

THE REGIONAL MUNICIPALITY OF NIAGARA
WASTE MANAGEMENT PLANNING STEERING COMMITTEE
REPORT 2-2014

Minutes of a meeting of the Waste Management Planning Steering Committee held in the Council Chamber, Regional Municipal Building, 2201 St. David's Road, Thorold, Ontario, on Monday, April 14, 2014, commencing at 9:04 a.m.

ATTENDANCE

Committee: Councillors Augustyn, Bylsma (Chair), Hodgson, Petrowski (Vice-Chair); Community Members Mr. Hall, Ms. Washuta.

Staff: Mr. Tripp, Commissioner, Public Works; Ms. Habermebl, Acting Director, Waste Management Services; Ms. Torbicki, Manager, Waste Policy and Planning; Ms. Norio, Legislative Assistant.

Other Staff: Ms. McGovern, Program Manager, Waste Management Services; Ms. Tait, Program Manager, Waste Management Services; Mr. Vanyo, Contract Supervisor, Waste Management Services; Mr. Winters, Program Manager, Waste Management Services.

Guests: Mr. MacDonald, Senior Solid Waste Engineer, HDR

PRESENTATIONS

9. Assessment of Alternative Waste Management Technologies – Pass/Fail Screening Criteria

Ms. Sherri Tait, Program Manager, Waste Management, provided committee members with information regarding Assessment of Alternative Waste Management Technologies – Pass/Fail Screening Criteria. Highlights of Ms. Tait's presentation were as follows:

- Purpose
- Project Overview
- Summary of Workshops
- Initial Screening Criteria
- Workshop Feedback on Criteria
- Rankings of Screening Criteria
- Recommended Screening Criteria
- Preliminary Screening Results
- Future Considerations and Next Steps

Moved by Councillor Augustyn
Seconded by Councillor Petrowski

That Ms. Tait's presentation respecting Screening Criteria for Alternative Waste Management Technologies Project, **BE RECEIVED** for information.

Carried.

(A copy of Ms. Tait's presentation is attached to these minutes.)

ITEMS FOR CONSIDERATION

10. Screening Criteria for Alternative Waste Management Technologies Project
WMPSC-C 13-2014

Moved by Councillor Augustyn
Seconded by Councillor Hodgson

That this Committee recommends to the Public Works Committee:

That based on feedback received during workshops, the following pass/fail screening criteria **BE APPROVED** to short list the alternative waste and biosolids management technologies for detailed evaluation:

Proven technologies which ideally have:

- three reference facilities in the world;
- with five years of operation processing Municipal Solid Waste (MSW)

Input feedstock does not compete with or reduce the Region's other diversion efforts;

If the Region chooses to proceed with implementation of an alternative waste management technology:

- The facility could be located within the Niagara region; and
- A new facility should be constructed;

Generation of primary energy outputs that minimize market risk exposure; and

In addition to the primary MSW feedstock input, the technology has the ability to process Industrial, Commercial and Institutional (IC&I) waste from within Niagara Region, if supported by a positive net revenue business case.

Moved by Councillor Petrowski
Seconded by Councillor Augustyn

That the main motion respecting Screening Criteria for Alternative Waste Management Technologies Project, **BE AMENDED** as follows:

That input feedstock **can** compete with or reduce the Region's other diversion efforts **subject to a cost-benefit analysis to be developed in the next phase of screening.**

Carried.

Moved by Councillor Hodgson
Seconded by Councillor Augustyn

That the main motion respecting Screening Criteria for Alternative Waste Management Technologies Project, **BE AMENDED** as follows:

If the Region chooses to proceed with implementation of an alternative waste management technology:

- The facility could be located within the Niagara region; **if a willing host community self-identifies**; and
- A new facility should be constructed.

Carried.

Moved by Councillor Petrowski
Seconded by Councillor Augustyn

That the main motion respecting Screening Criteria for Alternative Waste Management Technologies Project, **BE AMENDED** by adding:

That a written commentary be provided by Economic Development on each phase of the Alternative Waste Management Technologies Project.

