



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

IAN A. BOWLES  
Secretary

LAURIE BURT  
Commissioner

**Draft SWMP Framework and Stakeholder Discussion Questions  
(November 2008)**

The Solid Waste Master Plan is the Commonwealth's blueprint for managing solid waste that is generated, reused, recycled, and disposed of in Massachusetts. As MassDEP is preparing a new Plan for the coming decade, we must harness new policies, incentives, technologies and practices to aggressively increase reuse and recycling, and to deal with what is left over in ways that do not harm the environment and reduce costs for municipalities and businesses. Our policy must be based on the *environmental performance* of the waste management system, as measured by progress toward reducing water pollution, local and regional air pollution and greenhouse gas emissions from the waste stream.

This document describes current trends in the management of Massachusetts' solid waste, and proposes some general principles for a new policy framework. It also presents questions that the Department would like to discuss during upcoming stakeholder meetings (details and schedule at <http://www.mass.gov/dep/public/hearings/smwpmtgs.htm>).

**Current Situation:**

While current recycling practices help Massachusetts residents, businesses, and government avoid significant solid waste disposal costs, we could do much better. Worldwide markets for recycled materials have soared in the recent past, but the Commonwealth's rate of recycling has leveled off.

The 2006 Solid Waste Master Plan Update continued an effort to reduce the solid waste we produce by 70% by 2010, a goal set in the "Beyond 2000" Solid Waste Master Plan. It also established a goal to recycle 56% of the solid waste generated in Massachusetts by 2010. While we are now recycling 47% of our waste and within 10% of achieving this goal, it will most likely not be met by 2010.

In 2006, we disposed of 6.6 million tons of waste in landfills and incinerators (enough to fill Fenway Park 74 times or a freight train more than 1,300 miles long). In addition to paying about \$500 million to dispose of this waste, residents, businesses and municipalities also lost opportunities to earn money by recycling and reusing the valuable materials that were thrown away.

Our world has changed in fundamental ways over the last several years:

- Global demand for second-hand materials has been strong and has grown exponentially in recent years, particularly from Asia and Europe. While these markets have recently declined along with the rest of the world economy, they are expected to recover as the world economy recovers. Over the last several years, expanded markets have dramatically raised the value of recycled materials, especially paper, metals, and plastics.
- High energy and fuel costs have made virgin materials and manufactured products more expensive, and in turn, have increased the relative value of recycled materials.
- Improvements in recycling technologies have made it easier for cities, towns, and businesses to provide dependable streams of specific materials that can be used directly to make new products.
- Waste bans, first adopted by MassDEP in 1990, cover a variety of materials with well-established recycling markets.<sup>1</sup> The waste bans are intended to reduce the toxicity of the waste we send to disposal facilities and to support the development and operation of recycling markets by ensuring that there is a continuous supply of these materials. Widespread compliance with the waste bans, however, has not yet been achieved.
- While the Commonwealth has invested heavily in our recycling markets and infrastructure over the last 20 years, competition for public resources and investment dollars is more intense than ever. The state budget cuts announced recently call for us to be more innovative and creative with the resources we have.
- New technologies (and some old ones that are getting new attention) show promise to generate energy from waste materials at less environmental cost than traditional waste-to-energy plants (e.g., less pollution, better/more cost-effective ways to capture the energy value of discarded material).
- Even with increased fuel costs, the cost of out-of-state disposal remains very low compared to in-state disposal, because inexpensive rail transport carries waste to out-of-state landfills with lower tipping fees. About 1.4 million tons of Massachusetts' solid waste is disposed of out of state each year. With reduced capacity available at in-state landfills, more Massachusetts waste will be exported in the future: by 2014, exports are expected to rise to between 2.5 and 4.1 million tons annually.
- Questions have been raised about the effectiveness of the incinerator moratorium in protecting the environment. The moratorium was established in 1990 to avoid overbuilding in-state disposal capacity with facilities that must receive large amounts of trash for decades. It was reaffirmed in 2000 to prevent increases in mercury emissions to the air. However, the moratorium may have had an unintended effect of protecting existing facilities from competition with new technologies that may be able to meet more stringent environmental performance standards.

### **New Framework**

While Massachusetts has implemented aggressive recycling programs over the last 18 years, these programs will not achieve our ambitious waste reduction goals. This year, MassDEP is opening up the whole Solid Waste Master Plan for a fresh look. We need a new framework –

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<sup>1</sup> Waste bans now cover paper, glass and metal containers, yard waste, single resin narrow-necked containers, batteries, white goods, whole tires, cathode ray tubes, and common construction debris such as asphalt paving, brick, concrete, metal and wood.

one that shifts our approach from “waste management” to “sustainable materials management”, and focuses on how to get the best value from discarded materials in both monetary and natural resource terms.

This new framework has two complementary parts:

- The first must significantly expand the degree to which we reduce, reuse, and recycle materials that would otherwise be discarded. Our challenge is how to stimulate new markets to “*reduce, reuse, recycle and recover.*”
- The second must address the materials that cannot be reduced, reused or recycled, and therefore need to be managed in ways that capture their remaining value and minimize their impact on our environment

This year, MassDEP is looking critically at what has worked, what has not worked, what new technologies may be available, and what new partnerships we can forge. We need to think about what we can do in the near term to start shifting to a sustainable materials management approach, and what longer-term strategies we can start pursuing now, for benefits down the road.

