# Recycling Organics at Boston Convention & Exhibition Center

Organics recovery programs help the Boston Convention & Exhibition Center (BCEC) save money, feed the hungry, and lower its environmental footprint. By continuously evaluating the waste stream at the convention center, and working with vendors and haulers to design a comprehensive program, BCEC is striving for maximum environmental results.

## *Facts at a Glance*

- BCEC covers more than 1.6 million square feet, including 516,000 square feet of exhibit space and 84 meeting rooms, and a 40,020-square-foot ballroom.
- The convention center hosted 113 events and 549,000 people in 2008.
- Organic materials and plastics are transported from the nearby Hynes Convention Center to the BCEC for pickup for recycling to improve marketability.
- In 2008 BCEC recycled almost 200 tons of materials.
- The BCEC saved $27/ton in avoided disposal costs with its organics recycling program.



The Boston Convention & Exhibition Center covers more than 1.6 million square feet and has the largest contiguous exhibit hall on the East Coast.

## Program Overview

In May 2006, the Massachusetts Convention Center Authority (MCCA), Massachusetts Department of Environmental Protection (DEP), and U.S. Environmental Protection Agency (EPA) New England initiated a plan to divert food waste by composting at the BCEC. The project expanded the State of Massachusetts' successful statewide commercial organics diversion strategy to include convention and conference centers. A complementary component of this strategy has been the cultivation of composting capacity in the State. Focusing on composting at the BCEC was a natural fit for this strategy, offering the opportunity to divert organics from the BCEC and to leverage available compositing capacity at a farm-based composting facility.

## Recycling at the BCEC

The BCEC opened for business in June 2004 with a capacity for more than 25,000 attendees a day. The facility contains 1.6 million square feet and fills Boston's need to accommodate large conventions and tradeshows. It has 516,000 square feet of exhibit space—the largest contiguous exhibit hall on the East Coast—and 160,000 square feet of meeting space in 84 meeting rooms.

Tradeshow materials and the waste generated fluctuates with the variety and size of events held at the conference center. The BCEC staff identifies and collects tradeshow-specific materials for donation, reuse, recycling, or composting. Staff members modify the breakdown procedures to incorporate material-specific containers on the tradeshow floor. Events at the BCEC generate food waste from diverse sources, including small coffee service areas, refreshment stands, temporary food service units, an international food court, and a 40,020-square-foot grand ballroom. The food service staff at the BCEC has served catered meals for as many as 9,000 convention patrons at one time. ARAMARK is the exclusive food service/beverage provider, under the leadership of Executive Chef Michael Tracy.

Early in the convention center's recycling program, bottles and cans were collected and turned in at local redemption centers, which accepted and recycled non-deposit plastic water bottles in addition to soda bottles and cans that have bottle deposits. (When the BCEC changed redemption centers, non-deposit water bottles were no longer accepted. The BCEC then expanded its plastics recycling program to include these water bottles and other plastics.) Cardboard was collected and placed in a recycling compactor, waste from the facility was put in a trash compactor, and open-top dumpsters were used for large and bulky items. At the time, the BCEC did not divert any organics to composting, although it did donate appropriate food leftovers to the Boston Food Bank.

Jet-A-Way of Roxbury, MA, provided waste removal and management services for the BCEC. As a result of this project, Jet-A-Way installed an organics compactor for food waste and other compostable materials. The BCEC dedicated an enclosed recycling area in the back room/loading dock area. The facility conducted an economic analysis for the capital investment required to maximize cardboard and plastic recycling using a vertical baler.



**Leftover fish from a seafood exhibition is prepared for composting.**

## Tips for Reducing Food Waste at Convention Centers

Americans throw away almost 25 percent of the food we prepare, or approximately 100 billion pounds, and recover fewer than 3 percent of food waste. The United States spends about $1 billion a year to dispose of food waste. Convention center staff and event managers can minimize the costs associated with food waste by planning ahead.

1. Try to reduce the amount of food waste generated by carefully controlling portion sizes. Conference attendees often leave considerable amounts of food on their plates, which must be disposed of.
2. Donate leftover food from events. The "Bill Emerson Good Samaritan Food Donation Act" (Public Law 104-210) provides legal protection to donors of food. You can locate local food banks or food rescue organizations at Feeding America, a national food bank network. Or, work with Rock and Wrap It Up!, a nonprofit organization working to alleviate hunger.
3. If you cannot donate leftover food, compost it along with food prep and plate scraps. Diverting organics reduces trash hauling costs, and composting produces a valuable material that is beneficial to the environment.

