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Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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MassDEP ORGANICS STUDY AND ACTION PLAN

February 2017

Background

The 2010-2020 Solid Waste Master Plan calls for the Massachusetts Department of Environmental Protection (MassDEP) to aggressively pursue diversion of food and other organic materials from the solid waste stream. Representing more than 25% of the waste stream in Massachusetts after recycling, food materials, compostable paper and other organics are the largest fraction of the remaining waste¹. In order to achieve the Commonwealth's overall solid waste management goals of reducing the waste we dispose of by 30% by 2020, a concerted effort must be made to recover these organics materials. The Solid Waste Master Plan set a specific objective to:

Divert at least 35% of food waste from disposal by 2020, which would result in more than 350,000 tons per year of additional diversion activity from targeted business and institutional sectors including:

- hotels
- convention centers
- supermarkets
- food waste processors
- large institutions
- Institutional food service providers.

MassDEP's Clean Energy Results Program calls for development of a study and action plan to identify barriers to meeting the state's organic diversion goals and recommend strategies to overcome those barriers. This action plan is based on a series of stakeholder meetings, discussions, research, and information gathering that MassDEP has conducted with external stakeholders, beginning with prior

¹ Given relatively high rates of leaf and yard waste diversion, this Plan does not focus on those materials, though they may be combined with food waste in some facilities.

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

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Organics Subcommittee meetings, the development of the draft Master Plan, and the Commonwealth's Organics Task Force and Workgroups that held a series of meetings in 2011. This document is also informed by several pieces of analysis including the food waste density mapping study and recently completed waste composition studies. MassDEP also considered the results of a number of organics diversion projects already underway in Massachusetts and elsewhere. This updated action plan reflects progress achieved over time, as well as lessons learned from the experience of MassDEP and other stakeholders.

This Action Plan lays out the programs and initiatives to be pursued over the next several years in order to obtain this objective. This effort will take collaboration from a number of stakeholders including state and local government, businesses, institutions, the solid waste, recycling, and composting industry and private developers. The Action Plan identifies the primary barriers to achieving the Commonwealth's organics diversion objective in five categories:

- Data Analysis,
- Reducing Waste and Donating Food,
- Collection Infrastructure,
- Processing Capacity/ Market Development, and
- Regulatory Reform/Waste Ban.

MassDEP's first Organics Action Plan was published in May 2012. The plan has been updated several times since then to reflect progress and program updates. MassDEP will continue to update this document on a periodic basis to reflect progress achieved as well as additional action items that may be added over time.

Key Web Site Links

The documents and resources listed in this Action Plan can be found through the following web site pages:

<http://www.mass.gov/eea/agencies/massdep/recycle/reduce/food-waste-ban.html>

<http://www.recyclingworksma.com/commercial-organics-waste-ban/>

Data Analysis

Barrier: Lack of Information on Sources and Amounts of Food Waste

Stakeholders need better information on organics generation and disposal. This information helps generators, collectors and processors of organics make sound infrastructure investments. This information also helps direct government assistance programs. Now that the ban is being implemented and infrastructure and diversion are continuing to grow, this information is important in informing program evaluation.

Actions	Original Target Date	Status
<p>Update food waste density mapping study – This identifies major generators of food waste and can assist haulers and processing facilities with routing and facility siting.</p> <ul style="list-style-type: none"> ○ Data updated summer 2011- have posted updated data to MassDEP web site 	Feb 2012	Completed
<p>Conduct further analysis of organics portion of waste stream from Massachusetts waste composition studies</p> <ul style="list-style-type: none"> ○ Confirm residential and ICI composition averages and breakdowns by truck type ○ Assess 2013 waste characterization study data submitted in February 2014 ○ Assess 2016 waste characterization study data submitted in February 2017 	<p>Mar 2012</p> <p>July 2014</p> <p>New</p>	<p>Completed</p> <p>Completed</p> <p>July 2017</p>
<p>Assess food waste generation data</p> <ul style="list-style-type: none"> ○ Work with the Lead by Example Program to quantify current food waste diversion by State facilities. Also gather sector based information on how to advance organics at colleges/universities, hospitals, corrections, convention centers. ○ Through inter-agency effort, work with large food manufacturers/processors and other large generators to get more information on their organics generation and diversion opportunities 	<p>July 2012</p> <p>Dec 2012</p>	<p>Completed/ Ongoing</p> <p>Ongoing</p>
<p>Complete assessment of economic benefits, job growth, and investment before and after implementation of the waste ban</p> <p>Prepare updated assessment of food materials diversion based on calendar year 2016 data</p>	<p>New</p> <p>New</p>	<p>Completed</p> <p>June 2017</p>

Reducing Waste and Donating Food

Barrier: Missing Opportunities to Reduce Food Waste and Donate Food

As more and more businesses separate wasted food to be diverted for disposal, it becomes clear that there are opportunities to reduce wasted food to begin with through more efficient food service operations. However, businesses need better information to identify these opportunities. In addition, in some cases, businesses divert food to composting, anaerobic digestion, or animal feed, when that food may still be high quality food that is safe to donate and serve to people. Businesses, food donation organizations, and local health officials need transparent guidance to ensure that this food can be donated safely and effectively.

