

Report to the Selectmen

To: The Brookline Board of Selectmen
From: The Pay-As-You-Throw Study Committee
January 2009

In June 2008, the Brookline Board of Selectmen, in discussion with the Brookline Solid Waste Advisory Committee, assembled a committee to study whether instituting a pay-as-you-throw (PAYT) waste disposal program would be environmentally, economically, and equitably viable for Brookline. With SWAC's mission to reduce the waste stream and the Board's mission to conduct town business economically, they felt that they would be derelict if they did not study such an option.

The Process

Eleven people were appointed to the study committee: Jesse Mermell, representing the Board of Selectmen, Peter Ames, representing the Council on Aging, Ronald Brown, representing property managers, Tom DeMaio, Commissioner of Public Works, John Dempsey, representing the Solid Waste Advisory Committee, Ed Gilbert, DPW Solid Waste Manager and Environmental Health Supervisor, Sean Lynn-Jones representing the Brookline Neighborhood Alliance, Robin MacIlroy, representing single-family homeowners, Adam Mitchell, Chair of the Solid Waste Advisory Committee, Tommy Vitolo, representing residential buildings not on town service, and Don Weitzman, representing the Advisory Committee.

Prior to the first meeting the Board of Selectmen expanded the charge of the study committee to look at other alternatives, in addition to pay-as-you-throw, that would reduce solid waste and increase recycling.

The committee began meeting in July 2008. Meetings were listed on the Town Calendar and held at either the Temporary Town Hall, the Municipal Service Center, or the Town Hall.

The committee addressed the following questions:

- How does waste and recycling collection and disposal work in Brookline?
- What are the existing regulations?
- How much does it cost Brookline per ton to collect and dispose of trash, yard waste, and recycling?
- How does Brookline compare with other communities?
- What are other communities doing to reduce their solid waste?
- How does Pay-As-You-Throw (PAYT) work?
- How would PAYT work in Brookline?
- What would be the financial impact of PAYT on the Town and the residents?
- If PAYT is not adopted in Brookline, what other appropriate steps should the town take to meet the Commonwealth's 70% waste reduction and recycling goal by 2010?

The committee - as a whole or as individuals - interviewed Tom DeMaio, (Brookline DPW), Ed Gilbert (Brookline DPW), Charles Sisitsky (Natick DPW), Terry Miller (Natick SWAC), Tom Daley (Newton DPW), Elaine Gentile (Newton DPW), Jeffrey Manship (Malden DPW), Chip Laffey, (Needham DPW), Walter Heller (Milton DPW), Carolyn Dann, (MassDEP), Joseph Lambert (Mass DEP), and John Craig (Phoenix Bag Co.).

Jonathan Ferris, Mass DEP municipal assistance coordinator for our region, consulted with the committee.

Publications and documents used in the research phase included: MassDEP Curbside Trash Collection Data (2007), *Pay-As-You-Throw: Lessons Learned About Unit Pricing* (2002) and *Full Cost Accounting for Municipal Solid Waste Management: A Handbook* (1997) by the United States Environmental Protection Agency (2002), *Variable-Rate or 'Pay-As-You-Throw' Waste Management* by Reason Public Policy Institute, "Kicking the Cans" in the *Wall Street Journal* (7/29/08), "Say 'no' to Pay-As-You-Throw" in the *Brookline TAB* (6/19/08), MassDEP PAYT Program Update (3/07), "PAYT in Concord" (3/07), "Saving the World for Latte" in *Newsweek* ((10/6/08), "Should You Pay For Your Garbage?" in *Parade* (9/2/08). We also used many websites including the US EPA and the MassDEP.

Documents supplied by the Brookline DPW included: Brookline Recycling and Solid Waste Information (2008), Funding for FY 09 Waste Contracts, Cost of In-House Solid Waste Collection (2009).

What is Pay-As-You-Throw?

