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**Solid Waste Master Plan
Education Workgroup
February/March 2009**

I. Mission

Explore ways to educate waste generators (i.e, residents and businesses) about the need to reduce waste and recycle, the benefits of reducing waste and recycling, and how to separate materials from trash to maximize their recovery value.

II. Key Issues and Questions

Stakeholder listening sessions held in December 2008 and January 2009 identified a lack of knowledge about waste reduction and recycling as a significant barrier to increasing the diversion of waste from disposal. This workgroup will review past and current state, municipal and other efforts to educate waste generators, identify specific key knowledge gaps, and identify options for expanding this knowledge base.

Workgroup discussions will focus separately on education of residents and businesses. A preliminary list of questions is below:

- What are good ways to explain why people should recycle?
- What information needs to be communicated to residents, businesses about:
 - What materials must be recycled (i.e., materials covered by waste bans)?
 - What materials can be recycled?
- How should we provide information about how to recycle (e.g., sorting for collection, where are drop-off facilities, special handling where needed, etc.)?
- Reuse and recycling have many benefits. Do key audiences respond better to information about some rather than others (e.g., saving money, help reduce climate change, etc.)? How can these benefits be better communicated?
- What audiences should be targeted on a priority basis?
- What are the best ways of reaching each audience (are there good models from other jurisdictions that we could borrow, build upon, etc.)
- What partnerships can MassDEP develop with other entities to successfully educate residents and businesses about waste reduction and recycling?
- How can education about waste reduction and recycling issues be better integrated into school curriculums to improve knowledge of these issues?

III. Background Information and Resources

Since the inception of MassDEP's recycling programs, the agency has worked to inform residents and businesses about the need for recycling and how to recycle. These have included the Department's extensive web site about waste reduction and recycling, participation in Earth's 911 information system about where specific materials can be collected for recycling, support for statewide information campaigns, provision of information materials and templates to municipalities for distribution to residents, provision of brochures on waste bans to businesses, publication of waste ban enforcement, and a wide variety of seminars, training sessions, and networking opportunities. These efforts will be summarized in a power point presentation at the first workgroup meeting.

Workgroup members will be asked to identify other models for education that have been successful in other areas, and potential partnerships.

Solid Waste Master Plan
Eliminating Barriers to Siting Waste Diversion Facilities Workgroup
February/March 2009

I. Mission

This workgroup will focus on how siting issues may be a barrier to increasing in-state waste diversion capacity (including facilities that many stakeholders agree are positive, such as composting), and will identify potential solutions for overcoming these barriers.

II. Key Issues and Questions

- What are the critical barriers to developing and siting new facilities that support Massachusetts waste diversion goals?
- What types of facilities or materials should be exempted from site assignment, either through a conditional exemption, or through some other exemption process similar to a Determination of Need?
- How can local concerns over facility siting be addressed without requiring site assignment?
- How can we ensure that MassDEP and local government have adequate authority to respond to concerns about facility operations such as noise and odor concerns?

III. Background Resources

Massachusetts Site Assignment regulations currently exempt certain recycling and small composting operations from the need to get a site assignment. This is done through one of two mechanisms:

- Conditionally Exempt Operations – list of activities and operations which are exempt from site assignment and permitting provided that the operations or activities are well managed and do not result in nuisance conditions
- Determination of Need for Site Assignment – a process whereby recycling or composting operations not included under the conditional exemptions may apply for consideration as a recycling and composting operation and exemption from site assignment.

Both of these processes are limited, by design, and do not provide a pathway for all recycling and composting technologies, nor for other technologies that do not fall neatly into the recycling and composting categories. For example, eligible composting operations are limited to small volumes of materials and do not specifically include technologies such as anaerobic digestion or other processes that recover energy from materials.

- Massachusetts Solid Waste Regulations: These regulations can be found on the MassDEP website at <http://www.mass.gov/dep/recycle/laws/regulati.htm#sw>. In particular, see:
 - 310 CMR 16.00: Site Assignment for Solid Waste Facilities
 - 310 CMR 19.000: Solid Waste Management Facility Regulations

**Solid Waste Master Plan
Market Development/State Purchasing Workgroup
February/March 2009**

I. Mission

Identify ways to strengthen and develop recycling markets in Massachusetts at all levels, including how the state as a consumer can contribute to demand for products that are made from post-consumer recyclables, easier to reuse/recycle, and generate less “end of life” waste.

