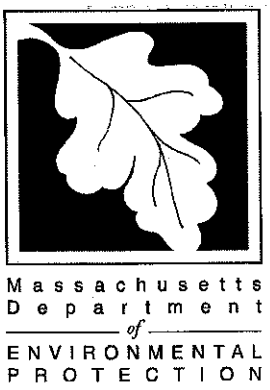
Attachment I

Massachusetts 2010-2020 Solid Waste Master Plan, April 2013

MASSACHUSETTS 2010-2020 SOLID WASTE MASTER PLAN

APRIL 2013

Pathway to Zero Waste



Massachusetts Department of Environmental Protection
Executive Office of Energy and Environmental Affairs

national basis.[8] Further information is available on the web at http://www.epa.gov/region2/webinars/index.html

Many other states have developed, or are developing, strategies for reducing greenhouse gas emissions as part of their state solid waste plans, their climate action plans, or both. Massachusetts considered the Solid Waste Master Plan strategies that will have the biggest co-benefits for reducing greenhouse gas emissions in the climate action plans required by the Global Warming Solutions Act. This issue is also being examined on a regional basis, with the development of a Climate-Waste Action Plan for the Northeast Region, by the Northeast Waste Management Officials Association. This plan is available on the NEWMOA web site at http://www.newmoa.org/publications/NEWMOAClimate-WasteActionPlan.pdf.

Economic Benefits

Recycling bolsters the state's economy. Recycling, reuse, and remanufacturing (that is, manufacturing based on recycled feed stocks) directly support more than 2,000 businesses with an estimated 14,000 jobs in Massachusetts, maintain a payroll of nearly $500 million, and bring in annual revenues of $3.2 billion[9].

Handling materials through reuse and recycling operations creates many more jobs than handling the same materials through disposal facilities. Materials recovery facilities create 10 times more jobs than landfills and municipal waste combustors, while recycling-based manufacturers create 25 times more jobs than disposal facilities for the same amount of material. Materials reuse operations create even more jobs, between 28 and nearly 300 times the number of jobs as disposal facilities[10]. Appendix I lists some of the companies in Massachusetts that are an important part of our recycling systems.

Diverting material from disposal, whether through up-front waste reduction, reuse, recycling or composting, can save significant disposal costs. Current disposal fees in Massachusetts typically range from $60 to $80 per ton. If we are able to achieve our goal of reducing disposal by 2 million tons per year by 2020, that would result in ***annual*** avoided disposal costs of $120-$160 million. Depending on the status of recycling markets, municipalities or businesses may be able to receive some revenue for recyclable materials; however the greatest benefits will come from avoided disposal costs. It is important to recognize that recycling and composting are not free, as there are collection and processing costs. But the combination of avoided disposal costs and potential material revenues makes recycling, anaerobic digestion and composting cost effective materials management strategies.

1.3 WHAT IS IN OUR WASTE AND HOW DO WE MANAGE IT?

Solid Waste Composition

The 2010-2020 Plan addresses trash that is produced by residents and businesses (referred to as

[8] As presented in June 4, 2009 US EPA Region 1 webinar, What is the Climate-Waste Prevention Connection?", citing forthcoming US EPA report titled *Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices*

[9] *U.S. Recycling Information Study*, prepared for the Northeast Recycling Council, February 2009.

[10] Institute for Local Self-Reliance, Washington, DC, 1997. Found on http://ilsr.org/recycling-means-business/, 5/11/15.

"Municipal Solid Waste" or "MSW"), as well as waste primarily from building construction and demolition (C&D debris), and smaller amounts of sludge from wastewater treatment, non-hazardous industrial solid waste, and other wastes that are managed in part at solid waste facilities. MSW typically contains a wide variety of discarded materials, including food scraps, yard waste, paper and paperboard products, plastics, metal, rubber, leather, textiles, wood, glass, and other miscellaneous materials. Figure 1 shows the typical composition of municipal solid waste based on waste characterization studies conducted in Massachusetts in 2010. When referring to "solid waste" in this document, unless specified otherwise, we are referring to MSW and C&D debris.

