Stickers, or a Combination?

There are several different approaches to getting payment from residents in a PAYT program. Options that were reviewed by the Study Committee include stickers that would be put on regular solid waste bags, specially designated solid waste bags of one or two sizes, and/or a barrel sticker to indicate a subscription fee had been paid for a 6- or 12-month period. Although several Massachusetts area PAYT program started using stickers, several are now in the process of switching to bags. Waste haulers generally prefer the bags because it is simpler to ensure that the drivers are collecting only the correct bags and the drivers don't have to make sure each residence only has one "free" barrel or bag. With stickers there are often disagreements over whether stickers fell off in the rain or snow and whether drivers should be asked to go back for a "missed pick up" if someone claims their sticker fell off. This study assumes bags for comparison purposes.

6.2. Use of Barrels

In all options, residents would be allowed to use barrels to prevent animals and birds from attacking and tearing open the bags of solid waste.

6.3. Annual Fee

If Arlington implemented an annual fee, it could be billed as an additional item along with the water and sewer billings. It could be set to cover part or all of the cost of the program.

6.4. Distribution Mechanism

Several bag providers are now offering the service of delivering the bags on demand direct to the retailers which saves the town the need for secure storage space and the staff time to deliver and track the purchase. In this system, they town gets an accounting of the bags purchased by the retailers. The Town then bills the retailers the wholesale cost and pays the supplier the wholesale cost.

6.5. Retailer – number and type of outlets, mark-up

Most PAYT programs use local grocery stores, drug stores and convenience stores to sell the bags. In the majority of towns researched, they have not had to include a retailer markup in the price because the retailers want the traffic from people coming to buy bags. In one case, Natick, they had to allow small convenience stores to sell the bags for cash only to help the small stores avoid paying the extra 5% cost charged to them for credit card purchases.

6.6. DPW role

The primary role of the DPW would be to provide publicity, enforcement, and to make sure the bag supplier provides satisfactory delivery service. If Arlington implemented a bulky waste fee, it would most likely be handled by the DPW.

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6.7. Pricing Considerations

6.7.1. Cost per bag

The committee has been working with an assumed price of \$2.00 per bag for the purposes of its financial analyses. The final pricing should reflect several considerations – what other towns may be charging in comparable programs, what the actual cost is to dispose of about 25 pounds of solid waste plus the cost of the bag, and how soon the bag price should be expected to change. The price in other comparable PAYT towns seems to range from \$1.00 to \$2.00. The actual cost for 25 pounds of solid waste plus the cost of the bag would come out to about \$1.20 per bag. In Arlington, there should also be consideration for the price of bags charged in the commercial PAYT program, which is \$2.10/bag. The commercial users would be likely to accept a decrease in their cost but it probably shouldn't be a large decrease. If the town wants to keep the cost the same for 2-3 years, the cost should be set somewhat higher than the current costs.

6.7.2. Number of bags/barrels “free”

In general, the option of a first barrel free would be the most politically acceptable version of PAYT and least costly to residents. Compared to paying for every bag, it would create a smaller but still significant incentive to reduce waste.

6.8. Bag size(s)

The usual bag size is 33- gallon or 34-gallon although some communities have specified a 40-gallon bag to ensure that it fits around the rim of an average solid waste barrel. It is common to offer a small and large bag in PAYT programs in which residents pay for every bag. The smaller bags serve the needs of those who generate small amounts of solid waste.

6.9. Low-income resident options

Some communities have established a low-income relief program that allows residents that meet the criteria to be eligible for set number of bags at no cost.

6.10. Enforcement and Prevention of Illegal Dumping

Illegal dumping is a common concern among residents and officials considering PAYT programs. The committee looked at numerous programs and found that, overall, illegal dumping was a minor or non-existent problem. Where the towns had done a good job with publicity, had a good recycling program, and had good enforcement against early violators, there was no additional illegal dumping noted. It is for this reason the financial model includes funding for additional staff time to handle enforcement and additional funding for publicity.

6.11. Public Outreach and Education

The outreach and public education are critical before the start and in the early phases of PAYT. DEP may have funding available to reimburse the Town for some of the costs of this expense, although it has not been assumed in the financial model. After the first year, it is less critical and can be rolled into some regular publicity programs alongside the recycling program.

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6.12. Multi-family Housing

In PAYT communities, providing municipal solid waste collection service to multi-family housing complexes is a challenge. The use of dumpsters by the residents means that there is no accountability for any misuse or use of the wrong solid waste bags. A resident using a black bag instead of the special bags could hide the bag at the bottom of the dumpster and it would not be likely to be found and identified. In addition dumpster service provided by commercial haulers is often less costly than the equivalent cost on a per household basis in a PAYT program. For this reason, some PAYT communities have offered the multi-family complexes the option of opting out or paying the equivalent of one bag per week per household to have the municipality collect from their dumpsters once a week. Any additional collection service or any larger capacity dumpsters would require an additional charge.

The Arlington Housing Authority was discussed by the PAYT Study Committee and it was determined that the number of units operated by the AHA is small and they generate less solid waste in general than the average households. The details of paying for disposal from AHA properties would need to be negotiated but would not significantly alter the impact of any of the options considered.

6.13. Bulky Waste Options

Every PAYT program needs to tell residents what to do with bulky items that do not fit into a bag but are not appliances. Bulky items can go to drop-off areas in communities that have them. If not, the options include:

- allowing residents to put out one bulky item per week at no cost;
- charging for weekly pickup;
- sending the residents to a private hauler;
- collecting specific types of items on a limited schedule (i.e., 3 metal collections per year and 3 burnable collections per year)
- offering a “drop and swap” day with fees for certain items.

6.14. Accounting Options

The revenue and expenses associated with a PAYT program may be handled in various ways. The preferred approach probably depends on the PAYT option selected. The options generating larger revenue streams may demand more visible accounting.

6.14.1. DPW Budget Line Item

In this option, the collection and disposal costs would be line item expenses in the Public Works Department budget as they are now. The revenues would come into the General Fund. The DEP Director would be responsible, as he is now, to hold expenses within the overall DPW budget. An excess of revenue over expense at the end of the year could not be earmarked for the solid waste & recycling program.

6.14.2. Revolving Fund

In this option bag revenues go into a fund dedicated to the solid waste and recycling program. Payments are made from this fund for program expenses. The fund must be reauthorized annually. Within limits, an unused balance may be carried over from one fiscal year to the next.

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6.14.3. Enterprise Fund

In this option solid waste and recycling program expenses and revenues are segregated from other Town accounts. The program has a stand-alone budget. Within limits, either a deficit or an excess of revenue over expense at the end of the year may be carried over to the next year. This option may offer the greatest public visibility.

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7. Appendix A – Study Committee Members

Freeland Abbott, Housing Authority
Peter Allison (resigned), choice of Selectman Dias
Richard Bowler, choice of Selectman Greeley
John Crowley, choice of Selectman Lyons
Marian DeCamp, choice of Selectman Hurd
William Eykamp, Vision 2020
Michael Healy, choice of Selectman Mahon
Peter Howard, Finance Committee
Elizabeth McGaffigan, Council on Aging
John G. Sanchez, Public Works Director
Ron Sender, choice of School Committee
Susan Wyly, Recycling Committee
Ruth Yannetti, Recycling Coordinator

Carolyn Dann, DEP, through a Technical Assistance grant

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8. Appendix B – Program Summaries from PAYT Programs

The PAYT programs described in this appendix are all in eastern Massachusetts in communities with populations both smaller and larger than Arlington's. Some have been in operation for many years (Gloucester started in 1990). Most began either when the town's landfill closed or when additional revenue was needed. All but one has been successful. Natick began under circumstances most like Arlington with an ongoing curbside trash & recycling pickup program and a revenue shortfall.

