MARYLAND DEPARTMENT OF THE ENVIRONMENT
Land Management Administration • Waste Diversion and Utilization Program
1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101 • www.mde.maryland.gov

Composting Resources for Institutions

Many institutions generate significant quantities of food scraps, non-recyclable paper, and other organics. Implementing a program to capture these materials for composting or donation can reduce waste disposal costs and decrease greenhouse gas emissions. Institutions that may be particularly well-suited to organics diversion programs include:

- Jails and prisons;
- Universities;
- Stadiums;
- Hospitals;
- Special event venues.

Establishing a Program to Divert Compostables

The first step in reducing disposal of food and other organics is to plan a program to reduce avoidable organic waste and source-separate the remainder for food donation or composting. The guidance manuals and other resources below provide tips for developing and implementing a new program.

Northeast Recycling Council, Special Event Food Waste Diversion Guidance: NERC created this document with a grant from U.S. EPA to guide event planners through the process of pre-event preparation, promotion, staff training, and working with venders.

Healthcare Without Harm, Waste Audit and Self Assessment: This assessment is a tool for healthcare facilities to identify important components of their waste streams (not just compostables). It allows the facilities to assess where they stand currently and provides sample actions and items to consider for each aspect of the assessment. More information related to waste reduction in the healthcare industry can be found on the group's website.

Composting at Work Guide: This guide was created by the Chittenden Solid Waste District in Vermont but is applicable or adaptable to any workplaces in Maryland. It contains practical tips on how to get started and address challenges such as staff training and odor prevention.

Massachusetts DEP, How-to Guide to Reduce Food Waste from Businesses and Institutions: Massachusetts published this brief guide that outlines the reasons businesses and institutions should reduce waste and provides steps to prevent and recycle food scraps.

U.S. EPA Sustainable Food Management Webinars: This free webinar series provides guidance and case studies on topics in sustainable food scraps management, aimed at institutions, venues, and businesses. Presentations and audio from past webinars are also available.

U.S. EPA's Food Waste Assessment Tools The tools include a cost calculator, which allows businesses and institutions to determine the costs of alternative methods of managing food scraps. It also provides an analysis of the environmental benefits of composting, source reduction, and food donation scenarios and includes links to additional resources. A food waste log allows businesses to document food losses over time and determine the sources of waste.

U.S. EPA's Food Recovery Challenge helps businesses and institutions set measurable goals for diversion of food scraps and track their progress. Participants in this free program gain access to an online data management and tracking system, technical assistance, and may be recognized as a "success story" for their efforts.

Center for EcoTechnology, Composting in Restaurants and Schools: This toolkit provides simple step-by-step instructions for planning and implementing a composting program at a restaurant or a school, complete with the estimated time needed to carry out each step. Case studies are also provided.

Biodegradable Product Institute Listing of Certified Biodegradable Food Service Items: BPI issues standards for biodegradable products and manages the "certified compostable" label program. Institutions with food courts or cafeterias may wish to switch to compostable service ware or compostable bags when they implement new composting programs. (NOTE: Check with your composter before selecting food service items as not all biodegradable items are accepted by all composters).

Biocycle's "Find-a-Composter" or **USCC's Compost Locator Map** can help identify the closest composting facilities that may be able to accept institutional materials.

USDA's U.S. Food Waste Challenge was announced in June 2013 and seeks to engage all participants in the food market in addressing food waste. Participants post a list of activities that they will do to reduce and recycle food scraps. The current list of participants includes trade associations, large corporations, and government agencies. In addition to goal-setting and demonstrating publically a commitment to food waste diversion, the program provides examples of strategies other organizations are adopting (click on each partner's name to see its plan).

BioCycle Article, "Practical Plan For Hospital Food Waste Recovery." This article provides some tips and lessons for launching a food waste diversion program at a hospital.

Johns Hopkins Center for a Livable Future, Composting for Congregations. This fact sheet was produced as part of the Center's "Food and Faith" initiative. It describes why faith-based organizations should compost and what they can do to get started.

Programs Specifically for Universities:

- The Game Day Challenge promotes waste reduction and recycling at college football games. Colleges compete against each other during every football season to earn titles such as "Organics Reduction Champion" or "Diversion Rate Champion."
- Virginia Tech's Greening Your Game Day Guide provides case studies and best management practices for implementing zero waste programs at college stadiums, concessions sellers, and tailgating areas.
- Recyclemania challenges colleges and universities to track their recycling over an 8-week period each year. Schools compete against one another in a variety of categories. Webinars, promotional materials, and promotion stipends are available to participants. Eleven Maryland colleges and universities participated in 2014, and four of these participated in the food diversion portion of the competition.
- Some research has shown that the use of trays in dining halls and cafeterias encourages people to take more food, which increases food waste. As a result, many colleges have begun to "go trayless" in an attempt to reduce food waste and eliminate the need to wash trays. The National Association of College and University Food Services maintains a list of universities that have made this change.