II. Key Issues and Questions

1. Discuss what we mean by the term “recycling market development”.
2. Identify what are the needs and barriers to increased development of markets for products made from recyclables. Discuss what can be done to drive demand for recycled content products and, in turn, drive demand for recyclables. Should we take a regional approach and, if so, how?
3. How do market development needs vary by material or product category? What are the best opportunities to develop markets and business for producing products made with recycled content in Massachusetts?
4. Identify who are the key stakeholders and discuss what role they can play in strengthening the markets.
5. Discuss and identify tools and incentives in the following categories:
 - a. Educational resources
 - b. Financial incentives and assistance
 - c. Regulatory incentives

III. Background Information and Resources

- MassDEP Program Summary on Recycling Market Development (to be provided)
- [Recycling Economic Information Study 2000](#)
- Recycling Economic Information Study 2009 (when released)
- [Environmentally Preferable Products Procurement Program Assessment Final Report, December 2003](#)
- [Mass EPP Case Study](#)

**Solid Waste Master Plan
Municipal Capacity Building/Regionalization Workgroup
February/March 2009**

I. Mission

Explore ways to expand local capacity for waste reduction programs through regionalization, increased efficiency, technical assistance and more.

II. Key Issues and Questions

Municipal collaboration and regional coordination on solid waste and recycling services is a successful strategy that many communities have employed over the past two decades to advance waste reduction and recycling programs. In addition, providing low-cost resources that enable municipalities to accomplish more with limited staff and funding is especially necessary in the current economic climate.

Questions to guide the discussion on how to expand local capacity building efforts and envision new opportunities are provided below:

- What are the barriers to municipalities engaging more in regional approaches to providing recycling/solid waste programs?
- What types of tools could the state provide to expand local capacity for recycling/waste reduction?
- Is there a need for sharing more data and information on successful strategies used on the local level (e.g. Pay-As-You-Throw (PAYT) programs, implementing single stream recycling and/or automated recycling programs, successful education initiatives, etc)?
- Are state contracts useful to municipalities and if so, are there additional recycling and waste related goods and services that would be helpful?
- What local waste reduction and recycling programs/services could be handled more efficiently through a regional approach?
- What are the biggest challenges municipal recycling staff face in doing their jobs effectively?
- What are the greatest opportunities for increasing residential recycling or composting?
- What opportunities exist for increased school recycling and does it make sense to approach some of these on a regional level?

III. Background Information and Resources

Regionalization and local capacity building are cornerstones of MassDEP's Municipal Waste Reduction Program. MassDEP has devoted significant financial and staff resources to promoting regional initiatives, starting with the development of the Springfield MRF in 1990. MassDEP has provided capital for regional recycling transfer stations and permanent regional household hazardous waste (HHW) collection facilities, developed templates for municipal waste/recycling contracts, case studies of successful recycling initiatives, and created a Waste Reduction Toolkit of strategies and tools for local coordinators to increase recycling and reduce waste.

Other state, regional, and local governments have developed successful recycling and waste reduction programs that are delivered more efficiently on a regional basis. In addition, regional service models used to deliver other public services may be applicable to recycling and waste reduction programs (e.g., drinking water, wastewater, transportation, schools, etc.) Links to information about a selected few regional initiatives from other states are provided here:

Central Vermont Solid Waste Management District: <http://www.cvswwmd.org/wp/>. This regional group includes 22 member communities and provides a Zero Waste mission statement, Reuse Business Database, A-Z Resident Services Database, other information resources, and links to member communities.

Portland (OR) Metro Regional Government: <http://www.metro-region.org/index.cfm/go/by.web/id=24197>. This regional organization covers 3 counties and 25 cities in the Portland, Oregon area and runs programs and provides information on waste prevention, sustainable living, hazardous waste management, recycling at school, home, work, and composting.