Natick PAYT System

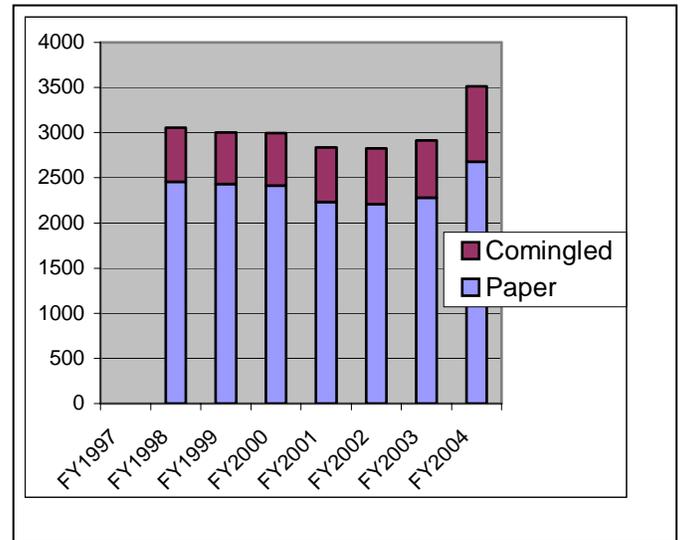
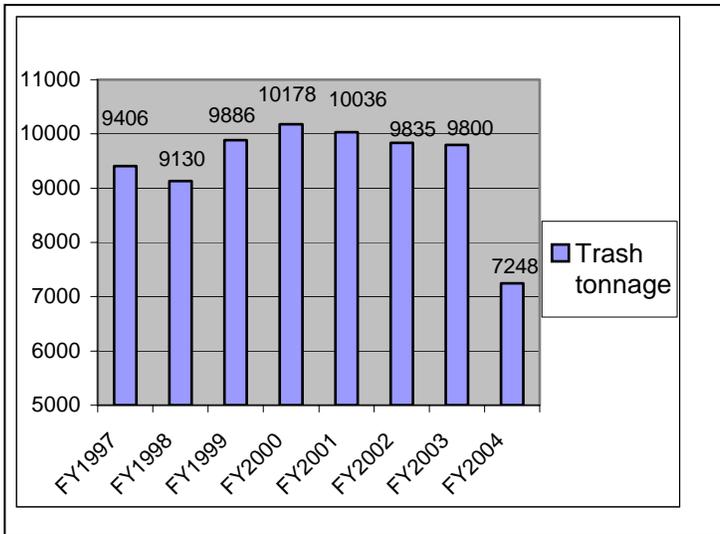
Population: 31,000 Households served: 10,300 curbside trash and recycling
 Contact: Tom Hladick: thladick@natickma.org, 508-647-6556

Overview of the PAYT program:

- \$1.75/33-gal bag, \$1.00/15-gal bag, blue color bag with printed instructions.
- The program serves up to 4-family units.

History:

- PAYT started in July 2003 in response to a fiscal problem.
- The Board of Selectmen voted to implement a flat fee per household of \$175 per year in FY03 and establish a PAYT study committee. The Committee developed plans for PAYT and the Selectmen adopted them in July 2002 to start July 2003.



Results:

- 900,000 bags sold in FY03; 60% large, 40% small
- Trash tonnage: FY02: 9800 tons, FY03: 7248 = 26% decrease
- Recycling tonnage: FY02: 2912 tons, FY03: 3512 tons = 21% increase

Implementation:

- **How did residents learn about the program?** The DPW and PAYT committee attended every possible event wearing a “PAYT starts July 1” T-shirt; used an electronic billboard near the town green with the same message; installed signs on each of the trash trucks; and developed a flyer to answer questions.
- **How are bags distributed? Do the retailers get a mark-up?** Bags are sold without a mark-up through 7 retailers (Two Stop and Shops, one in Natick and one in Framingham, Roche Bros, Town Paint, Lil Peach, Tilly’s, Donelan’s Supermarket and Jones Drugstore). Retailers get an official poster.
- **Who produces the bags? Who delivers?** Natick used the state contract and has Boxes and Bags Unlimited deliver bags to the Town’s storage container. They bought a special 8’ x 20’ container that they lock the bags into for storage. A town employee takes orders each Wednesday and delivers the bags on Thursdays. He has the stores sign a delivery slip upon receipt, which goes to

the Town Offices to generate the invoice. They are planning to change this so that the bag supplier delivers directly to the retailers.

- **Have you changed prices over time?** No, but when they started PAYT, the town eliminated the flat fee per household.

Administration and Finance:

- **Number of staff needed?** No additional staff was needed. Deliveries take about ½ hour/week.
- **Accounting system?** The Finance department uses a Quicken program to generate invoices. Billing questions are handled by the Finance Department. Other questions go to Public Works.

Enforcement, Illegal Dumping:

- The first few weeks, the DPW staff inspected trash routes each day. They stapled a note inside a plastic bag to any improperly bagged trash. The note offered that the town would collect the bag of trash the following day if it had been transferred into a proper bag. Most residents complied and either called or put the trash out in a proper bag the following week. After the first week, there were almost no violations.
- According to the DPW, illegal dumping was not a problem. The Town did find one or two bags of illegally dumped trash in the first month. They identified the source, returned the trash and fined the resident. A notice was put into the local paper, without the resident's name. That has stopped further violations.
- The other municipal departments do not use the PAYT bags.

Additional Waste Options for Residents:

- White goods, metals, bulky waste, CRTs: Town collects curbside for \$25, formerly on alternate Saturdays, now Mondays.
- Yard Waste: Seasonal collections - two weeks in the spring and three weeks in the fall. Residents can also use the recycling center, which is open three days a week, all year round. Christmas trees collected curbside during the first two weeks of January, weather permitting. Residents can also drop them off at recycling center.
- HHW: annual collection event

Other Contacts:

- Town Manager: Paul Lemnios, 508-647-6400
- DPW Business Manager: John Craig, 508-647-6552
- Volunteer or Recycling Committee Contact: Terry Miller, PAYT Study Committee, terry-miller@comcast.net
- Website: www.earth911.org (Enter zip code 01760) www.natickma.org

Gloucester PAYT System

Population: 30,000 Households served: 14,000 winter;16,000 summer

Weekly curbside trash collection & biweekly curbside recycling collection

Contact: Sue Mitchell, Recycling Coordinator: smitchell@ci.gloucester.ma.us, 978-281-9785

Overview of the PAYT program:

- \$1.50 per sticker for 35 gallon sized can/bag of trash. Each household is allowed 4 bags of trash or three bags of trash & one large item per week such as a couch, etc. Recycling is unlimited. One curbside pick up per year of leaves in the fall and one for Christmas trees in January.
- Program serves up to 4 family units. Each unit gets one recycle bin and anyone who needs an extra pays \$5.00 per bin.

History:

- PAYT started in Oct. 1990 when landfill closed. A \$52.00 per unit bill was sent to participating households, but people were so enraged that they easily decided a PAYT program would be more fair. Trash stickers started at \$.50 cents. In September 1991 stickers went up to \$1.00. In July of 2001, sticker prices went to \$1.50.
- At the same time (July 2001) a sticker program for curbside collection of appliances and CRTs started. Stickers are \$20 for each appliance / CRT.
- The recycling program initially started as drop off only. In 1993, curbside collection of recycling began. (not sure whether it is FY or CY)
- 500,000 trash stickers a year are sold. Sticker printing goes out to bid & the low bidder this year was Resourceful Bag & Tag.

Trash tonnage changes:

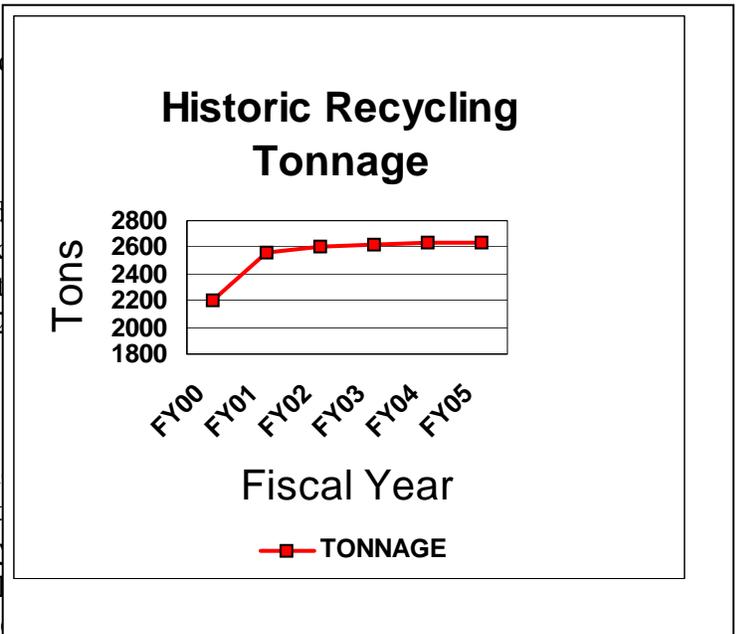
- In the year before PAYT, Gloucester threw away much more trash. After PAYT, Gloucester's annual trash tonnage dropped significantly and has remained much lower (last 12 years).