Carried.

Upon the vote being taken, the Committee Chair declared the original motion, **as amended**, Carried.

11. Approval of Illegal Dumping Working Group Initiatives
WMPSC-C 14-2014

Moved by Councillor Augustyn
Seconded by Councillor Hodgson

That this Committee recommends to the Public Works Committee:

That the following initiatives of the Illegal Dumping Working Group **BE APPROVED:**

- Re-launch the region-wide illegal dumping campaign to promote the reporting of illegal dumping;
- Implement the Reward System, outlined in this report;
- Install consistent illegal dumping signage on Regional Roads;
- Make available new illegal dumping signs to local area municipalities; and
- Accept, co-ordinate and/or manage illegal dumping calls through the Region's Waste Info-Line

That this report **BE CIRCULATED** to the local area municipalities for information.

Carried.

CONSENT ITEMS FOR INFORMATION

12. Moved by Councillor Hodgson
Seconded by Councillor Petrowski

That the following reports, correspondence items and minutes **BE RECEIVED** for information:

WMPSC-C 15-2014 Memorandum (dated April 14, 2014) from S. Mucciarelli, Associate Director, Waste Disposal Operation and Engineering re: Temporary Reopening Bridge Street Landfill

WMPSC-C 16-2014 Memorandum (dated April 14, 2014) from S. Mucciarelli, Associate Director, Waste Disposal Operations and Engineering re: Collection of Liquid Cooking Oil, Grease and Fats

WMPSC-C 17-2014 Memorandum (dated April 14, 2014) from L. McGovern, Program Manager re: Special Events Organics Program – Cost Recovery

- WMPSC-C 18-2014 Memorandum (dated April 14, 2014) from L. McGovern, Program Manager re: Plastic Bag/Film Campaign
- WMPSC-C 19-2014 Memorandum (dated April 14, 2014) from C. Habermebl, Acting Director, Waste Management Services re: Councillor Information Requests
- WMPSC 1-2014 Waste Management Planning Steering Committee February 24, 2014 – Minutes
- WMPSC-C 20-2014 Citizens Liaison Committee – Niagara Road 12 Landfill Site September 30, 2013 – meeting notes
- WMPSC-C 21-2014 Humberstone Landfill Site Public Liaison Committee November 20, 2013 – meeting notes

Carried.

ADJOURNMENT

The Committee adjourned at 10:37 a.m. to meet again at 9:00 a.m. Monday, May 26, 2014, in the Council Chamber, Regional Headquarters.

Councillor Byslma
Chair


Ann-Marie Norio
Legislative Assistant


Natasha L. Devos
Acting Regional Clerk

Assessment of Alternative Waste Management Technologies – Pass/Fail Screening Criteria

Waste Management Planning Steering Committee – April 14, 2014

Outline

- Purpose
- Project Overview
- Summary of Workshop
- Initial Screening Criteria
- Workshop Feedback on Criteria
- Rankings of Screening Criteria
- Recommended Screening Criteria
- Preliminary Screening Results
- Future Considerations
- Next Steps

Purpose

- Review major components of the assessment
- Overview of the workshops and feedback received
- Present preliminary screening results
- Obtain Committee input and approval of screening criteria

Project Overview

Key Steps:

- ✓ Feedstock Review - profile available feedstocks - focus on municipal solid waste and biosolids
- ✓ Review of Technologies - available, existing, proven, emerging
 - Screening of Technologies - identify pass/fail criteria to develop short list of technologies for detailed evaluation
 - Evaluation of Technologies - compare and weigh technology options to identify preferred system for possible implementation
 - Reporting - document work of the assessment, recommend course of action and outline next-steps for consideration

