



*Recycling Council
of Alberta*

MSW Options Workshop: Integrating Organics and Residual Treatment/Disposal

Michael Cant

TSH Engineers Architects and Planners

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Presentation Overview

- ◆ Background
- ◆ Technical Reports
- ◆ Study Assumptions
- ◆ Evaluation Indicators



Recycling maximized ✓



Composting maximized ✓



Residuals ?

Background

- ◆ 12 m tonnes of waste generated by Canadian households in 2002 (382 kg/person)
- ◆ 5% increase in household waste generation since 2000
- ◆ 301 kg/person (78.7%) is disposed, 81 kg/person (21.3%) diverted
- ◆ 2% increase in disposal and 1.3% increase in diversion as compared to 2000
- ◆ Nationally Canada still disposes 79% of the residential waste stream



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Residuals ?

Background

- ◆ 50% diversion target set in late 1980's with the target date of 2000
- ◆ A few municipalities have achieved the target – National diversion 21%
- ◆ Broad range of waste management technologies available but difficult to sort through them and implement systems
- ◆ 2004 FCM releases *Solid Waste as a Resource Guide for Sustainable Communities*
- ◆ Document provides an overview of integrated solid waste information, policies and technologies – Resource tool for municipalities to evaluate their systems and make decisions on future directions

■ www.sustainablecommunities.ca/capacity_building/waste/solid_waste_as_a_resource.asp



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Residuals ?

Technical Reports

- ◆ Information being presented today builds on the FCM Guide by providing detailed information on:
 - Composting
 - Anaerobic Digestion
 - Sanitary Landfill
 - Bioreactor/Enhanced Landfill
 - Thermal Treatment



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Residuals ?

Study Assumptions

- ◆ Each technology to look at 3 population sizes 20,000, 80,000 and 200,000
- ◆ Residential waste to disposal – 300 kg/person was used, the amount currently diverted 81 kg/person or 21% is already being removed
- ◆ Waste composition – three municipal waste composition summaries were used
 - North Glengarry, ON 10,600 population
 - Sudbury ON, 85,000 population
 - Calgary AB, 880,000 population



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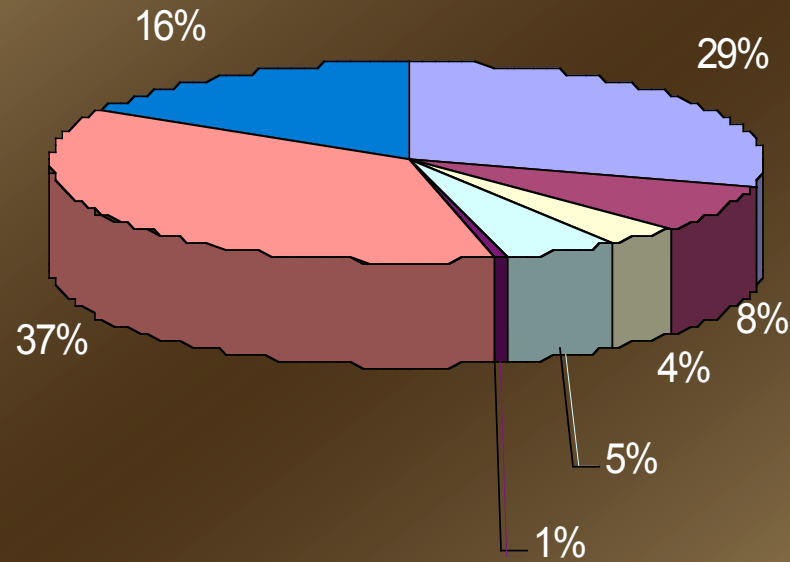
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Residuals ?

Study Assumptions

Average Waste Composition: North Glengarry, Sudbury, and Calgary



- Paper
- Glass

- Plastics
- HSW

- Metals
- Compostables



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Residuals ?

Study Assumptions



www.calgary.ca/waste



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Source
Separated
Organics (SSO)



www.reddeer.ca



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Residuals ?

Study Assumptions



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Residuals ?