Alameda County (CA) Waste Management Authority: <http://stopwaste.org/home/index.asp> This regional group includes Alameda County, 14 cities, and 2 sanitary districts that provide refuse and recycling services. The Authority is responsible for preparation of the Alameda County Integrated Waste Management Plan and Alameda County Hazardous Waste Management Plan. It manages a long-range program for development of solid waste facilities and offers a wide variety of other programs in the areas of source reduction and recycling, market development, technical assistance and public education. See in particular the link for “Resources for Local Governments” in the lower left hand corner

California Integrated Waste Management Board: <http://www.ciwmb.ca.gov/LGCentral/>. The Integrated Waste Management Board provides a “Local Government Central” web site that provides useful resources for local governments in California such as factsheets, model policies and ordinances, model documents, outreach materials, waste diversion guidance, grants and funding, tools and databases (waste characterization, market directory, recycled products directory, more), local government success stories and case studies, and numerous publications and other resources on all aspects of waste management.

King County, Washington: <http://your.kingcounty.gov/solidwaste/index.asp>. The King County, Washington Solid Waste Division provides [garbage transfer, disposal and recycling services](#) for residents and businesses in all of King County, except for Seattle and Milton. The SWD also provides [household hazardous waste disposal](#) options and recycling education programs for its residents, including an A-Z programs and services directory, a “*What do I do with...?*” searchable guide, and a materials exchange program.

Below is a list of current and prior initiatives that support local capacity building and regionalization in Massachusetts:

Municipal Assistance Coordinators (formerly MRIP coordinators): MassDEP funds a network of six regional coordinators who are assigned to work with municipalities on specific projects that reduce waste, foster regional approaches, improve cost effectiveness and accessibility of services (contracting for solid waste/recycling, collecting discarded hazardous products from households), and implement local pilots. MassDEP Boston and regional staff coordinate and deliver additional assistance. Each year, the MACs deliver more than 10,000 hours of hands-on technical assistance to municipalities throughout the state. Approximately one third of this time is allocated to specific municipal waste reduction projects that are awarded through the Municipal Grant Program each year (averaging 35-40 projects per year).

MACs also hold regional municipal meetings (approximately quarterly) where municipal, industry and NGO representatives share information about innovative programs, industry trends, markets, regional initiatives, etc. MACs also assist municipalities in implementing programs to enable them to meet Department Approved Recycling Program (DARP) criteria (voluntary program).

Other MAC activities:

- regional HHW collection networks
- regional brush/yard waste grinding contracts
- regional Reuse/Zero Waste community events
- regional outreach programs
- regional solid waste/recycling contracts
- regional “bulk buy” purchases of recycling bins
- database compilation on PAYT programs, municipal solid waste fee structure, municipal solid waste services, etc.

Equipment and Education Grants:

Since 1990, MassDEP has provided equipment to support recycling, composting, household hazardous products (HHP), and mercury diversion programs at the local and regional levels. These grants enable municipalities and schools to create recycling collection infrastructure both in-house (at municipal buildings and schools) and for the community at-large (to serve residents and in some cases businesses).

Reducing the toxicity of the solid waste stream by supporting municipal efforts to collect and properly manage discarded hazardous household products has been a long-time focus of these programs. Grants for "technical assistance" and "transfer station" have included funding of about \$750,000 to help municipalities establish six permanent centers for collecting household hazardous waste (located in Greenfield, Lexington, Newton, Quincy and North Brookfield) and support one-day collection events in many municipalities.

State contracts for goods and services (recycling and waste related): MassDEP, in partnership with the Operational Services Division, maintains contracts for a range of goods and services which municipalities may purchase at state contract prices. These include: compost bins, recycling containers, HHW collection events, e-waste recycling, mercury recycling, PAYT bags, and solid waste/recycling consulting services.

Solid Waste Contracting Workshops: 2 to 3 offered each year, covering state procurement regulations, 30B exemption for solid waste, effective bidding practices, industry trends, setting fees, enterprise accounts, etc.

Other Workshops and Trainings: Pay-As-You-Throw, school chemical management, mercury collection and management, operating a home composting bin program, and healthy lawn and landscape workshops.

Waste Reduction Toolkit: MassDEP distributes a Waste Reduction toolkit with case studies, outreach material templates, sample press releases, model recycling ordinances, and step-by-step guidance on how to implement mandatory recycling, conduct effective outreach programs, educate businesses about recycling benefits and options, conduct a community-wide "reuse/recycling" event, and plan for "zero waste" events in the community. Customizable mandatory recycling door-hangers, office recycling signs

Pay-As-You-Throw Assistance: MACs and MassDEP staff provide extensive, multi-year hands-on assistance to municipalities that are in various stages of PAYT program evaluation, planning or implementation. This includes cost/benefit analyses, case studies, “tours” of PAYT municipal operations, communications plans, and assistance with grant requirements. PAYT start-up financial

assistance is also provided to communities that implement a new PAYT program to assist with education efforts, initial bag purchases, and related costs.