Summary of Workshops

- Two workshops on March 6, 2014
- Several Advisory/Standing Committees invited to participate
- 14 Committee members provided feedback
- Attendees received a handbook with technology descriptions and feedback form for each criterion
- HDR provided overview of technologies, draft criterion including preliminary criterion statement, conditions, key implications and considerations
- Attendees asked to rank level of agreement with each criterion statement on scale of 1 (strongly disagree) to 5 (strongly agree), provide written feedback, suggest modifications or suggest other criteria and rank criteria in order of importance

Initial Screening Criteria

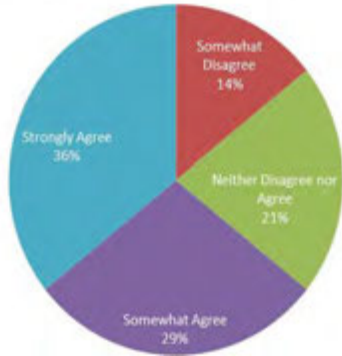
The following criterion were explored during the workshops:

- A. Technology – Demonstrated Viability (i.e. proven vs. new and emerging)
- B. Facility Location – In Niagara region
- C. Facility Location – In Ontario
- D. Facility Location – In the U.S.
- E. New Facility
- F. Existing Facility
- G. Feedstock and Sources – Additional IC&I from within Niagara region
- H. Feedstock and Sources – Additional MSW and/or IC&I outside Niagara region
- I. Resource Recover – Energy Market Risk
- J. Technology – Target Feedstock
- K. Resource Recovery – Energy Displacement of Fossil Fuels

A. Demonstrated Viability

Respondents were asked to comment on the preferred status of technologies and the number and years of operation appropriate for reference facilities to be considered proven.

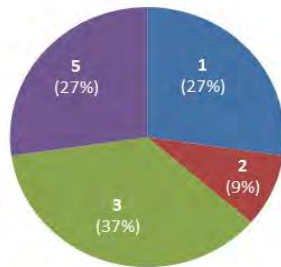
A1 - The Region should focus on proven technologies that present less risk.



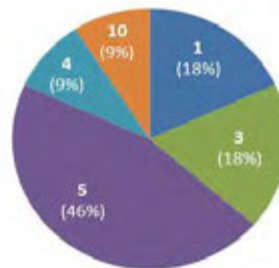
- Criterion is important to gauge the level of risk the Region is comfortable with
- Feedback seems to indicate, Region should focus on more proven technologies which have a track record processing MSW and as such present less risk

A. Demonstrated Viability cont'd

Number of Reference Facilities Required



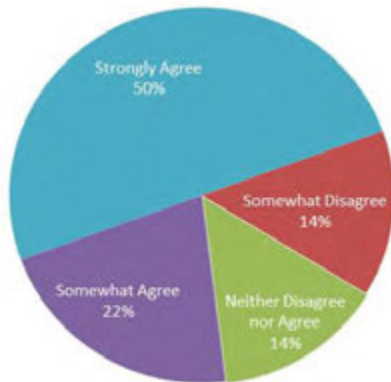
Number of Years of Operation



- Definition of proven – three reference facilities operating for five years
- May prove challenging for many new and emerging technologies

B. Facility Location – In Niagara Region

Respondents were asked to comment on their preference for development of a new facility in Niagara region.

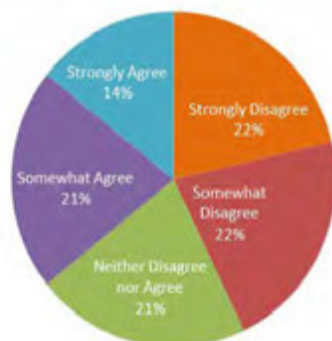


- Supportive of local economy, providing employment directly through construction and operation and indirectly through additional industries/businesses involved with facility and/or outputs
- Reduced transportation costs/emissions
- Region would be responsible for cost of facility and associated infrastructure
- May be concerns associated with sitting a facility

C. Facility Location – In Ontario

Respondents were asked to comment on the potential geographic location of a facility within Ontario but outside of Niagara region (i.e. within three hours or less distance or anywhere in Ontario).

