



mwin Municipal Waste Matters

Spring 2006

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mwin 2006 Annual Meeting & Conference

June 14-16, 2006 Blue Mountain Conference Centre

Have you registered yet?

We listened to your comments and developed an excellent program to give you what you asked for including:

- ✓ Environmental assessment and approvals – how it's really working
- ✓ free expert advice
- ✓ discussions about new and innovative municipal waste management solutions especially for smaller municipalities
- ✓ alternative packaging for beverages
- ✓ Blue Box and the funding formula (Guy Crittenden's always controversial session)

You also asked us to move the golf tournament back to the beginning of the conference and we have done just that.

Jeff Fletcher at the Town of the Blue Mountains is also arranging for interested delegates to take part in a site inspection of the Town's new passive windrow operation.

There's still time to take advantage of the special discount rate before the May 26th deadline. You can download the program and registration information from the mwin website at www.mwin.org. Click on the *More Info* tab in the upper right corner of the site under the **2006 mwin Annual Conference June 20-22 Collingwood Ontario** item.

There are still exhibiting and sponsorship opportunities. Details are available on the website at the above location.

If you have questions, please call Maryanne Hill at mwin (519-620-9654 or mhill@mwin.org).

Contributors

Michael Cant

Golder Associates Inc.
(mcant@golder.com)

Danielle Braney

City of Greater Sudbury
(danielle.braney@
greatersudbury.ca)

Maria Kelleher

Kelleher Environmental/RIS
(mkelleher@risinternational.com)

Vince Ciano

VPF Waste & Recycling
(vciano@vpfrecycling.com)

Andrew Drury

All Treat Farms Limited
(adrury@alltreat.com)

Jeffrey Fletcher

Town of the Blue Mountains
(jfletcher@town.
thebluemountains.on.ca)

Scott Freiburger

AET Consultants Inc.
(scott@aetconsultants.com)

Melissa Kovacs-Reid

County of Dufferin
(mkovacs@dufferincounty.on.ca)

Dave Gordon

Regional Municipality of Peel
(dave.gordon@peelregion.ca)

Elizabeth Kenrick

Ottawa Valley Waste Recovery
Centre (OVWRC)
ekenrick@OVWRC.com

Chris Tucker

Classic Displays
chris_tucker81@yahoo.ca

Paul van der Werf

2cg Inc.
2cg@sympatico.ca

Peter Veiga

Town of Markham
pveiga@markham.ca

FCM Solid Waste as a Resource Workshops

Working with the Federation of Canadian Municipalities, **mwin** organized and delivered six very successful national workshops on the FCM Solid Waste as a Resource Guide.

Special thanks to [Maria Keller](#), [Janet Robins](#) and [Betty Muise](#) from Kelleher Environmental who facilitated the sessions.

The final report on these workshops is now completed and can be downloaded from the **mwin** website (www.mwin.org) under the **mwin** News and Classifieds section.

mwin/RCA Deliver National Waste Management Workshops in Toronto and Calgary

Under the leadership of the Municipal Waste Integration Network (**mwin**) and the Recycling Council of Alberta (RCA) Waste Management Workshops were delivered in Toronto (February 23, 2006) and Calgary (March 2, 2006). The workshops provided organics management and residual disposal/treatment presentations on:

- Composting
- Anaerobic Digestion
- Sanitary Landfill
- Bioreactor Landfill and
- Thermal Treatment.

Each technology was evaluated for populations of 20,000, 80,000 and 200,000. The evaluation criteria used included; economic, social, environmental, energy and greenhouse gases. Approximately 50 people attended each workshop. The presentations are available on

The final report **Municipal Solid Waste (MSW) Options: Integrating Organics Management and Residual Disposal/Treatment** is available both the **mwin** (www.mwin.org News and Classified Section - click on the View More tab to locate) and RCA (www.recycle.ab.ca) websites. For those who were unable to attend the workshops, the presentations will be delivered again in a brief session during **mwin**'s conference in June 2006.

Funding support for the study was provided by Environment

If you wish to contribute
Articles or information

Contact Us

Tel: (519) 620-9654

Fax: (519) 620-9678

info@mwin.org

http://www.mwin.org

Canada and Natural Resources Canada.

