

HALIFAX

Organics Management

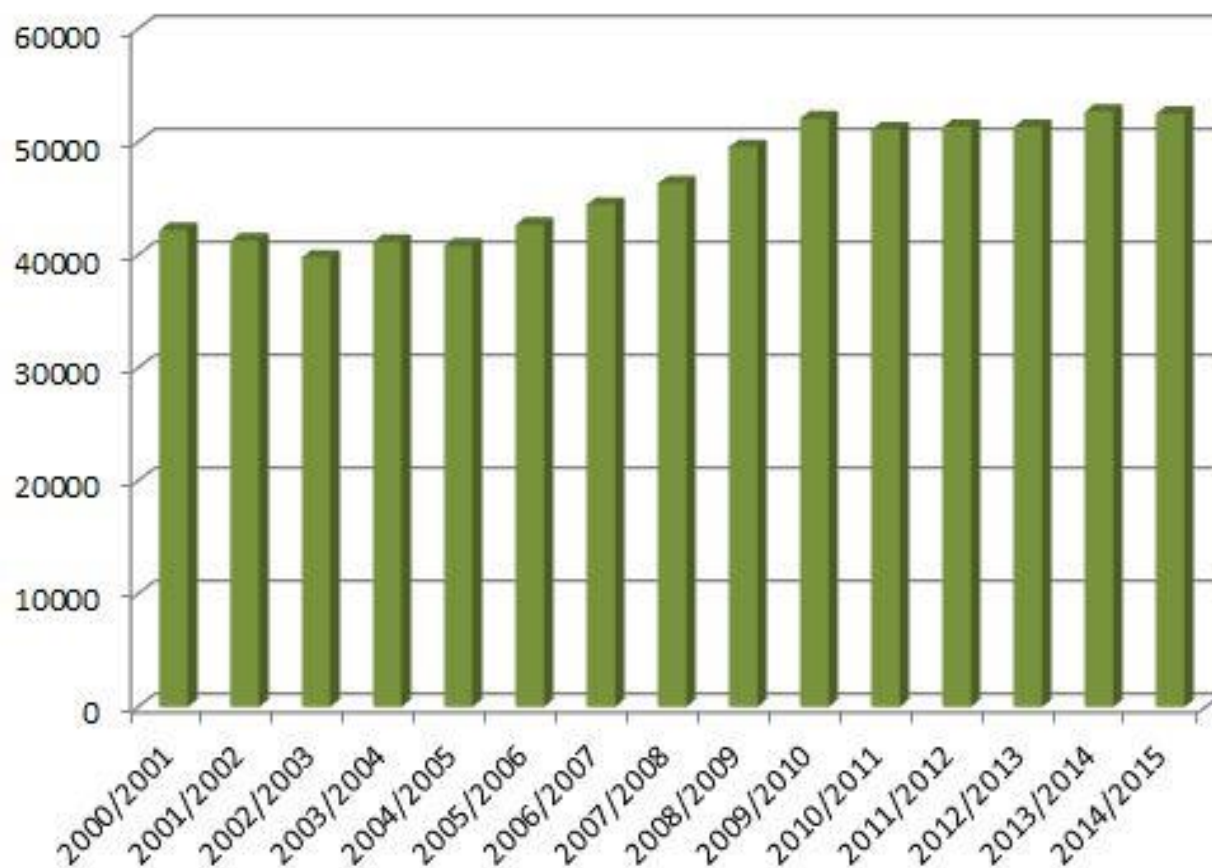
ESSC February 4, 2016

Organics Management In Halifax

- Halifax was the first city in Canada to implement source separated organics in 1998.
- Currently process 53,000 tonnes annually
 - Residential 37,000 tonnes
 - ICI 16,000
- Capacity at HRM facilities is 50,000 annually
 - Contracts with a third parties to process access capacity
 - Leaf and yard waste (Kel-Ann)
 - Christmas trees (Knock Resources)
 - Access organics (Fundy Compost)
- Facilities are meeting their permit requirements

Halifax Regional Municipality Source Separated Organics

Fiscal	Tonnes
2000/2001	42,194
2001/2002	41,279
2002/2003	39,781
2003/2004	41,136
2004/2005	40,820
2005/2006	42,666
2006/2007	44,445
2007/2008	46,308
2008/2009	49,542
2009/2010	52,097
2010/2011	51,116
2011/2012	51,328
2012/2013	51,338
2013/2014	52,682
2014/2015	52,499



Compost Facilities

- 1997 Contract for the Design, Build, Finance and Operation of Source Separated Organics Facilities
 - New Era Technologies (NETL) (Goodwood)
 - Miller Waste (Burnside)
- Constructed to meet 1996 CCME compost requirements
- Both facilities meet their permit obligations for meeting the 1996 CCME requirements
- Operations began in 1999
- 20 year contracts until 2019
 - Operating costs renegotiated every 5 years
 - HRM has option to purchase during term
 - HRM has an obligation to purchase in 2019
- In 2015 HRM purchased the New Era operation
 - Operational savings
 - Provides flexibility in organics management program

Compost Facilities

- Challenges
 - Facilities have reached processing capacity.
 - Facilities do not meet the revised 2010 NSE compost guidelines.
 - NS Environment is reviewing compliance dates.
 - April 2019 was proposed. No confirmation.
 - Facilities are 17 years old.
 - NETL process not optimal for based on organics composition
 - Infrastructure is not readily replaceable.
 - Miller site location and proximity to neighbours restricts potential expansion.