Pay-As-You-Throw (PAYT) is the popular name for what the waste disposal industry also calls unit pricing or variable-rate waste management. Basically, it is a market-based approach for dealing with the issues of waste generation rates, rising disposal costs, the environmental problems of transporting and incinerating waste, and state and federal waste prevention and recycling goals. Unit pricing takes into account variations in waste generation rates by charging residents based on the amount of trash they place at the curb. It offers individuals an incentive to reduce the amount of waste they generate and leave for disposal. Basically, residents who throw away more pay more. Most PAYT programs charge residents a yearly flat fee for trash collection. That pays for the staff, the equipment, the fuel, and the administrative costs. Above that basic fee, residents then pay for every bag or barrel that they place at the curb. That covers the trash disposal costs.

129 of the 351 Massachusetts cities and towns have pay-as-you-throw programs In 2007 the EPA reported that PAYT programs were available in about 25 percent of communities in the United States, covering nearly 75 million residents. Five states have more than 75 percent of communities with PAYT. Thirty of the 100 largest cities in the United States are using PAYT.

Though the basic concept of pay-as-you-throw is straightforward, the decision to adopt such a program is far from simple. There are potential benefits as well as potential barriers. The following will be discussed in greater detail:

Potential benefits

- Waste reduction
- Reduced waste disposal costs
- Increased waste prevention
- Increased recycling and composting
- Consistency in budgeting
- Support of town, state, and federal goals
- More equitable waste management fee structure
- Increased understanding of environmental imperatives

Potential barriers

- Illegal dumping
- Recovering expenses
- Administrative costs
- Resident costs
- Multi-family housing
- Building public support

Brookline's Solid Waste History

Brookline began its municipal solid waste program in 1921 and paid for it with property taxes. Trash disposal, necessary for health and aesthetic reasons, was a very small municipal expense. Costs were low. But, as the population grew, the landfill reached capacity, the incinerator was closed, and the trash tonnage, collection costs, and disposal costs continued to rise, the Town had to consider other options. In 1989, refuse disposal costs went from \$18 per ton to \$75 per ton which represented a 300% increase. Brookline instituted a "refuse fee" of \$150 per household per year with the intention of covering approximately 70% of the costs of collection and disposal. In 1992, recognizing that the "flat fee is not a fair system," the Advisory Committee urged "the Selectmen and the Solid Waste Advisory Committee to pursue the 'pay per bag' or other alternative programs in which the fee will reflect usage." A Town Meeting article calling for a PAYT program was withdrawn before a vote in the early 1990s.

The current refuse fee per household is the same regardless of differences in the amount of waste generated. Residents who recycle faithfully and throw out little and residents who use private haulers subsidize those who recycle little and generate greater amounts of trash. Even with the current system some have the mistaken impression that municipal solid waste collection is "free" so they have no incentive to reduce their trash

The refuse fee was increased to \$200 in 2007.

Approaching the Problem

The committee asked the question, “Should trash collection and disposal be treated like a utility such as electricity, gas, or water?” With most utilities one pays for what one uses, and fees reflect the full cost of the service. By regulating the amount of trash they disposed of, residents could lower or raise the amount they paid, and the municipal solid waste budget would balance.

For the purposes of the study the committee used the current figure of 13,255 households on municipal collection and an FY2009 solid waste and recycling budget of \$2.8 million. We understand that, over history, the municipal solid waste program has not generally recovered full cost. Property taxes have been used to supplement the program budget.

For FY 2009 the yearly \$200 refuse disposal fee per unit comes within approximately \$10 of covering all the expenses for Brookline’s municipal solid waste collection and disposal. To keep pace in FY 2010 the fee would have to be raised again by \$10 and then about 3% every year to keep up with the consumer price index.

The Recommendation

After careful deliberation, the study committee recommends that Brookline institute a pay-as-you-throw program with a multi-tiered pricing system: a yearly refuse disposal fee and different rates for two different-sized, town-approved bags. This system would allow for planning, budgeting, and accounting for fixed costs by charging residents the yearly fee. The price per bag would reflect the actual disposal (or “tipping”) costs.