Our sincere thanks to:

Project Manager: **Michael Cant**, Senior Waste Planner, Ontario Sector Waste Team Leader at Golder (mcant@golder.com), formerly with Totten Sims Hubicki

Workshop Presenters:

Anaerobic Digestion - Maria Kelleher, Kelleher Environmental (mkelleher@sympatico.ca)

Composting - Paul van der Werf, 2cg Inc. (paulv@2cg.ca)

Thermal Treatment - Konrad Fichtner, Gartner Lee Limited (kfichtner@gartnerlee.com)

Sanitary & Bioreactor Landfill - Neil MacDonald (neil.macdonald@ch2m.com), CH2M HILL

Workshop Facilitators:

Mississauga Workshop - Betty Muise, Principal, Betty Muise Adult Training (bettymuise@sympatico.ca)

Calgary Workshop: Jim Gendron, Partner, Equus Consulting (jgendron@equusgroup.com)

Industry News

Passings

February 27, 2006 - *Dick Cave* of R. Cave and Associates, Environmental Consultants.

The Compost Report

Overview of Composting Technologies

A brief overview of composting technology types is presented. A more detailed overview can be found in the recently released **mwin** report Municipal Solid Waste (MSW) Options-Integrating Organics Management and Residual Treatment/Disposal from which this article was adapted. There are two main classes of centralized composting technologies. Examples of each type are provided.

Non-Reactor Composting Technologies

These are technologies where composting typically takes place outdoors.

Non-reactor systems tend to utilize public-domain technology, albeit sometimes with the aid of specialized equipment provided by various vendors. These systems can compost a variety of wastes including source separated organics (SSO). As well they are used for secondary composting of organic waste that has been managed in a Reactor Composting Technology.

Windrow

The term windrow refers to a pile of material that is characterized by a generally-triangular cross-section and a length that may vary significantly depending on available space. Commonly, windrows are between two and four metres in height and three to six metres in width. Windrow composting generally takes place outdoors on a paved (e.g. concrete, asphalt) or unpaved surface such as a compacted clay pad.

Windrows are moved or 'turned', usually by some type of mobile heavy equipment such as a pay loader or specialized windrow turner. This is done to aerate the material, to reduce particle size, to blend it, and often to gradually move it through a processing area. The frequency of turning may range from several times daily to once per month, depending on a wide range of factors (such as type of organic material). Most regulatory regimes require that the material be fully turned at least five times during the process, but much higher numbers of turns are not uncommon. A finished product can typically be produced in 3-12 months.

Process monitoring tends to focus on the collection of temperature data. Often simple and rugged hand-held instruments are used.

Given their low demand for capital equipment, and low operating costs, windrow systems are widely recognized as the lowest-cost composting approach available. Windrow composting has rather large land requirements if more than modest quantities of organic materials are processed. Windrow is most viable in rural sites or areas with large buffer zones.

Reactor (In-vessel) Composting Technologies

These encompass enclosed channel and tunnel/container systems. They are commonly referred to as “in-vessel” systems. Reactor systems tend to be available only from vendors of proprietary technologies.

Common elements of Reactor Composting Technologies include:

- Some type of building(s) to house elements which may include: feedstock preparation (i.e. segregation, shredding/grinding, mixing), composting and curing.
- Composting takes place indoors or in fully sealed vessels
- Can handle a wide array of feedstocks
- Residence times of organic waste varies from 3-28 days
- Some level of automated data collection for temperature (e.g. thermocouples, programmable logic controller, desk-top computer) and in some cases other parameters such as oxygen, relative humidity etc.
- Air handling system to force air through composting waste and remove off-gases for treatment
- Treatment of off-gases typically occurs in a biofilter although other scrubbing methods are also sometimes used
- After residence time has been completed composting material must be taken to a curing area for further processing. This curing area can be indoors or outdoors.
- A finished compost can be made in 2-6 months

Enclosed Channel

Channels are partially sealed vessels. Composting takes place in a horizontal silo like channel consisting of two long parallel concrete walls generally, 1-2 m in height, 3-5m in width and 30m + long. A facility can have a number of channels. A variant of this type of composting is wide-bed composting, where the width of the channel is close to the width of a building.