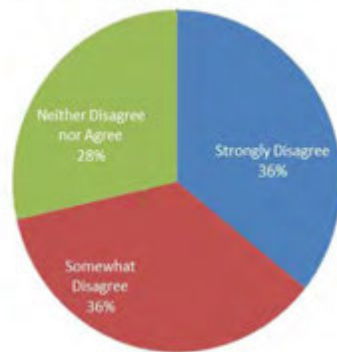
C1 - The facility could be located outside Niagara region, but within a three hour or less hauling distance in Ontario.



- No distinct preference regarding locating a facility within three hours or less in Ontario
- Depending on distance of the facility from the region, additional infrastructure (e.g. transfer stations) may be required

C. Facility Location – In Ontario cont'd

C2 - The facility could be located outside Niagara region, but anywhere in Ontario.

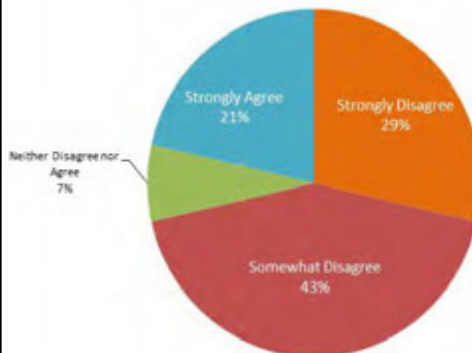


- Responses imply that location of a facility outside of Niagara region should not necessarily be extended to any location in Ontario
- If a facility located outside Niagara, potential to use existing facility or form partnership to develop a facility
- Important to consider that feedback to Criterion B indicated strong support for a facility within Niagara region

D. Facility Location – In the U.S.

Respondents were asked to comment on the location and hauling distance with respect to a facility location in the U.S.

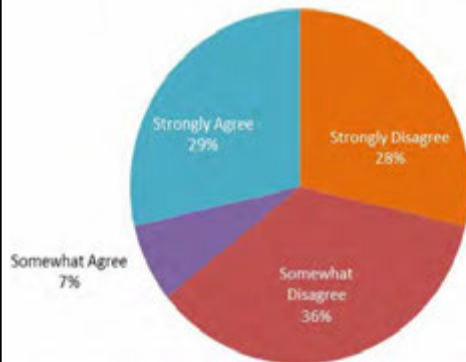
D1 - The facility could be located in the U.S.



- Additional risks involved with border crossings if facility located in U.S.
- An inventory of existing facilities in US indicate there is capacity available with competitive pricing located within four to five hour hauling distance
- Risk, lack of control and environmental considerations were expressed as concerns

D. Facility Location – In the U.S. cont'd

D2 – Three hours or less is a reasonable hauling distance to the U.S.

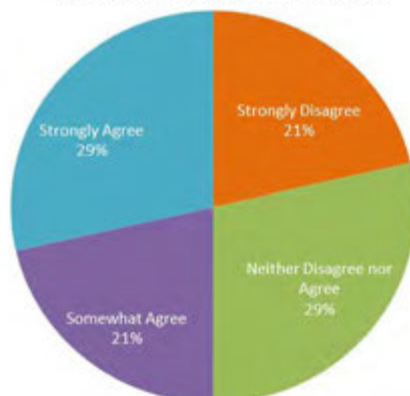


- Respondents indicated that three hours is not a reasonable drive time to U.S. facilities
- From discussion and comments it is interpreted that this opinion is likely recognition that many U.S. facilities are located more than three hours away

E. New Facility

Respondents were asked to provide feedback on whether a new facility should be constructed and if that facility should be owned by Niagara Region.

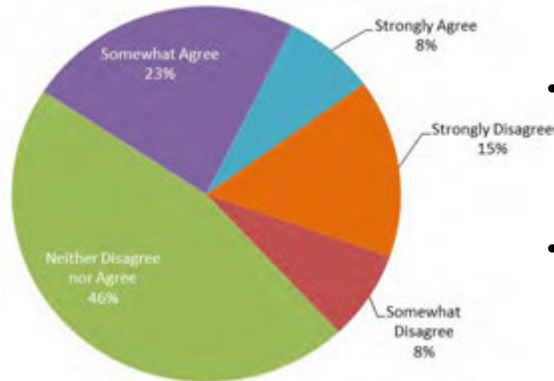
E1 - A new facility should be constructed.



