Leaf and Yard Waste Diversion Update

March 16, 2010

Natasha Page
Introduction

- Committee Members
- Timeline of Leaf and Yard Waste Diversion Technical Committee
- Draft Strategy
- Results from Feasibility Study – part 1
- Next Steps
Team Members

- Natasha Page  
  Alberta Environment

- Allan Yee  
  City of Edmonton, CCC

- Daryl McCartney  
  University of Alberta

- Don Davies  
  Stantec

- Donna Chaw  
  Alberta Environment

- Doug Wilson  
  University of Calgary

- Jim Moore  
  BFI Canada

- Jodi Tomchyshyn  
  Alberta Environment

- 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
Committee Timeline

2009

• Apr: committee revived
• May – Jun: updated committee terms of reference
• Jun – Jul: clarified outstanding questions for feasibility study for draft strategy
• Sep: hired contractor to address Feasibility Study – part 1
2010

- Jan: hired contractor to address Feasibility Study – part 2
- Feb: have results for Feasibility Study – part 1
- Mar: have results for Feasibility Study – part 2
- Apr – Jun: committee to review information and update draft strategy
- Jun – Jul: workshops for greater feedback on strategy
- Jul – Sep: finalize strategy and prepare report for Minister
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:
  - Sustainable grant fund
  - Disposal ban on l&y 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?
Regions

Defined by Government of Alberta’s Land Use Framework
### “AS GENERATED” L&YW QUANTITIES BY GEOGRAPHIC REGION

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
<th>Residential L&amp;YW (tonnes/yr)</th>
<th>ICI L&amp;YW (tonnes/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Saskatchewan</td>
<td>1,281,139</td>
<td>151,311</td>
<td>40,917</td>
</tr>
<tr>
<td>South Saskatchewan</td>
<td>1,531,318</td>
<td>200,646</td>
<td>49,855</td>
</tr>
<tr>
<td>Red Deer</td>
<td>274,784</td>
<td>15,147</td>
<td>6,826</td>
</tr>
<tr>
<td>Lower Athabasca</td>
<td>131,786</td>
<td>6,476</td>
<td>2,619</td>
</tr>
<tr>
<td>Upper Athabasca</td>
<td>119,039</td>
<td>7,410</td>
<td>3,815</td>
</tr>
<tr>
<td>Lower Peace</td>
<td>41,291</td>
<td>2,617</td>
<td>1,359</td>
</tr>
<tr>
<td>Upper Peace</td>
<td>116,946</td>
<td>6,588</td>
<td>3,091</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,496,303</strong></td>
<td><strong>390,195</strong></td>
<td><strong>108,482</strong></td>
</tr>
</tbody>
</table>
Summary of Composting Facilities in Alberta

- **Multiple Feedstocks**: 9 facilities, 14%
- **Manure**: 11 facilities, 17%
- **Food Waste**: 0 facilities, 0%
- **Biosolids**: 7 facilities, 11%
- **L&YW**: 37 facilities, 58%
Current Facilities
## Composting Capacity by Geographic Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Existing Organic Waste Processing Capacity</th>
<th>L&amp;YW Processing Deficit (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L&amp;YW only</td>
<td>Other Feedstocks</td>
</tr>
<tr>
<td>North Saskatchewan</td>
<td>12,270</td>
<td>314,100</td>
</tr>
<tr>
<td>South Saskatchewan</td>
<td>11,464</td>
<td>129,950</td>
</tr>
<tr>
<td>Red Deer</td>
<td>8,340</td>
<td>15,000</td>
</tr>
<tr>
<td>Lower Athabasca</td>
<td>4,250</td>
<td>43,000</td>
</tr>
<tr>
<td>Upper Athabasca</td>
<td>600</td>
<td>0</td>
</tr>
<tr>
<td>Lower Peace</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>Upper Peace</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36,479</strong></td>
<td><strong>502,050</strong></td>
</tr>
</tbody>
</table>
# Summary of Development and Operating Costs (based on Conceptual Design)

