



TORONTO STAFF REPORT

December 14, 2000

To: Works Committee

From: Commissioner of Works and Emergency Services

Subject: Proposed “Workable Alternative Waste Management Strategy to the Adams Mine Disposal Option”

Purpose:

The purpose of this report is to respond to the September 30, 2000 memorandum submitted to City Council from a group of Councillors proposing "A Workable Alternative Waste Management Strategy to the Adams Mine Disposal Option" (the "alternative strategy"), by identifying components of the City's 3Rs Implementation Plan and other projects that address the recommendations contained in the alternative strategy.

Financial Implications and Impact Statement:

There are no direct financial implications arising from this report.

Recommendations:

It is recommended that this report be received for information.

Background:

At its meeting held on October 3, 4, 5, 2000, and its Special Meetings held on October 6, 2000, October 10, 11, 2000, and October 12, 2000, City Council adopted Amendment No. 3 (s) of Clause No. 1 of Report No. 17 of the Works Committee, headed “3Rs Implementation Plan for the City of Toronto”, which states as follows:

“The joint communication dated September 30, 2000, from Councillors John Adams, Ila Bossons, Elizabeth Brown, Olivia Chow, John Filion, Jack Layton, Anne Johnston, Irene Jones, Pam McConnell, Joe Mihevc, David Miller, Howard Moscoe, Frances Nunziata, Joe Pantalone, Michael Prue, Kyle Rae, Mike Tzekas, and Michael Walker, entitled “A Workable Alternative Waste Management Strategy to the Adams Mine Disposal Option”,

be endorsed in principle, subject to the following amendments, and subject further to a report from the Commissioner of Works and Emergency Services to the first meeting of the Works Committee to be held in 2001, with a proposal on implementation plans for the Waste Management Strategy:

- (1) amending the last line in the section headed “The Collection Systems”, under the subheading “For Single Family Homes”, so that such line shall now read as follows:

“- Household Hazardous Waste Collection (Red Box) or Special Waste Depots for toxics, batteries, solvents, etc.”; and

- (2) amending the last line in the section headed “The Collection Systems”, under the subheading “For Multi-Residential Buildings”, so that such line shall now read as follows:

“- Dry Collection for all other waste or mixed waste processing.”

Comments:

The purpose of the alternative strategy, put forward by the Councillors listed above, was two-fold. On the one hand it raised arguments against proceeding with a contract with the Rail Cycle North consortium for residual solid waste disposal at the Adams Mine Landfill. On the other hand it sought to provide “an outline of the advanced, fully integrated and sustainable alternative to current disposal options.”

Due to an unsuccessful process to integrate City Council’s amendments into the negotiated contract with Rail Cycle North, the City is not proceeding to engage that consortium to provide disposal capacity. As recommended in the alternative strategy, the City has engaged under City Council authority two landfills in Michigan to provide for the City’s needed disposal capacity (Onyx’s Arbor Hills Landfill, and Republic’s Carleton Farms Landfill).

In regard to the recommendations contained in the alternative strategy for diversion activities, we have prepared responses in the form of a table, which is attached to this report (see “Attachment A”). The majority of the responses are drawn from the 3Rs Implementation Plan for the City of Toronto, which was adopted with amendments at the City Council meeting held in October 2000.

In order to operationalize our 3Rs Implementation Plan and successfully reach the new diversion targets adopted by City Council, approval of corresponding funding requests contained in the Solid Waste Management Division’s 2001 Operating Budget and 2001-2005 Capital Budget is required. Another report listed on the Works Committee agenda of January 10, 2001, under the heading “Solid Waste Disposal – Responses to Requests from Works Committee and City Council”, identifies the required operating and capital budgets.

Listed below is a summary of the recommendations contained in the alternative strategy regarding “Collection Systems” and “Processing Systems” and our summarized responses.

The Collection Systems

The alternative strategy provided a number of recommendations for collection systems for single family homes, multi-residential buildings, municipal Agencies, Boards, Commissions, and Departments, and commercial waste collected by the City.

