Update from Alberta Environment

March 8th, 2011
Presented by Natasha Page
Outline

• L&YW Diversion Technical Committee
  – Results of consultants report to address outstanding questions

• Waste measurement
  – New online reporting system for landfills
  – What’s the opportunity for measuring organics recycling?
Leaf & Yard Waste Diversion Committee

- Natasha Page
  Alberta Environment
- Allan Yee
  City of Edmonton, CCC
- Daryl McCartney
  University of Alberta
- Don Davies
  Stantec
- Donna Chaw
  Alberta Environment
- Jim Moore
  BFI Canada
- Joanne Walroth
  Recycling Council of Alberta
- Linda McDonald
  Alberta CARE
- Lindsay Lofthouse
  City of Calgary
- Mary Curtis
  City of Red Deer
- Neil Weins
  Bio-Cycle Nutrient Solutions Inc.
- Richard Binder
  City of Calgary
- Rob Olenick
  Top Spray
Work to Date

Since last CCC workshop:

• Feasibility Study finished - answers to committee’s questions

• Measures to evaluate cost and benefit of composting
  – Full cost accounting to be reviewed by committee
  – Life Cycle Analysis (LCA) literature review complete

• Compost Marketing workshop
Leaf and Yard Waste Diversion Strategy

• Proposed Outcomes
  – Diversion of leaf and yard waste from the waste stream to a beneficial resource stream.
  – Fundamentally, Albertans understand the benefits of managing leaf and yard waste as a resource.
  – Albertans are engaged and participating.
Draft Strategy Recommendations

• Requires Government leadership (municipal and provincial)
  – Implement strategy
  – Develop government procurement policies
  – Implement standardized waste measurement system
  – Report back to Albertans on strategy

• Need to implement:
  – method for supporting infrastructure development
  – policy tools to encourage resource recovery (e.g.: disposal ban on leaf & yard waste?)
  – Communication, education, and training program
  – Accountability system to measure success

…but…committee still had outstanding questions
Feasibility Study – Part 1

Outstanding questions

– Amount of material to be managed?
– Infrastructure needs?
– Processing options and costs?
– Management of final product?

• Information presented at last year’s Compost Matters! workshop
Leaf and Yard Waste Collected

Regions defined by Government of Alberta’s Land Use Framework

Includes estimated amounts from residential and ICI sectors, in t/yr

- 3,976
- 9,095
- 11,225
- 9,679
- 192,228
- 21,973
- 250,501
Feasibility Study – Part 2

Outstanding question addressed
– Economic & policy instruments to encourage diversion
– What are the funding models?
– GHG Offsets and impact on LYW diversion
– Recommended diversion rate, and monitoring, grant fund details
Economic & Policy Instruments

Policy tools for reducing disposal in landfill include

• Landfill tax or levy
• Differential tipping fees
• Mandated standards and regulations
• Disposal bans
• Mandatory source separation and recycling
• Mechanisms linked to permitting
Funding Models

• In Canada, only Quebec has funding program that targets L&YW and other organics
• Other jurisdictions: include organics in solid waste reduction initiatives
• Funding cost commonly comes from general revenue
• In Alberta, Waste Management Assistance Program and Resource Recovery Grant Program are currently under review and not accepting applications
GHG Offsets for Composting

• Composting facilities can claim GHG offsets through composting
• Protocol is currently under review

• Current rate of offsets: $10 – 13.50 per t
• Cost of applying for credits for
  – quantifying emission reductions;
  – verifying claims; and
  – registering and trading offset credits

• Total potential for diverting all L&YW:
  644,900 t CO$_2$e or $7.58$ M per y
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After final analysis, recommendation to not consider GHG offsets in determining policy options for L&YW diversion.
Report Recommendations

• Differential tipping fees should be implemented at landfills
• Municipalities should implement programs to encourage participation
  – Bag limits
  – Tag-a-bag
  – L&YW Collection Bins
• Do not implement disposal bans at this time
• Two different province wide diversion targets:
  – moderate ~35% (38% urban)
  – aggressive ~55% (63% urban)
### Conceptual L&YW Infrastructure (estimate) by Geographic Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Drop/off transfer sites</th>
<th>New Class 2 and Class 3 Facilities</th>
<th>Expansion of Existing Facilities</th>
<th>Total Infrastructure Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Saskatchewan</td>
<td>$195,000</td>
<td>$475,000</td>
<td>$1,260,000</td>
<td>$1,930,000</td>
</tr>
<tr>
<td>South Saskatchewan</td>
<td>$180,000</td>
<td>$250,000</td>
<td>$17,400,000</td>
<td>$17,830,000</td>
</tr>
<tr>
<td>Red Deer</td>
<td>$75,000</td>
<td>$100,000</td>
<td>$1,575,000</td>
<td>$1,750,000</td>
</tr>
<tr>
<td>Lower Athabasca</td>
<td>0</td>
<td>$150,000</td>
<td>$875,000</td>
<td>$1,025,000</td>
</tr>
<tr>
<td>Upper Athabasca</td>
<td>$7,500</td>
<td>$575,000</td>
<td>$250,000</td>
<td>$832,500</td>
</tr>
<tr>
<td>Lower Peace</td>
<td>0</td>
<td>$125,000</td>
<td>$75,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>Upper Peace</td>
<td>$37,500</td>
<td>$350,000</td>
<td>$500,000</td>
<td>$887,500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$25 M</strong></td>
</tr>
</tbody>
</table>
Contractor Recommendations

