

APPENDIX 1

REVIEW OF THE MANAGEMENT AND FUNDING FOR INACTIVE LANDFILL SITES

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 **TORONTO** Auditor General's Office

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EXECUTIVE SUMMARY

Inactive landfills have ongoing monitoring and maintenance costs far into the future

The City of Toronto is responsible for the post closure maintenance of 161 known inactive landfill sites. The perpetual care of any closed or inactive landfill site can include a wide spectrum of activities from simple monitoring, to the construction of containment structures.

Ensuring the environmental integrity of these sites involves such activities as surface and ground water monitoring, maintenance of drainage structures, monitoring leachate and gas emissions, and maintaining the surface cover placed on the site.

The City has established a Perpetual Care Reserve Fund and a Keele Valley Site Post Closure Trust Fund for the care of these sites. The total available as at December 31, 2009 in the Reserve Fund is \$31 million and in the Trust Fund is \$7 million.

Withdrawals from the Reserve Fund relate to ongoing maintenance costs while contributions to the fund consist of annual budgetary allocations, a portion of landfill revenues and interest income. Contributions from the City's operating budget are subject to approval each year. Contributions of \$3.5 million were made for each of 2008, 2009 and 2010.

The City only has \$38 million in reserves to cover costs with a present value of \$121 million

No expenditures have been charged to the Trust Fund since its establishment and the only activity since the minimum contribution of \$4 million stipulated by the Ministry of Environment was established has been annual interest earned on the funds.

As of December 31, 2009, the present value of future landfill closure and post closure liabilities is estimated at \$121 million. The City only has \$38 million set aside to cover these costs leaving an unfunded liability estimated at \$83 million to be borne by future taxpayers.

Further expense of \$23 million will be charged to Reserve Fund

In a report to the Executive Committee dated January 17, 2011, the City Manager recommended an expenditure of “up to \$23 million, funded by Reserve Funds, for soil remediation of the parcel of land in Scarborough to be used for the Pan Am Aquatic Centre/Canadian Sport Institute Ontario Facility”.

The report further states that “total remediation costs are estimated at \$52 million with the City being responsible for up to \$23 million and the University of Toronto for the balance. The City’s share is recommended to be funded from available funds within the Solid Waste Perpetual Care of Landfills Reserve Fund.”

The fund will be close to depletion

The charge of \$23 million to the Perpetual Care Reserve Fund significantly depletes this fund to the extent that its balance as of December 31, 2011, after estimated operating costs of close to \$10 million, will likely be in the range of \$200,000.

It is also important to note that the expenditure of \$23 million will have negligible impact on the long-term liability as the liability pertains to the ongoing care and maintenance of all 161 closed landfill sites to protect the environment.

In this context, it is arguable that the amount of \$23 million should not be charged to a reserve fund the purpose of which is to provide for ongoing post closure costs to protect the environment and not remediation expenditures to ready a site for redevelopment.

In any event, the charging of the \$23 million to this fund is Council’s decision. Nevertheless, Council should be aware that this action will increase the unfunded liability by a further \$23 million.

Further, the “Financial Impact” statement on the January 17, 2011 report makes reference to the fact that funds of \$23 million are available in the Solid Waste Perpetual Care Reserve Fund and the withdrawal of this amount “will have no debt impact on the 2011 recommended City Capital Budget”. While this is the case, there is an impact on the City’s Operating Budget through an increased contribution to the Reserve Fund.

For 2012 onwards, the projected contributions to the Reserve Fund will be increased to over \$6 million (previously \$3.5 million) in part to compensate for the lost interest revenue as well as projected increased maintenance costs.

Summary of Issues

In addition to the significant unfunded liability, our review identified the following:

- there is no plan to address the Perpetual Care Reserve Fund shortfall
- royalty revenue generated from landfill gas produced at three of the landfill sites is not consistently verified and reviewed at the supervisory level
- consultant recommendations for the inactive landfill monitoring program need to be followed up to ensure action is taken where appropriate
- no evidence of documentation of supervisory review, actions taken and date of follow up for annual landfill site inspections.