Web-based Resources: MassDEP's Recycling Website has a section entitled "[Tools for Coordinators](#)" which includes case studies, templates, data, and links on a variety of waste reduction initiatives.

Municipal Recycling Incentive Program: From 1998 until 2003, MassDEP provided \$12.9 million in payments to 241 municipalities for recycling a total of 1.25 million tons of paper, cans and bottles. These payments were separate from grants for recycling equipment and services. This incentive grant program ended in December 2002 when state budget cuts eliminated most of the municipal recycling assistance budget at MassDEP. Over the five and a half years in which MRIP operated, the tonnage recycled by municipalities participating in the program increased 26 percent, compared to a 12 percent tonnage increase from non-MRIP participant communities between July 1996 and December 2002.

Former Equipment grants: Certain categories of recycling equipment grants have been eliminated from the program because of a lack of resources, or because MassDEP deemed the need to have been satisfied or to be a lower priority than other grant categories. These include: curbside recycling trucks, roll-off containers, curbside recycling set-out bins, tanks for used motor oil collection, sheds for used paint collection, recycled product grants, wheeled carts for multi-family and business recycling programs.

Solid Waste Master Plan
Performance and Viability of Technologies for Residuals Waste Workgroup
February/March 2009

I. Mission

This workgroup will strive to reach a common understanding regarding the performance data for various technologies (e.g., anaerobic digestion, gasification, pyrolysis, etc.) and attempt to resolve conflicting claims made by various stakeholders about the performance and viability of these technologies. The workgroup will also compare newer technologies with existing technologies (e.g., existing waste-to-energy facilities, landfills). This group will focus on obtaining and comparing actual performance data from facilities to develop a clear understanding of how different technologies have performed in practice. The information developed by this workgroup will be used to inform MassDEP's policy development regarding new and existing technology options.

II. Key Issues and Questions

- What parameters should the group gather data on and use to compare facility performance?
- Define which types of technologies to assess. Characterize each technology option to develop a common understanding of terms.
- Potential parameters to consider include, but are not limited to:
 - Electrical generation efficiency and energy generation – how much energy is generated per ton of waste?
 - Heat rate
 - Emissions, including carbon dioxide, sulfur oxides, nitrogen oxides, mercury, and dioxin
 - Composition of solid output and whether/how this material has viable uses
- How do these facilities compare to other energy sources in terms of emissions on a per megawatt hour basis?
- Have emerging technologies been effective in practice?
 - What facilities are currently operating in the United States and in other countries?
 - What facilities are currently under development?
 - What facilities have closed and why?
 - Have facilities proved to be economically viable?
 - What tipping fees do facilities require to cover costs and make a profit?
- Based on data from actual operating facilities, to what extent do they compete with or complement recycling? Are recycling rates in communities served by these facilities higher or lower than recycling rates in other areas? What factors related to these facilities appear to correlate most closely with recycling rates? Price of the tip fees? Type of contract? Other factors?

III. Background Information Resources

- *Assessment of Materials Management Options for the Solid Waste Master Plan Review*
 - Commissioned by MassDEP and completed by the Tellus Institute in December 2008.
<http://www.mass.gov/dep/recycle/priorities/dswmpu01.htm>
- Stakeholder comments on *Assessment of Materials Management Options for the Solid Waste Master Plan Review*, including listing of additional informational resources
 - <http://www.mass.gov/dep/recycle/priorities/dswmpu01.htm>
- MassDEP Website on Municipal Waste Combustors
 - <http://www.mass.gov/dep/recycle/solid/mwc.htm>