Actions	Original Target Date	Status
<p>Promote industry best management practices to reduce food waste generation</p> <ul style="list-style-type: none"> ○ Develop basic guidance on reducing food waste ○ Complete survey of colleges & universities on food waste reduction strategies ○ Promote and share best practices from survey to increase their adoption 	<p>New</p> <p>New</p>	<p>Complete Spring 2017</p> <p>Ongoing</p>
<p>Promote food waste reduction strategies at schools through the Massachusetts Green Team program</p>	<p>New</p>	<p>Ongoing</p>
<p>Create best management practices around food donation, engaging with stakeholders (Health Agents, food donation groups, etc.)</p> <ul style="list-style-type: none"> ○ Partner with the Harvard Food Law and Policy Clinic to create legal fact sheets for issues involving food donation – liability protection, tax incentives, and date labeling ○ Present best management practices for food donation at board of health meetings and conferences ○ Work with the State Department of Public Health to formalize food donation opportunities within the state Food Safety Code 	<p>Ongoing</p> <p>New</p> <p>New</p> <p>New</p>	<p>Ongoing</p> <p>Completed</p> <p>Completed</p> <p>2017 TBD</p>
<p>Assess opportunities to support increased food donation and rescue in the context of the Massachusetts Food Systems Plan</p>	<p>New</p>	<p>Ongoing/specifics TBD</p>

Collection Infrastructure

Barrier: Lack of Collection and Separation Systems at Generators

Diversion of organics has primarily been done by large generators of food materials. However, MassDEP is seeing an increased trend of greater interest in reducing food waste among smaller generators as well. Generators need more information, research and technical and financial support to build more robust collection and management systems. As collection systems and receiving facilities mature and grow, it is important to seek opportunities to make collection more efficient.

Actions	Original Target Date	Status
Determine sectors and businesses most likely to be impacted by proposed waste ban, as defined	May 2012	Completed
Develop sector specific best management practices for organics collection programs (supermarkets, hospitals, hotels, etc.) <ul style="list-style-type: none"> ○ Education and Promotion ○ Publish updated restaurant food waste toolkit ○ Propose to use generic cross sector BMPs for most sectors 	Jul 2012	Completed for supermarkets Ongoing Completed Completed
Establish technical assistance and grant programs to divert food waste from public colleges/universities, hospitals, corrections/DHS. <ul style="list-style-type: none"> ○ Prioritize sectors ○ Develop and begin Technical Assistance Services ○ Grants for collection containers and other capital for collection 	Jul 2012 Sept 2012 Sept 2012	Completed Ongoing Ongoing
Establish technical assistance and loan programs to divert food waste from private colleges/universities, hospitals, nursing homes, hotels, large restaurants. <ul style="list-style-type: none"> ○ Prioritize sectors ○ Begin Technical Assistance Services 	Jul 2013 2013-14	Completed Completed
Pilot organics diversion programs at large generators and publish and share case studies (supermarkets, convention centers, food processors, hospitals, colleges and universities, hotels, large corporate offices with cafeterias, etc) <ul style="list-style-type: none"> ○ 23 case studies prepared as of January 2017 	Ongoing	Ongoing
Continue to support and expand organics diversion program with supermarkets <ul style="list-style-type: none"> ○ Develop plan to sunset Supermarket Recycling Certification Program ○ Provide technical assistance to supermarkets not currently diverting 	New Mar 2012	Completed Ongoing
Establish direct technical assistance effort for food manufacturers and processors by offering free waste audits and program development consulting assistance <ul style="list-style-type: none"> • Participate in multi-agency outreach and assistance meetings with the food manufacturer and processor sector 	Dec 2012 Ongoing	Ongoing Ongoing

Barrier: Insufficient Collection Services

To stimulate competition and reduce costs, more collection service is needed. Generators need to know who can provide service and be able to negotiate for service amongst multiple collectors. Haulers of organics need to achieve route density in order to provide competitive collection services. New collection methods and technologies need to be reviewed and tested.