- No existing alternative waste management facilities in Niagara region.
- New facility constructed and owned by Region would provide greatest flexibility
- Region would have the ability to choose ownership/partnership options
- Longer implementation timeline associated with this choice and extensive permitting and approval process

E. New Facility cont'd

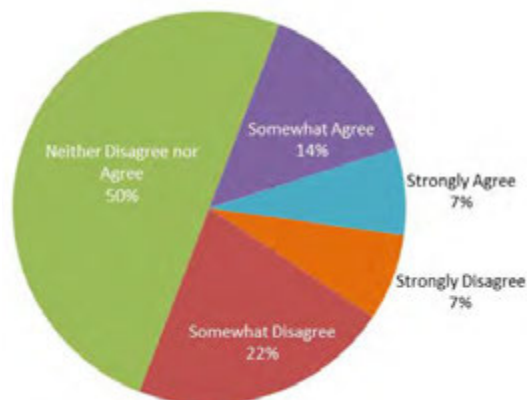
E2 - A new facility should be owned by Niagara Region.



- Responses indicate either public or private ownership is acceptable
- Long-term financial commitment to the ownership and operation of facility within the Region but would be supporting local economy
- If Region did not own, Region would likely still need to make a long-term contractual waste supply commitment

F. Existing Facility

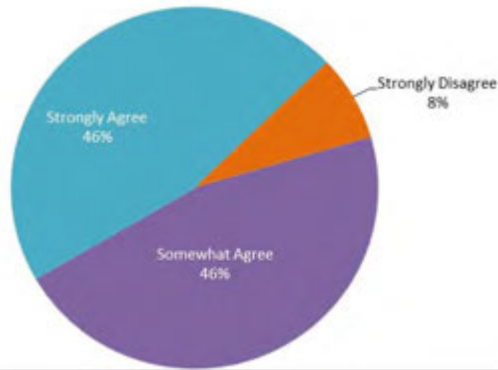
Respondents were asked to comment on whether an existing facility should be used.



- If an existing facility used, it would mean the facility would not be located in Niagara region
- Little opportunity for ownership and control of the facility – only a customer
- Type of technology utilized in the existing facility may limit options for feedstocks and sources of feedstocks
- Need to negotiate a contract – likely long term with guaranteed tonnages

G. Feedstock and Sources: IC&I from within Niagara Region

Respondents were asked to comment on whether or not the facility should be designed to accommodate IC&I waste from within the region.

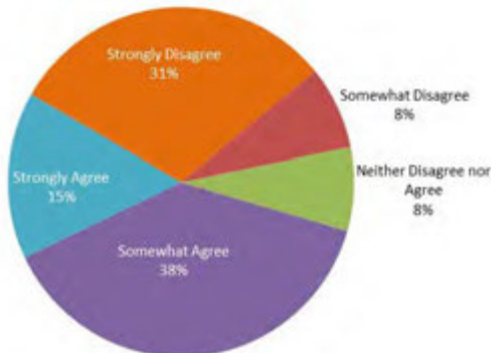


- Build merchant capacity, which would provide a disposal option that may not be available to businesses
- Merchant capacity is subject to risk of market fluctuations but does allow for flexibility to accommodate Regional growth
- Subject to a business case being made to verify a net positive revenue position for the Region, there was strong support for this criterion

H. Feedstock and Sources: MSW and/or IC&I from outside Niagara Region

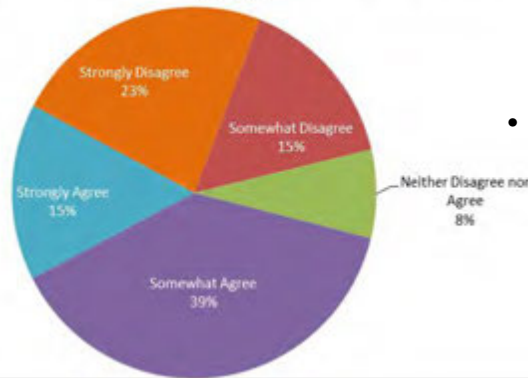
Respondents were asked to comment on whether the facility should be designed to accommodate MSW and/or IC&I waste from outside the region.