Recycling tonnage Changes:

- In 1990 when PAYT started, Gloucester offered curbside recycling. Recycling tonnage was 1,356 tons. When the City went to curbside trash collection, recycling tonnage increased to 1,795 tons (32% increase). The City saw it's next year when sticker prices went up \$0.50 to \$1.50. Recycling tonnage was up to 2,000 tons (17% increase).

Implementation:

- Trash stickers are distributed to 40 stores through the Recycling Coordinator. The bright pink stickers (which match the City's color scheme) makes 2.5% on each roll. All stores pay for the stickers.
- Appliance / CRT stickers are sold at the DPW on a per unit basis. The CRT is picked up, so the City is losing money with each unit.
- There are 2 trash and 1 recycle truck in the City per day except during red collection weeks (downtown, multifamily units) in the summer when 2 recycle trucks are required.



Administration and Finance:

- All sticker revenue goes into the General Fund. All expenses come out of the General Fund. Sticker revenue pays for the City's disposal cost, which is also about 50% of the city's solid waste program cost, although it varies from year to year. The General Fund pays for collection and other related services.
- In the beginning, there was a trash inspector, a part-time sticker clerk and the Recycling Coordinator. Today, there is 1 Recycling Coordinator who also works as sticker clerk. Waste Management calls / emails daily with any violations.

Enforcement and Illegal Dumping:

- Residents not complying with sticker program regulations do not have their trash picked up. Letters from the DPW, BOH or tickets from the police as well as possible fines may result from repeat offenses. These abusers will lose their trash privileges and will have to prove to city officials that they have made arrangement for privately contracted collection.
- Trash with no stickers, tampered stickers, construction debris, overweight or oversized trash or yard waste is left by Waste Management. Driver calls in left stops and Waste Management calls the DPW. There are as few as 3 or as many as 10 violations per day. The peak time for violation occurs during summer when seasonal residents return (who have forgotten the program.)
- Illegal dumping has not increased since PAYT. Remote areas that always had illegal dumping still do. Police check dumpsters and city trash barrels when needed, and identified trash is returned to the home of the offenders by the police.
- The Recycling Coordinator will then visit homes where violations have occurred and will leave a recycling brochure at the door with the solution circled as well as a number to call for help.

Additional Waste Options for Residents:

- Bulky waste: limit 1 item per week with sticker
- Appliances / CRTs picked up curbside with purchase of \$20 sticker
- Yard waste: 1 curbside pick up of leaves in November, 1 curbside pick up of Christmas trees in January. Brush, leaves and yard waste can be dropped off at municipal composting facility. Resident parking/beach sticker is required. Sticker costs \$20.
- Waste Oil, oil filters, tires and car batteries drop off once a month
- Annual HHW collection event

Worcester PAYT System

Population: 172,000 Households served: ~50,000 curbside trash and weekly recycling
Contact: Robert Fiore: FioreR@ci.worcester.ma.us, 508-799-1430

Overview of the PAYT program:

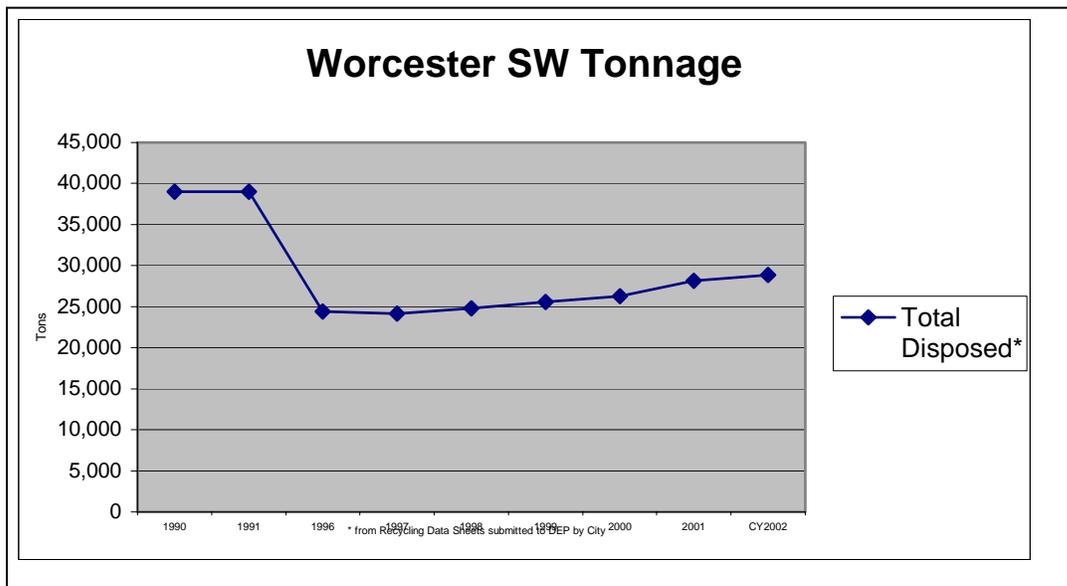
- \$1.00/30-gal bag, \$0.50/15-gal bag, yellow with City seal.
- The program serves up to 6-family units.

History:

- PAYT started in November 1993 in response to a fiscal crisis.
- The City initiated curbside recycling at the same time.
- Large and small bags cost \$.50 and \$.25 until prices changed in 2001.

Results:

- Average # of bags sold in FY03 = 2.923 million 30-g bags and 1.942 15-g bags or 77.8 bags per household per year (30-g equivalents) or 1.5 bags per week per household.
- Trash tonnage changes: Prior to PAYT: 39,000 tons/year. FY02: 29,300 tons



Implementation

- **How are bags distributed? Do the stores get a discount off the price?** Bags are sold through 130 retailers (CVS, Price Chopper, Big Y, Super Stop & Shop, White Hen Pantry and neighborhood convenience stores).
- **Who produces the bags? Who delivers?** Nyman Paper Company supplies and delivers the bags to the retailers. They bill the City for the wholesale cost. The City bills retailers at the retail cost. The retailers do not get a mark-up on the bags.
- **Have you changed prices over time?** The price started off at \$.50 and \$.25 per bag. In 2001, the City increased the price to current levels. They changed the sleeve color and the UPC code and publicized the new prices to the public to ensure that retailers were not charging the new price for the old bags and pocketing the difference. At first, there was a run on the older, cheaper bags.

Administration and Finance:

- **Number of staff needed?** At the outset, there were 4 health inspectors checking for violations. After several years, they were needed less by the DPW so they were transferred to the Health and Code Division and then the number reduced to two and then to none. The DPW has a customer service center that can answer questions on recycling and waste.

Enforcement, Illegal Dumping:

- The first few weeks, the DPW staff inspected trash routes each day. They would label improperly bagged trash with a violation notice and note the address in order to return the next day. If the trash had not been properly bagged by the next day, the staff would collect it and provide the resident with information about the PAYT program and a warning about the fines. The inspectors had the ability to issue tickets for illegally dumped trash using a progressive fine system. The first offense is a warning. Subsequent violations result in \$25, \$50 and \$100 fines handled as non-criminal dispositions through the housing court. Most of the violations result in warnings. Rarely has the City had to issue fines. The City did not allow bags to stay on the curb for more than 24-hours. They have had a 99.9% compliance rate for most of the program's history.
- According to the DPW, illegal dumping was not a problem. The City started a curbside bulky waste collection at the same time as PAYT. They told businesses to keep dumpsters locked and use a common key. They invited businesses to call the DPW if they found any illegal dumping but none have called. Illegal dumping always was the large items like furniture and appliances, not trash bags.
- Prior to PAYT, the DPW collected trash from Fire and Police departments and charged back the cost. With the implementation of PAYT, the Fire Department had to start paying for its own trash and buys the City bags. The Police Department also pays for its own trash but chose to use a private hauler. The DPW does not collect from schools because they use dumpsters and have restrictions on times for collection so they have their own private hauler also.

Additional Waste Options for Residents:

- White goods, metals, CRTs: Take to drop-off center or pay city hauler directly.
- Bulky waste: Take to drop-off center by appointment or pay city hauler directly.
- Yard Waste: The City operates three yard waste drop-off sites open from April through November and open in January for Christmas trees.
- HHW: Residents can bring HHW to the HHW facility monthly.