### **Summary**

We need to break through the current logjam of old ideas, stop relying on state subsidies to reach our recycling goals, and stop disposing of waste as if the material had no value. New conditions are giving us an opportunity to capitalize on new market realities and new technologies to make recycling pay, and significantly reduce what we landfill and incinerate.

### **General Principles for a New Framework**

1. Capture the maximum value of materials in the waste stream through re-use, recycling, or composting and, for materials that cannot be reused or recycled, recovering their energy value.
2. Dispose only materials with no remaining value in landfills and municipal waste combustors.
3. Encourage the reduction of the quantity and toxicity of waste at its sources.
4. Improve the environmental performance of our waste management system, in terms of water discharges, air emissions (including greenhouse gases), and energy/water conservation.
5. Improve other aspects of the system’s performance: create “green” jobs, support the development of other industry, and keep costs reasonable for participants in the system.

### **Questions for Discussion**

MassDEP has identified some questions that the agency would like to explore during upcoming stakeholder meetings. These are listed below.

#### *1. Increasing the supply of recycled materials:*

- What are the barriers that keep people from recycling/composting more:
  - Residents of single-family homes? Multi-family buildings?

- Communities that don't currently have high recycling rates? Communities that don't currently offer solid waste management services? Communities that are already recycling at high rates?
  - Large, medium, and small sized businesses: Commercial? Industrial? Institutions?
  - Other groups?
- How can we harness market forces to better align the costs and benefits for increased recycling by waste generators (residents, businesses, municipalities), with the interests of the businesses that handle waste materials?
  - How can we increase waste ban compliance by Massachusetts generators? What are the barriers to compliance and what strategies will address these barriers?
  - How can we increase waste ban compliance by Massachusetts haulers? What are the barriers to compliance and what strategies will address these barriers?
  - Recognizing the current state budget shortfall, what financial resources may be available to support efforts to increase the supply of recycled materials in the short term while we are developing longer-term market-based incentives? One potential source may come from a provision of the "Green Communities Act of 2008", which allows municipal waste combustors that were operating as of 1997 to sell "Tier 2 Renewable Energy Credits," as long as half of the revenue they generate from these credits is devoted to MassDEP-approved recycling programs.
2. *Building Recycling Markets:*
- Some materials already have strong recycling markets. How can we make collecting and moving them to end users easier?
  - MassDEP has tentatively identified paper, organics, and some specific construction materials (wood, wallboard and shingles) as candidates for short-term efforts. Are there materials that would be more productive to focus on in the near term?
  - How can we encourage haulers, recycling and disposal facilities (all participants in our solid waste management system) to make the necessary upfront investments to increase recycling?
  - How can we encourage entrepreneurs to develop and support new uses for materials that are recovered from waste? What are the best ways to stimulate new markets that recover the maximum value from these materials?
  - In the near-term, are there alternative energy generation technologies that are compatible with the waste streams that present the largest opportunities for reuse and recycling? For example, could/should anaerobic digestion be used to expand our ability to recycle organic wastes?
  - What new technologies are available to help maximize recycling?

- How can we incentivize recycling markets to grow without depending on government subsidies?
  - Where do we need to develop and support the infrastructure that collects these materials, and moves them to the markets?
3. *Preventing Waste from Being Generated:*
- How can we encourage/incentivize businesses to design products that have minimal “end of life” impacts?
  - How can we encourage manufacturers, distributors, and retailers to implement more efficient practices that will reduce the quantities of material in products, reduce the toxicity of materials used in products, reduce packaging, and take other steps to keep waste from being generated when products reach the end of their useful lives?
  - What opportunities are ripe for action in the short term, and what longer term initiatives should work start on now?
4. *Getting the Most out of Residual Materials:*
- What specific types of materials remain after maximum reduction, reuse, and recycling? How might the content of these residual materials change over time, as our recycling and reuse programs evolve?
  - What are the best uses of these residual materials, in terms of capturing the maximum value from them with the least environmental impact (water quality, air quality, greenhouse gas emissions)?
  - How can our strategies and programs account for changes in waste composition over time?
  - Do those residuals have sufficient energy value to make it economically feasible to use them to generate energy?
  - How can we ensure that *only* materials that cannot be reused or recycled actually get disposed? What processes and/or systems need to be established to achieve this important objective?
  - Regarding fuel for energy, what opportunities are there to use stocks of discarded materials as substitutes for virgin fossil fuels?
  - The goals of the moratorium on new municipal waste combustor capacity have included 1) preventing increased mercury emissions; and 2) avoiding overbuilding in-state disposal capacity with facilities that must receive large amounts of trash for decades.
    - Has the moratorium been effective at achieving those goals?
    - Are there other approaches for achieving those goals that would encourage innovation, greater energy production efficiencies, and the development of methods for managing

residual waste that can meet significantly higher environmental performance standards (for existing and any new facilities)?

- Is it necessary to continue the moratorium in order to maintain the progress we have made toward those goals?
- Are there other goals that continuation of the moratorium would help us achieve?