Actions	Original Target Date	Status
<p>Provide updated information on Massachusetts food waste processors and haulers (materials accepted, quantities, collection type, etc.)</p>	<p>May 2012</p>	<p>ongoing</p>
<p>Provide financial assistance to existing and potential haulers to initiate organics collection efforts</p> <ul style="list-style-type: none"> ○ Establish low interest loan program for collection containers and capital equipment through the Recycling Loan Fund ○ Add additional dedicated funding for organics loans to the Recycling Loan Fund 	<p>Jan 2012</p> <p>February 2014</p>	<p>Completed</p> <p>Completed</p>
<p>Work with regional groups to develop small generator collection routes</p> <ul style="list-style-type: none"> ○ Provide case studies and “how to” information to regional groups (chambers, chain stores, municipalities) to form cooperative collection routes ○ Offer grants to fund the establishment of regional collection networks ○ Offer grants to purchase collection containers 	<p>Jul 2013</p> <p>Jul 2012</p> <p>Jul 2012</p>	<p>Ongoing, as needed</p> <p>Completed</p> <p>Completed</p>
<p>Support efforts to collect organics from residential sources</p> <ul style="list-style-type: none"> ○ Offer grants to municipalities to pilot collection ○ Offer grants for capital equipment to collect organics at drop-off locations ○ Continue to offer and encourage technical and financial assistance for backyard composting and other on-site solutions 	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>
<p>Disseminate information on success stories and recognize specific efforts, including efforts to reach the hauling community</p> <ul style="list-style-type: none"> ○ Develop recommended best management practices for Public Health Officials on requirements for dumpster/trash storage areas to better facilitate collection ○ Develop guidance on contracting for solid waste, recycling, and organics services 	<p>Ongoing</p> <p>New</p>	<p>Ongoing</p> <p>Completed</p> <p>Spring 2017</p>

Processing Capacity/ Market Development

Barrier: Insufficient Processing Capacity

Once collected, source separated organics must have a place to go. Although Massachusetts has a number of entities accepting organics for processing and this number is growing, additional capacity is still needed in order to achieve the 350,000 tons of additional organics diversion.

Actions	Original Target Date	Status
<p>Disseminate information on technologies and financial assistance programs</p> <ul style="list-style-type: none"> ○ Prepare financial assistance matrix ○ Create web resources on technologies and case studies ○ Disseminate information on how best to handle lower quality organics (residential, small business) 	<p>Feb 2012 Jul 2012</p>	<p>Completed Completed Ongoing as needed</p>
<p>Public education and outreach strategy</p> <ul style="list-style-type: none"> ○ Educate public about new composting and AD technologies ○ Develop FAQ document to address public questions and concerns over different types of facilities/technologies ○ Work with the Massachusetts Clean Energy Center and other stakeholders to assist local communities with review and oversight of proposed facilities 	<p>Sept 2012 Dec 2012 Dec 2012</p>	<p>Completed Completed Completed</p>
<p>Encourage municipal expansion of existing composting operations and siting of new operations</p> <ul style="list-style-type: none"> ○ Solicit proposals for feasibility studies through SMRP Municipal Grant Program ○ Provide capital grants or per ton subsidies to municipal operations managing organic material through SMRP Municipal Grants, Mass CEC or Mass DOER Green Communities Program ○ Added \$750,000 of dedicated funding for municipal grants for anaerobic digestion capacity development ○ Offer training, technical support and information through MACs and staff ○ Establish simple certification form for small organics operations at municipal sites 	<p>July 2012 July 2012 Sept 2012 Sept 2012 Jun 2013</p>	<p>Completed Completed Completed Completed Completed</p>
<p>Develop Anaerobic Digestion Facilities on State Property</p> <ul style="list-style-type: none"> ○ Identify state properties for potential private development of organics management facilities ○ Conduct Feasibility studies ○ Issue Request for Information 	<p>Dec 2012 Jun 2013 Jul 2013</p>	<p>Completed Completed Completed</p>

<p>Encourage new private development or expand existing organics management capacity</p> <ul style="list-style-type: none"> ○ Provide aggressive low interest loans for private facility development through the Recycling Loan Fund ○ Add additional dedicated funding for organics loans to the Recycling Loan Fund ○ Pre-permitting assistance ○ Promote more capitalization of and technical assistance to existing farm composting/AD operations to help meet local capacity needs ○ Support new farm operations ○ Provide funding opportunities for AD facilities through the Green Communities (DOER) and the MassCEC Organics to Energy Program (MassCEC) ○ Partner with CEC, DOER, and DAR to leverage and coordinate funding assistance across state financial assistance programs 	<p>Jan 2012</p> <p>Feb 2014</p> <p>Ongoing</p> <p>Jan 2012</p> <p>Ongoing</p>	<p>Completed</p> <p>Completed</p> <p>Ongoing Ongoing</p> <p>Ongoing Completed</p> <p>Ongoing</p>
<p>Recycling Business Development Grants</p> <ul style="list-style-type: none"> ○ Issue grant application and award grants for two rounds of grants for packaged food management in 2016 ○ Establish program target materials for 2017 ○ Issue 2017 grant application ○ Award 2017 grants 	<p>New</p> <p>New</p> <p>New</p> <p>New</p>	<p>Completed</p> <p>April 2017</p> <p>April 2017</p> <p>Fall 2017</p>
<p>Assess and support development of on-site food waste management solutions</p> <ul style="list-style-type: none"> ○ Provide information on on-site systems for managing wasted food <ul style="list-style-type: none"> ○ Prepare and post listing and description of systems on Recycling Works web site ○ Update listing on regular basis as new information and new technologies become available ○ Support through targeted grants and loans <ul style="list-style-type: none"> ○ Low interest loans for capital cost of on-site systems at private facilities 	<p>Ongoing</p> <p>Ongoing</p> <p>Jan 2012</p>	<p>Ongoing Completed</p> <p>Ongoing</p> <p>Completed</p>