Each channel has a distinct input and output end and functions as a continuous flow system rather than a batch system. Material is placed in the input end by a piece of mobile equipment. Mixing of organic waste is provided with a specialized automated turner that typically straddles the concrete walled channels on rails or wheels. It starts its

processing at the output end, discharging compost, and moves towards and completes its cycle at the input end of the channel. As the turner makes repeated passes down the channel over time, it gradually moves the mass of waste from the input end to the output end of the channel. Additional aeration is provided via a mechanical aeration system.

Container/Tunnel

Container/tunnel composting systems are fully sealed vessels in which the composting environment is tightly controlled and so should be able to process compost in the shortest amount of time possible.

Container systems are mobile and resemble closed top roll-off containers. They are typically made from metal with the interior made from corrosion resistant metals. There are generally a number of containers at a facility. They are modular and additional containers can be added relatively easily.

Tunnel systems are fixed in place, typically in a building. They are typically made from concrete or corrosion resistant metals. They in some cases originated and share features of composting tunnels used by the mushroom growing industry. There are generally a number of tunnels at a facility. They are modular and additional tunnels can be added relatively easily.

Paul van der Werf

2cg Inc.

519-645-7733

2cg@sympatico.ca

New mwin Members

Classic Displays.

Classic Displays has been effectively providing innovative beautification products for Cities, Business Improvement Areas and Property Management Groups since 1979. Classic Displays is currently composed of three different divisions of operations: Christmas and Holiday Displays, Flags and Banners and Site Furniture products. Over the last decade, we have become a major supplier of Recycled Plastic Site Furniture products such as benches, waste receptacles,

planters, etc. in Ontario and throughout Canada. As a Canadian company we share the appreciation of our environmentally concerned citizens. As a leader in helping municipalities and organizations meet their "Green Agendas", Classic Displays is now working towards developing new sustainable designs for our recycled plastic site furniture products. Our premier product, the Phoenix, is a new multi-stream, multi-purpose, waste management receptacle. With a new "ergonomically correct" design, created with input from major Canadian cities such as the City of Toronto and the City of Vaughn, the Phoenix is the ideal receptacle to help combat work place back strain and injury. The Phoenix is made of post industrial/post consumer recycled plastic and can be used for both your waste and your recycling needs. Classic Displays is proud to be a new member of the Municipal Waste Integration Network.

Contact *Chris Tucker* at:

Tel: 1-800-461-6635

E-mail: chris_tucker81@yahoo.ca

mwin Member News

AMRC

Congratulations to everyone on the new AMRC board.

Chair: *Mike Birett*, York Region

Vice Chair *Joe Hall*, Ottawa Valley Waste Recovery Centre

Treasurer: *Cathy Wiebe*, County of Wellington

Secretary: *Kim Kidd Kitagawa*, Waterloo Region

Other members include:

Anne Boyd, City of London

Pat Parker, City of Hamilton

Rosanne Fritzsche, Town of Richmond Hill

Jen Turnbull, City of Guelph

Rob Rennie, Regional Municipality of Peel

Clayton Sampson, County of Oxford

City of Greater Sudbury

Danielle Braney is the Acting Director of Waste Management (Danielle.Braney@greatersudbury.ca).

Congratulations to Renée Lagrove, the new Waste Diversion Coordinator at the City. You can reach her at (905) 674-4455 x4241 or renee.lagrove@greatersudbury.ca.

City of Guelph

Janet Laird has moved back as the Director, Environmental Services at the City. You can reach Janet at (519) 837-5604 or janet.laird@guelph.ca.

Dean Wyman has joined the City as Manager, Solid Waste Services. You can contact him at (519) 767-0598 x 222 or dean.wyman@guelph.ca.

We wish both of them much success in their new positions.

County of Dufferin

Dufferin County Seeking SSO Collection Bids [05/17/2006] RFP PW-06-13 Closing Date: June 8, 2006 2:00 pm. Visit www.mwin.org to find the announcement under **mwin News & Classifieds**.

Golder Associates Inc.