H1 - The facility should be designed to accommodate MSW from outside the region.



H. Feedstock and Sources: MSW and/or IC&I from outside Niagara Region cont'd

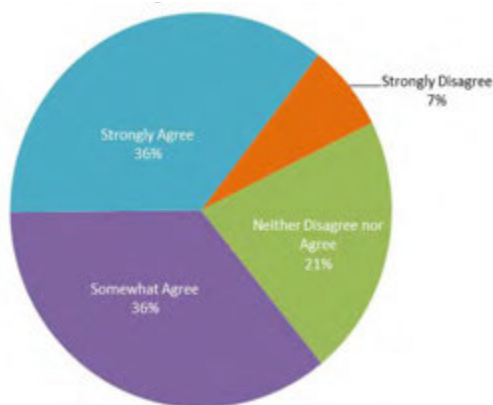
H2 - The facility should be designed to accommodate IC&I waste from outside the region.



- This criterion will tend to favour technologies that are able to handle a range of different feedstocks
- Economic viability of these options was an important consideration – acceptance of these materials should provide a net positive revenue to the Region and should not impose a burden on taxpayers

I. Resource Recovery: Energy Market Risk

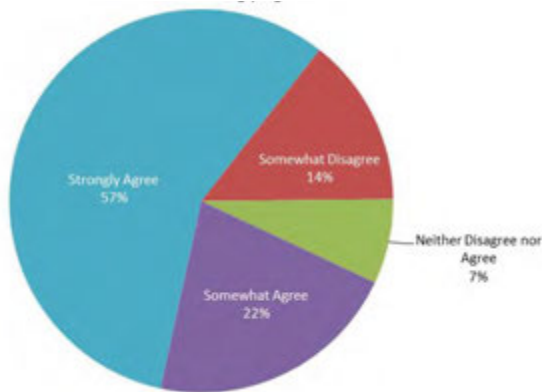
Respondents were asked to comment on whether the Region should focus on technologies that generate energy outputs with an existing, established and stable market.



- This criterion will tend to exclude those technologies that focus on the production of fuel (RDF, syngas, biofuels) or may impose additional process steps and costs on those technologies
- Support for technologies that produce an output with an existing, established and stable market such as the electricity market (electricity contracts are becoming harder to get)

J. Technology – Target Feedstocks

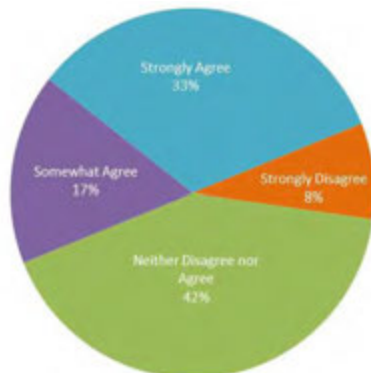
Respondents were asked to comment on the statement that diversion rates for existing programs should not decrease.



- Any new technology under consideration should not compete with diversion programs
- Priority for materials management should be consistent with the waste hierarchy
- Primary outputs from most alternative waste management technologies do not currently count as diversion in Ontario

K. Resource Recovery: Energy Displacement of Fossil Fuels

Respondents were asked to comment on the statement regarding the technology's ability to produce an output that could displace current consumption of fossil fuels.



