

NEW AND EMERGING TECHNOLOGY DEMONSTRATION PROJECT

1. RECOMMENDATION

It is recommended that:

1. Staff complete the GTA review of the Request for Expressions of Interest to determine the technology for a demonstration facility on Regional property and report to Council in October prior to issuing a Request for Proposal (RFP) for a new and emerging residual waste management technology demonstration project as outlined in this report.

2. PURPOSE

This report is to inform Council on the status of the review of the new and emerging technology Request for Expressions of Interest (REOI) that is being undertaken by the municipalities of York, Peel, Durham and Toronto and seek authority to issue a RFP for a demonstration project in York Region.

3. BACKGROUND

On September 10, 2003, Solid Waste Management Committee was informed of the Greater Toronto Area new and emerging technology review in Clause 1 of Report No. 3 of the Solid Waste Management Committee. Committee made the following additional recommendations:

- “1. Staff prepare a report to Regional Council at its meeting on September 18, 2003, regarding a process which would allow any of the companies submitting a Request for an Expression of Interest regarding new and emerging technologies, to submit in the next three to four weeks a plan to implement a pilot project, which would comply with the following conditions:*
 - (1) the pilot project would not require a lengthy Environmental Assessment and can be sited quickly;*
 - (2) costs of the operation would be less than York Region’s current costs for transporting waste to Michigan; and*
 - (3) the required tonnage would not put York Region at risk legally.”*

4. ANALYSIS AND OPTIONS

The GTA municipalities of York, Peel, Durham and Toronto retained a consulting team from MacViro and EarthTech to review the fifty-one REOI submissions and to assist Regional staff on the preparation of a Request for Proposal for a commercial scale demonstration facility. York, Toronto and Peel are interested in a commercial research / demonstration technology project(s) but each municipality has a different schedule for project

implementation. York Region staff have been working towards the issuance of a RFP in late October to a short-listed group of vendors.

On September 10, the Solid Waste Management Committee requested a much shorter timetable that would include all vendors as noted in Section 3 of this report. The following sections of this report discuss these two options for the RFP process as well as one other option.

4.1 Request for Expressions of Interest (REOI) Submissions

Fifty-one submissions to the Toronto REOI for new and emerging technologies were received on July 14, 2003. The submissions can be categorized into the following areas:

- Front end processing and material marketing.
- Refuse derived fuel (RDF) production and combustion.
- Pyrolyses/gasification.
- Anaerobic digestion.
- Other.

The specific categorization of each firm is provided in *Attachment 1*. Specific firms use each technology in a different manner and represent a different diversion potential. An analysis is underway to differentiate the proposals to determine which technologies should be piloted on a larger scale.

4.2 Option 1 - Current Request for Proposal Process

4.2.1 York Region Demonstration Project

For this option it is proposed that York Region issue a RFP to a short list of companies for a specific new and emerging technology that has been selected from the REOI submissions. Section 4.2.2 provides the details on how the candidate technologies and firms would be selected and invited to submit to the RFP.

It is further proposed that the technology demonstration be operational for a period of two years as this is the length of time generally allowed by the Ministry of the Environment (MOE) for a pilot project. There may be an option to extend this time based on the success of the project and the ability to obtain longer term operating certificates from the MOE.

There will be significant capital and operating costs required for the demonstration project. It is proposed that the Region require its operational costs be equal to, or less than, the cost of transporting and landfilling the waste (approximately \$65 / tonne). The terms of the RFP would require that any additional operating costs be paid by the vendor including the capital costs. The RFP process could also consider the option for a public-private partnership, if the vendor does not have the financial ability for the project, but has an exciting technology that deserves further development.

Approximately 20,000 tonnes per year of residual waste is shipped from our Georgina Transfer Station and another 25,000 to 30,000 tonnes will be shipped from the new Bales Drive Transfer Station. If a new technology demonstration facility could be constructed at either of these facilities it could mean that possibly only 10% - 40% of the current volumes would go to landfill depending on the selected technology. Both of these transfer stations have limited space to install the processing equipment required for the emerging technology, but there are opportunities given the discussion staff has had with some of the vendors. The proposed Bales Drive Transfer Station has a significant tipping floor area that could be redesigned to house processing equipment. It is planned that this facility would start accepting waste in early 2005 at which time a new technology could be operational.