Congratulations to *Michael Cant* who has moved to Golder Associates in Whitby. He has taken on the role of Senior Waste Planner, Ontario Sector Waste Team Leader. To contact Michael, call him at (905) 723-2727 or e-mail him at mcant@golder.com.

Totten Sims Hubicki

Congratulations also to *Colleen Carter* who assumes the position of Manager, Solid Waste at TSH. Contact Colleen at (905) 668-9363 or ccarter@tsh.com.

Town of the Blue Mountains

Jeffrey Fletcher, Manager of Solid Waste Services announces that there will be a tour of the newly completed Town of the Blue Mountains composting pad at the **mwin** conference (20-22 June). The tour will take place on June 22 following the close of the business session at noon.

Town of Markham

Congratulations to the Town of Markham on winning the 2006 *Clean World Award* from PITCH-IN-CANADA. The Town's environmental stewardship programs developed in partnership with its community partners has resulted in a 65%

diversion from landfill and significantly reduced the environmental impact of transporting its waste to Michigan for disposal.

Peter Veiga

Supervisor, Waste Management Operations

Tel: (905) 477-7000 ext. 3700

E-mail: pveiga@markham.ca

Regional Municipality of York

York Collection and Processing Optimization Study

York Region is scheduled to undertake a study on collection and processing optimization for single stream blue box recyclables in June 2006. The project team consists of York Region, AET Consultants Inc. and Waste Diversion Ontario. Stewardship Ontario is funding the project through the Effectiveness and Efficiency Fund. The anticipated completion date is the end of September 2006.

As single stream collection is being adopted by many jurisdictions in Ontario and elsewhere, best practices for collection and processing need to be developed. To date, studies with a focus on single stream systems have been limited to Material Recovery Facility (MRF) processing. As the recycling system as a whole involves both collection and processing, this study will touch on both. This study will determine the best practice for compaction during collection that maximizes collection effectiveness and efficiency while at the same time, ensuring that MRF processing remains effective and efficient.

The overall goal of this study is to determine the best practice for compaction on single stream collection. The primary objective is to determine the optimal compaction on single stream collection vehicles while maintaining MRF processing efficiency and end-product quality.

The collection and processing study will be completed in two phases. Phase one will focus on historical data, specifically and will include a background survey of jurisdictions within Ontario, Canada and the United States to determine which jurisdictions are compacting blue box recyclables during collection and why; to develop the best practice for collection while maintaining MRF efficiency.

Phase 2 will involve process testing of single stream blue box recyclables collected at different compaction rates (kg/m^3) to

evaluate MRF performance and determine the upper compaction limit (kg/m³) for collection that maximizes collection efficiency while maintaining MRF processing efficiency. The process testing will include material composition audits of both MRF residue and end products pre, during and post the compaction tests.

Scott Freiburger, BES, CCEP, EMS(A)
Principal/Sr. Environ. Technologist
AET Consultants Inc.
scott@aetconsultants.com

Shaun Spalding
Operations Coordinator
York Region
shaun.spalding@york.ca

Gary Everett
E&E Fund A-Team Manager
Waste Diversion Ontario
geverett@wdo.ca

Geoff Love
Technical Services
Stewardship Ontario
glove@stewardshipontario.ca

The Last Word

We were pleased with how the both the MSW workshops in Mississauga and Calgary as well as the six FCM Solid Waste As A Resource workshops that we delivered were so very successful. Reports from those who participated clearly indicated that they provided valuable information.

Again, have you registered yet for the conference? If not, then please send in your completed registration right away. You can download delegate, sponsor and exhibitor information for the conference from the **mwin** website (www.mwin.org). Simply click on the link for the annual conference to find the forms.

Both Paul van der Werf (2cg Inc., 2cg@sympatico.ca) who wrote **The Compost Report** and Scott Freiburger (AET Consultants, scott@aetconsultants.com) who wrote about the York Region plan regularly contribute to the newsletter.

The next newsletter will be published in September. If you wish to submit an article or have an idea for an ongoing column, please contact me at (519) 620-9654 or mhill@mwin.org.

Thank you to everyone who contributed to the Spring 2006 newsletter. Information sharing is so important to each of us.

Enjoy the long weekend.

Maryanne

Maryanne Hill, Executive Director