

## Residential Organics Diversion Moves Forward in Ontario

By Nora Goldstein  
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THIS month, the town of Markham, Ontario is rolling out the first phase of its new 3-stream collection program, starting with 12,000 single-family households. "Mission Green" is designed to cut the number of transport trailer loads of Markham garbage going to Michigan landfills by 656 trucks or 23,000 tons of MSW annually, according to Mayor Don Cousens. This is in addition to roughly 30,000 tons already being diverted via recycling and green waste programs (equivalent to 850 trash trailer trucks.) The town set a diversion rate target of 70 percent, higher than the province's 60 percent goal by 2008.

The pressure to reduce the amount of waste being exported to Michigan landfills isn't just limited to Markham. Since the Keele Valley Landfill servicing the greater Toronto region closed in December 2002, over 1.1 million tons/year have been crossing the border. The average cost to transport and dispose of solid waste is in the range of \$71/ metric ton (Canadian). Just last month, it was reported that the province may be facing the equivalent of an export ban as of October 1st (see sidebar).

Markham is one of nine municipalities in the York Region (pop. 867,000). The region's governing council approved development of a three-stream collection system — organics, commingled recyclables and trash — in 2001. "We weren't able to implement the program because of the lack of source separated organics processing capacity in the region," says Michael Birett, a waste manager with York Region. That changed when Halton Recycling [2003] Ltd., based in Ontario, bought the assets of an organics processing plant in Newmarket, Ontario. The plant, formerly owned and operated by Canada Composting, Inc. (which is the North American licensee for the BTA anaerobic digestion technology), has a design capacity of 132,000 tons/year (120,000 metric tons). "We signed a five-year contract — two years plus 3 one year extensions — with Halton Recycling to take up to 60,000 metric tons/year (66,000 tons) of source separated organics, plus 20,000 metric tons/year (22,000 tons) of yard trimmings," he adds. "We also are building a materials recycling facility with the capacity to process 90,000 metric tons/year (99,000 tons) of commingled blue box material. That is scheduled to open in July 2005, as will a new transfer station — located at the same site — that is designed to receive up to 150 tonnes/day (165 tons) of garbage and 100 tonnes/day (110 tons) of source separated organics."

The target date for having all municipalities in York Region on board with the 3-stream program is the end of 2005, to coincide with the opening of the MRF and transfer station. However, based on varying expiration dates of existing collection contracts, some municipalities may be coming into the program later.

### MISSION GREEN IN MARKHAM

Markham's current waste diversion program includes blue box recycling, leaf and yard trimmings collection (in bulk from April to November), a ban on setting out grass clippings, backyard composting, a recycling drop-off center and public space recycling. In 2003, the town's recycling rate was 35 percent (about 22 percent attributed to blue box recycling and 4 percent to backyard composting and the

grass clippings ban). With the new program, an additional 30 percent diversion is expected through curbside organics collection (with a targeted four percent rise in blue box recycling).

Organic collection carts supplied by Norseman Plastics are scheduled for delivery to the Phase I households during the second week of September. The 13-gallon green wheeled carts are designed for household organics only. The list of accepted materials is lengthy and includes all food scraps (meats, fish, dairy, vegetative, etc.); soiled paper towels and tissues; soiled paper food packaging, paper coffee cups and plates; household plants; diapers and sanitary products; animal waste and bedding; and pet food. Each household also will receive a kitchen container (2 gallon capacity).

"We ran several pilots a number of years ago to test collection container options," says Peter Veiga, Supervisor of Waste Operations for Markham. "In one pilot, 'Markham's on a Roll,' we tested a split cart for recyclables and garbage, and a large aerated cart for organics. Residents had problems with storing the large carts. In the 'Bag-It' pilot, we found that we still needed a rigid container to set the bags out on the curb. As it turned out for the Mission Green program, the organics processing method was selected first, and because food and paper residuals aren't being processed with yard trimmings, it didn't make sense to combine the two in a larger cart for collection, and the smaller Norseman cart fit the bill. We encourage people to set the materials inside the cart in bags and to line their kitchen container with a bag."

Organics and recyclables will be collected weekly in a sideloading vehicle; trash will be collected biweekly. "We expect that biweekly trash collection will drive participation in the organics program because people won't want that material sitting around for two weeks," adds Veiga. Seasonal collection of leaves and yard trimmings will continue. The town expanded the list of accepted recyclables to include empty aerosol and metal paint cans, and aluminum foil and plates.

An aggressive public education program, cofunded by the Region, has been initiated to introduce Mission Green, including meetings and special events. An information package, including an instructional CD, is included with every cart. At a media event recently, where the green carts, kitchen containers and a sample setout were displayed, a trash transfer trailer was adorned with a banner that read, "Mission Green Target 70%..... 656 More of These Off The Road Every Year."