• Have levy on all MSW disposed in Class II and III landfills to develop grant program
  – Managed at arms length from GOA, by third party
  – Education awareness programs
  – Market development of beneficial products from L&YW
  – Have operator training
  – Link funding to verified records of beneficial products being produced
Next Steps for LYW Committee

• Refine strategy based on information from recent reports
  – Full cost accounting for leaf and yard waste diversion
  – Literature review of life cycle assessments for organics

• Finalize the strategy and provide recommendations to the Minister

• Move forward on education initiatives
Online Waste Measurement System
Waste Measurement in Alberta: Municipal Solid Waste to Landfills

- Voluntary annual survey
- Calculates the annual amount of municipal solid waste disposed in landfills per year (kilograms of waste per capita).
- MSWtL highlights the Ministry's efforts to work with Albertans to encourage waste reduction.
- Reported in the Government of Alberta’s annual report.
- The CCME established methods and definitions to measure progress towards a nationwide waste reduction target. Alberta adopted the CCME methods and continues to use the same methodology today.
Municipal Solid Waste to Landfill Performance Measure

Source: Alberta Environment, 2009

Source: Alberta Environment, 2009
Annual Reports

• Standards for landfills in Alberta includes a reporting requirement for approved and registered landfills.
  – Current:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Frequency</th>
<th>Method/ Sample type</th>
<th>Sampling Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume and type of waste received</td>
<td>Continuously (when operating)</td>
<td>Scale data base</td>
<td>Weigh scale</td>
</tr>
<tr>
<td>Volume and type of material removed</td>
<td>Continuously (when operating)</td>
<td>Scale data base</td>
<td>Weigh scale</td>
</tr>
</tbody>
</table>

  – Future:

7.4 **Tonnage Records**

(a) The person responsible shall submit annual tonnage records through Alberta Environment’s online Waste Measurement System for wastes accepted by March 31 of the year following the year in which the waste was accepted.
Waste Measurement in Alberta: Statistics Canada

Source: Statistics Canada, 2006
Development of a new system

Consultation:
- incorporate the current waste measurement systems
- no new software
- user friendly
- potential to harmonize with other provinces
- allows system users to track their own information and generate reports
Online Waste Measurement System

Re-TRAC™ - A Recycling and Solid Waste Data Management Tool

Log in

Please supply your user name and password for access to Re-TRAC™

Username: 
Password: 

[ ] Log me in automatically each time I connect to Re-TRAC™

Forgot Password

Login
Re-TRAC System Features

• Accessible from any computer with internet access
• Secure information collection. Each user is provided with a user name and a password
• Harmonized with Statistics Canada’s survey, MSWtL and a landfills reporting requirements
• Ability to manage data and generate reports
• User-friendly
### Waste Management Services

**Who are you responding for?**

1.1 List all municipalities, cities, villages, towns and townships for which this jurisdiction provides waste management services. Please indicate by checking the appropriate box, for each service the jurisdiction provides to the municipality specified.

<table>
<thead>
<tr>
<th>City / Municipality</th>
<th>Collection</th>
<th>Disposal / Processing</th>
<th>Recycling / organic material processing</th>
<th>Waste management planning / administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.1 NODLEFORD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.2 HAMILL</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Waste Diversion: Organic Material Processing and Recycling

**Organic Material Processing** (composting, anaerobic digestion)

2.1 In 2009, did this company own and/or operate a facility where organic materials were processed? Please include landfills or sites where organic materials were composted.

- [ ] Yes  
- [ ] No

**Recycling**

3.1 In 2009, did this company own and/or operate a material recycling facility (MRF), recycling centre or drop off depot (municipally or privately owned) where materials were processed/collection for recycling?

- [ ] Yes  
- [ ] No

### Waste (Garbage) Disposal or Processing

4.1 Did this company own and/or operate a facility where waste was disposed/processed in 2009? Include all types of landfills (Aqua, sanitary, hazardous), incineration/thermal treatment (Aqua, energy from waste, gasification) and residual waste processing (A.G., conversion of non-recyclable waste to an alternative fuel source).

- [ ] Yes  
- [ ] No
## Organic Material Processing (composting, anaerobic digestion)

### Source of Materials (Percentage)

<table>
<thead>
<tr>
<th>Source of Materials</th>
<th>Quantity of Materials Entering the Facility</th>
<th>Tonne</th>
<th>Source Unit (%)</th>
<th>Individual, Commercial and Institutional (TCAT and CAD) (%)</th>
<th>Intake Share equal 100%</th>
<th>Material disposed of processing residue (e.g., contaminated materials) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

### Type of Material

<table>
<thead>
<tr>
<th>Type of Material</th>
<th>Quantity of Organic Materials</th>
<th>Tonne</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper and Gesch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic and Glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Organic Tonne:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Recycling

3.1 In 2012, did this company own and operate a material recycling facility (MMF), recycling centre or drop-off depot (municipal or privately owned) where materials were processed/collection for recycling?  

- Yes  
- No

### Waste (Garbage) Disposal or Processing

4.1 Did this company own and operate a facility where waste was received/processed in 2012? Include all types of facilities (e.g., sanitary, hazardous, incineration/thermal treatment [e.g., energy from waste, gasification] and residual waste processing [e.g., treatment of non-waste waste to be deposited in landfills])  

- Yes  
- No
Reports and Reporting

1. Material Management Report
   • A print out once the survey has been completed. Information can be transferred to the Statistics Canada survey.

1. Alberta Environment’s annual report

2. Standard Re-Trac Report

3. Environment Benefits Report
Thank-you!

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