Several of the recommendations are in the process of being implemented, such as expanding the Blue Box to include polycoat containers, paint cans and aerosol containers. Input from focus groups and a broad-based public attitude survey and feedback from several pilot projects will assist in determining the optimum collection system(s) for the City's diverse housing stock and social composition. Specifically, we are planning to implement pilot projects in 2001 to test separate organics collection from curbside households and apartment buildings.

Future reports will address such matters as household hazardous waste collection options, and a diversion policy for the City's Agencies, Boards, Commissions and Departments.

The Processing Systems

The alternative strategy recommended the commissioning of three to four anaerobic digesters and recommended potentially commissioning one aerobic composting facility. It notes that an anaerobic digester is being constructed by the City of Toronto at the Dufferin Transfer Station property.

At this time we are proceeding, under City Council's direction, with proposal negotiations with Groupe Conporec of Tracy, Quebec, and Miller Waste Systems of Markham, Ontario. These two firms are proposing aerobic composting technology, having met the City's commercial requirements and provided confirmation of the "proven" nature of their respective technologies, as required by the Request for Proposals. This is in addition to the aforementioned project to construct an anaerobic digester at the Dufferin Transfer Station property.

We are also proceeding to conduct a study, in co-operation with Enwave District Energy Ltd., on the feasibility of siting an anaerobic digestion plant on City-owned property, which would process municipal waste to generate biogas (methane) to supplement the district energy needs of the downtown core. This is the subject of another staff report listed on the Committee's agenda.

The alternative strategy position for processing systems can be partially met through the initiatives listed above. The siting of additional anaerobic digestion facilities will require an RFP process. At this time we recommend that a second RFP for diversion technologies be considered following:

- the outcome of the negotiations with Groupe Conporec and Miller Waste Systems;
- operating results from the anaerobic digestion plant at the Dufferin Transfer Station location;

- review of the results of a feasibility study conducted in co-operation with Enwave regarding the potential siting of an anaerobic digestion facility;
- analysis of the focus group input on collection systems; and
- incorporation of direction to be provided by the Mayor's Task Force on Recycling.

Conclusions:

Many of the components put forward in the alternative strategy submitted to City Council by a group of Councillors on September 30, 2000 are currently being implemented through the 3Rs Implementation Plan and current programs.

At this time we are proceeding with a number of initiatives that will assist in the process of increasing the City's diversion rate, such as the proposal negotiations with Conporec and Miller for aerobic digestion of organics, and a study in conjunction with Enwave on the potential for anaerobic digestion of solid waste to supplement downtown heating requirements.

However, in order to meet the diversion targets set by City Council, approval of capital budgets linked to diversion activities will be required to ensure the necessary collection equipment and processing infrastructure is in place, and associated operating budget commitments are made to reflect increased operating costs.

Contact:

Lawson Oates, B.A., M.E.S.
Manager, Strategic Planning
Solid Waste Management Services
Works and Emergency Services
Metro Hall, 19th Floor
Phone: (416) 392-9744
FAX: (416) 392-4754
E-mail: loates@city.toronto.on.ca

Angelos Bacopoulos
General Manager, Solid Waste Management Services

Barry H. Gutteridge
Commissioner, Works and Emergency Services

Attachment A.

Response to Recommendations Contained in the “Workable Alternative Waste Management Strategy to the Adams Mine Disposal Option”

