

Clause embodied in Report No. 9 of the Works Committee, as adopted by the Council of the City of Toronto at its meeting held on June 26, 27 and 28, 2001.

## 7

**Old Landfills Program: Harmonized Policy, Guidelines and Procedures**

*(City Council on June 26, 27 and 28, 2001, adopted this Clause, without amendment.)*

**The Works Committee recommends the adoption of the following report (May 17, 2001) from the Commissioner of Works and Emergency Services:**

Purpose:

This report seeks approval of the proposed harmonized Policy, Guidelines and Procedures to be used in addressing risk management of old municipal landfill sites in the City of Toronto.

Financial Implications and Impact Statement:

There is no funding request with regards to the approval of these recommendations.

Funding for Perpetual Care of Landfills, in the amount of \$4,416,000 has been provided in the approved Solid Waste Management's 2001 Capital Program for the year 2001 under Capital Project SW305.

Funding requests for investigation and remedial works will be the subject of further reports to Council.

Recommendations:

It is recommended that:

- (1) the Policy, Guidelines and Procedures for addressing risk management of old landfill sites in the City of Toronto, as described in the body of this report, be approved; and
- (2) the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.

Background:

On June 3, 4 and 5, 1998, City Council approved Clause No. 6 of Report No. 5 of The Works Committee recommending a proactive approach to addressing the risks and issues associated with old landfill sites, and proposing the use of an 8 Step Procedure to manage these risks and issues.

The Committee requested an interim list of old landfill sites. This was the subject of Clause No. 10 (h) of Report No. 8 of The Works Committee, received for information at City Council's meeting of October 1, 1998. The Committee further requested, with respect to old landfill issues, that staff: prioritize the list of old landfill sites in terms of risk factors; report on possible landfill gas recovery; and submit a status report to the Committee on a semi-annual basis. On December 14, 1999, Council received, for information, Clause 24(g) of Report No. 6 of The Works Committee providing information on the status of the old landfill program. The initiation of further investigation and risk assessment, at additional sites, is the subject of a separate in-camera report concurrently being submitted to the Works Committee.

Comments:

Prior to the City's amalgamation, the former City of Scarborough and the former Metropolitan Toronto had programs underway to assess and manage the risk associated with old landfills that were under their care. These programs are still underway.

Progress has been made in amalgamating the handling of issues respecting old landfills from all the former municipalities. The site identification, assessment and prioritization requires a harmonized Policy, and associated Guidelines and Procedures. Also, the ability to resolve associated litigation issues and land development issues will improve with a harmonized approach in dealing with old landfill sites. To expedite these processes, staff are submitting the following recommendations. The specific guidelines and procedures are preliminary, and will be reviewed and refined by consultants as work proceeds.

The following is a description of the proposed Policy.

It is recommended that as a matter of policy, the City of Toronto will take further steps to investigate and resolve:

- (1) issues on the portion of old landfill sites that are on property owned by, or managed by, the City of Toronto; and
- (2) the leachate and landfill gas issues on abutting properties as related to (1) above.

The following is a description of the proposed Guidelines.

It is recommended that staff, and consultants hired to assist with various activities, use the following guidelines when investigating and assessing risk at old landfills. These have been compiled by using a combination of former municipal practice, private industry practice, and current legislation, in consultation with regulators and other experts in this field:

- (1) As general guidance, sites that were filled after 1950 and having more than 10,000 tonnes of waste will be investigated first, as these newer and larger sites have potential to produce large quantities of landfill gas and leachate;

- (i) Buildings and other enclosures, in locations where there is a potential for migration of subsurface landfill methane gas and accumulation of this gas in an enclosed space, will generally be considered the highest priority.
  - (ii) Potential contamination of surface water courses and surface ponding areas will also be considered high priority.
  - (iii) Other risks factors that will be considered include slope stability, soil and vegetation cover, ambient air emissions and groundwater contamination.
- (2) Landfill methane gas can migrate through the subsurface soils into confined spaces. It is an explosive hazard when it reaches five percent by volume methane-in-air. This is called the lower explosive limit (LEL). When investigating the potential migration of methane gas to nearby buildings and enclosures:
- (i) Should landfill methane be detected at 50 percent of the LEL or higher in the subsurface soil at the property line of a property containing a building, permission from the land owner should be sought forthwith to monitor the air in the building and to construct monitoring probes near the building foundations.
  - (ii) Should landfill methane be detected at 20 percent LEL or higher in the subsurface soil near a building foundation, permission from the land owner should be sought forthwith to monitor the air in the building and to provide remedial works as recommended.
  - (iii) Should landfill methane be detected at 10 percent LEL or higher in the air in a building, the building should be evacuated immediately and permission from the land owner should be sought forthwith to provide remedial works as recommended.

Issues of landfill gas migration and associated land use are described in the MOE's current 1994 Guideline D-4, titled "Land Use On or Near Landfills and Dumps" (formerly MOE Policy 07-07).

The following is a description of the proposed Procedures.

It is recommended that the following procedures be implemented by Works and Emergency Services Department staff in consultation with City staff of Legal, Real Estate, and Insurance and Risk Management:

- (1) Site Identification and Data Administration (includes mapping; preliminary audit; review and commenting on associated development proposals and building permit applications) will be led by Technical Services Environment Section, in liaison with MOE.
- (2) Non-Intrusive Investigation (includes Phase I study; non-intrusive geophysical tests) will be led by Technical Services with assistance of Solid Waste Division and geophysical consultants.

- (3) Intrusive Investigation (includes Phase II study; in-ground testing, sampling and analysis) will be led by a team of City staff from Technical Services and Solid Waste Division, with assistance from geotechnical and environmental consultants.
- (4) Risk Evaluation and Reporting (includes assessment of public, environmental and corporate risk on a site by site basis; up-dated reporting on a five-year cycle or after remedial work completed) will be provided by consultant(s) led by a team of City staff from Technical Services, Solid Waste Division, Legal Division, and Insurance and Risk Management Division.
- (5) Remedial Options and Action Plan Reporting (includes a report, on a site by site basis, of risk management options, a proposed action plan with recommendations and approximate costs; this report will go to Council to support approval of continued action and implementation of recommendations) will be led by a team of City staff as in procedure (4) above.
- (6) Engineering and Approvals (includes detailed remedial design; detailed cost estimates; scheduling; approvals from land owners and regulatory agencies) will be led by a team of City staff from Solid Waste and Technical Services, with assistance of appropriate consultants.
- (7) Construction and Zoning Control (includes award of, and project management of, construction activities; amendments to OP, secondary plans, zoning by-laws and conditions on development agreements and permit review process) will be lead by Solid Waste (for construction), with assistance of appropriate consultants, and Technical Services (for zoning control).
- (8) Long Term Monitoring and Maintenance (includes on-going site monitoring of gas and groundwater probes, surface conditions and slope stability; reports for perpetual care and site review up-dates) will be led by Solid Waste Division.

Conclusions:

These Policy, Guidelines and Procedures will clarify and help expedite the risk management program for old landfill sites. Further reports dealing with issues specific to individual sites will be brought to Council as these issues develop.

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