Brookline is one of a few municipalities that do not currently charge extra for collecting and disposing of bulky items (e.g. white goods, air conditioners, cathode ray tubes, large furniture). The committee recommends that residents be charged separate, modest fees that reflect the actual cost to the town for disposing of such items.

An Example of How Brookline PAYT Could Work

The refuse fee would be lowered to somewhere in the range of \$150 - \$170 per household per year. That would pay for salaries, maintenance, fuel, recycling/composting, and administrative expenses. The trucks still have to be manned. They still have to do the routes. In addition to the yearly fee, residents would pay in the range of \$.70 - \$.80 per 15-gallon bag and/or \$1.40 - \$1.60 per 30-gallon bag. Bags would be a distinctive color imprinted with the Town of Brookline seal. They would be available in at least ten retail stores in Brookline in units of ten and at cost. PAYT bags are not subject to sales tax. The bag price would be set for the term of the disposal contract and take into account any escalator clauses.

As expenses go up (or go down) in succeeding years, the fee and the bag costs would be adjusted accordingly in much the same way that water fees are set to reflect yearly costs. The Board of Selectmen would set the rates.

To avoid confusion at the curb, collection and disposal of bulky items would be planned for and paid for in advance. Residents would apply Town of Brookline stickers to the items. The stickers would be available at Town Hall and at the Municipal Service Center. Sticker prices would vary from \$5 to \$20 depending on the item's disposal costs. For example, it currently costs Brookline \$14 to drain freon from each air conditioner. In 2008, 700 refrigerant goods were picked up at curbside and disposed of at a cost of approximately \$10,000.

Potential Benefits:

Waste reduction: The United States Environmental Protection Agency and the Massachusetts Department of Environmental Protection have been tracking the thousands of communities that have been using unit pricing since the 1980s. The evidence is that pay-as-you-throw programs lead to reductions in solid waste. For example, about 73% of the Town of Natick's curbside collection was solid waste before PAYT. After PAYT was instituted, solid waste went down to 59% of curbside collection. The nearby communities of Milton and Needham have PAYT. In 2008, they reduced the percentage of trash collected at curbside to 48% and 31% respectively. Brookline's percentage at curbside is 70%.

Reduced waste disposal costs: When the amount of waste is reduced the amount spent on disposal is reduced. Brookline currently pays \$82 for every ton of waste sent to the incinerator. By cutting waste disposal by 341 tons between July 1, 2008 and December 31, 2008, Brookline saved \$28,000.

Increased waste prevention: To take advantage of the potential savings that unit pricing offers residents typically modify their traditional purchasing and consumption patterns to reduce the amount of waste they place at the curb. These behavioral changes have beneficial environmental effects that include reduced energy use and materials conservation. At the same time more manufacturers are reducing bulky packaging in response to market and environmental demands.

Increased recycling and composting: Experience has shown that recycling rates go up when pay-as-you-throw programs are instituted. Brookline's recycling rates are not as high as those of comparable communities. They are not even close to nearby communities that have instituted unit pricing. For example, Brookline's recycling rate has leveled at about 30% while nearby PAYT communities such as Milton (52%) and Needham (69%) are edging toward the state goal of 70%.

Consistency in budgeting: An important part of PAYT in Brookline would be that the Board of Selectmen would set the yearly fee and the bag prices based on the real

expenses of collection and disposal over the length of the contract. Setting the rates over that length of time would bring consistency to the solid waste budget. The Board uses similar authority to set water rates.

Support of town, state, and federal goals: Again, though Brookline's recycling rates are good they do not meet the goals for recycling set by the Commonwealth (70% by 2010), nor do they meet the high expectations we have as a town and a nation.

More equitable waste management fee structure: Our refuse disposal fee, in effect, requires residents who generate a small amount of waste to subsidize the greater generation rates of their neighbors. Because the customer with pay-as-you-throw is charged for the level of service required, residents have more control over the amount of money they pay for waste disposal. If we do not adjust solid waste costs, property owners who subscribe to private haulers will increasingly subsidize the municipal program through their property taxes.