2013 Stantec Report Recommendations

Additional capacity to meet long term processing needs that will support compliance with CCME.

- Continued Operation of Miller Ebara and New Era Sites to 2019
- Repurpose the WSF at Otter Lake
- Construct and operate compost curing and storage pads
- Construct and operate an anaerobic digestion facility

2014 Council Direction

Council directed staff to initiate development of a business case for the source separated organics program to introduce an Anaerobic Digestion processing capability and other program changes to improve system cost performance and compost quality and return to Regional Council with a revised plan by June 30, 2014.

In order to fulfill this direction staff completed

- Facility condition assessments
- Compost compliance and process reviews
- Business case of alternative processing models

Miller Assessment / Review

- Building
 - Fair to good condition
 - Regular maintenance estimated useful life of 10-15 years.
- Equipment
 - Good condition
- 2010 NSE Guidelines Compliance (CCME)
 - Able to achieve with through a variety of options
 1. Forced aeration (\$1.5 - \$2.2M)
 2. Aeration through new turning equip (\$3.8 - \$6.0M)
 3. Offsite outdoor curing area (\$0.4 - \$1.5M)
 4. Combination of 1 & 3 (\$0.5 - \$1.0M)

NETL Assessment / Review

- Building
 - Fair to poor condition
 - Regular maintenance estimated useful life of 10-15 years.
- Equipment
 - Good condition
- 2010 NSE Guidelines Compliance (CCME)
 - Able to achieve through
 1. Additional bulking amendment (\$8 - \$16/tonne)
 2. Additional curing area (\$0.4 - \$1.5M)
- Long term site risk is Stinnes-Enerco containers are nearing useful life. Containers can no longer be purchased as Stinnes-Enerco is no longer in business.
- NETL process not optimal for composition of organics

Miller Site Recommendations

- Operate the site until 2019
 - Invest in capital as outlined within the 2015 CRA report
- Operate the site post 2019
 - Continue to process 25,000 tonnes annual
 - Implement one of the options identified in the Compliance and Process Review
 - No expansion of the Ebera processing technology

NETL Site Recommendations

- Operate site until 2019 or transition date
 - Invest in health and safety improvements
 - Invest in capital repairs to ensure site can operate until 2019 or transition date
 - GHD concluded that the Goodwood facility is not ideal for considering further investment to upgrade operations to bring it into compliance with the 2010 NSE Guidelines.
 - Feedstock characteristics
 - Bulking amended needs
- 35 Acre site can be used for future operations.

Business Case Review

- Staff worked with GHD to complete a business case for organics processing and management. The Review assessed;
 - Integration of anaerobic digestion
 - Expansion of existing facilities
 - Partnerships with non-traditional entities
 - Development of new aerobic facilities

