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Creating Sustainable, Cost-Effective, and Equitable Waste-Management Programs in Maine Communities

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The waste-management hierarchy established by Maine statute calls for, in descending order of preference, reducing the amount of waste generated, reusing of items when possible, recycling, organic composting, incinerating materials for energy production, and landfilling (38 M.R.S.A. §2101).

It is our intent in this commentary to present several perspectives on popular municipal solid waste (MSW) policies and programs that can help guide decision making to address the waste hierarchy as well as to extend thinking in regard to MSW. We hope to bring to light the complexity of the issues and to suggest that decisions on MSW have thus far failed to address some fundamental aspects of MSW services in Maine.

There is a broad array of information on policies and programs to address the waste hierarchy. Policies, however, are often labeled as “best practice” with little or no objective criteria or evidence that define what is a best practice. Simply because a policy or program has been enacted and/or implemented in other localities does not mean it is best practice. Information on the results of practices is required, as are distinctions between the types of programs.

From the literature on waste management, it is widely held that the

single most important finding is that effective approaches to reducing MSW—whether addressing individual or multiple components of the hierarchy—require comprehensive planning, full cost (and benefit) accounting, and the integration of interests among the multiple players involved in components of the hierarchy. This includes comprehensive and sustainable consumer education. There is too often a rush by municipalities to implement a one-size-fits-all approach addressing one component of the hierarchy without understanding the interrelationships between components of the hierarchy.

Case in point: The controversy over the costs and effectiveness of recycling, both financially to citizens and communities and to the environment, which festers nationwide and here in Maine. John Tierney, *New York Times* science editor, maintains that we have become “recycling lemmings”—unquestioning in our pursuit of disposing the vast amount of waste we generate through recycling, ignorant of the overall costs and of the damage being done to the environment. He further states that “despite decades of exhortations and mandates, it’s still typically more expensive for municipalities to recycle household waste than to send it to a landfill. Prices for recyclable materials have plummeted because of

lower oil prices and reduced demand for them overseas. The slump has forced some recycling companies to shut plants and cancel plans for new technologies” (*New York Times*, October 3, 2015).

MSW disposal is a *public service* (*public good*) in Maine that all municipalities are required, by Maine statute, to provide to residents and businesses (MRSA Title 38 §1304B, §1305).¹ It is not the same as electricity or water, which municipalities are not required by the state to provide. A public good is defined technically as a service or good that may be used without reducing the amount available for others and that cannot easily be withheld from those who use it.² Public goods include services whose consumption is not decided by the individual consumer, but by the society as a whole. Many public goods are provided by government, and these are usually financed by taxation.

As a public good, we argue that programs to reduce MSW need to be equitable and fair to both citizens and businesses. Past and current efforts both across the state and in many parts of the nation, however, have transformed this public service into a private commodity that residents must pay for directly as they would electricity or water. For example, unit pricing programs such as the pay-as-you-throw (PAYT) programs in Maine and elsewhere are aimed at promoting recycling through cost incentives as a way to reduce the amount of MSW that needs disposing. These programs treat the first ounce of waste generated by residents as a private commodity to be disposed of only with consumer-purchased bags.³ The purchase of these often high-priced special bags (\$1.50 to \$3.45 per 30-gallon bag, depending on the community), often from only one source is, in many communities, the only way to dispose of

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one's trash unless one contracts for it (and pays) privately.

For those with low or fixed incomes, typical of many seniors in Maine, PAYT may be a significant financial burden. In addition, the legal basis of this additional cost to citizens for a legislated public service has not been questioned because reducing MSW is considered good regardless of the social inequities or financial disparities created by such policies. These are two key areas in MSW disposal services that the environmental community has failed to recognize.⁴

Pay-as-You-Throw (PAYT) Collection Methods

There are three main types of PAYT collection methods: carts (bins), bags with identifying stickers/tags, or a hybrid of the two. The cart (bin) method is becoming the predominant method in the Midwest, in part because it is tied to the increased popularity of automation and can be designed so families are allotted a certain amount of trash as part of the property tax and over that pay more, a necessary criterion for an equitable public-good service.

There is little evidence in Maine that unit pricing programs alone, such as bag-based PAYT programs, will increase recycling and save on costs to municipalities for MSW disposal. A study by Nicolas Miller (2008) using a cross section of towns in Maine showed no differences in recycling rates in 2006 between towns with a PAYT program

and those without one.⁵ Our own analyses of the first year of the PAYT program in Waterville demonstrated that the cost of the program to the residents of Waterville significantly exceeded any so-called savings from the implementation of the program.