Increased understanding of environmental imperatives: Through unit pricing, Brookline has the opportunity to explain the hidden costs of waste management. Traditionally, we have obscured the actual economic and environmental costs associated with waste generation and disposal. As Brookline residents understand their impact on the environment, they can take more steps to minimize them. With the increased concern about climate change and the Town's climate change goals, there is a strong argument to reduce solid waste and increase recycling. There is a direct correlation between the amount of solid waste collected, transported, and disposed of and the amount of carbon and toxic emissions released into the atmosphere. For example, a 25% trash reduction yields a .4% reduction in Brookline's carbon footprint. PAYT could represent 2% of the carbon savings needed to meet the 2020 goal.

Potential Barriers

Illegal dumping: When they are presented with the concept of PAYT, illegal dumping is the primary concern for some residents. They may object to PAYT because they think it will lead to misuse of public litter barrels, leaving trash in front of a neighbor's house late at night, or dumping in alleys. Most communities with pay-as-you-throw programs report that illegal dumping proved to be less of a concern than anticipated. For the first weeks of a switchover to PAYT, some municipalities have temporarily reassigned municipal staff to check on and enforce compliance. Brookline should expect to do this as well.

Recovering expenses: Since pay-as-you-throw offers variable rates to residents, the potential exists for uneven cash flow that could make it harder to operate such a program. Other communities found that by being fiscally conservative in setting rates they were able to cover fluctuations. Brookline must set fees and bag prices at the appropriate level to ensure that, on average, sufficient funds are raised to pay for waste collection, complementary programs, and special services. A PAYT program would be revenue-neutral.

Administrative costs: Brookline already has a system to distribute refuse disposal bills and collect fees. The town-approved PAYT bag distribution system will be operated by a company that supplies the stores directly. Many communities pool department resources for an initial two-week enforcement period. The MassDEP firmly believes in the efficacy of unit pricing. They will make an initial grant to Brookline (\$4/household) for education and outreach efforts for the switchover. There should be no increased administrative costs to the Town.

Resident costs: While unit pricing offers residents greater control over the cost of disposing of their waste, it could initially be seen as a rate increase. An effective public outreach campaign that clearly demonstrates the current costs of waste management and the potential reductions offered by pay-as-you-throw will help to address this.. In the current fiscal climate, however, Brookline's waste disposal fee is highly likely to increase in order to reduce or eliminate deficits in the Town's solid waste budget.

Multi-family housing: Extending PAYT to residents of multi-family housing should not be difficult. Currently, there are ninety-eight buildings on municipal service that have nine units or more. For residents of some of those buildings the costs of solid waste collection and disposal are somewhat concealed in rent and condominium fees. A PAYT system would make it clear to residents the true costs. As in single-family homes, that should be an incentive to reduce and recycle.

Building public support: Perhaps the greatest barrier to realizing a pay-as-you-throw program is overcoming resistance to change from residents, landlords, and elected representatives and officials. Informing stakeholders about the economic, environmental, and equity costs of current waste generation patterns can help overcome resistance and build support.

Over fifteen years ago an article calling for a PAYT program in Brookline faltered in Town Meeting. The economic and environmental aspects of solid waste have only gotten worse since then. Now there is a much broader consensus in the community that we must take better care of the environment, make wise fiscal decisions, and be as fair as possible to all residents. The Town is setting goals and acting on initiatives to counteract climate change.

Other Alternatives

The Committee looked at other ways of reducing solid waste and increasing recycling. The following alternatives are being tried either in the region or in other parts of the United States.

Single-stream recycling

What is it?

Single stream recycling allows residents to throw all recyclables into one wheeled cart (toter). The sorting (paper products one way and commingled containers the other way) takes place at the materials recovery facility. Single stream works best when residents are provided with two toters: one for recyclables and one for trash. One truck collects both.

Brookline currently has dual-stream recycling. Paper and cardboard and commingled containers are sorted in the household. They are placed separately at the curb and collected in separate sections of the truck. Trash is picked up by another truck.