Options Analysis

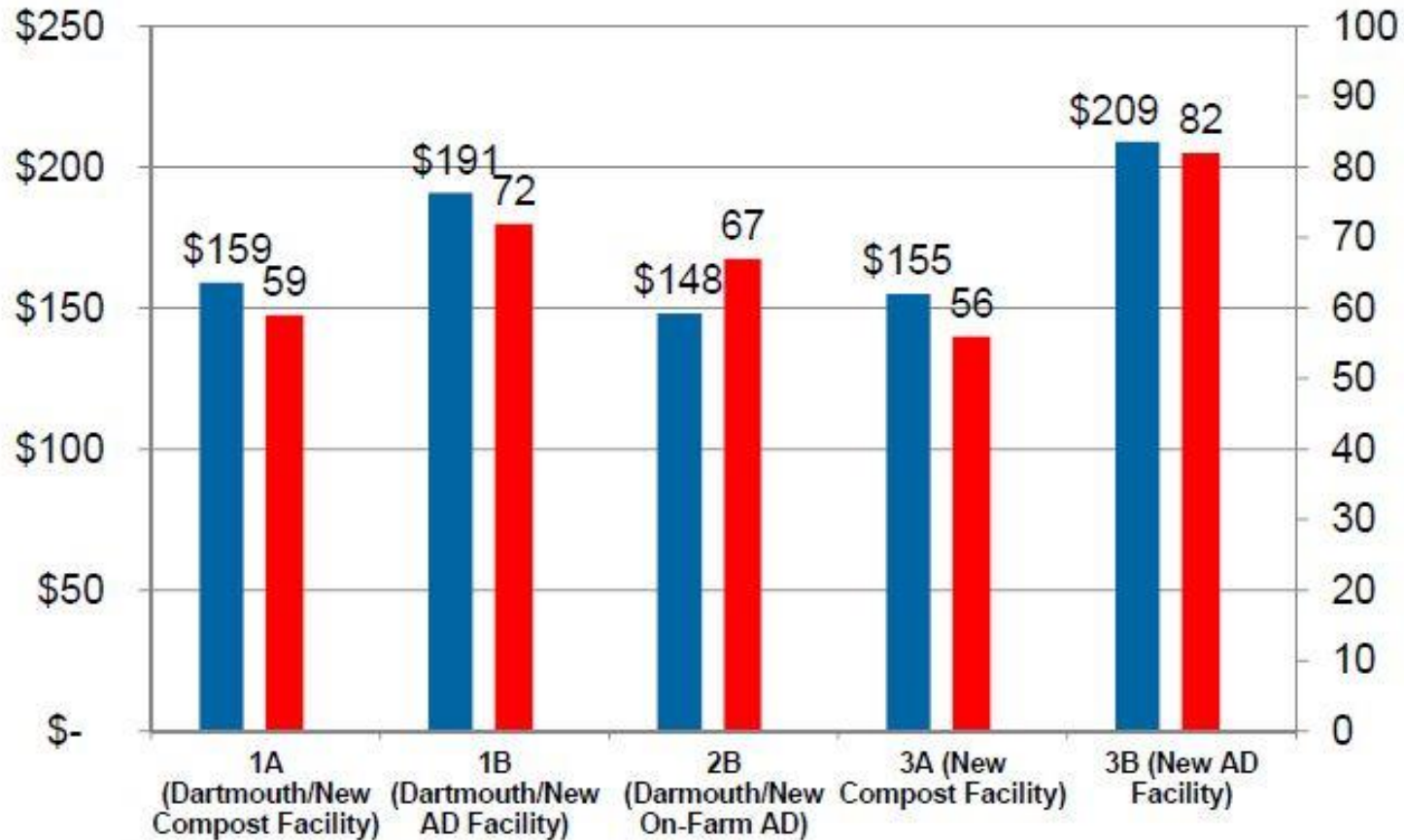
Option	Existing Facility		New Facility	
1A	Existing Dartmouth Compost Facility	25,000 TPY	New Compost Facility	35,000 TPY
1B	Existing Dartmouth Compost Facility	25,000 TPY	New AD Facility	35,000 TPY
2B	Existing Dartmouth Compost Facility	25,000 TPY	Two New On-Farm AD Facilities	35,000 TPY
3a	-	-	New Compost Facility	60,000 TPY
3B	-	-	New AD Facility	60,000 TPY
Option 3 Potentials Sites: Goodwood, Dartmouth, New Site				

Evaluation Criteria

Description	Weighting
Equivalent Annual Cost	20
Facility Footprint	5
Feedstock Compatibility	15
Planning and Approvals Risk	5
Process and Technical Risk	5
Odour and Noise	20
Process Water & Stormwater	5
End Products and Byproducts	5
Phasing and Transition	5
Schedule	10
Future Regulations	5
Schedule	10
Total	100

Evaluation Review

■ \$ Equivalent Annual Cost (4%, 20 Years) ■ Decision Matrix Results



Objectives for the Organics Mgmt Program

- Minimize capital and operating costs, including reducing current processing costs
- Minimize impact to the community (odors, noise etc.)
- Meet the 2010 NSE Guidelines for compost post 2019
- Increase organics processing capacity from 50,000 tonnes to 60,000 tonnes per year, with the option to increase to 75,000 tonnes per year in the future

Market Driven Solution and Innovation

- Allow market innovation to assist in procuring the most capable and cost effective solution.
- By allowing the market to develop organics management and processing options it provides for alternative methods to be proposed which may or may not have been analyzed by staff
- It is not recommended that staff develop a predefined and predetermined solution to manage organic material.
- Proponents may utilize existing assets, facilities and sites in their proposals.

Procurement

- Directed non-binding RFP
 - Allows Council flexibility in selection
 - Not bound to staff's recommendation
- 2 stage process
 - 1st stage is prequalification stage
 - Experience, track record, successful operations, technology review, financial capabilities etc.
 - 2nd stage prequalified bidders are invited to the RFP stage.
 - Provide additional engineering, financial and operations detail.
- Recommendation to Council

Summary

- Facilities meet their permit obligations to comply with 1996 CCME requirements.
- New 2010 Provincial guidelines with an estimated compliance date of 2019 will require investments by Halifax.
- Facilities are at maximum capacity. Growth in processing capacity is required.
- Staff recommend a market driven solution to address the 4 main objectives
 - Minimize capital and operating costs, including reducing current processing costs
 - Minimize impact to the community (odors, noise etc.)
 - Meet the 2010 NSE Guidelines for compost post 2019
 - Increase organics processing capacity from 50,000 tonnes to 60,000 tonnes per year, with the option to increase to 75,000 tonnes per year in the future

HALIFAX

Staff's Recommendation

Direct staff to initiate the process to identify a service provider for organics management and processing as per the scope of work and requirements included as Attachment A to this report and to return to Halifax Regional Council to award the organics management and processing contract.