Other Contacts:

- Mayor: Timothy P. Murray (508) 799-1153
- Treasurer: Thomas F. Zidelis (508) 799-1095
- Volunteer or Recycling Committee Contact: NA
- Website: www.earth911.org (Enter zip code 01608) or www.ci.worcester.ma.us

Concord's PAYT System

Population:	17,000	Trash collection:	curbside
Households served:	3,000	Recycling:	curbside
PAYT system:	\$1.50/sticker, none "free"		
Contact(s):	Ann Dorfman, adorfman@concordnet.org 978-318-3241		

Overview of the PAYT Program:

- \$1.50/sticker and \$39.00 six-month sticker (exactly the same per week as the tags)
- Bags or barrels are accepted. Either container requires one tag (or barrel sticker). Residents can put a tag on one bag and not use a barrel, or can put multiple bags in a 34-gallon barrel and put one tag on the barrel. The resident gets to choose how they want to do it.
- Flat fee of \$108/year billed every 6 months.

History:

- Landfill closed 1993. Chose to implement PAYT curbside program at that time.
- There was no municipal curbside program prior to PAYT.
- In 1998, prices increased from \$1.00 to \$1.50 and subscription fee decreased from \$120/year to \$102/year. In 2002, fee increased to \$108/year.

Results:

- In FY02, the average number of stickers sold equalled 175,913 disposal units or 1.2 disposal units per household per week.
- Tons of waste generated/y: FY02 2,267 tons, or 25.7 lbs per sticker
- Tons of recyclables/y: FY02 1,464 T paper, 438 T commingled 46% (not including yard waste)

Implementation:

- Stickers are distributed at Town House and seven retail outlets. Distributors receive 5% commission.
- Resourceful Bag and Tag prints stickers. They cost a little over \$2,395 for 100,000 stickers (\$0.02395 per sticker). Ryden Decal (800-448-1991) prints six-month barrel stickers 14" x 3.5", printed on both sides for \$850 for 1,500 (\$.56 each).

Accounting and Finance:

- Town accountant does the billing of the flat fee. Residents subscribe through the Treasurer's Office. Treasurer's office does twice yearly billing. Public Works does everything else (designing invoice and inserts and working with the hauler to discontinue service of unpaid subscribers.)
- \$40,000 contributed from the Enterprise Fund for Accountant time. Program also funds the fulltime coordinator.
- About 1800 residents use private haulers. Many private haulers have back door or garage pickup, a service the town does not provide. Prices are all more expensive.

Enforcement, Illegal Dumping

- The Town experiences illegal dumping in public barrels and private dumpsters on a regular and ongoing basis but not enough to be a major problem. They have a bylaw to allow tickets for illegal disposal but fines should be higher. They produce and place illegal disposal notice decals on doors of all private and municipal dumpsters in town to remind scofflaws that illegal disposal is illegal. They do not experience illegal dumping in parks, rivers, woods, etc.

Additional Waste Options for Residents:

- Bulky waste: Drop-off day in May and October or private hauler
- White goods, CRTs: Drop-off day in May and October or private hauler
- Leaf and Yard waste: Composting Site open Saturdays 9 – 3 April – Mid-December
- Xmas trees: Composting Site first two Fridays and Saturdays in January. Two charities also pickup at the curb for a \$10 donation and deliver to the composting site.

North Reading's PAYT System (ended)

Population:	13,000	Trash collection:	curbside
Households served:	4000+	Recycling:	curbside (was drop-off)
Contact(s):	Dave Hanlon, DPW Director		

Overview of basic program

- Stickers required for each bag, sold for \$0.65/sticker

History:

- In 1989, North Reading started curbside collection of trash. To offset the new cost for this service, they started charging \$0.65/sticker. The contractor costs and disposal costs increased every year. Every 2-3 years, the DPW recommended increasing the sticker price but the Selectmen would never approve an increase. In 1991, North Reading opened a recycling drop-off center, which reduced their trash tonnage below their GAT. The Selectmen “did not want to hear about anything related to trash or related to NESWC” (due to frustration with the NESWC contract). As a result, the costs increased but the revenues did not. In FY03, there was a \$750,000 budget deficit. The DPW proposed increasing the sticker fee to \$2.00 or \$2.25 or shifting to a flat fee-based program at a cost of \$150/hh/year. The Selectmen decided they could offer curbside recycling at an additional \$30/yr cost and get a dependable source of revenue, so opted for a \$180/hh/yr flat fee. BFI had been consulted and commented that trash “would disappear” if they increased the sticker fee, suggesting that they would see more illegal dumping.

Results:

- Average number of stickers sold was about \$750,000 per year, which remained fairly stable.
- Town was generating fewer tons than their 5246 TPY Guaranteed Annual Tonnage (GAT) for many years. In the last year, after dropping PAYT, their tonnage increased by 750 TPY and seems to be continuing at the same level. FY03 tonnage was 5139TPY.
- When they offered curbside recycling collection, their recyclables tonnage increased.

Implementation:

- Stickers were distributed at 6 stores including Shaw's Stop & Shop, and Town Hall. The stores would come to Town Hall and buy the stickers.
- Barrels were allowed
- Now, with the flat fee, residents are allowed to “opt out” of the fee if they can prove they have a legal alternative means of disposal.

Accounting and Finance

- In the Flat Fee system, the Town adopted a low-income provision tied to the discount policies in the assessor's office. They get 5-7% delinquencies per year which get added to a resident's tax bill as a lien and then they are paid.

Enforcement and Illegal Dumping

- With the PAYT system, residents would complain about stickers “falling off”, especially on rainy or snowy days. The drivers were asked to go back to pick up the trash.
- They had problems with illegal dumping at school dumpsters and alleys. No longer a problem after the end of PAYT.

Brockton PAYT System

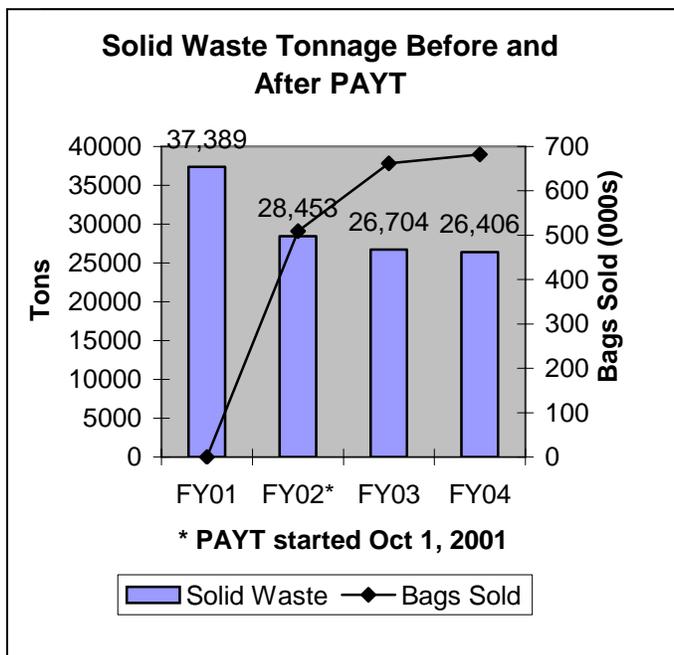
Population: 95,994 Households served: 25,407 curbside trash and weekly recycling
Contact: Patrick Sullivan, PAYT/Recycling Coordinator: psullivan@ci.brockton.ma.us, 508-580-7827

Overview of the PAYT program:

- \$1.00/33-gal bag, in packages of 5, green with City seal.
- \$280/year/household fee pays for 1 32-gallon bag or barrel of trash/week (up to 50lbs), 1 bulky item/week, and unlimited recycling and leaf collection. The City gave away 2 recycle bins to each household.
- The program serves up to 5-family units. For multi-family units, the City encourages owners to mark unit numbers on their trash barrels. DPW gave drivers a listing of the number of units at each address.

History:

- For 10 years prior to the start of PAYT, residents paid \$110/year/household. At the end of the trash collection contract, the City knew costs were likely to increase significantly. The City requested bids for collection based on a PAYT program. The PAYT program started in October 2001. The City aimed to start in July but delayed the start to provide public hearings first.



Trash tonnage changes:

- In FY02, with PAYT for only 9 months, the trash levels decreased to 76% of the FY01 level.
- In FY03, trash tonnage decreased further to 71% and in FY04 to 70.6% of the FY01 levels.