- Respondents in general agreed with this, but seemed to feel that this criterion could be considered later under the more detailed evaluation process

Workshop Feedback

- The following general themes are consistently reflected in the feedback received:
 - Importance of health and environmental considerations;
 - Support for continuing and expanded waste reduction and diversion efforts; and
 - Acknowledgement of the importance of a sound business case and recognition of a diverse range of potential commercial/business arrangements going forward.

Rankings of Screening Criteria

Criterion	Ranking
A - Technology - Demonstrated Viability	1
J – Technology – Target Feedstock	1
B - Facility Location – In Niagara Region	2
I - Resource Recovery – Energy Market Risk	3
E - New Facility	4
G - Feedstock and Sources – Additional IC&I from within Niagara Region	4
H - Feedstock and Sources – Additional MSW and/or IC&I from outside Niagara Region	5
F - Existing Facility	6
C - Facility Location – In Ontario	7
D - Facility Location – In the U.S.	10
K - Resource Recovery – Energy Displacement of Fossil Fuels	0

Recommended Screening Criteria

1. Proven technologies (Criterion A) which ideally have:
 - a) three reference facilities in the World (Criterion A1);
 - b) with five years of operation processing MSW (Criterion A2);
2. Input feedstock does not compete with or reduce the Region's other diversion efforts (Criterion J);
3. If the Region chooses to proceed with implementation of an alternative waste management technology:
 - a) The facility could be located within Niagara region (Criterion B); and,
 - b) A new facility should be constructed (Criterion E).
4. Generation of primary energy outputs that minimize market risk exposure (Criterion I); and,
5. In addition to the primary MSW feedstock input, the technology has the ability to process IC&I waste from within Niagara Region (Criterion G), if supported by a positive net revenue business case.

Recommended Screening Criteria cont'd

The following interprets and summarizes the key feedback associated with lower priority ranked criteria:

- Public/private ownership and/or partnering options could be considered (will be conducted in parallel with comparative assessment as per the RFP)
- Future consideration could be given to incorporating merchant capacity to accept MSW and IC&I waste from outside Niagara region, if supported by a positive net revenue business case
- If necessary, a new or existing facility located outside of Niagara could be utilized, but it should be within Ontario and located a reasonable driving distance from Niagara (as defined by cost and environmental considerations)
- No further consideration should be given to utilization of a facility located in the U.S

Preliminary Screening Results

- Alternative waste management technologies that should be evaluated in detail include:
 - Direct combustion (potentially including supplementary anaerobic digestion or composting)
 - Mechanical biological treatment (MBT)
 - Refuse Derived Fuel production
- Direct combustion, MBT (with AD or composting as a subset or supplementary component) and RDF (with specific adaptations) may offer the potential to co-process organics and biosolids along with MSW, depending on a number of specific technical considerations.

Future Considerations

- Dependent on business arrangements or partnership opportunities it might prove advantageous to remain open to the possibilities of:
 - Utilization of a facility outside of Niagara region; and/or,
 - Incorporation of merchant capacity to accept MSW and IC&I waste from outside Niagara region
- Waste to liquid fuel and gasification (conventional and plasma arc) are subject to aggressive development efforts - consider allowing these technologies to compete with other more proven technologies on the basis of qualifications, processing capabilities, environmental considerations, financial performance, guarantees and other factors as may be appropriate
- Recommended that the above considerations be addressed in the context of a future business case analysis and procurement process

Next Steps

- The remaining steps of the project include:
 - Development of detailed evaluation criteria and weightings to assess the short-listed technology options through workshops
 - Comparison of technology options using life-cycle assessment and application of evaluation criteria and priority weightings
 - Reporting on findings and recommendations
- Completion of these steps will require Council approval at each milestone

QUESTIONS?

Technologies that should be removed from further consideration include the following:

- Anaerobic Digestion (AD) (as stand-alone)
- Composting (as stand alone)
- Organics Recycling Biocell or Landfill Bio-module
- Gasification
- Hydrolysis
- Plasma Arc Gasification
- Pyrolysis
- Thermal & Catalytic Depolymerisation,
- Waste to Liquid Fuel Technologies