There is an automatic assumption that programs to reduce MSW, such as PAYT, will lead to increased recycling. The evidence in Maine, however, is more complex than that. Take Woolwich as an example. PAYT was implemented in Woolwich for a limited period of five months in 2015–2016.⁶ Recycling increased while trash collected by the town decreased, resulting in a savings on tipping fees for the town of approximately \$15,500. However average trash plus recycling tonnage between the PAYT period and the same time period for each the previous five years showed a reduction of over 155 tons. Where did this trash go? There are a number of possible explanations for this trash shifting. Certainly reuse and reduction may explain some proportion. However, based on qualitative information, a much larger proportion was due to residents taking trash to business dumpsters like those at Bath Iron Works and to other town collection sites, with a small proportion explained by residents dumping trash on private land or just hoarding it. Public Health Research Institute (PHRI), a Maine-based nonprofit health research firm, is currently conducting a study on effective and equitable policy options study for solid waste management and recycling in Maine. Data from this study supports negative trash-shifting behavior. In February and March of 2016, the two months following the end of the PAYT program in Woolwich, recycling tonnage actually increased by an estimated 7 percent over the previous (PAYT) month.

Trash disposal, however, increased by 116 percent.

Travis Blackmer and George Criner also write of their 2014 investigation of waste-management programs—curbside trash collection, curbside recyclables collection, single-stream collection,⁷ and PAYT—for the purpose of assessing and estimating “their impacts on municipal recycling rate” (2014: 53). PAYT, they note, is the most controversial. And, they conclude, “there is no best system for municipalities” (Blackmer and Criner 2014: 57).

The current literature on MSW strongly suggests that there is a need to combine an aggressive education campaign with whatever program or policy is undertaken to reduce trash and improve rates of recycling.⁸ Good advice? Sure, but might education on its own be the key to improving recycling with existing policies without the need for privatizing trash disposal for households? There are many communities in Maine and across the nation that appear to have markedly increased recycling rates as a result of focused education combined with single-stream recycling and curbside collection. Contrast the examples of Portland and Scarborough. Both have curbside and single-stream recycling—considered essential to increased household recycling. With these changes Scarborough increased its recycling rates dramatically without imposing a PAYT program. It is currently at 33 percent. Scarborough undertook an aggressive education program on what it means to be a sustainable consumer. Portland imposed a PAYT program; yet at 37 percent, the city's current recycling rate is still only slightly above Scarborough's rate. Indeed, the most recent report on solid waste generation and disposal in Maine notes that “SSR [single-stream recycling] programs [that] provide large

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bins to residents for collection of recyclables....[have] greatly increased the amount of material that programs are collecting. However, the education of residents in the programs has not kept up” (Maine DEP 2016: 27).

An important but missing component in many discussions and articles is information about the advanced technologies being developed and implemented in the private sector on MSW reuse and recycling. WastAway, Inc., of Morrison, Tennessee, is a good example (<http://www.wastaway.com/>). WastAway, Inc., takes trash, uses a patented process to pull out the metals, and bakes the rest of the trash into a fluff material that is used as a potting-soil product, converted into fuel-source pellets, or used to produce building materials. There is no need to separate household trash from recyclables. Technologies such as these are the new best practices in MSW and should be considered in Maine. In addition, they have the added advantage of producing local jobs, a requisite for communities with sustainable programs that address the waste-management hierarchy.

One of the biggest tools missing from the reduce, reuse, compost, and recycle components of Maine’s MSW hierarchy is mandatory policies by the state or municipalities, for example, mandatory commercial recycling, requirements for recycling food scraps and construction and demolition debris, and mandatory multi-family recycling. These kinds of policies have been a critical tool in localities across the country in developing MSW disposal policies and programs that work. (See Partnership for Working Families 2013.) Mandatory policies on the disposal of construction materials, food waste, and hazardous materials are few and far between in Maine, but this is not so in many localities across the country. In

Maine, it appears easier to simply place the burden on households in the form of a fee through programs such as PAYT, with almost no responsibilities levied on businesses to reduce their volume of waste.

Yet businesses produce a large proportion of the trash that ends up in landfills. According to Isenhour and colleagues (2016: 26),

The ban on commercial food waste in Massachusetts took effect in October 2014, targeting first large producers generating four or more tons of food and vegetative waste per month. Given that organic materials made up approximately 25 percent of the state’s waste stream and nearly half of that was generated by businesses and institutions, the state decided to focus on commercial generators first.