<p>Recommendations Contained in “Alternative Strategy”</p>	<p>Staff Response - 3Rs Implementation Plan Initiatives</p>
<p><u>Collection System for Single Family Homes:</u></p> <p>Expand number of container types collected through the Blue Box.</p>	<p>City Council has adopted the recommendation to add polycoat containers (e.g. milk cartons and aseptic drink boxes), empty paint cans, and empty aerosol cans to the Blue Box Program effective March 1, 2001.</p>
<p>Enhance publicity program for the Grey Box to increase participation and diversion.</p>	<p>Toronto residents will be encouraged to increase their participation in the Grey Box through intensification of communication and education activity; increased convenience; and introduction of financial incentives.</p> <p>These goals can be achieved through: the expected provision of free advertising space for municipal waste diversion programs by the major daily and weekly newspapers (through the WDO); the adopted recommendation to hire casual staff to promote recycling performance; and the adopted recommendation to proceed with a detailed plan for year-round once a week curbside collection of recyclable materials.</p>
<p>Provide a “Green Box” for collection of organic materials from the home.</p>	<p>We are proceeding with the adopted recommendation to conduct an eight month project in 2001 to test the co-collection of organic kitchen waste and garbage in two compartment automated collection carts from 2,400 single family households in the York Community Council Area, using a dual compartment fully automated truck, subject to approval of funding in the 2001 Operating Budget.</p> <p>We are also proceeding with proposal negotiations with Miller Waste Systems and</p>

<p>Recommendations Contained in “Alternative Strategy”</p>	<p>Staff Response - 3Rs Implementation Plan Initiatives</p>
	<p>Conporec for the design, construction and operation of aerobic composting facilities for mixed waste and/or source separated organic material from households and businesses.</p>
<p>Household hazardous waste collection (Red Box) or Special Waste Depots for toxics, batteries, solvents, etc.</p>	<p>At the current time the City operates two ‘Toxic Taxis’ that pick-up household hazardous waste (“HHW”) on request. We also operate depots at our transfers stations, where residents can drop-off material.</p> <p>We are currently investigating ways to improve HHW recovery, including the potential introduction of a household collection service and retailer “take back” programs.</p>
<p><u>Collection System for Multi-Residential Buildings:</u></p> <p>Wet collection for all organics and other ‘wet waste’ (40% of waste by weight).</p> <p>Dry collection for all other waste or mixed waste processing.</p>	<p>We are proceeding with the adopted recommendation to implement automated chute systems in two apartment buildings to improve recycling recovery levels to test organics collection.</p> <p>We are also proceeding under Council approval to conduct a series of focus groups and a broad-based public attitude survey to assist in determining what changes apartment residents and property managers would be prepared to make to facilitate the successful introduction of alternative collection methods. The results of these focus groups and survey will be reported to the February meeting of Works Committee.</p>
<p><u>Collection System for ABCs:</u></p> <p>Option to adopt Wet/Dry System or “Blue/Grey/Green/Red Box” Program. No ‘opting out’ permitted.</p>	<p>We will be submitting a report early in 2001 containing recommended policies for diversion activities by the City’s Agencies, Boards, Commissions, and Departments (“ABC&D”) and user pay policies for disposal.</p>

<p>Recommendations Contained in “Alternative Strategy”</p>	<p>Staff Response - 3Rs Implementation Plan Initiatives</p>
	<p>At this time we would recommend that each ABC&D prepare a diversion plan that addresses their particular waste streams and reflects an appropriate collection system linked to the volume of material they are diverting or plan to divert.</p>
<p><u>Collection System for Commercial Waste Collected by the City:</u></p> <p>Organic, fibre and recyclable collections offered with financial incentives (e.g. free pick-up of these materials, charge only for unsorted and residual waste).</p>	<p>Staff are examining different diversion options for municipally collected commercial waste, including mandatory source separation of organics and recyclables with variable rate service fees for waste. Staff will also be reporting in February on the results of a pilot project in collecting organics from restaurants and green grocers on Danforth Avenue.</p>
<p><u>Processing Systems</u></p> <p>Organics:</p> <p>570,000 tonnes total capacity through a combination of 3-4 anaerobic digesters and one aerobic digester.</p> <ol style="list-style-type: none"> 100,000 tonnes at the Newmarket facility (in operation now with substantial excess capacity). Electricity production from methane, Grade A compost; High emission credit values (cost no greater than \$55/tonne); 	<p>We have engaged the Canada Composting plant in Newmarket to process organics collected from restaurants along Danforth Ave. as part of a pilot project regarding collection of source separated organics from the commercial sector.</p> <p>We have also secured funding from the WDO to test processing mixed waste from restaurants and green grocers at the Newmarket facility.</p>
<ol style="list-style-type: none"> 120,000 tonnes at the new Dufferin facility (under construction, opening on a pilot scale in August 2001, full operation possible by December 2002). Electricity production from methane; heat for local district heating system; high emission 	<p>If the Dufferin anaerobic digestion demonstration facility proves successful in processing mixed waste and/or source separated organics, it is our intention to develop it into a full-scale plant (up to 165,000 tonnes of input capacity). This will require</p>