<table>
<thead>
<tr>
<th></th>
<th>Small Scale Facility</th>
<th>Medium Scale Facility</th>
<th>Large Scale Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design example size (tonnes/yr)</strong></td>
<td>500</td>
<td>4,000</td>
<td>15,000</td>
</tr>
<tr>
<td><strong>Development and Equipment Costs</strong></td>
<td><strong>Total ($)</strong></td>
<td>122,200</td>
<td>1,000,000</td>
</tr>
<tr>
<td></td>
<td><strong>Per Tonne of Capacity ($/tonne)</strong></td>
<td>244</td>
<td>250</td>
</tr>
<tr>
<td><strong>Annual Operating Costs</strong></td>
<td><strong>Total ($)</strong></td>
<td>25,000 to 30,000</td>
<td>90,000 to 100,000</td>
</tr>
<tr>
<td></td>
<td><strong>Per Tonne of Capacity ($/tonne)</strong></td>
<td>50 to 60</td>
<td>23 to 25</td>
</tr>
</tbody>
</table>
Compost End Uses and Markets

- Data collected via questionnaire and follow up phone calls
- Contacted
  - composters and
  - potential/current end users of compost in each of the 7 regions
L&YW Compost End Uses and Markets

Producers

- 26 composting facilities
- Only 22 actively composting (18 municipal & 4 private)
- Most facilities processed L&YW using windrows
- Combined production of about 111,000 tonnes of compost (includes compost from other feedstocks)
L&YW Compost End Uses and Markets

Markets

• Survey included garden centers, landscapers and wholesale nurseries
• Data potential market was supplemented with study from Iowa
• Half of the garden centers only carry bagged compost
• Primarily used from April and October, high demand in April and May
• Compost use affected by annual weather conditions
## Estimated Compost Market Demand

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<tr>
<th>Region</th>
<th>Population</th>
<th>Demand</th>
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<tbody>
<tr>
<td>North Saskatchewan Total</td>
<td>1,281,139</td>
<td>210,107 m³/yr</td>
</tr>
<tr>
<td>South Saskatchewan Total</td>
<td>1,531,318</td>
<td>251,136 m³/yr</td>
</tr>
<tr>
<td>Red Deer Total</td>
<td>274,784</td>
<td>45,065 m³/yr</td>
</tr>
<tr>
<td>Lower Athabasca Total</td>
<td>131,786</td>
<td>22,613 m³/yr</td>
</tr>
<tr>
<td>Upper Athabasca Total</td>
<td>119,039</td>
<td>19,522 m³/yr</td>
</tr>
<tr>
<td>Lower Peace Total</td>
<td>41,291</td>
<td>6,772 m³/yr</td>
</tr>
<tr>
<td>Upper Peace Total</td>
<td>116,946</td>
<td>19,179 m³/yr</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,496,303</strong></td>
<td><strong>573,394 m³/yr</strong></td>
</tr>
</tbody>
</table>
Barriers to Compost Marketing

- Low selling price of competing products (6 comments)
  - the fertilizer and peat industries and the low prices of ‘perceived’ competing products (3)
  - poor quality compost is being brought on the market which negatively affects the opinion of the product (1)
  - inexpensive topsoil negatively affects the perceived value of compost (1)
  - feedlots are selling cheap/low quality compost which negatively affects the opinion of the product (1)

- Cannot meet market demand (3 comments)
  - need more compost to sell / we 'run out' / need bigger facility – composters do not have enough feedstock to meet their current compost demand (3)
Barriers to Compost Marketing

- **Regulatory Issues (6 comments)**
  - reduce regulatory/permitting hurdles pertaining to facility ‘start-ups’ and expansions thereby allowing for an easier ability to manage organic by-products (2)
  - Reduce government procurement barriers and promote compost usage among government entities (2)
  - difficult to enter reclamation market because of current revegetation regulations (2)

- **Education**
  - lack of public understanding about compost and its value, requiring additional public education regarding the product (1)

- **Infrastructure/equipment needs**
  - access to compost application equipment to assist in efficient and economic application (1)
Feasibility Study – Part 2

• Outstanding questions
  - Full Cost Accounting for the program
  - Sustainable Grant Fund details
  - What are the funding models?
  - Economic & policy instruments to encourage diversion
  - Recommended diversion rate and monitoring plan
Next Steps

- Mar: have results for Feasibility Study – part 2
- Apr – Jun: committee to review information and update draft strategy
- Jun – Jul: workshops for greater feedback on strategy
- Jul - Sep: finalize strategy and prepare report for Minister
I find that a real gardener is not a man who cultivates flowers; he is a man who cultivates the soil.

He is a creature who digs himself into the earth …

He lives buried in the ground.

He builds his monument in a heap of compost.

If he came into the Garden of Eden, he would sniff excitedly and say: 

“Good Lord, what humus!”

- Karel Capek, The Gardener's Year, 1931
Thank-you!

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