

COMPOSTING MATTERS

by Paul van der Werf

“Over time the residents and businesses began to accept the Waste Watch program so much so that plans were made to expand the program beyond East Prince.”



Shrinking Waste Lines

The growth of PEI's Waste Watch Program

There's a whole “you can't” school of thought that finds reasons why things can't or won't work. It saps our energy to actually do something — to effect change and make progress.

The Province of Prince Edward Island has a “can do” attitude. It's a small place with big ideas, and has taken waste management and created something that works for them.

PEI's permanent population of 135,000

ebbs and flows with an annual influx of more than a million tourists. Dealing with those people, and their waste, has always been a challenge. In the early 1990s with a landfill set to close, 12 communities/villages (30,000 residents and 1,000 businesses) in the East Prince region of the island decided to proceed down another road. In December 1994 the Waste Watch program was born.

This program focuses on diversion *first* and disposal *second*. It involves collecting and processing compostable waste and recyclable wastes. Remaining residue wastes are managed at the island's landfill or waste-to-energy (WTE) facility. The Waste Watch program is mandatory for all residents and businesses. Non-participation is penalized through higher costs.

Early days

The Waste Watch program began as a pilot project in 1992 using a bag based program — blue bags for recyclables, paper bags for organics, and garbage bags for waste. The pilot participants determined that the paper bags for organics and garbage bags for waste led to unacceptable levels of rodents and vermin and recommended a two cart program: green for compostables and black for waste. Recyclables continue to be collected in blue bags on a monthly basis. Compostable wastes and garbage are collected on alternating weeks (i.e., biweekly).

Over time the residents and businesses began to accept the Waste Watch program so much that plans were made to expand the program beyond East Prince. In 1999 the island Waste Management Corporation (IWMC) was created. This crown corporation was given responsibility for all waste management on

the island including the siting of a composting facility.

Composting

The composting of organic wastes is a major contributor to the program's success and PEI's high waste diversion rate.

Initially composting took place at the East Prince windrow composting facility. This worked reasonably well for the initial phase. The addition of a larger composting facility to accommodate all of the island's organic waste was important.

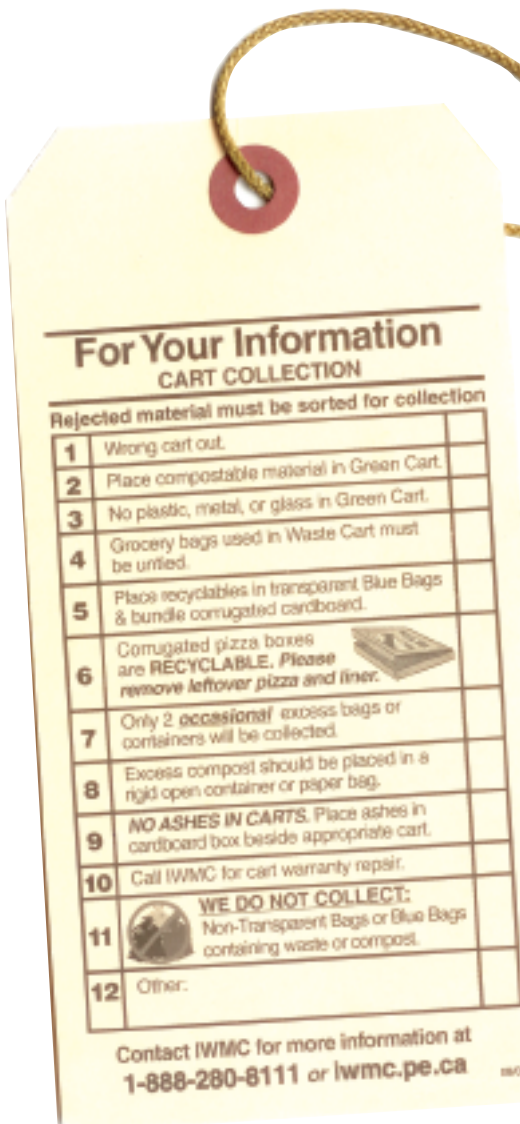
A considerable amount of work went into siting and technology selection for this composting facility. Eventually a site was chosen in Brookfield (near Charlottetown) that would use Green Mountain's in-vessel composting technology.

The 30,000 tonne per year (design capacity) composting facility consists of a receiving hall, 52 composting vessels, an air handling system and a curing/finishing hall. It cost approximately \$22 million to build (which included some significant site works).