Other vendors may need more space for their technologies and it is proposed that they provide their own site for a demonstration facility. It is noted that further discussions will need to take place with the Towns of East Gwillimbury and Georgina regarding the possible developments at these sites.

4.2.2 Evaluation and Screening Criteria

The RFP needs to provide the respondents with the criteria by which their proposals will be evaluated. The submission needs to have sufficient information to allow staff to evaluate the technical capability and viability of the proposed technologies and vendors.

4.2.1.1 Mandatory Qualification Criteria

Respondents must meet the following mandatory qualification criteria:

- Have an operating, commercial scale facility processing at least 1 tonne per hour of municipal solid waste.
- Provide a financial surety of \$100,000 in the form of a bid bond or certified cheque.
- Provide an agreement to provide a performance bond equal to 50% of the annual tipping fee once the facility is in operation.
- Provide a letter from an insurance company certifying that the respondent can obtain liability insurance in the minimum amount of \$5,000,000 from a recognized company incorporated within Ontario.
- Provide audited financial statements, or acceptable equivalent for privately held companies, to demonstrate the financial capability to execute the project.
- Commitment to share operating data and allow access to the facility for municipal and regulatory staff, and elected officials.

4.2.1.2 Additional Qualification Criteria

For respondents that meet the mandatory qualification criteria, the following information will be evaluated:

- Risks and uncertainties associated with developing the facility.
- Expected reliability / dependability of the technology in managing York Region's wastes on an on-going basis over the long term.
- Nature and magnitude of York Region resources required for the development and operation of the facility.
- Nature of potential environmental impacts from the facility and likelihood of obtaining public acceptance and any required municipal, provincial or federal approvals.
- Costs to York Region.
- Project schedule.
- A mass balance of municipal solid waste components for each stage of the process.
- Physical size of facility and suitability at the Bales or Georgina Transfer station, or on a site provided by the respondent.

4.2.2 Technology Selection

Staff and its consultants have been reviewing the fifty-one submissions to the Toronto REOI process. The steps required to complete the review and prepare a RFP are:

- Comment on each of the submissions, including any relevant information known to the consultants from their current experience on their reviews of the City of Edmonton's and Region of Niagara's new and emerging technology reviews.
- Prepare a policy paper for each of the five groupings of technology types as listed on *Attachment 1*. These policy papers would describe the overall issues with each technology and describe the benefit that could be achieved from a commercial scale demonstration project.

- Determine a technology that merits demonstration based on the findings and needs described in the policy papers.
- For the selected technology, determine which vendors will be invited to respond to the RFP. The selected vendors must have a commercial scale facility with continuous operation utilizing municipal solid waste as the feed stock.
- Review the RFP responses and select a vendor to provide the demonstration project.

The consultants are preparing to present their findings and develop the policy papers with GTA staff and MOE on September 30th. Subsequent to that meeting, York Region would determine which technology it wishes to pursue and issue a RFP. It is possible to issue the RFP by the end of October. Given the complexity of the demonstration project, it is proposed that the selected vendors have eight to ten weeks to prepare their submissions. Staff would then be able to report the outcome of the RFP process to Committee and Council in February 2004. If Council wishes to proceed, the selected vendor may be able to start construction in the summer of 2004 depending on its technology, and on the time it takes to receive all necessary planning and environmental approvals.

4.3 Option 2 - Suggested RFP Approach by the Solid Waste Management Committee

On September 10, the Solid Waste Committee requested staff to consider a different approach to the issuance of a RFP process. Committee's recommendation requested that all vendors representing any form of new and emerging technology be invited to submit a proposal in the next three to four weeks with the conditions noted in Section 3 of this report.

Staff have considered Committee's proposed approach. A RFP that allows any type of technology pilot would be very broad in its scope. It would be challenging to equitably evaluate the numerous technologies and determine how each of the technologies would fit into the Region's waste management strategy.

If staff were to issue a RFP as suggested by Committee, it is believed that vendors will require eight to ten weeks to prepare their submissions due to the technical complexity of the project. Some firms may be more advanced than others in their ability to respond in a shorter time frame, but the time suggested would be fair to all vendors. With this timetable, staff could report to Committee in January 2004 on the outcome of the RFP process. As such, this proposed RFP process would shorten the schedule by one month from February to January 2004 compared to Option 1.