Organics Collection Examples:

- University of Maryland, College Park: The University collects food and soiled paper from the student union, dining halls, fraternities and sororities, and some offices. This website details the program and shows the signage and bins used by the University.
- Bates College: This EPA Case Study describes the composting program at Bates College in Maine.

On-Site Composting Options

In addition to planning for successful source-separation and collection of organics, each institution should carefully consider options for processing the collected materials. Some facilities may lack the space or staff for composting on site. However, for those institutions that can manage it, composting on site can have valuable benefits:

- For colleges and universities, a composting facility can serve as an educational tool as well as a practical means of managing the school's organics. Some colleges have given academic credit for hands-on learning at the composting site or have designed courses to discuss organics management methods.
- Institutions with a large amount of outdoor area can use the finished compost on site and avoid the need to purchase alternative landscaping materials. Not only does this save money, it avoids energy expenditures on transporting compost long distances.
- Composting on site saves money and transportation fuel. Having organics hauled off site for processing or disposal can be costly, especially for very large generators of organics. And, if

the facility is not located near a centralized composting facility, on-site processing may be a necessity.

Institutions might be particularly suitable hosts for in-vessel composting systems. These systems have a reduced residence time and smaller footprint, can be highly automated thereby reducing staff demands, and can prevent odors.

Three In-vessel Case Studies:

Allegheny College in Pennsylvania installed an indoor, in-vessel composter in 2001. The composter processes 800-900 pounds of pre- and postconsumer food waste per day from the school's dining halls, where compostable serviceware is used. The system can handle a maximum of 2,000 pounds of material per day. Food waste is mixed with wood chips from campus landscaping and composted in the vessel for 14-16 days. After the initial composting phase, the material is mixed with hay and manure and windrowed until it is mature. The compost is used on campus for landscaping. The high salt content of the food waste was initially an issue but was addressed by adding more wood chips, hay, and manure. The College has estimated its annual savings from composting at $56,000. See BioCycle, "Colleges Scrape the Plate, Close the Loop," July 2010, Vol. 51, No. 7, p. 44.

Virginia Department of Corrections uses in-vessel composting at its James River/Powhatan correctional facilities to handle food waste from the prison cafeterias. 62-gallon bins are used to store and transport the food from the dining halls to the vessel and chipped pallets are added to obtain the proper mix. Liquid collects in the bottom of the vessel and is reintroduced to the materials automatically by a pump. Residence time in the composter is 14 or 28 days, with a subsequent 90-day curing period outside. Virginia DOC has since expanded its capacity to 3 in-vessel units serving 5 correctional facilities and the University of Richmond, with a total capacity of 12,000 pounds per day. In 2011, 143 tons of materials were processed (98 tons of food waste, 45 tons of chipped pallets). The finished compost is used for landscaping, orchards, and greenhouses on DOC and University of Richmond campuses. For more information, see Virginia DOC, James River Correctional Center In Vessel Composter, Presentation from Virginia Food Waste Workshop (2006) and Virginia DEQ, Overview of Local Composting Infrastructure, slide 14, Presentation from Surplus Food Recovery Workshop (2012).

Ohio University began running its in-vessel composter in 2009 and expanded it in 2012 into what the University touts as the largest in-vessel composting system at any U.S. university. 100% of dining hall pre- and post-consumer food scraps are added to landscaping waste and composted in the expandable system for a 14-day retention time. The resulting compost is cured for 90 days and used on campus for athletic fields and gardens. Since the original system could handle only half of the school's food waste, the school undertook an expansion to add a 4-ton composter. The composter is located inside a barn. The University's website provides additional information. The composter is made by Wright Environmental Management, Inc.

Off-Site Composting Considerations

Institutions that choose to send organics off site for composting will need to contract with a hauler to remove compostables and transport them to a composting facility. Be sure to discuss the following issues with your potential organics hauler:

- Are there any types of organics that are not accepted? Ask specifically about meat, paper towels and other non-recyclable paper, and yard trim (if generated).
- What are the logistics of the collection system? Is material collected at a set interval or on call? How and where should the material be set out for collection? Does the hauler provide any bins, signage, or training that the institution can use?
- Where does the material go for composting?
- What kinds of compostable products are accepted, if any? This is important because some composting facilities accept certain compostable plastic food service ware and compostable plastic bags, while others do not.