Bags sold in FY01: 0; FY02: 509,200; FY03: 661,800; FY04: 682,400

Recycling and Yard Waste Tonnage:

- In FY02, paper tonnage increased 236% and container tonnage increased 200%.
- FY03 and FY04 showed continued increased in recyclables and yard waste tonnage collected.

Implementation:

- **How are bags distributed? Do the stores get a markup?** Bags are sold through 25 retailers (3 Shaws, CVS, Walmart and smaller stores). Small stores pay upon delivery; others pay when invoiced. The stores do not get a mark-up on the bags.
- **Who produces the bags? Who delivers?** BFI arranges printing, delivery and invoicing.
- **Have you changed prices over time?** There has been no change to the bag price. The annual fee was initially set at \$220/year until the full costs were known. Then, it was increased to \$280/year. The combined revenues from bag sales and the annual fees cover 100% of the costs of the solid waste and recycling budget.
- **Other Changes:** BFI needed more recycling trucks but reduced the trash trucks from 9 to 7.

Accounting and Finance:

- **Number of staff needed?** At first, the PAYT program took a lot of everyone's time but now there is 1 FTE plus supervisor. In addition, 4 DPW staff check for violations but were doing that before.
- **Accounting system?** The City receives \$0.25/bag. BFI keeps \$0.75 per bag to pay for the costs of disposal.

Enforcement and Illegal Dumping:

- There was an initial six-month grace period. Compliance was better than 90% from the start. Now, first time offenders receive a courtesy letter. The second time at the same address, the resident receives a ticket, prepared and sent by the DPW Office. The offender has 21 days to either request a hearing before Housing Court or pay the fine in the City Clerk's Office. If neither action takes place, the DPW is notified and a complaint is filed against the offender in Housing Court who then issues a warrant. The fines are \$100.00 for the first offense and \$300.00 for each subsequent offense. Chronic abusers may lose their trash privileges.
- According to the DPW, there has been no increase in illegal dumping. Some residents report a reduction in illegal dumping as a result of the enforcement. (See Editorial May 19, 2004 in Brockton Enterprise.)

Additional Waste Options for Residents:

- White goods, metals, CRTs: Residents call BFI to schedule appointment to collect curbside
- Bulky waste: one item/week will be collected curbside
- Yard Waste: curbside collection every week spring thru Dec plus 2 weeks for Christmas trees
- Recycling depot: accepts household recyclables, paint, tires auto batteries, oil, TVs, computer monitors, cardboard, clothing, computer parts, mercury containing waste, spent anti-freeze, fluorescent tubes and textiles. Some items have a small fee.

Other Contacts:

- Mayor: John T. Yunits, Jr. (508) 580-7123
- Finance Director: John Condon (508) 580-7165
- Website: www.earth911.org (Enter zip code 02301)

Boxford's PAYT System

Population: 8251, Households served: 2200, curbside trash and recycling
Karen Sheridan, sheridankj@aol.com

Overview of Basic Program:

- \$2 per 32-lb sticker, previously was \$1/sticker, none “free”
- Barrels are allowed

History:

- The program has been in place for over 11 years. The only change has been the increasing cost of the stickers from initial 35 cents per bag to present \$2/bag. Waste disposal also changed from using the town landfill to being hauled to a combustion plant. Town changed over to PAYT when the town changed from a drop-off to curbside trash and recycling. The town had no contracted curbside service before PAYT. Residents perceived that they paid nothing for trash before PAYT. But the first year the sticker was only 35 cents and they got a brand new service--curbside pick-up.
- About 10% of the residents use private subscription haulers. (5% are individual households who use a private hauler, 5% is a senior citizen housing project that contracts directly with the same waste hauler). Prior to PAYT residents all had private subscription haulers who hauled to the town dump; but most residents hauled their own trash the town dump. When the town went to curbside trash and recycling, they no longer allowed private subscription haulers to dump in the landfill, only the waste hauler the Town contracted with was allowed to dispose of waste in the town landfill. The only hauler requirement is that private haulers must register with the Board of Health each year. There is only one private subscription service in town. Mello charges \$30/month for curbside trash or \$40/month to come in the driveway to the garage. Any amount of household trash or large bulky items are allowed. This amount is \$360/yr compared to \$104 if household bought 55 \$2 trash stickers per year.

Results:

- The change in recycling was astonishing. Going from drop-off to curbside at least doubled the tonnage of recycling. Evidence of source reduction is hard to estimate because the tonnage of waste was an estimate until the landfill closed several years ago and waste was hauled to combustion plant & weighed.
- Average number of stickers sold: 120,000 per year = about 55 per household (2200) that do not use subscription service.
- Tons of waste generated: 1687 tons from 2301 hhs (100 of which are in a senior citizens complex) so really only 2201 households use bags. At $1687 * (2201/2301) = 27$ lbs / bag.
- Curbside recycling tonnage for 2428 households is 987 tons (mixed paper, glass, alum, plastics). At drop-off they collect 45 tons of OCC 68 scrap metal.

Implementation:

- Stickers are sold at Town Hall (32,500), 2 libraries (33,000) and the 2 retail general stores in town (54,500).
- Stickers are printed at Northeast Quality Products in Newburyport. They don't change (the color) the stickers unless raising the sticker price. Previously stickers cost \$1.
- Most of the logistics are managed by the Office of the Treasurer. The stickers are ordered by the Selectmen's Office and delivered to the Treasurer's Office where they are stored.

Libraries are issued one roll at a time and the turnover is made to the Treasurer after all are sold. The stores are issued one roll at a time on credit, payment is made to Treasurer when stickers are sold and a new roll is issued. Cost per roll is \$1000 (500 stickers @\$2) but stores pay \$975 a roll. The Treasurer's Office maintains forms to be signed whenever a library or store employee is issued a roll of stickers. A transaction log is maintained noting the serial numbers of stickers on each roll, date of issue and date of payment. On June 30th, at the end of the fiscal year, all accounts are balanced out (all cash turned in along with unsold stickers, partial rolls are reissued.)

Accounting and Finance:

- Some Town leaders want to place the total cost of waste & recycling collection on the sticker price. About 1/3 of the price is in the tax base at this point. This feels like the public's limit in paying for stickers. Whenever we raise the price of the stickers, more households go to the subscription service and more residents "cheat" the system.
- Senior Citizens on the Tax Work-Off Program are employed at Town Hall 2.5 hours per day to sell stickers. The balance of the time, stickers are sold by the Treasurer's Office. Approximate time 1hr/day for clerk.
- Complaints are handled by the BOH who is in charge of the curbside waste and recycling contract.

Enforcement and Illegal Dumping:

- There has not been any more or any less problems with illegal dumping with PAYT. There is always some amount of illegal dumping occurring. What they have seen are some residents "cheating" by putting stickers on their barrels not on the top item or placing a bag on top of a barrel or not using stickers at all. The waste haulers don't seem to notice these discrepancies.

Additional Options for Residents:

- Boxford has weekly drop-off site for Bulky waste (charge is based on size \$10-25), white goods, CRTs, leaves, yard waste and Christmas trees.

Holliston's PAYT System

Population: 13,152, Households served: 4400, curbside trash and weekly recycling
 \$2.00/34-gal sticker, 1 barrel "free" (or 52 free stickers for seniors)
 Andrea Minihan, 508-429-0608

Overview of Basic Program:

- \$2 per 34-gallon sticker
- Resident can just put sticker on top item in a barrel.
- One free barrel per week, no special labeling

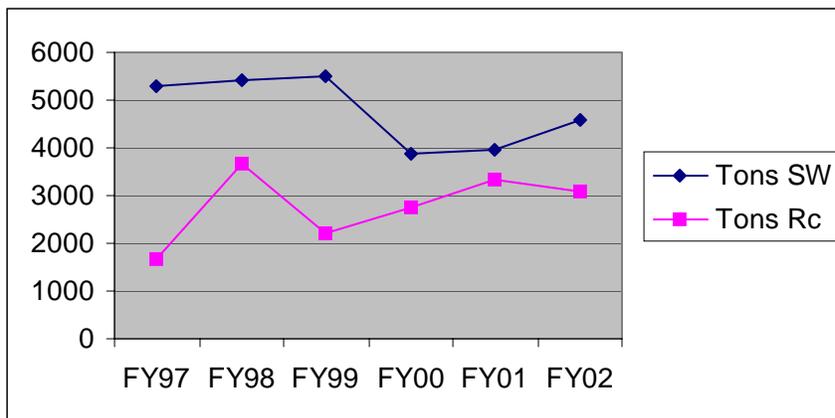
History:

- PAYT has been in place since FY99.