Upon receipt, compostable wastes are inspected and mixed with amendment and then inserted into a composting vessel. Composting takes place for 10-14 days in the vessel. The technology selected facilitates the injection of air into and the removal of off-gases from the vessel. The air handling system is set up so that it can re-circulate some of the off-gases back into the tunnel to help maintain temperatures. Off-gases are directed to one of two biofilters for final treatment. A sophisticated computer monitoring system tracks the composting process in each vessel. A key aspect is the continual monitoring of temperatures to ensure that pathogen requirements are met.

Afterward, curing takes place in an enclosed hall that provides aeration to the composting windrows and collects off-gases for treatment in the biofilters. After screening, the compost is sometimes taken to another site for storage and additional curing prior to sale.

The composting facility is managed by ADI International Inc, which was part of the original design-build team for the facility. ADI is respon-



Cart collection information left behind when a cart is not collected.

COMPOSTING MATTERS



Off-gases from the composting vessels and buildings are treated in a biofiltration system.



The site has 52 composting vessels. Compost stays in the vessels for 10-14 days.

sible for the day-to-day operation of the facility from material receipt to the discharge of finished compost. IWMC maintains two staff at this composting site to weigh and inspect every incoming load of compostable waste.

Says Heather Chowen, disposal manager for the IWMC, "ADI has done a fantastic job. They stand behind what they say they are going to do. They have made this work."

Operating costs are in the low to mid \$60s and approximately \$75/tonne if capital costs are included.

The facility operates in a relatively odour free manner. There were initially some odour complaints but changes were made to reduce fugitive odour emissions. (ADI has an incentive clause in its contract that allows it two odour complaints per month or six annually, and faces a significant fine for each odour complaint thereafter.)

The facility produces about 14,000 tonnes per year of compost, all of which is sold. In the beginning there were some significant problems when the potato growing industry indicated in a very public manner that it would not accept potatoes grown in this compost. (This was for a very specific liability-driven issue.) The fall-out from this was initial reluctance by anyone to use the product. Through hard work this is turning around and today a considerable portion of the product is bought by residents. Forays are being made into the agricultural sector, although mostly off-island. All compost meets CCME requirements. (Compost is sold for up to \$10/yard.)

Challenges

The island has a very strong communications and education program that informs residents and businesses about the "dos and don'ts." Wastes are left behind if the collector determines they are not sorted properly. IWMC has a series of tags that it can affix to containers explaining to residents why wastes were not collected. (See photo.)

There are other challenges. Some businesses didn't sort their wastes well, resulting in contamination of incoming feedstocks at the processing facility. IWMC has a system to identify and surcharge businesses that don't sort their wastes properly. Initially there were a lot of surcharges. Money does talk, though, and these have been reduced dramatically.

Multi-residential units pose a big challenge (as they do in many municipalities). (See article, page XX) Success in these units has relied on the apartment superintendent. Again, a financial incentive is used. Owners of apartment buildings pay \$195/unit/year to have all three streams collected. Wastes are inspected prior to removal. Poor sorting of compostable and recyclable streams results in them being shipped to the WTE facility and surcharged.

Finally, PEI's million-plus tourists come from diverse cultures and speak different languages. It's been a communication challenge, but IWMC has taken a "you have to start somewhere" approach and continues to work on improving this aspect of the program.


Successes and the future

Since its inception, the Waste Watch program has diverted over 1.1 billion pounds or about 500,000 tonnes.

PEI's Minister of Transportation and Public Works Gail Shea puts it succinctly: "We are achieving our goals. Waste Watch went province wide in 2002 and now services more than 60,000 customers across Prince Edward Island. Our diversion rate is about 65 per cent so we feel that we are making good strides in this effort."

As for future initiatives, Gerry Moore, CEO of the IWMC, has charted a clear direction to continue this program's success.

"We are working to improve efficiency and service delivery in our daily operations and have identified several areas of opportunity for the future. These include: development of an electronic waste program; further development of stewardship programs with corporate and community partners; and, evaluation of new technologies to enable further energy from waste opportunities."

Concludes Minister Shea, "One of the key ingredients in the success of program is the support and participation of islanders in the Waste Watch program. Islanders value a clean environment for their families and their future and the Waste Watch program is one of the many ways that they support that goal." 

Paul van der Werf is president of 2cg Inc. in London, Ontario. Contact Paul at www.2cg.ca