4.4 Option 3 - Alternative Proposal

An alternative proposal could be considered if a vendor is planning to establish its pilot on its own property, and is not seeking any financial assistance from the Region other than a tipping fee. The Region could offer a limited volume of residual waste to these vendors and offer a tipping fee equal to, or less than, the current cost to landfill waste (\$65/ tonne) as requested by Committee. All capital costs would be the vendor's responsibility. This approach would allow vendors to proceed on their own without any financial risk for the Region. If the vendors are unable to get their processes licensed and operating by a set time, the Region would just continue to send waste to landfill.

It is suggested that 100 tonnes per day (20,000 tonnes per year) of waste is a suitable volume for a pilot project on private property. At this volume, the Region could agree to at least two pilot facilities without any significant impacts on our waste transfer, haulage and disposal contracts. At this volume, it is also assumed that the Ministry of the Environment would address the approval requirements as a limited pilot operation, which should shorten the time and requirements to get the pilot facility constructed and operating. It is suggested that the vendor be able to be licensed and fully operational by January 2006 and that the tonnage

guarantee would then commence for a period of two years. An RPF would need to have evaluation criteria similar to that noted in Section 4.2.2.

4.5 Analysis of Options

The purpose of a pilot demonstration facility is to learn more about a specific new and emerging technology, and fill the technical and information gaps that are needed to develop a full scale solution. Some of the issues that need to be considered for each vendor and associated technologies are:

- How would a source separate household organic (SSO) program impact a biological process for residual waste management if the remaining organic fraction is too small?
- How would a mechanical processing facility handle the “recyclable” waste material that is separated if the markets do not currently exist?
- Are the advanced thermal and chemical processes at a commercial production scale processing mixed municipal solid waste?
- What environmental approvals are required, and what is the expected timetable for receiving the approvals?
- Are there specific siting issues that must be considered for each technology?
- How effective is the technology in minimizing the amount of residual waste that needs to be landfilled?

Staff prefer to have the RFP process benefit from the knowledge gained through a thorough evaluation of the REOI submissions as outlined in Section 4.2.2. This evaluation would also screen out vendors who may not have a complete system to handle the entire residual waste stream. The Region must be more thorough in its evaluation if any Regional funds are used to construct the facility, or if it is built on Regional property. If the Region is only committing its waste tonnage to a vendor at a facility on the vendor’s property as noted in Option 3, then there is little or no risk for the Region. Also, staff believe that vendors will need eight to ten weeks to properly respond to an RFP for all of the options and therefore it will be January or February in 2004 before staff can report back to Committee and Council on the outcome.

Of the three options outlined above, staff recommend that the RFP process detailed in Option 1 be followed to determine the appropriate technology that the Region wants to pilot at one of its transfer stations. Staff also suggest that the alternative process outlined in Option 3 could be followed in conjunction with Option 1 if Council wants to be able to have a broader range of technologies piloted. In either case though the timing suggested by the Solid Waste Committee would not be achievable.

5. FINANCIAL IMPLICATIONS

The budgeted costs to review the REOI submissions and a RFP process are detailed in Clause 1 of Report No. 3 of the Solid Waste Management Committee dated September 10, 2003.

6. LOCAL MUNICIPAL IMPACT

If a technology, vendor and location are approved by Regional Council in 2004, the local municipality will be involved through the normal zoning and planning approval process as required for a facility construction project.

7. CONCLUSION

Regional Council and staff want to investigate new and emerging technologies for residual waste management as soon as possible. There are possibly five types of technology that could be employed to reduce the volume of waste being landfilled. Due to the technical uncertainties with some of these technologies, staff recommend completing a thorough evaluation of the fifty-one technology providers who have submitted proposals to the City of Toronto's REOI process. The results of this process will be presented to Council in October. At that time Council can authorize the parameters of the RFP. The results of the RFP would be reported to Committee and Council in February 2014.

The Senior Management Group has reviewed this report.

(A copy of the attachment referred to in the foregoing is included with this report and is also on file in the Office of the Regional Clerk.)