Barrier: Lack of End-markets For Products

Once processed, finished products need to find a home. Although there are consistent and sufficient outlets for compost, developing and promoting higher value compost products and uses that increase revenue for processors will help drive down overall system costs thereby improving the cost-effectiveness of organics diversion.

Actions	Original Target Date	Status
<p>Work with OSD/MassDOT to enhance use of compost products in highway construction</p> <ul style="list-style-type: none"> ○ Establish specifications for highway and transportation uses of compost ○ Promote specifications to state and local highway and DPW officials ○ Pre-approve compost sites as high quality compost providers per DOT specifications ○ Promote OSD contract for composting soils ○ Participate in State Procurement Team for contract for landscaping materials 	<p>New</p>	<p>Complete</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Spring/summer 2017</p>
<p>Work with the agricultural sector to identify additional market outlets for compost materials</p>		<p>Ongoing</p>
<p>Hold stakeholder meeting among major trade associations to discuss options and strategies for growing compost use, including:</p> <ul style="list-style-type: none"> – Massachusetts Nursery Landscape Association – Massachusetts Association of Landscape Professionals – Ecological Landscaping Association – Massachusetts Association of Landscape Contractors – compost producers 		<p>2017 TBD</p>
<p>Compost production & marketing workshops</p> <ul style="list-style-type: none"> ○ Conduct workshops for composters on how to effectively market compost material ○ Share Northeast Recycling Council compost marketing resources ○ Host a composting workshop in conjunction with RecyclingWorks 	<p>Jun 2012</p> <p>Dec 2013</p> <p>New</p>	<p>Completed</p> <p>Completed</p> <p>2 completed, additional workshops TBD</p>
<p>Assess market outlets for materials generated by anaerobic digestion facilities such as the solid and liquid digestate.</p> <ul style="list-style-type: none"> ○ Potential to eliminate fees for organic and/or recycled fertilizers. ○ Partner with NEWMOA and other Northeast states 	<p>Ongoing</p> <p>New</p>	<p>Ongoing</p> <p>2017 TBD</p>

Regulatory Reform/Waste Ban

Barrier: Regulatory Environment that Is Unclear and Considered Cumbersome

The lack of clear permit pathways for organics processing facilities that employ advanced technology such as anaerobic digestion, and concerns about the applicability of the local site assignment process to such facilities, has been a barrier to the expansion of organics capacity in the Commonwealth. Revising the State's solid waste siting regulations to address these issues will help facilitate development of new and expanded capacity.

Actions	Original Target Date	Status
Revise Regulations to: <ul style="list-style-type: none"> ○ Consider operations that collect, process and recover organic materials as recycling facilities, not solid waste facilities subject to Site Assignment ○ Establish levels of MassDEP review that maintain environmental and public health protection. ○ Provide a clear permitting pathway with site specific MassDEP approvals. ○ Allow wastewater treatment plants to accept organics for processing. 	Summer 2012	Completed
Establish Guidelines and Forms necessary for implementation of the Regulations	Summer 2012	Completed

Barrier: Need for Steady Supply of Source Separated Organics

Public and private investment in collection systems and processing capacity of organics is contingent on these entities having confidence that a sufficient amount of organic material will be available. While some generators have established programs without a ban, a waste ban is necessary to drive widespread adoption of organics diversion.

Actions	Original Date	Status
Implement Waste Ban on Organic Materials <ul style="list-style-type: none"> ○ Develop in coordination with the SWAC Organics Subcommittee the framework for a ban on commercially generated organic materials in 2014 ○ Promulgate Organics Ban regulations and revise guidance ○ Update Facility Waste Ban Plans ○ Effective date of Ban – October 1, 2014 	Sept 2012	Completed
	Summer 2013	Completed
	Mar 2014	Completed
	Summer 2014	Completed

<ul style="list-style-type: none"> ○ Review Outreach and Communication Plan with Organics Subcommittee ○ Implement Outreach and Communication Plan ○ Outreach to targeted market sectors 	<p>Feb 2014</p> <p>Spring, Summer 2014</p>	<p>Complete</p> <p>Ongoing as needed</p>
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