EPA provides more information on managing food scraps at www.epa.gov/wastes/conserve/materials/organics/food.

## Nuts and Bolts

*Organics Project.* In 2006, a coalition of representatives from the BCEC management team, Massachusetts DEP, EPA, ARAMARK, Jet-A-Way, and Rocky Hill composting facility in Saugus, MA, defined how best to move forward with organics diversion at the BCEC. In March 2006, in coordination with Massachusetts DEP, the BCEC initiated several of its earliest tradeshow organics recycling programs. The first, the New England Grows tradeshow, donated two tractor-trailer loads of plant and landscaping materials for reuse at local agricultural high schools. The International Seafood Show, also in March, collected more than 22 tons of fish and fish products from the tradeshow vendors for composting. The coalition made improvements to the source separation program prior to the very large Microsoft conference/tradeshow (10,500 attendees) in June 2006.

Michael Tracy of ARAMARK led the communication and training initiative for the food service personnel involved with food preparation, presentation, and cleanup. The organics diversion program included both food prep waste and postconsumer waste, including leftover food and plate scrapings where appropriate. The coalition developed a training manual that identifies materials that can and cannot be included in the program and includes examples of signage in several languages. Permanent staff learned the procedures and train the temporary staff brought in for each show.

To support the new organics program, the hauling vendor installed a dedicated open-top container for the Microsoft show. The BCEC positioned the organics compactor and other recycling storage/removal systems in the loading dock area with signage and fenced in the area. The dock manager, building services manager, kitchen staff, and cleaning staff worked collaboratively to oversee organics disposal, cardboard recycling, and returnable bottle operations. BCEC employees monitored disposal of organics to prevent contaminants, such as plastics, from being disposed of in the organics container. In addition, the BCEC employees, including temporary help, placed cardboard and paper into the dedicated cardboard compactor.

Following the successful execution of the organics program during the Microsoft event, the BCEC decided to include the organics composting program as a permanent component of its waste management process. The organics program proved itself again at the EPA Brownfields conference in fall 2006. At this event, conference organizers focused on composting organics, recycling cardboard, diverting refundable cans/bottles to the local recycling center, recycling paper at the end of the conference, and providing recycling for conference attendees—with a goal of making this event as sustainable as possible. Of the 6.8 tons of waste generated at the Brownfields conference, 1.2 tons of food waste was diverted to composting and 1.8 tons of cardboard and paper were recycled.

Building on the success of the BCEC organics program, the Hynes Convention Center, another MCCA facility, established a limited organics diversion program in early 2007. To reduce contamination, the BCEC later replaced the organics compactor with 65-gallon wheeled carts, which were also used by the Hynes Convention Center.

*Plastics Project.* The coalition reviewed options for plastics recycling from an operational and economic perspective and concluded that including all plastics would increase diversion rates for all types of plastics, as well as provide economic benefits due to revenue for the plastics and avoided disposal costs. The analysis included plastics brought over

from the Hynes Convention Center. To capture as much plastic as possible in the waste stream, the BCEC decided to collect pallet stretch wrap, plastic sheeting material, shrink wrap, plastic water bottles, plastic pails, and assorted plastic waste such as damaged bread racks, coat hangers, waste baskets, and chairs. Based on the analysis, the BCEC purchased and installed a vertical baler for plastics, the same type of baler used for cardboard baling, for approximately $10,000. All film plastic, such as pallet stretch wrap and plastic sheeting material, are placed in the baler. When it has collected five bales, the BCEC notifies the hauler and has them picked up for recycling.

The BCEC added a 35-yard self-contained compactor for comingled containers, into which they mix all containers generated from the kitchen, deposit bottles/cans, water bottles, and rigid plastics for recycling. Other plastics from the kitchen, such as plastic buckets, also go into a compactor. Large objects such as broken plastic furniture and any other discarded large plastic items go into an open-top container and are sent to recycling.




BCEC staff use a baler, compactor, and open-top container to manage plastics from both the BCEC and nearby Hynes Convention Center.