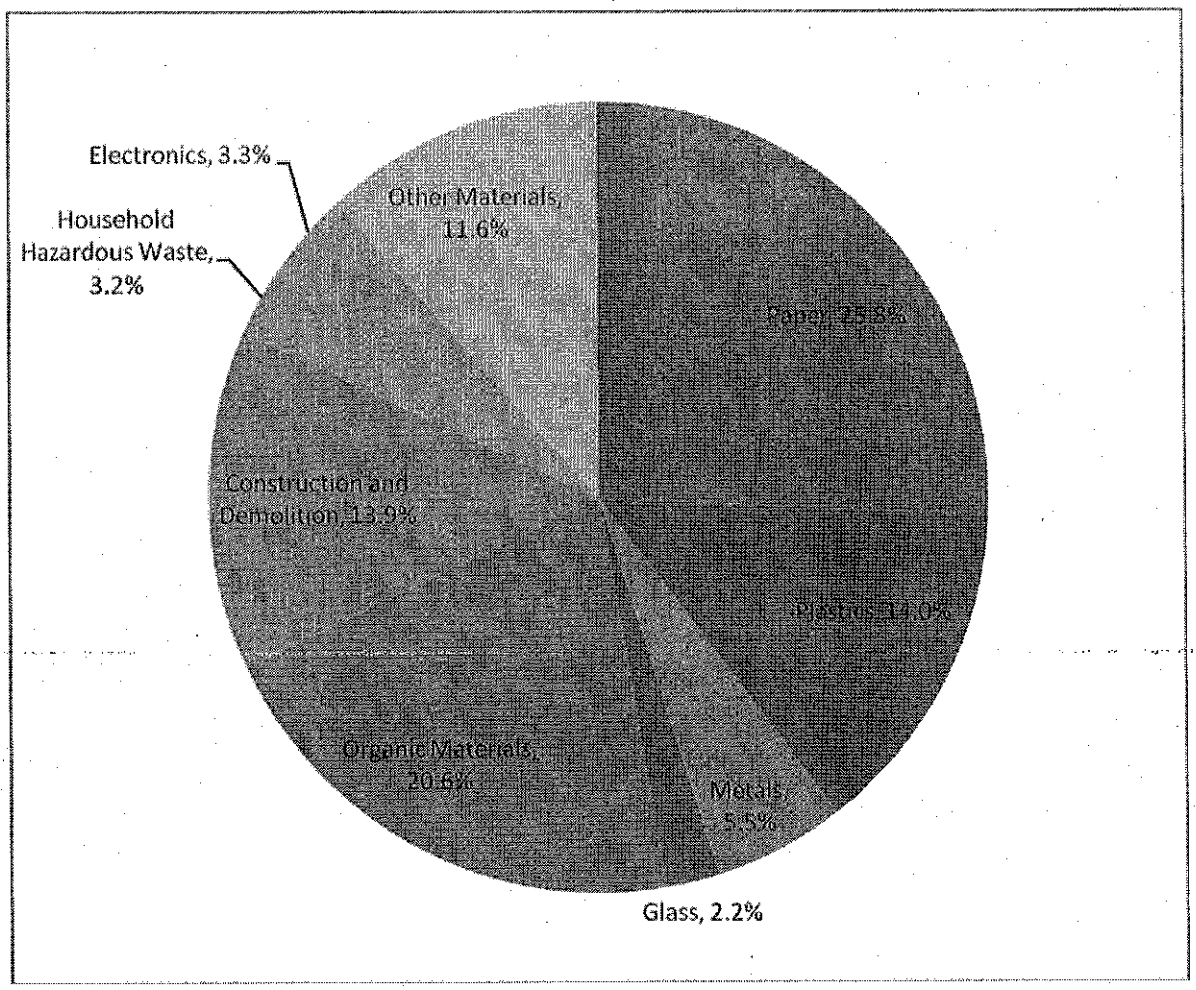


Figure 1 Municipal Solid Waste Composition

Construction and Demolition Debris (C&D) – generated from the construction, renovation and demolition of buildings, roads, bridges and other structures – is the other major component of solid waste. C&D waste typically includes asphalt, brick, concrete, metal, wood, wallboard, and roofing and siding materials (such as wood and asphalt shingles). Wood waste can be natural lumber, painted or stained, unpainted or untreated, pressure-treated, or "engineered" (particle board, for example), and also can take the form of discarded pallets and crates. Figure 2 below

- Agency's assessment of future capacity.

As shown in Table VI, there is adequate capacity through the year 2039 for all 10 CAP management categories. For landfills, the projected remaining management capacity calculation takes into account the depletion of available landfill capacity over time.

Conclusions

EPA has updated the national assessment of capacity for the treatment and disposal of hazardous wastes for the next 20 years. Based on its analyses of the data presented in this Report, the Agency has determined that adequate national capacity for the treatment and disposal of hazardous waste exists for 20 years (i.e., year 2034) and through the year 2039. Although EPA believes there is national capacity, states and regional groupings of states should continue hazardous waste management planning activities to ensure that adequate capacity exists in the future.

While currently there is adequate hazardous waste treatment and disposal capacity, there is the potential for unforeseen circumstances (e.g., new federal regulations, permit denials, taxes on management, statutory limitations on landfills, and changing market conditions) that could affect the future availability of management capacity. Nationally, the industry is consolidating and restructuring as indicated by the existence of fewer landfills, incinerators, and energy recovery facilities permitted under RCRA Subtitle C requirements than reported in the 1993 CAP data submissions. The dynamic hazardous waste market and the uncertainty of the permitting process make it difficult to guarantee that the current surpluses of hazardous waste management capacity will continue to exist. Although the Agency believes the information presented in this Report demonstrates the future availability of treatment and disposal capacity, the Agency will continue to periodically collect and evaluate data to ensure that the requirements of CERCLA 104(c)(9) are satisfied.

While implementation of the methodology presented in the 1993 Guidance predicts the future availability of capacity through 2039 for all 10 CAP management categories, EPA believes that management of certain waste streams should be studied in more detail. Specifically, EPA plans to conduct analyses to examine the generation and management of wastes containing mercury and wastes containing dioxin. The results of these studies will be made available to the public once they are ready for review.

Furthermore, assuring adequate capacity requires active planning on the part of all parties, including states, tribal governments, industry, and commercial management facilities. This necessitates that all states periodically examine their capacity situations, identify areas of concern, and develop plans that consider future needs. These planning exercises will add to states' knowledge of their hazardous waste management systems, help them implement waste minimization programs, and encourage companies to replace inefficient treatment technologies with safer and more innovative technologies. This can be especially important if studies of hazardous waste management data show capacity issues for specific waste streams anticipated to be generated within a state's borders.