During Phase II, to be rolled out in September 2005, the remaining 55,000 single family households in Markham will be added to the 3-stream program. That expansion is timed with the opening of York Region's MRF and transfer station. Phase I will be used to work out "the kinks;" recyclables will be shipped to the city of Toronto for processing until the Region's new MRF is up and running. For the time being, private businesses and multifamily residences will not be part of the Mission Green program. Collection costs for the 3-stream program are only slightly higher than the program being replaced, in large part because of cocollection of recyclables and organics and the biweekly pick-up schedule for trash.

## **ORGANICS PROCESSING**

The Halton plant in Newmarket has a projected annual capacity of 132,000 tons/year. The facility is designed to accept two streams — residential yard trimmings and source separated organics — notes Bill Palmer, operations manager with Halton Recycling [2003] Ltd. The company has been upgrading the plant since it acquired the facility from Canada Composting, Inc. Upgrades include installation

of a vertical composter, supplied by VCU Technology Ltd. of New Zealand. "Overall, upgrading has been done to improve the reliability of the process and to eliminate odors," says Palmer. "The facility will continue to use the hydropulper and a methanizer to produce electricity."

The hydropulper is a wet separation step designed to remove inorganics (e.g. plastics and other nonbiodegradable materials in the source separated stream) and reduce the solids content to under ten percent. An agitator pulps the material; light fraction contaminants float to the surface, while heavy objects are caught in a trap at the bottom of the pulper. After pulping, the liquid fraction flows into a tank (the "methanizer") where anaerobic bacteria produce biogas that is converted into electricity. The pulped fraction will be run through a filter press then mixed with chipped yard trimmings and loaded into the composting unit. Liquid from the tank is recycled back into the hydropulper. "The complete process takes about six weeks to make and to test the finished compost," adds Palmer. "Our goal is to produce a AAA compost and we have secured markets for the final product. The biogas will be used on-site to produce electricity, which is then fed into the Newmarket Electric Utilities system."

Currently, yard trimmings are being accepted from the Region of York. Trial runs of source separated organics are scheduled to start arriving after September 16th. The yard trimmings are accepted from curbside pickup in municipal trucks and from residents dropping off at the facility. They are chipped on site. Source separated organics such as vegetable trimmings and food scraps from commercial locations will be accepted depending on how they are directed from each municipality. Halton Recycling considers those feedstocks to have the same composition as residentially source separated organics.

## **REGIONAL WASTE MANAGEMENT REALITIES**

In addition to the 66,000 tons/year of source separated organics from York Region, portions of residential organics collected by the city of Toronto will be taken to the anaerobic digestion plant in Newmarket as well (about 24,000 tons/year). The tipping fee for York Region at the Newmarket plant is in the \$100 (Canadian) range. While the plant's capacity is adequate for the time being, it was recognized by the governing bodies in the Greater Toronto Area that more processing capacity needs to be developed. At the direction of its Council, York Region entered into a joint RFP with the Regions of Peel, Durham and the city of Toronto to develop approximately 330,000 tons of new source separated processing capacity. The RFP was issued in November, 2003 through the city of Toronto and a number of companies responded. "The intent of the RFP is to look for and encourage private sector development in Ontario to strengthen the province's organics processing capacity," says Michael Birett. No decisions have been made with regard to proposals received. (Since the time the RFP was issued, the Region of Peel withdrew from the process after deciding to expand its existing composting system that utilizes the Herhof container technology.)

In general, notes Birett, people in Ontario don't want to see their waste crossing the border: "The public is supportive of alternatives and finding solutions. Our goal is to minimize what we send across the border by maximizing what we can pull out through reduction, blue box recycling, anaerobic digestion and composting."

## **GROWING CHALLENGES TO WASTE IMPORTS**

IN July, the state of Michigan notified the Ontario Ministry of the Environment (MOE) that haulers bringing waste from Ontario into Michigan must have a State of

Michigan Department of Environmental Quality (DEQ) permit in order to dispose waste in the state. This requirement was adopted as part of a package of legislation signed by Michigan Governor Jennifer Granholm in March 2004. House Bill 5324 — part of the legislative package — requires exporting jurisdictions to apply for and obtain a permit to confirm that the jurisdiction has equivalent regulatory requirements to Michigan for recycling. Among those requirements is a landfill ban on certain beverage containers, whole tires, oil and lead acid batteries.

According to the letter from the Michigan DEQ to the Ontario MOE, these permits need to be in place by October 1, 2004. This requirement has been challenged on the basis that it "contravenes the free movement of materials under interstate commerce and North American Free Trade Agreement laws," notes an item on Solid Waste & Recycling's website ([www.solidwastemag.com](http://www.solidwastemag.com)). "A ruling is not expected until mid-September — meanwhile the deadline for a DEQ permit application is September 1, 2004." Stay tuned.