Results:

- Average number of stickers sold: Sold \$83000 at \$2 each annually, sold 93 rolls of 250 each from July 1 2002 to Jan 31, 2003, roughly 40,000 stickers per year = about 9 per hh/y
- Tons of waste generated: FY02 – 4570, FY01 - 3954, FY00 - 3881, FY99 - 5497, FY 98 - 5433, FY97 – 5288. Using $4570 * 2000 / ((52+9) * 4400) = 9140000 \text{ lbs} / 268800 \text{ bags} = 34 \text{ lbs/bag}$
- Tons of recyclables: FY02 – 3078, FY01, - 3345, FY00 – 2767, FY99 – 2198, FY98 – 3660, FY97 – 1653. The annual variable between FY02 and FY01 is leaf and yard waste.

	start of PAYT					
	<u>FY97</u>	<u>FY98</u>	<u>FY99</u>	<u>FY00</u>	<u>FY01</u>	<u>FY02</u>
Tons SW	5288	5433	5497	3881	3954	4570
Tons Rc	1653	3660	2198	2767	3345	3078
% change SW		3%	1%	-29%	2%	16%
% change Rc		121%	-40%	26%	21%	-8%
tons change SW		145	64	-1616	73	616
tons change Rc		2007	-1462	569	578	-267
diversion rate	24%	40%	29%	42%	46%	40%



Implementation:

- Stickers are distributed through 4 retailers and town hall. Stickers cost 2.5 cents each and are ordered by the Treasurers office. Stores purchase rolls from the Treasurer at \$475 per roll for a roll of 250.

Accounting and Finance:

- The Selectman's office handles the administration and complaints. They had BFI help out in the office for 1st two weeks. Drivers that find a problem call the office immediately before resident can call to complain so office knows why a bag was left. Met 4-5 times with drivers at start.

Enforcement and Illegal Dumping:

- They do see increased dumping in town and business dumpsters. They had to get rid of a dumpster and Goodwill box cuz was attracting illegal dumping over weekends.

Additional Options for Residents:

- White goods, metals, CRTs, yard waste all can be dropped free at Drop-off site.
- Bulky waste will be collected curbside if they call BFI (but considering charging)

Milton's PAYT System

Population: 25,803, Households served: 9280, curbside trash and recycling
\$2.00/34-gal sticker, none "free"
Branch Lane, 617-696-5729 or Kathy O'Donnell, 617-696-5732

Overview of Basic Program:

- \$2 per 34-gallon sticker. Residents can put sticker on top item in a barrel.

History:

- Landfill closing in 1991 led to PAYT.
- At first hand-delivered 52 free stickers over the course of two weeks. Did this for the first few years. When closed landfill and cost increased, made people pay for all the stickers.

Results:

- Average number of stickers sold: \$74,298 from \$2 stickers sold by town, 628,965 sold by retailers at \$180/sticker revenue to the town (retailers get \$.20/sticker) and \$30,000 came in from annual barrel stickers sold on a prorated basis of \$2/week left in the year. In addition, they sold 110 \$15 stickers for bulky waste.
- Tons of waste generated: about 5600 tons per year
- Now have a 53% recycling rate, increased from 28% in 1992.

Implementation:

- Stickers are distributed through 12 retailers who pay \$1.80/sticker but add \$.20/sticker so residents pay \$2/sticker. Some on cash basis, others billed. Stickers are pre-numbered, or can buy a barrel sticker good for 52 wks = \$104, purchased at town office only or can be mailed if send check. Hauler won't pick up trash if sticker expires.
- They buy stickers from NE Quality Products. Pay \$14.25 per 1000. Town delivers to retailers once a week. DPW delivers to stores, picks up cash, deposits
- A field person drives route each day, puts violation sticker on bags if not stickered properly.

Accounting and Finance:

- They have one clerk FT and one field person. Not an enterprise fund but revenues are credited to DPW offsetting about 50% of costs. Treasurer does inventory check most months, deposit cash w. treasurer daily, sell bins, and compost bins.

Additional Options for Residents:

- Bulky waste: (anything over 40lbs) requires 3 \$2-stickers – "large item"
- Appliances (metal) sold 110 special stickers for OBW at \$15/sticker and 37 \$25 stickers for freon for (AC and frigs) at town hall or by mail after sending a check or bring to RC free (\$10 for freon)
- Leaves and yard waste: 10-11 wks fall leaf pickup and 4 wks in spring, no drop off
- Xmas trees: xmas trees free 1 wk/yr

Chelmsford's PAYT System

By Barbara Scavese, Recycling Coordinator

The Town of Chelmsford, Massachusetts, instituted a user fee for trash collection in 1990, after voters rejected a tax increase to keep trash and recycling collection in the budget. Voters rejected a similar request for a tax increase in 1991 to keep recycling collection in the budget.

In 1992, residents overwhelmingly voted to eliminate the user fee and raise taxes. Town Meeting had approved a Town by-law that guarantees any tax increase for solid waste services would be used only for solid waste services, multi-family complexes had been added to the solid waste program, the Board of Health had been complaining about illegal dumping and residents were tired of the inconvenience of buying trash tags.

The "Bill and Tag" user fee that was in effect for two years consisted of two parts:

An Annual Bill All single-family homes received an annual bill which covered the fixed costs of the services: administration and curbside trash collection.

The annual bill for trash collection in FY91 was \$74.00 and included 4 trash tags to "jumpstart" the program. Originally meant to be part of the user fee, recycling collection and the fall leaf collections were returned to the tax base as Town provided services for every single-family home, so that people who didn't use the Town's trash service could use these other services. (Massachusetts residents cannot be required to pay the user fee and use the Town's service.)

The annual bill for trash collection in FY92 was \$80.00. Due to the voter's rejection of a tax increase for recycling collection, this voluntary service was listed as a separate item on the annual bill for the cost of \$30.00. Residents could elect to use either trash or recycling collection or both. Residents who paid the recycling user fee received a large tag to be attached to the side of their recycling bin. Only those bins with the recycling tag attached were collected.

A Tag Fee Residents purchased sticky tags and attached one to each regular trash item put out for collection, to pay for the disposal of the trash the tags was attached to. The tag was thrown away with the trash, and items not tagged were not collected. Tags were applied only to the regular trash, and not to recyclables or leaves put out for the special fall leaf collections.

Tags cost \$1.00 each during the first year of the program, and \$1.15 during the second year. Tags were available at several local stores, the Town Offices and by mail order (mail order was discontinued the second year). Trash tag vendors received 5% of the tag fee. Tags were chosen over bags because of limited storage space at the Town Offices and at stores, they were easy to handle and deliver to the stores, and they were easy to mail. The disadvantage of tags is that they don't limit the amount of trash that can be placed in a trash can, while a bag is self limiting.

Bulk items (any item that weighs over 80 pounds or is a shape that cannot be picked up by one person) required a special bulk tag. Bulk items were collected four times a year. The cost of the bulk tag was \$7.00, and was intended to cover the cost of collection as well as disposal. However, the bulk tag fee was insufficient and this service was discontinued during the second year of the user fee program. Residents then made private arrangements for bulk collection.

RESULTS OF FEE

During the first year of the program, roughly 80% of the 8,800 eligible households participated in the trash program. During the second year, about 82% participated in the trash program and almost 60% of the eligible households participated in the recycling program.

The trash user fee encouraged recycling, while the recycling user fee implemented the second year discouraged recycling. Residents became very creative in reducing their trash, in both acceptable and unacceptable ways. Many became more careful in their purchases, and began composting their yard waste and even some kitchen waste. Many also increased their use of garbage disposals and trash compactors, which reduce the need for trash tags but didn't reduce the disposal problem. Some residents resorted to burning trash in their fireplaces, not only an unhealthy practice but also unpleasant for their neighbors. Unfortunately, a small handful dumped their trash in business and condominium dumpsters or in the back woods. The net result was that the amount of trash that was collected during the first year of the program dropped to 65% of what had been previously collected.

