

TORONTO STAFF REPORT

April 14, 2000

To: Works Committee

From: Barry H. Gutteridge, Commissioner, Works and Emergency Services

Subject: Analysis of the CUPE Waste Management Plan (Wet-dry System)

Purpose:

The purpose of this report is to provide an evaluation of the CUPE Waste Management Plan (the "CUPE Plan") and identify options for proceeding with a comparative analysis in relation to the waste diversion systems arising from the Toronto Integrated Resource Management (TIRM) Diversion Request for Proposals (RFP) process.

Financial Implications and Impact Statement:

Further analysis of the feasibility of a wet-dry system requires an expenditure of \$25,000.00 plus GST for additional consulting work. Funds are available in the approved 2000 Capital Budget under Program CSW168 – Waste Management Planning.

Recommendations:

It is recommended that authority be granted to amend the TIRM Diversion consulting contract with MacViro Consultants Inc. to develop a modified wet-dry system design, at a cost of \$25,000.00 plus GST.

Background:

Toronto Council, at its meeting on February 29, 2000, adopted Clause No. 3 of Report No. 5 of Works Committee, which recommended that:

- (1) authority be granted to amend the TIRM Diversion consulting contract with MacViro Consultants Inc. to conduct a two phase analysis of the CUPE Waste Management Plan at a cost of \$32,500.00 after municipal GST rebate; and

- (2) staff report back to Works Committee in April with the results of the phase 1 analysis of the CUPE Waste Management Plan and with options for proceeding with the phase 2 comparative evaluation.

CUPE submitted a revised version of their plan on March 17, 2000, which was the deadline for the TIRM Diversion proposals.

Discussion:

As previously reported, the CUPE Plan proposes the implementation of a two stream wet-dry system for all municipally collected waste, as well as waste from the City's agencies, boards, commissions and departments. All waste would be separated at source into "wet" material (e.g. food waste, diapers, soiled paper) and dry waste (recyclable material and other dry garbage), with the wet waste composted in an aerobic channel composting system and the dry waste processed through a material recovery facility (MRF). The CUPE Plan states that seven wet-dry facilities (i.e. integrated composting plants and MRFs) would be required to process approximately 1 million tonnes per year of municipally generated waste. The plan suggests that the wet-dry system will create the following benefits for Toronto:

- diversion from landfill of 69 percent of waste received
- recovery of over \$59 million worth of usable products each year
- cost and energy savings through co-collection of the wet and dry streams in a single two compartment vehicle
- employment of approximately 900 people in the wet-dry facilities
- cost savings of \$400 million compared to exporting all waste for disposal

The evaluation of the CUPE Plan by Enviro RIS, a sub-consultant to MacViro Consultants Inc., identifies seven major concerns with the wet-dry system as proposed. These concerns can be summarized as follows:

- (1) Since a wet-dry system has never been fully implemented for commercial and multi-family household waste, the material recovery projections in the CUPE Plan are speculative. The City of Guelph has the only fully operational wet-dry system in North America and it services single family homes only. The Guelph wet-dry system achieves 25% diversion of incoming residential dry material and 67% diversion of incoming wet material.
- (2) The capital and operating cost assumptions used in the CUPE Plan are based on a theoretical "Guelph II" dry MRF facility design which has not yet been implemented and which was not designed to meet Toronto's specific requirements. Therefore, the costs provided must be considered as preliminary estimates only.