Perhaps the tool that would best enable Maine municipalities to develop efficacious and equitable waste-management policies is improved and increased state guidance and assistance in planning and assessing policies on all aspects of the waste hierarchy. Additionally, Maine state government could help create incentives for sustainable designs and to support collaboration among businesses. Instead, municipalities in Maine, especially smaller ones, are left on their own to address their MSW problems (and state mandates) without the resources or know-how to plan across the hierarchy. Integrated planning between government, residents, and the companies whose businesses provide services within the hierarchy is a compelling need, particularly whenever a change in any component of the hierarchy is being considered. The legislation governing the state’s MSW plan, for example, requires the state to provide guidance

and direction to municipalities in planning and implementing waste management and recycling programs (38 M.R.S.A. §2122). Planning assistance may include cost and capacity analysis and education and outreach activities (38 M.R.S.A. §2133). Yet our research reveals that towns currently considering policies and programs to reduce trash and improve recycling are not getting planning assistance from the state.

National studies on waste management demonstrate that the best approach to reducing waste, improving recycling, and creating jobs is a comprehensive one, not a one-size-fits-all singular approach. There is a need for a sustainable public education campaign, a comprehensive plan for residential and commercial waste, strong source-reduction policies (e.g., recycling mandates tied to financial incentives), and programs for commercial and household food waste. These components all need to be part of a fair and comprehensive approach to reducing and managing waste while promoting cost-effective reduction, reuse, and recycling policies that ensure equity among residents and businesses.

Maine communities will be facing some difficult decisions over the next months as they ponder waste-management policies and programs to meet state mandates. Additionally, they are often targets of firms marketing a singular solution for reducing household trash and increasing recycling. There are, however, models available for them to assess and adapt—models that will do justice to their residents and businesses. Being diligent and cognizant of the questions they must ask about the various options is essential. Analyzing the true costs and benefits of policies is critical for sustainable and equitable programs.

As part of the study mentioned earlier, PHRI is developing a white

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paper on policy options including unit pricing programs that balance the responsibilities of government, residents, and businesses in solid waste management while recognizing that MSW is a public service required by Maine law for residents and businesses. This white paper, informed by the work of the Partnership for Working Families, authors such as Blackmer and Criner, Miller, and others, will directly benefit Maine communities seeking direction for a fair, equitable, and financially sustainable waste reduction and management program. 🐟

ENDNOTES

- 1 MRSA Title 38 §1304B also states that “municipalities shall have the legal authority to control the handling of solid waste generated within their borders.” Most municipalities have ordinances that require businesses and apartment buildings with more than four units to contract privately (and pay) for trash pickup and disposal. The private contractors presumably use the same disposal sites as for household waste in that community.
- 2 Some classic examples of public goods cited by economists are national defense, clean air (pollution abatement), and lighthouses.
- 3 This says nothing of the fact that bag fees revenues have become a back-door regressive tax used by municipalities to fund other services provided to residents. Thus, what is labeled as a user fee is in reality a tax that funds not just MSW disposal, but roads and schools, to say nothing of the profits sent out of state to bag-manufacturing companies that charge 300 to 400 percent and higher for bags that municipalities could purchase directly.
- 4 One of the most powerful arguments for PAYT according to the environmental community is that it is the most equitable. This logic clearly ignores the fact that MSW services in Maine are not the same as other services such as water

or power. It also does not distinguish between types of PAYT programs that are equitable (and there are several—not in Maine) and those that are not.

- 5 However, Miller found that “if the PAYT towns are divided into those with town ordinances and those without ordinances (as a quick and easy way to separate the towns with greater emphasis on recycling), the differences are stark, with towns that also have an ordinance recycling at rates more than three times higher on average—albeit with much higher incomes, education levels, and numbers of materials accepted” (2008: 11). This reinforces our assertion that PAYT systems alone will not lead to higher recycling rates.
- 6 The PAYT program in Woolwich stopped at the end of January 2016 as a result of a town referendum.
- 7 Single-stream is also referred to as “single-sort” or “zero-sort” recycling.
- 8 See Robert Carr. 2016. Container Group Survey: Recycling Is Popular, but More Education Is Needed. <http://waste360.com/business/container-group-survey-recycling-popular-more-education-needed>

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