Study Assumptions

20,000 Population

| Material | Baseline | Source Separated Organics | | Mixed Waste Processing | |
|--------------------------|--------------------|---------------------------|--------------------|------------------------|--------------------|
| | Residual Treatment | SSO | Residual Treatment | Mixed Waste | Residual Treatment |
| | Tonnes | | | | |
| Paper Fibres | 1,721 | 232 | 1,489 | 842 | 880 |
| Plastics | 467 | 0 | 467 | 47 | 420 |
| Metals | 219 | 0 | 219 | 85 | 134 |
| Glass | 319 | 0 | 319 | 159 | 159 |
| Household Special Wastes | 48 | 0 | 48 | 18 | 30 |
| Compostables | 2,264 | 1613 | 651 | 1,132 | 1,132 |
| Other Waste Materials | 958 | 0 | 958 | 187 | 771 |
| Total Tonnes | 5996 | 1845 | 4,151 | 2,470 | 3,526 |



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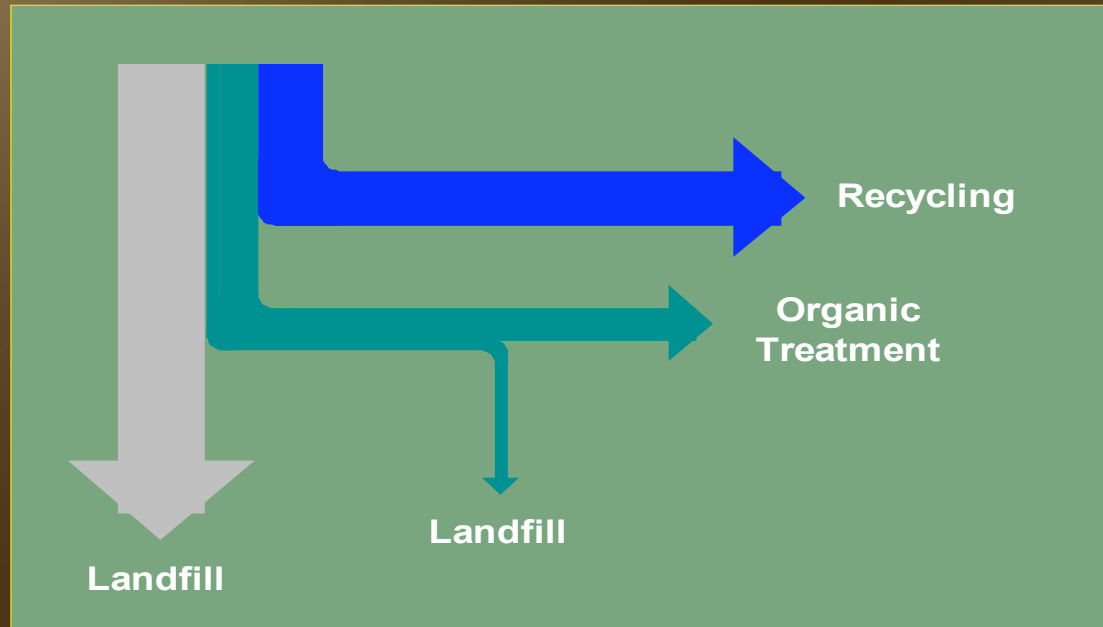
Composting maximized ✓



Residuals ?

Study Assumptions

- ◆ Recycling and organics only:



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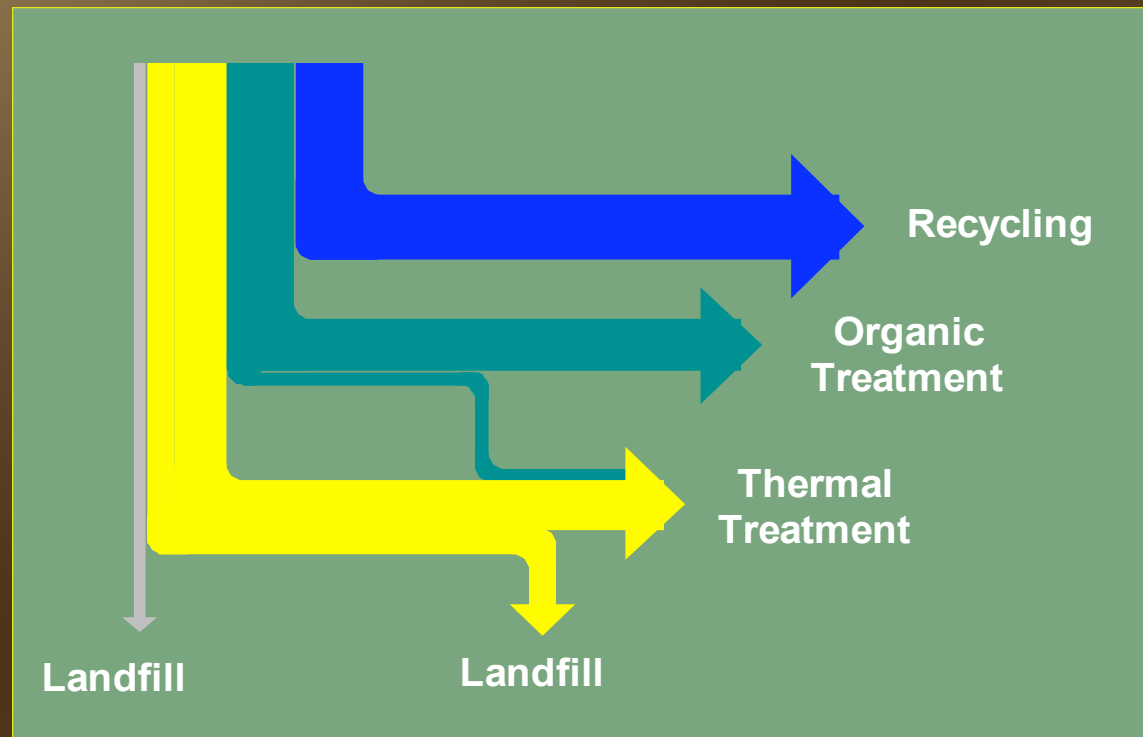
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Residuals ?