- (3) The quantity of compost that can be produced is significantly overstated compared to the Guelph experience. The CUPE Plan projects that 60% of the wet stream will be converted to compost whereas Guelph achieves 25% conversion to compost. Incorporating this change increases the net cost of the wet processing operation from \$38 to \$59 per tonne (a 35% increase in cost).
- (4) Aggressive assumptions for material capture rates and revenues, particularly for aluminum, result in optimistic revenue projections. The CUPE Plan projects that 10,050 tonnes of aluminum beverage cans will be recovered annually and sold at the current market value of \$2,055.00 per tonne, for total aluminum revenue of \$20.6 million (37% of total dry material revenue). This recovery level is seven times higher than the amount presently captured in the Blue Box Program and the current market value for aluminum is at an historic high. By comparison, the average price the City has received for aluminum over the last five years is \$1,737.00 per tonne. For planning purposes it is preferable to use conservative revenue projections based on historical market prices and the recovery levels achieved in other similar programs.
- (5) Only one of Toronto's seven transfer station properties is large enough to accommodate the integrated wet-dry facilities as proposed by CUPE. Therefore, additional land adjacent to the transfer stations or other properties would have to be acquired to site the facilities, which would have a significant impact on the total system cost.
- (6) The unspecified cost savings associated with co-collection of wet and dry waste may not be realized if co-collection vehicles cannot operate effectively in the downtown core, if wet and dry facilities cannot be located at the same location, or if the one man co-collection vehicles such as used in Guelph are unacceptable to the union.
- (7) A more accurate cost comparison of the proposed CUPE wet-dry processing system with the existing waste management system (excluding collection and adjusted to reflect export of all waste disposal tonnage) shows that the wet-dry system as proposed would in fact cost Toronto an estimated \$41 million more over a 20-year period, rather than save \$400 million indicated in the CUPE Plan. Factoring in land acquisition costs for siting the proposed facilities would further increase the wet-dry system cost.

The Enviro RIS report concludes that the assumptions and calculations used in the CUPE Plan would have to be substantially revised to accurately compare a wet-dry system to the TIRM diversion systems. The complete Enviro RIS report is attached for reference.

In view of the results of the Phase 1 analysis of the CUPE Plan, there would appear to be two options regarding the proposed Phase 2 comparative analysis with the TIRM Diversion proposals. The first option would be to not proceed with any further analysis of a wet-dry system at this time, and instead focus on analysing the diversion system options generated by the TIRM proposals. The second option would be to conduct a second wet-dry system analysis based on a more accurate set of assumptions and compare this revised system to the TIRM system options. The original MacViro/Enviros RIS workplan for Phase 2 was based on comparing the wet-dry system as proposed by CUPE, with minor modifications, and did not contemplate a complete revision of the CUPE Plan.

MacViro Consultants and Enviros RIS have prepared a workplan to develop a modified wet-dry system design which can be compared to the diversion systems that evolve from the TIRM proposals. Enviros RIS has recommended that the wet-dry system be considered only for single family households, based on the experience in Guelph and Northumberland County. Part of the analysis would involve an investigation of suitable wet-dry processing sites and subsequent development of facility capital and operating costs. The cost of this additional consulting work is \$25,000.00 plus GST.

It is recommended that we proceed with the additional consulting work and the Phase 2 comparative analysis of the modified wet-dry system for the following reasons:

- (1) Although we have concerns with the wet-dry system option proposed by CUPE, the system does warrant further analysis with respect to single family households. The wet process is working effectively in Guelph and the dry process is working effectively in Northumberland County.
- (2) Analysis of a wet-dry system in comparison to diversion systems that evolve from the TIRM process will allow a wider range of potential diversion system to be considered (e.g. Three-stream system with source separated organics, Blue/Grey Box recycling plus mixed waste processing, two-stream wet-dry system).
- (3) It is possible that one or more of the TIRM diversion proposals could be considered as part of the wet processing requirements of a wet-dry system.
- (4) Modelling the collection component of the wet-dry system will also allow us to model other two-stream options in the future. One example of an alternative two-stream system is in Edmonton where all recyclable materials are collected commingled in a blue bag, and the remaining waste will be composted in a mixed waste composting plant (currently being commissioned).

Staff intend to keep CUPE informed of all modifications made to their proposed wet-dry system.

Conclusions:

Based on the results of the Phase 1 analysis of the CUPE Waste Management Plan, it is recommended that we engage consultants to develop a modified wet-dry system design and then proceed with the Phase 2 comparative analysis. We appreciate CUPE's interest in bringing their plan forward. We will be working with them on the implementation of the waste management processes selected as a result of the TIRM process.

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