PROBLEMS

As mentioned, illegal dumping was a minor problem resulting from the user fee. There was no increase in staffing to handle complaints, which would have been helpful, and is advisable to any municipality considering a trash user fee.

Approximately 3% of the residents did not pay the annual trash fee nor did they submit documentation they were using an alternate service (as required by town by-law).

Initially, the tags didn't stick when they were attached at freezing temperatures, although they did stick when attached at room temperature and taken outside a few minutes later. The bid specifications were modified to say that tags must be able to stick when attached to the trash at below freezing temperatures.

The biggest problem with the trash user fee was its effect on the financing of the recycling program. The Town's budget no longer avoided trash disposal costs through recycling, therefore the Town no longer had a financial incentive to maintain the recycling program within the tax base. If recycling was discontinued and people produced more trash, they could just buy more trash tags. In addition, several vocal town leaders insisted that the trash user fee could not subsidize the recycling program. The recycling user fee that resulted from the rejection by the voters for a tax increase must pay for the recycling program in its entirety. With the implementation of the recycling user fee, recycling participation dropped from roughly 85% of eligible residents to almost 60%.

EFFECT OF USER FEE ON REQUEST FOR BIDS

When the user fee went into effect, the Town was paying a flat fee for the town-wide collection of trash and recyclables, and a per ton charge for the disposal of trash. (Chelmsford does not have a contract with a disposal site.) As a result of the user fee, the recent request for bids asked for a per household charge for trash and recycling collection. If the user fee had continued, the Town would have paid only for those households, which participated in either of the programs. Thus the financial risk to the Town was reduced.

The Town also requested a flat fee for the town-wide collection of trash and recyclables, in case the tax increase was approved. The Town continued the request for a per ton disposal charge.

LESSONS LEARNED

Solid waste management needs to be considered as an integrated program on recycling, composting and waste disposal. When any component of the program must be self supporting through a user fee, that component faces potential elimination if insufficient funds are collected. This is what happened to Chelmsford's bulk collection program. The recycling program also came very close to being eliminated because of the doubt that sufficient funds could be collected.

RECOMMENDATIONS

If a community is going to adopt a user fee, I would recommend one in which residents pay for each item they throw away through the use of tags or bags, to pay for trash disposal costs. (Paying by weight would be even better when disposal charges are based on weight.) Although Chelmsford residents grumbled about the user fee, they did think paying for what they threw away was fair.

I would also recommend that the collection costs remain as part of the tax base so that every resident could use any of the programs they choose. If this is not possible, then I recommend a flat bill for the collection costs. Check with legal counsel to determine if your contract(s) will allow for every component of your integrated solid waste program to be included as one item on the bill. To reduce financial risk, structure your next contract so that your community is charged only for those residents who participate in the program. Guarantee a minimum number of participants to the contractor to reduce his financial risk. Have the contractor collect the annual bill, if possible.

Tags or bags should be widely available for the convenience of residents. Tags or bags must be stored in a secure location such as a vault. The tags used by Chelmsford were serialized for inventory control.

When preparing the solid waste budget, consideration should be given to those who cannot afford a user fee. Consideration should also be given to the department which enforces illegal dumping laws. This department must have sufficient resources to handle an increase in illegal dumping. Problems will arise with a solid waste user fee but they can be managed. Fees can easily be adjusted up or down depending on the current economic conditions. A user fee in which residents pay for each item they throw away is regarded as fair by the users and encourages trash reduction.

Lexington PAYT Program

(July 2003 – March 2004)

Population: 30,355 Households served: 10, 950

Weekly curbside trash collection & biweekly curbside recycling collection, now weekly

Contact: Robert Beaudoin, Solid waste and Recycling Superintendent: Rbeaudoin@ci.lexington.ma.us

781-274-7298

Overview of the PAYT program:

- \$2.00 per sticker for 35 gallon sized can/bag of trash.
- Town gave out 30 stickers per household at the start of the program. Residents could trade in the stickers or pay directly for a barrel sticker.
- Program serves up to 4-family units.
- Town offered unlimited recycling and curbside yard waste program during this period.

History:

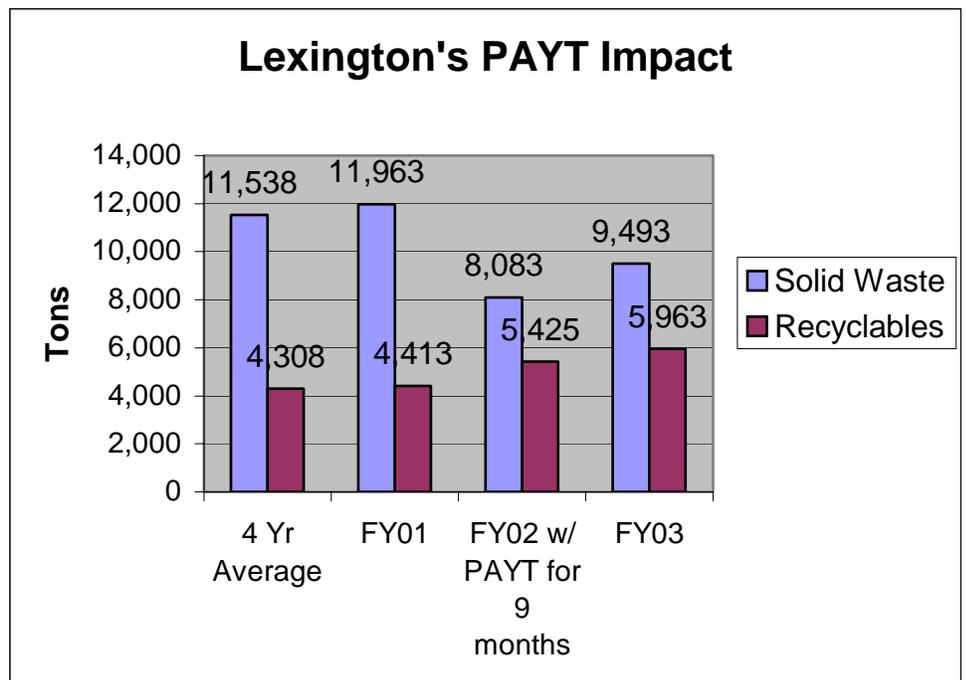
- PAYT started in July 2001. Then, some residents contested the program on the basis of a 1922 by-law that stated the Selectmen should provide for “free” disposal. The wording of the by-law was changed at Town Meeting but then, in a subsequent referendum, residents voted to end the PAYT program as of March 2002.
- The recycling program initially started as biweekly but in January, the town switched to weekly recycling collection.
- According to the DPW Director, there were several “hot issues” at the time and this program bore the brunt of the public’s frustration.

Trash tonnage changes:

- Lexington averaged 11,538 tons per year of trash prior to PAYT and had increased to nearly 12,000 in FY01.
- With 9 months of PAYT in FY02, their annual trash tonnage dropped to 8083 tons (33%).
- After PAYT ended, trash levels increased again to 9,493 tons per year.

Recycling tonnage changes:

- Recycling averaged about 4,400 tons per year prior to PAYT.
- Recycling tonnage for FY02



(with 9 months of PAYT) was 5,425 or 26% more.

- When the Town ended PAYT, they retained weekly recycling collection and recycling tonnage continued to increase.

Implementation:

- Stickers were distributed my mail initially and also available for sale at stores throughout the Town.

Administration and Finance:

- All sticker revenue went into the General Fund.
- An additional \$250,000 or more of new revenue in FY02 came from brokering Lexington's excess capacity (i.e., the amount between its actual deliveries and their Guaranteed Annual Tonnage) at the North Andover waste-to-energy facility.
- The Town hired a Solid Waste and Recycling Superintendent to oversee the PAYT program and all solid waste and recycling contracts.

Enforcement and Illegal Dumping

- Residents not complying with sticker program regulations did not have their trash picked up.
- Illegal dumping did not increase with the implementation of PAYT.

Additional Waste Options for Residents:

- Yard waste: curbside pick up of leaves was the policy during the PAYT period
- HHW collection events 8 times per year at Minuteman Regional HHP Collection site in Lexington.