Study Assumptions

- ◆ Recycling and organics treatment with thermal:



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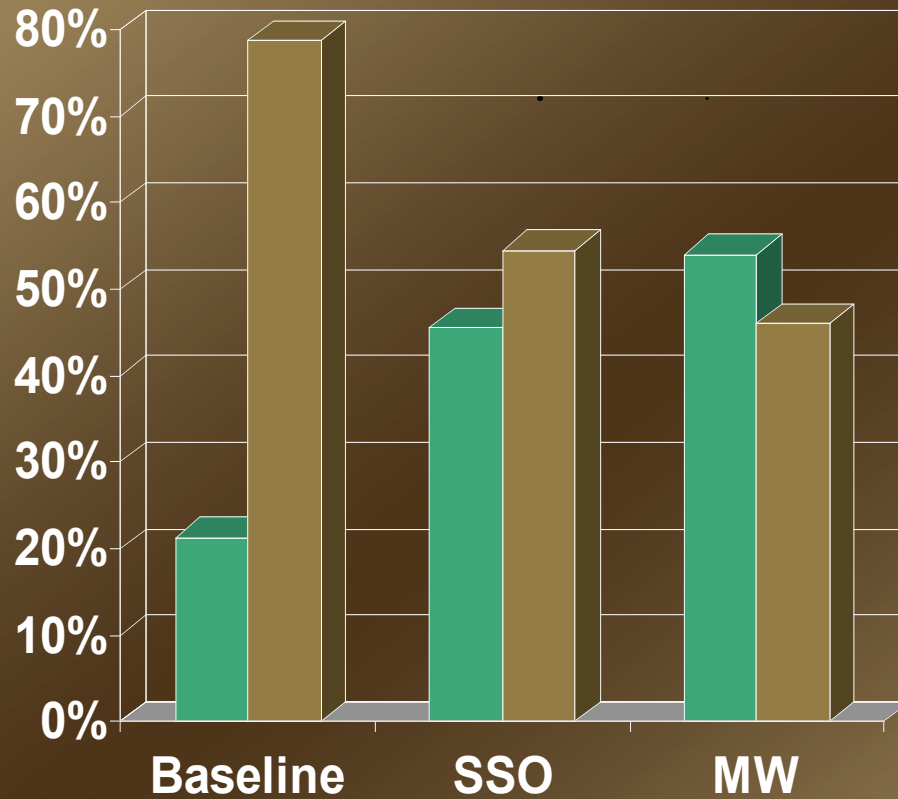


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Residuals ?

Study Assumptions



■ Diverted
■ Disposal

Baseline = Baseline for current diversion
SSO = Source Separated Organics
MW = Mixed Waste Processing



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Residuals ?

Study Assumptions

- ◆ The assumptions were used to arrive at a tonnage the technology option would have to handle.
- ◆ This formed the basis of the evaluation.



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Residuals ?

Evaluation

- ◆ The following indicators were used to evaluate the five MSW management options:

| Indicators | |
|----------------------|---------------------------------|
| General | Facility Throughput |
| | Major Design Features |
| | Commercial Status in Canada |
| | Approvals Required |
| Environmental | Footprint |
| | Landfill Airspace |
| | Potential Environmental Impacts |
| | Quality of Processed Organics |
| | Energy Recovery |
| | Greenhouse Gas Emissions |



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Residuals ?

Evaluation

- ◆ The following indicators were used to evaluate the five MSW management options:

| Indicators | |
|-----------------|----------------------|
| Social | Public Acceptability |
| | Siting Challenges |
| | Land Use-Conflicts |
| | Employment |
| | Dust |
| | Noise |
| | Traffic |
| | Odour |
| Economic | Capital Costs |
| | Operating Costs |
| | Cost per tonne |



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Residuals ?