Advantages:

- Makes recycling in the home very easy
- Recyclables are contained in a wheeled cart (toter) with a lid
- Safer for workers if done with toters and automatic or semi-automatic collection

Disadvantages:

- Initial cost of toters
- Maneuvering toters around cars and in snow in densely populated neighborhoods.
- Contamination

Does it reduce solid waste and increase recycling?

Communities that use single-stream recycling report that their recycling rates went up when single-stream was introduced. The Committee recommends a serious study of single-stream recycling when the recycling contract is renegotiated. Though we will not enjoy the high returns we were getting on paper, we will, most likely, reduce some of our solid waste and save money on tipping costs. It is possible that the increased volume of recyclables would cover the reduced revenue from waste paper. Materials recovery facilities have been buying new machinery to do the sorting. They are starting to encourage single-stream.

Curbside collection of organics

What is it?

There has been quite a bit of publicity about San Francisco's curbside collection of organic kitchen waste. The food waste is composted. Because food waste often makes up 30% of residential trash, other municipalities are following the example. Cambridge has initiated a voluntary drop-off site for organic waste.

Advantages:

- Reduces a significant amount of what is currently solid waste

Disadvantages:

- Needs planning for residential storage until collection
- Needs arrangements for hauling and composting

Does it reduce solid waste and increase recycling?

Yes. The Committee recommends that the Solid Waste Advisory Committee investigate setting up a system of curbside collection or drop-off of organic waste. It would be particularly important if Brookline institutes PAYT. Further reducing our solid waste tonnage is the objective and food waste is considerable.

Composting yard waste at the transfer station

What is it?

Brookline picks up yard waste at the curb and the Water Division cleans storm drains. All that is hauled to the transfer station. A private hauler takes it away (\$91,000/year in FY 2009) to be composted into humus and sold. Could Brookline compost its own yard and storm drain waste?

Advantages:

- On-site operation would save costs of sending it out
- The Town would use the humus

Disadvantages:

- Before the redesign of the transfer station, composting generated nuisance odors and neighborhood complaints.

Does it reduce solid waste and increase recycling?

Though no appreciable change is predicted, now that the grounds of the transfer station have been redesigned, Brookline should study the feasibility of composting yard waste on-site. Would composting create annoying odors? Would composting make fiscal sense? Could the compost be used on park projects or for sale to the public?

Charging by weight

What is it?

Some municipalities in the United States and in Europe have sophisticated scales on their sanitation trucks. They weigh residents' trash and, by scanning the bar codes on the barrels or bags or totes, are able to charge by the pound.

Advantages:

- More accurate gauge of disposal costs
- Residents with trash compactors would pay their fair share

Disadvantages:

- The startup and initial administrative costs would probably be high.

Does it reduce solid waste and increase recycling?

Yes. In much the same way that PAYT does.

RecycleBank

What is it?

RecycleBank is a company that sells software that allows the recycling contractor to scan radio-frequency tags embedded in the recycling toter. The toter is weighed. The data is transmitted to a Web site and the information is converted into points that the resident can redeem for discounts at selected stores. It offers rewards for recycling in much the same way that frequent flier points are accrued by flying.

RecycleBank is used in nine states. The closest community to Brookline using RecycleBank is Everett, Massachusetts. Though Everett reports higher recycling numbers than before RecycleBank, they also report loads being contaminated to increase weight illegally.

Advantages:

- Works well with automatic collection
- Assesses trash by weight instead of volume
- Residents get redeemable points

Disadvantages:

- More sophisticated than PAYT

Does it reduce solid waste and increase recycling?

Yes. The Committee thinks that PAYT is simpler, and more economical to initiate.

Increased recycling enforcement

What is it?

Most residents on municipal service recycle. It is part of the Brookline culture. However, there are some residents who do not comply. Increased enforcement might bring the stragglers in line.

Advantages:

- No change to the current collection and disposal system

Disadvantages:

- Additional personnel and hand-held computers are expensive

Does it reduce solid waste and increase recycling?