9. Appendix C – Detailed Financial Planning Model

Table 3. PAYT Planning Model Assuming 20% Reduction in Solid Waste

Proposed Changes	Current System	Flat Fee	PAYT-Basic	PAYT	PAYT +Flat Fee
Projected Reduction in SW	0%	0%	20%	20%	20%
Margin for retailers	\$ -		0	0	0
Flat fee/hh	\$ -	164	0	0	75
Sale price per unit (large)	\$ -		\$ 2.00	\$ 2.00	\$ 1.00
Bags/tags "Free"	-		52		0
Parameters					
lbs/bag	20	20	25	25	25
Costs/bag	\$0.00		\$0.17	\$0.17	\$0.17
Results					
SW Tons	18,930	18,930	15,144	15,144	15,144
Rec Tons	4,894	4,894	6,156	6,156	6,156
Bag/tags required/hh	0	0	5	45	45
Costs/Revenues					
SW Collection cost	\$ (1,241,250)	\$ (1,241,250)	\$ (1,156,900)	\$ (1,156,900)	\$ (1,156,900)
Rec Collection cost	\$ (437,000)	\$ (437,000)	\$ (573,000)	\$ (573,000)	\$ (573,000)
YW Collection cost	\$ (284,000)	\$ (284,000)	\$ (284,000)	\$ (284,000)	\$ (284,000)
SW Disposal cost	\$ (1,211,533)	\$ (1,211,533)	\$ (969,226)	\$ (969,226)	\$ (969,226)
Rec Revenue	\$ -	\$ -	\$ -	\$ -	\$ -
Bag/tag costs	\$ -	\$ -	\$ (16,005)	\$ (143,341)	\$ (143,341)
Implementation Costs	\$ -	\$ -	\$ (60,000)	\$ (60,000)	\$ (60,000)
Subtotal Costs	\$ (3,173,783)	\$ (3,173,783)	\$ (3,059,131)	(3,186,467)	\$ (3,186,467)
Bag/tag revenue	\$ -	\$ -	\$ 194,000	\$ 1,737,466	\$ 868,733
Flat fee per household revenue	\$ -	\$ 3,173,783	\$ -	\$ -	\$ 1,455,000
Subtotal Revenues	\$ -	\$ 3,173,783	\$ 194,000	\$ 1,737,466	\$ 2,323,733
Total Appropriation Required	\$ 3,173,783	\$ 0	\$ 2,865,131	\$ 1,449,002	\$ 862,734
Tax Levy Cost per 1 family hh/yr	\$ 160*	\$ 0	\$ 145	\$ 73	\$ 44
Bag Fee + Fixed fee cost/hh/yr	\$ -	\$ 164	\$ 10	\$ 90	\$ 120
Total Average cost to 1 family hh/yr	\$ 160	\$ 164	\$ 155	\$ 163	\$ 164
*Note that this cost is based on an average single family residence, unlike the flat fee which is based on any type of residence.					

Table 4. PAYT Planning Model Assuming 10% Reduction in Solid Waste

<u>Proposed Changes</u>	<u>Current System</u>	<u>Flat Fee</u>	<u>PAYT-Basic</u>	<u>PAYT</u>	<u>PAYT +Flat Fee</u>
Projected Reduction in SW	0%	10%	10%	10%	10%
Margin for retailers	\$ -		0	0	0
Flat fee/hh	\$ -	\$ 164	0	0	75
Sale price per unit (large)	-		\$ 2.00	\$ 2.00	\$ 1.00
Bags/tags "Free"	-		52	-	0
<u>Parameters</u>	-				
lbs/bag	20	20	25	25	25
Costs/bag	\$0.00		\$0.17	\$0.17	\$0.17
<u>Results</u>					
SW Tons	18,930	18,930	17,037	17,037	17,037
Rec Tons	4,894	4,894	5,525	5,525	5,525
Bag/tags required/hh	0	0	5	53	53
<u>Costs/Revenues</u>					
SW Collection cost	\$ (1,241,250)	\$ (1,241,250)	\$ (1,156,900)	\$ (1,156,900)	\$ (1,156,900)
Rec Collection cost	\$ (437,000)	\$ (437,000)	\$ (573,000)	\$ (573,000)	\$ (573,000)
YW Collection cost	\$ (284,000)	\$ (284,000)	\$ (284,000)	\$ (284,000)	\$ (284,000)
SW Disposal cost	\$ (1,211,533)	\$ (1,211,533)	\$ (1,090,380)	\$ (1,090,380)	\$ (1,090,380)
Rec Revenue	\$ -	\$ -	\$ -	\$ -	\$ -
Bag/tag costs	\$ -	\$ -	\$ (16,005)	\$ (168,329)	\$ (168,329)
Implementation Costs	\$ -	\$ -	\$ (60,000)	\$ (60,000)	\$ (60,000)
Subtotal Costs	\$ (3,173,783)	\$ (3,173,783)	\$ (3,180,285)	\$ (3,332,608)	\$ (3,332,608)
Bag/tag revenue	\$ -	\$ -	\$ 194,000	\$ 2,040,349	\$ 1,020,174
Flat fee per household revenue	\$ -	\$ 3,173,783	\$ -	\$ -	\$ 1,455,000
Subtotal Revenues	\$ -	\$ 3,173,783	\$ 194,000	\$ 2,040,349	\$ 2,475,174
Total Appropriation Required	\$ 3,173,783	\$ 0	\$ 2,986,285	\$ 1,292,259	\$ 857,434
Tax Levy Cost per 1 family hh/yr	\$ 160*	\$ 0	\$ 151	\$ 65	\$ 43
Bag Fee + Fixed fee cost/hh/yr	\$ -	\$ 164	\$ 10	\$ 105	\$ 128
Total Average cost to 1 family hh/yr	\$ 160	\$ 164	\$ 161	\$ 170	\$ 171

*Note that this cost is based on an average single family residence, unlike the flat fee which is based on any type of residence.

Table 5. PAYT Planning Model Assuming 30% Reduction in Solid Waste

Proposed Changes	Current System	Flat Fee	PAYT-Basic	PAYT	PAYT +Flat Fee
Projected Reduction in SW	0%	30%	30%	30%	30%
Margin for retailers	\$ -		0	0	0
Flat fee/hh	\$ -	\$ 164	0	0	75
Sale price per unit (large)	\$ -		\$ 2.00	\$ 2.00	\$ 1.00
Bags/tags "Free"	-		52	-	0
Parameters	-				
lbs/bag	20	20	25	25	25
Costs/bag	\$0.00		\$0.17	\$0.17	\$0.17
Results					
SW Tons	18,930	18,930	13,251	13,251	13,251
Rec Tons	4,894	4,894	6,787	6,787	6,787
Bag/tags required/hh	0	0	5	37	37
Costs/Revenues					
SW Collection cost	\$ (1,241,250)	\$ (1,241,250)	\$ (1,156,900)	\$ (1,156,900)	\$ (1,156,900)
Rec Collection cost	\$ (437,000)	\$ (437,000)	\$ (573,000)	\$ (573,000)	\$ (573,000)
YW Collection cost	\$ (284,000)	\$ (284,000)	\$ (284,000)	\$ (284,000)	\$ (284,000)
SW Disposal cost	\$ (1,211,533)	\$ (1,211,533)	\$ (848,073)	\$ (848,073)	\$ (848,073)
Rec Revenue	\$ -	\$ -	\$ -	\$ -	\$ -
Bag/tag costs	\$ -	\$ -	\$ (16,005)	\$ (118,353)	\$ (118,353)
Implementation Costs	\$ -	\$ -	\$ (60,000)	\$ (60,000)	\$ (60,000)
Subtotal Costs	\$ (3,173,783)	\$ (3,173,783)	\$ (2,937,978)	\$ (3,040,326)	\$ (3,040,326)
Bag/tag revenue	\$ -	\$ -	\$ 194,000	\$ 1,434,582	\$ 717,291
Flat fee per household revenue	\$ -	\$ 3,173,783	\$ -	\$ -	\$ 1,455,000
Subtotal Revenues	\$ -	\$ 3,173,783	\$ 194,000	\$ 1,434,582	\$ 2,172,291
Total Appropriation Required	\$ 3,173,783	\$ 0	\$ 2,743,978	\$ 1,605,744	\$ 868,035
Tax Levy Cost per 1 family hh/yr	\$ 160 *	\$ 0	\$ 139	\$ 81	\$ 44
Bag Fee + Fixed fee cost/hh/yr	\$ -	\$ 164	\$ 10	\$ 74	\$ 112
Total Average cost to 1 family hh/yr	\$ 160	\$ 164	\$ 149	\$ 155	\$ 156
*Note that this is based on an average single family residence, unlike the flat fee which is based on any type of residence.					

