United States
Environmental Protection
Agency

Solid Waste and
Emergency Response
(5306W)

EPA-530-F-98-023d
September 1998
www.epa.gov/osw

Green Workplace Program

Government of Ontario

70% Recovery of Food Discards

In 1991, the Government of Ontario, Canada, created the Green Workplace Program (GWP). The GWP facilitates waste reduction, resource conservation, and environmentally responsible purchasing in provincial facilities. An integral part of the GWP's waste reduction programs, composting diverted approximately 1,500 metric tons (1,650 U.S. tons) of food discards from landfills in FY96. From all its composting programs combined (in-vessel, on-site, and off-site), the Government of Ontario avoided C$150,000 in trash disposal costs in FY96. Of this avoided cost, C$8,580 was from its in-vessel program.

Program Description

When audits showed that food and wet waste constituted up to 70% of the waste stream of institutional facilities, the GWP began nine projects aimed at developing composting expertise and demonstrating on-site composting systems. These sites employ a variety of compost methods, including windrow, aerated static pile, and large scale vermiculture. In total, the sites handle 225 kg (496 lbs.) to 2,750 kg (6,064 lbs.) of food and other organic material each week. Based on the success of these first projects, GWP has expanded composting to 27 government facilities.

The Ontario Government set up a Greening Demonstration Fund to purchase and test environmental technologies. Through this fund, GWP purchased an **in-vessel composting** unit made by Wright Environmental Inc., an Ontario company. Located on the grounds of the Ontario Science Center, this in-vessel system accepts food discards (including dairy, meat, and fish) from seven different government facilities. A special building, accessible to visitors, houses the composter.

Diners in four correctional facilities and three government office buildings and restaurants put their food discards into "food only" containers. Kitchen staff refrigerate this food, along with food preparation scraps in specially marked 65-gallon containers. On semi-weekly collection days, kitchen staff wheel containers to the loading dock for pick-up. In a unique arrangement, staff and clients from a local detention center collect and transport the discards to the composter.

At the in-vessel site, detention center clients add food discards and bulking agent (such as wood chips and paper towels) to the mixer in appropriate proportions. Material spends 24 to 30 days moving through the

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vessel. It is then screened and stored in an on-site container which, when full, is taken and emptied at a municipal windrow site. Material is windrowed and cured for three to four weeks.

When the project began, staff from Wright Environmental trained Ministry of Correctional Services employees to run the composting machine. They also trained detention center clients in proper handling and transportation procedures. GWP staff provide training to kitchen and other building employees on how to prepare food discards for composting.

The composter is also being used to test the viability of starting residential and commercial food discard collection programs.

Costs/Benefits

Note: all cost figures are in Canadian dollars. All tons are metric tons.

The machine cost $180,000, and costs $50 per ton to run. In FY96, transportation to the Ontario Science Center cost approximately $49 per ton; landfill hauling and tipping costs were $138 per ton. In FY96, the in-vessel unit composted 220 tons of food discards, avoiding $8,580 in waste disposal costs.

Based on landfill costs and participating facilities at the time of purchase in 1992, GWP projected a 4.6-year pay-back period on the composter. Since 1992, both transportation and landfill costs have gone up, with transportation costs increasing more than landfill costs. In addition, in early 1997, a facility that had contributed 2 tons per day to the compost stream stopped preparing food on-site and discontinued participation in the program. In late 1997, however, another facility will join, adding 4-10 tons per week. In fall 1997, GWP is predicting a 6-year pay-back period. As more material is diverted from landfills and composted, the in-vessel unit becomes more cost-effective.

The Toronto Parks Department saves money by using compost instead of buying soil, peat moss, mulch and fertilizer to maintain lawns and gardens.

Tips for Replication

- Know how much and what type of food discards are generated at your facility. Determine your current food discard collection and disposal costs.
- Calculate how much the preferred composting system will cost (aim for a pay-back period of five years or less).
- Ensure that you have sufficient budget to cover system purchase and maintenance.
- Consider accepting food discards from many sites to increase program cost-effectiveness.
- Train staff to use the composting method correctly.
- Publicize your program; publish results.

In-Vessel Composter Program Summary, FY96

Sector	Government (7 buildings)
Start date	1993
Dedicated employees*	<0.25
Method	In-vessel (continuous flow) and windrow composting
Materials collected	Fruit and vegetable trimmings, plate scrapings, dairy products, fish, meat, bones
Part of comprehensive waste reduction program?	Yes
Total food discards generated (TPY)	314 metric tons (345 U.S. tons)
RESULTS:	
Food discards recovered (TPY)	220 metric tons (242 U.S. tons)
Food discards recovered (%)	70% from participating sites
COSTS:	
Average composting costs**	$99 per metric ton
Average avoided landfill hauling and tipping fees	$138 per metric ton
Net savings	$39 per metric ton

Tons are metric tons. 1 metric ton = 1.1 U.S. tons. Cost figures are in Canadian dollars.

* A dedicated employee is one whose primary responsibility is working with the composting program.
** Average composting costs do not include unit costs for up-front capital expenditures associated with this program.
TPY = tons per year

Source: Institute for Local Self-Reliance; Dave Sparling, Green Workplace Program, Government of Ontario