- US EPA Webpage on Municipal Waste Combustion
 - <http://www.epa.gov/epawaste/nonhaz/municipal/combustion.htm>
- US EPA Webpage on *Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks*
 - <http://epa.gov/climatechange/wycd/waste/SWMSGHGreport.html>
- County of Los Angeles, California Website on Conversion Technologies
 - <http://www.socalconversion.org/>
- New York City Department of Sanitation Website, including Evaluation of New and Emerging Waste Management and Recycling Technologies and Approaches
 - http://www.nyc.gov/html/dsny/html/swmp_implementation/swmp_otherinit.shtml
- European Union Waste Website
 - <http://ec.europa.eu/environment/waste/index.htm>
- Scotland EPA Guidelines for Thermal Treatment of Municipal Waste
 - http://www.sepa.org.uk/waste/waste_regulation/idoc.ashx?docid=b61dc32b-f2e8-4f65-b237-8e67c5194f08&version=-1
- Advanced Thermal Treatment of Municipal Solid Waste, United Kingdom Department for Environment, Food, and Rural Affairs
 - <http://www.defra.gov.uk/environment/waste/wip/newtech/pdf/att.pdf>

**Solid Waste Master Plan
Reducing Waste Generation Workgroup
February/March 2009**

I. Mission

Explore ways to stimulate practices that reduce the generation of waste and the toxicity of materials entering the waste stream from both the commercial and residential sectors. Identify various initiatives to support this desired outcome. This will include review of MassDEP's existing efforts, identification and discussion of successful initiatives in other jurisdictions, and the applicability and feasibility of these initiatives to Massachusetts in the context of the revised Solid Waste Master Plan and the future of waste management.

II. Key Issues and Questions

- Identify successful initiatives in other jurisdictions and whether/how they would work in Massachusetts.
- What waste streams and material categories offer the best opportunity for reducing at the source of generation and/or reducing the toxicity of products and packaging?
- What are the opportunities and barriers to reducing waste generation along the lifecycle of each material category?
- For each waste stream/material type, is waste reduction best achieved through regulation, incentives, or in combination?

III. Background Resources

MassDEP Information

- Summary of existing MassDEP programs to promote and encourage the reduction in waste generation (to be provided)
- 2008 Assessment of Materials Management Options for the Solid Waste Master Plan Review - <http://www.mass.gov/dep/recycle/priorities/tellusmmr.pdf>
- Massachusetts Solid Waste Master Plan: 2006 Revision, June 2006 - <http://www.mass.gov/dep/recycle/priorities/swmprev.pdf>
- Waste Reduction Program Assessment & Analysis for Massachusetts, February 2003 - <http://www.mass.gov/dep/recycle/priorities/tellrep.pdf>
- City of Newton Comprehensive Source Reduction Plan, June 2001 - <http://www.mass.gov/dep/recycle/reduce/assistan1.htm#wastered>

Other Information

- EPA's Source Reduction Program Potential Manual – A Planning Tool
<http://www.epa.gov/osw/conserva/downloads/source.pdf>
- EPA Region 7 Waste Reduction Site
http://www.epa.gov/region7/waste/solidwaste/reduce_waste.htm
- European Union Waste Site <http://ec.europa.eu/environment/waste/index.htm>

Solid Waste Master Plan
Waste Bans and Business Recycling Workgroup
February/March 2009

I. Mission

Identify strategies to improve the effectiveness of Waste Bans and increase business recycling rates.

II. Key Issues and Questions

- Identify the greatest opportunities for additional waste reduction by material category and/or business sector
- Identify barriers to beginning or increasing recycling by businesses. Barriers that have been identified to probe more deeply into include costs, contracting practices, space, convenience, awareness/education, others?
- Determine what are the most effective ways to break down those barriers and the best roles for state government, local government, business waste generators, business associations and non-profits, and haulers
- What additional initiatives should the state consider to support or leverage increased Business recycling?
- Identify strategies to improve the effectiveness of Waste Bans
- Where and how should waste bans be enforced to maximize their effectiveness?

III. Background Information and Resources

- Commercial recycling data for calendar years 2005, 2006, & 2007 (to be provided)
- MassDEP Commercial Waste Disposal Assessment – available at <http://www.mass.gov/dep/recycle/priorities/dswmpu01.htm#recycling>
- Tellus Waste Reduction Program Assessment – particularly tables at end, available on same page as the Commercial Waste Disposal Assessment listed above
- Waste Ban guidance on MassDEP website: <http://www.mass.gov/dep/recycle/laws/policies.htm#bans>
- Waste Ban Regulations on MassDEP website: <http://www.mass.gov/dep/recycle/laws/bansreg.htm>