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**NEW AND EMERGING WASTE MANAGEMENT TECHNOLOGY
RESEARCH FACILITY RFP NO. P-03-80**

The Solid Waste Management Committee recommends the following report, April 8, 2004, from the Commissioner of Transportation and Works be referred back to staff for a report to Committee in June:

1. RECOMMENDATION

It is recommended that:

1. The Region not accept any proposals received for the new and emerging waste management technology research facility Request for Proposal No. P-03-80.

2. PURPOSE

This report outlines the results of the Request for Proposal (RFP) process for a new and emerging waste management technology research facility.

3. BACKGROUND

On September 18, 2003, Council requested that proposals from private sector firms be solicited to find a solution to reduce the amount of waste being landfilled in Michigan and to increase waste diversion. RFP No. P-03-80 was issued in October 2003 and closed March 2, 2004.

4. ANALYSIS AND OPTIONS

RFP P-03-80 solicited requests to build and operate a thermal residual waste research facility at the new Bales Drive waste management facility in East Gwillimbury for a period of up to five years. It was expected that the research equipment would be installed in the new transfer station and effectively reduce the amount of waste shipped to Michigan by up to 20,000 tonnes per year. The project intended to study and evaluate treatment of waste using gasification, pyrolysis, refuse derived fuel production and combustion or incineration. The research facility was expected to operate for a maximum of five years to be consistent with the position that it was a research facility and therefore exempt from the requirement to conduct an Environmental Assessment. This short time frame was a requirement of the Ministry of the Environment and represented a potential problem for proponents expecting to amortize significant capital costs.

The Region received four proposals on March 2, 2004. The evaluation of these proposals was completed by staff from Supplies and Services, Legal Services and Solid Waste

Management with support from MacViro Consultants Inc. and Earth Tech Ltd. KPMG was retained by Audit Services to audit the RFP process.

The review process included the following four steps:

1. Mandatory Commercial Screening
 - Proper execution of proposal documents.
 - Submission of the required proposal securities including an undertaking to bond and a statement of insurability.
2. Mandatory Technology Screening
 - Proposal had to meet the required air and sanitary sewer regulations.
 - A suitable reference facility had to be operating somewhere in the world.
 - Technology should be based primarily on the thermal processing of residual solid waste.
3. Technical Evaluation
 - Proposals were evaluated and scored against 10 criteria (see Table 1).
4. Consideration of Price Proposal
 - The price envelopes for proposals that scored a minimum of 75 out of 100 on the Technical Evaluation were opened.

The Region also issued a second request for proposal (P-03-81) at the same time as the research facility RFP seeking a solution to process 70,000 tonnes of residual waste for a ten to twenty year term. The results of that RFP are the subject of a separate report to Committee on April 14, 2004.

Table 1
Evaluation of Technical Proposals for
RFP No. P-03-80

Criteria

1. Risks and uncertainties associated with developing the facility.
2. Expected reliability/dependability of the technology in managing York Region's waste on an on-going basis over the long term.
3. Nature and magnitude of York Region resources required for the development and operation of the facility.
4. Nature of potential environmental impacts from the facility and likelihood of obtaining public acceptance and any required municipal, provincial or federal approvals.
5. Project Schedule.
6. A mass balance of MSW components for each stage of the process, with the primary

consideration being the diversion from landfill provided by the facility.

7. Physical size of facility, capacity, scalability and suitability at the Bales Drive Transfer Station.
 8. Ability of Proponent to deliver facility.
 9. Commercial capability and financial strength of Proponent.
 10. Quality of Technical Proposal.
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4.1 Proposal Results

Proposals from the following companies were received:

1. Global Warming Prevention Technology Inc.
2. Greey CTS Inc.
3. Trillium Recycling and Energy Management Corporation
4. National Waste Services Inc. and GEM Canada Waste to Energy Inc.

The opening and review of the proposals was audited by KPMG. Their audit report stated that the Region and its consultants established a fair and transparent review process that the results of the proposal evaluations were consistent with the established procedures.

The RFP required proponents to provide an Agreement to Bond and Statement of Insurability to support the firm's financial capabilities. Both Global Warming Prevention Technology Inc. and Greey CTS Inc. did not provide these required financial instruments and, therefore, did not pass Step 1 of the screening process. Proposals from Trillium Recycling and National Waste Services Inc. passed screening Steps 1 and 2 and received a score of 84 and 55 in the Technical Evaluation (Step 3) respectively. National Waste Services' proposal scored relatively low as its reference facility is not processing municipal solid waste, no information was provided on the environmental regulator or host community, the mass balance to determine where the waste was processed or converted in the facility was incomplete, and there was insufficient information on the project's management team.

Trillium's proposal is to gasify the waste using its proprietary TwinRec technology developed by its parent company EBARA. There are a number of commercial scale plants using this technology in Japan. In this process, the waste is mechanically sorted and sized to remove unacceptable materials first, and then heated in a high temperature vessel. The waste does not combust (i.e. burn) but rather changes into a gas and a liquid state. The gas is then sent to a high temperature combustion process where the heat of combustion is used to vitrify (i.e., make into a glass-like material) the solid residue, thus making it into a stable non-hazardous slag. The flue gases from the process are then cleaned to meet the Ministry of the Environment's A7 guideline for air quality before being exhausted into the environment. The vitrified slag represents about 10% by weight

of the incoming waste and needs to be landfilled or possibly used in brick making or road construction.

Trillium scored higher than the required 75 points on the technical review and therefore only its price proposal was opened. The cost per tonne (see Table 2) is extremely high as there are very poor economies of scale associated with a small sized facility and a significant portion of the operating price is the amortized capital cost of the facility. Approximately \$24.5 million in capital is being recovered over a five year contract term. The operating cost per tonne is \$359 per tonne if the capital costs are removed from the total price.

The RFP also required proponents to state a second operating cost if the Region paid one third of the capital costs (see Table 2). This optional pricing would likely have benefited smaller companies who were unable to totally finance the project during the research phase of their technology development.

Table 2
Trillium Proposal for RFP P-03-80

	Cost/tonne if Fully Financed by Trillium	Cost/tonne if Region Funds $\frac{1}{3}$ of Capital Cost
10,000 tonnes/year	\$960	\$852
20,000 tonnes/year	\$604	\$531

The current cost to landfill waste is approximately \$64/tonne which is significantly lower than the Trillium price. Peel Region's waste to energy facility, by comparison, costs approximately \$105/tonne. Staff expected a higher cost for the research facility but cannot support the price from Trillium as the incremental cost would be \$10.8 million per year. It is therefore proposed that Council not accept the proposal from Trillium.

5. FINANCIAL IMPLICATIONS

The proposal from Trillium would increase the Region's waste management costs by \$10.8 million per year for a period of five years. Staff can not justify this increased cost for the benefits that may be learnt from the research especially when the Ebara technology proposed by Trillium is working at a commercial scale in Asia.

6. LOCAL MUNICIPAL IMPACT

The construction of a research scale thermal facility at the Bales Drive waste management facility would have required consultation and site plan approval from the Town of East Gwillimbury. No site plan amendments are required given the recommendations of this report and therefore the existing approvals are adequate for the

completion of the material recovery centre and transfer station.

7. CONCLUSION

The Region received four proposals to construct and operate a thermal research facility at the Bales Drive waste management facility. It is recommended that the Region not proceed with this research facility given the results of the RFP evaluation and costs of the only compliant proposal.

The Senior Management Group has reviewed this report.