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<p>credit values; costs less than \$55/tonne due to heat sales);</p>	<p>approval of funds identified in the Capital Budget projections for 2002, as recommended in the 3Rs Implementation Plan.</p>
<p>3. 200,000 tonnes at a new facility in the Portlands to be integrated with the Toronto Hydro/Boralex/Works Department/Canadian Paperboard Co-generation Plant (could be in operation by June, 2003). Electricity production from methane for Toronto Hydro, owned by the City. Heat sales through steam generation to Enwave – secure low-priced energy for this partnership enterprise. Would also provide certifiable “green power” sufficient for Olympic Games operations and venues. Note: Site already owned by the City and reserved for this purpose at 101 Commissioners’ Street. Costs less than \$55/tonne due to available site and secure market for steam.</p>	<p>We are proceeding with a co-operative study with Enwave on the feasibility to site a 150,000 tonnes/year anaerobic digestion plant on City-owned property to process municipal waste to generate biogas to supplement the district energy needs of the downtown core. A status report on the development of the study is also listed on the Works Committee agenda of January 10, 2000. The 3Rs Implementation Plan carried a recommendation to proceed in a co-operative feasibility study, which will include a potential linkage to the cited co-generation plant.</p>
<p><u>The Aerobic Digester:</u></p> <p>4. 150,000 tonnes as proposed in the Commissioner of Works Recommendations for further negotiations with two potential suppliers. Location: Scarborough. Cost: high. Could be replaced by additional anaerobic capacity at lower cost, eg. expanded Subbor facility in Guelph, which is already constructed and has significant excess capacity.</p>	<p>We are proceeding under City Council direction to conduct proposal negotiations with Comporec and Miller Waste Systems for the potential engagement of aerobic composting facilities, with one facility potentially sited at the Scarborough Transfer Station. The proposals from these firms have been identified as the top-qualified proposals in Category 1 (Proven Diversion Capacity) of the TIRM Process. The 3Rs Implementation Plan contained a recommendation to proceed with the proposal negotiations noted above.</p> <p>A RFP proposal submission from SUBBOR was found to be informal on the grounds that it did not meet the required commercial security requirements and was unable to demonstrate the “proven” nature of its technology. We are currently proceeding with a testing program for anaerobic digestion plants, which may result in</p>

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	<p>the engagement of SUBBOR in the program. SUBBOR’s facility in Guelph, Ontario is a demonstration facility that is currently being commissioned.</p>
<p><u>Stabilization of Residual Waste Prior to Disposal: (Ideal Long-Term Option):</u></p> <p>As in Halifax and emerging in Europe, aerobic digestion of all residual trash prior to shipment to any landfill. The waste would be completely stabilized, no odour, no putrescence remaining. Multiple sites for disposal of this inert material could be much more easily located. Possible recycling use may be discovered in long term.</p>	<p>Prior to landfilling the City of Halifax aerobically composts its residual solid waste. This is required because of the hydro-geological features of its landfill location and Provincial legislation. The landfill sites that Toronto has engaged are designed to manage residual solid waste that has not been stabilized through composting. While there are environmental benefits to pre-disposal stabilization, we recommend that funds be expended on plants that will return solid waste resources to the economy in a beneficial fashion. When Toronto’s diversion targets have been met, we recommend that a review of the potential uses for the residual, such as production of refuse derived fuel, be investigated along with pre-disposal stabilization of remaining organics through composting.</p>