As an alternative to using plastics, many events look at biodegradable utensils, plates, cups, and packaging options. Though these products are compostable at some composting facilities, the operational utilization of these products from a practicality and event organizer acceptance level still has hurdles to overcome. Color, appearance, and product strength are characteristics that food service personnel measure against conventional plates, utensils, and cups. In addition, the current pricing structure for these materials is still greater than that of conventional plastics. To date, the BCEC has not utilized these products to any great extent, but plans to review and consider biodegradable items as an option for event planners in the future.

## Project Results

The organics recycling program has seen continual success since 2006. A total of 67 tons of food waste and other organics were collected for composting in 2007, and the BCEC increased its annual pull to 103 tons in 2008. The BCEC saved $27/ton in avoided disposal costs with its organics recycling program.

The BCEC has had similar tonnage results for cardboard recycling, with 74 tons collected in 2007 and 122 tons in 2008. By diverting the cardboard through recycling, the BCEC avoided $82.50/ton in disposal costs and received an additional per ton revenue on the materials collected.

In 2008, the BCEC collected and recycled 18 tons of plastic film, along with 15 tons of comingled containers.

## Additional Program Enhancements

In August 2008, the BCEC contracted separately with a local recycling company, Save That Stuff, Inc., to help grow its waste diversion and recycling program and assist in maximizing the materials coming out of individual shows.

Additional improvements to the program include the following:

- Collecting and recycling carpet, including the cardboard tubes the carpet is rolled around.
- Placing beverage and paper recycling containers in exhibition areas, hallways, and meeting rooms.
- Installation of a new 300-gallon stainless steel storage tank to collect fryer oil from the kitchen, which is made into biodiesel for heating and transportation.
- Collecting, sorting, and storing vendor giveaways and other booth materials for distribution to charitable organizations, schools, and other recipients.
- Collecting wood pallets to be reused, or, if broken, sent to a composting facility.
- Dedicating a storage room for the collection and sorting of e-waste for recycling. This includes wire cables, light bulbs, computer monitors, batteries, and other electronic equipment from facility operations and left by vendors.
- In the food court areas, providing condiments in bulk dispensers or compostable materials, along with some compostable cups and plates. Plastic creamer containers remain one of the major contaminants that the BCEC needs to remove from its recycling stream.
- Using a portion of the compost derived from the BCEC's organic waste stream for landscaping onsite.




Workers use 65-gallon wheeled totes like this one to collect organic materials for composting at both the BCEC and Hynes Convention Center.

## Challenges and Solutions

*Challenge.* Contamination of the organics compactor.

*Solution.* The BCEC solved its contamination problem by assigning an organics point person, the recycling manager, to the back room operation to direct each commodity to its respective collection container. Also as a quality control measure, the BCEC replaced the organics compactor with thirty-five 65-gallon totes and installed a dedicated area below the loading dock where materials are picked up daily, and as needed during events.

*Challenge.* Training the employee workforce, including temporary workers.

*Solution.* The BCEC addressed its training challenge through direct involvement of the executive chef and development of a training manual that identifies materials that can and cannot be included in the composting program. The manual includes examples of signage in multiple languages. Permanent staff has been trained on the procedures, and they in turn train any temporary staff brought in for shows.

*Challenge.* Disposal of recyclables (organics and cardboard) in the trash compactor.

*Solution.* The BCEC solved this problem by designating an area in the back room for recyclables with fencing, signs, and oversight by operations management. Employees bring all materials collected from the exhibition floor in wheeled totes to the recycling area where they sort and deposit materials into the various collection containers.

*Challenge.* Varied hauling frequencies of the organics container due to event scheduling and food service activities.

*Solution.* The BCEC solved its hauling challenge by close communication with ARAMARK, the recycling manager, and the composting facility. Depending on the size of the event, the composting vendor picks up organics once, twice, or even three times a day for the large events.

*Challenge.* Effective source separation of post-event recyclables from the show floor.

*Solution* The BCEC management team solved this problem through communication with show planners and the post-event cleanout workforce, coupled with designated collection containers for organics, paper, cardboard, reuse items, and trash stationed throughout the show floor area during cleanout.



**The BCEC staff works with event planners and post-event cleanout staff to ensure that carpet and padding are recycled whenever possible.**

EPA
United States
Environmental Protection
Agency

Office of Solid Waste (5306P)
EPA 530-F-09-029
February 2010

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