Yes. Strict and efficient enforcement would increase recycling rates.

Education

What is it?

The Solid Waste Advisory Committee and the DPW do an excellent job - with a very limited budget - of educating the residents and creating a culture of recycling in Brookline. The DPW website, the DPW Open House, Brookline Works, grants from the Brookline Community Foundation, grants from the recycling contractor, donations of space for the Recycling Corner in the Brookline TAB, and SWAC presence at community events help to get the message to the community.

Advantages:

- Outreach and education are healthy community-building techniques

Disadvantages:

- Education and outreach take time, personnel, and money

Does it reduce solid waste and increase recycling?

Yes. However, even with all the educational efforts, Brookline recycling rates have been fairly level in recent years. Education and enforcement would have to go hand in hand. The Solid Waste Advisory Committee recommends \$10,000 per year for education.

More public area recycling receptacles

What is it?

The public area recycling receptacles that we have in twelve sites are well used. If the receptacles are conveniently available, pedestrians will use them for disposing of recyclables. Where there are no recycling receptacles to complement the litter barrels, paper, cardboard, and commingled containers are ending up in the waste stream.

Advantages:

- Because they recycle at home, residents expect to have recycling options in public areas
- We already have the design for sturdy, attractive, and capacious receptacles

Disadvantages:

- Units are expensive to purchase

Does it reduce solid waste and increase recycling?

Yes. The receptacles in place are heavily used. The Committee recommends purchasing more. The Solid Waste Advisory Committee has identified twelve high-priority locations for more public area recycling receptacles.

Collection Methods

The Committee looked at two collection methods to see if they were compatible with our charge to reduce solid waste and increase recycling.

Automatic collection

With automatic collection the driver never gets out of the cab. From inside the truck, he or she manipulates a robotic arm that lifts the toter, dumps the contents, and returns the toter to the curb. Each truck has only one man – the driver.

There are obvious savings in manpower, and it is much safer for the sanitation and recycling workers.

The only incentive for waste reduction is in variable toter sizes: larger ones for recyclables (65-gallons), smaller ones for trash (35-gallons). For automatic co-collection (waste and recycling) we would have to go to single-stream recycling as well.

Advantages:

- Reduction in manpower
- Fast collections (10 seconds/container)
- Worker safety
- Trash and recyclables are kept in wheeled toters with lids safe from animals and winds
- Compatible with single-stream recycling

Disadvantages:

- Reduction in manpower may affect other DPW operations (e.g. snowplowing)
- Some residents complain about the size and ugliness of the toters.
- Some residents complain that they are charged even when the toter is not out. (e.g. vacation weeks)
- Some difficulty in congested neighborhoods
- Contaminated recycling
- Not easily compatible with a bag system

Communities that have automatic collection and PAYT bags have found that they have had to increase enforcement prior to actual collection because the driver cannot see into the toter before dumping it. The same was true of communities that used smaller toters for trash and larger toters for recycling. Residents contaminated the recycling toter with their excess trash.

Residents would be charged a yearly rate based on the size of the trash toters.

If Brookline were to try automatic collection, the Committee recommends a trial in South Brookline on Friday collection days.

Semi-automatic collection

Semi-automatic collection also uses wheeled toters that are compatible with a lift on the sanitation truck. The worker wheels the toter to the lift. The lift dumps the trash. The worker returns the toter to the curb. Advantages and disadvantages are similar to automatic collection.

The Recommendation Restated

After careful deliberation, the study committee recommends that Brookline institute a pay-as-you-throw program with a multi-tiered pricing system: a yearly refuse disposal fee and different rates for two different-sized, town-approved bags. This system would allow for planning, budgeting, and accounting for fixed costs by charging residents the yearly fee. The price per bag would reflect the actual disposal (or “tipping”) costs.

Brookline is one of a few municipalities that do not currently charge extra for collecting and disposing of bulky items (e.g. white goods, air conditioners, cathode ray tubes, large furniture). The committee recommends that residents be charged separate, modest fees that reflect the actual cost to the town for disposing of such items.