AUDIT OBJECTIVES, SCOPE AND METHODOLOGY

Why we conducted this review

In view of the estimated present value of maintaining inactive landfill sites which is in the range of \$121 million, a review of inactive landfill operations was included in the Auditor General's 2010 Audit Work Plan.

The review covered the period from January 1, 2007 to December 31, 2009 and focused on the following areas:

- adequacy of balances in, and contributions to, the Perpetual Care Reserve Fund
- compliance with policies and procedures, and
- effectiveness of controls over landfill monitoring and maintenance.

Our audit methodology included the following:

- review of policies and procedures
- review of Committee and Council minutes and reports
- interviews with appropriate City staff
- site visits
- examination of documents and records
- review of inactive landfill operation reports in other jurisdictions
- other procedures deemed appropriate

Compliance with generally accepted government auditing standards

We conducted this audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence that provides a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

AUDIT RESULTS

Perpetual Care Reserve Fund Has Insufficient Funds to Cover Estimated Future Costs

Under Provincial legislation the City is responsible for well defined and regulated activities relating to the perpetual care of inactive landfill sites that fall under the responsibility of the City of Toronto.

Responsibility for 161 landfill sites

The City of Toronto has responsibility for 161 known inactive landfill sites. Of the former municipalities, only the municipalities of Metropolitan Toronto and City of Scarborough developed programs to manage the risks associated with inactive landfill sites. In April 2003, City Council adopted a report titled “*Old Landfills Program: Harmonized Policy, Guidelines and Procedures*”, established to assess and manage the risk and set priorities relating to inactive landfill sites.

Consultant developed landfill monitoring protocols

Routine landfill-monitoring was undertaken in the former Metro and Scarborough prior to amalgamation in Toronto. At that time, a consultant was engaged to help City staff develop protocols for field monitoring and collection of water samples for inactive landfill sites. The consultant summarized these protocols in a document entitled “*Groundwater and Surface Water Sampling Protocols Manual*” for use as a reference by City staff. The current monitoring program involves four main activities:

- leachate sampling
- groundwater quality monitoring
- surface water quality monitoring
- subsurface gas monitoring.

\$121 million estimated liability. \$38 million set aside

As at December 31, 2009, the City’s estimated future liability for post closure care activities for inactive landfill sites was \$121 million. At that same date, the City had \$38 million set aside for these costs, leaving a shortfall of \$83 million as an unfunded liability. The \$38 million that has been set aside to pay future costs is retained in two separate funds.

Perpetual Care Reserve Fund established

The Perpetual Care Reserve Fund was established by the City to address the ongoing perpetual care costs of maintaining inactive landfills. The Fund had a balance of \$31.3 million as at December 31, 2009. Withdrawals from the fund relate to ongoing maintenance costs while contributions to the fund consist of annual budgetary allocations, a portion of landfill revenues and interest income. Contributions from the City’s operating budget are subject to approval each year. Contributions of \$3.5 million were made for each of 2008, 2009 and 2010.

Keele Valley Trust Fund established

The second fund is the Keele Valley Site Post Closure Trust Fund, a fund required by the Ministry of the Environment. This trust fund was established in 1983 and, according to the Ministry, must maintain a minimum balance of \$4 million. The balance in the fund as at December 31, 2009 was \$7.4 million. No expenditures have been charged to the fund since its establishment and the only activity since the minimum required contribution of \$4 million stipulated by the Ministry of Environment was established has been annual interest earned on the funds.

On November 3, 2004 the Acting Commissioner, Works and Emergency Services, and the Chief Financial Officer and Treasurer, reported on, “*Adequacy of Perpetual Care of Landfill Reserve*”. The report recommended a 2005 operating fund contribution of \$3 million to the Perpetual Care Reserve Fund with increases of 5.55 per cent each year thereafter until 2021.

The report of November 3, 2004 also recommended that the Commissioner of Works and Emergency Services and the Chief Financial Officer and Treasurer review and update the long term financing plan every three years and report back to Council with financing recommendations.

Improvements in waste diversion rates mean lower contributions to the Reserve Fund

In addition to annual budget allocations, other contributions to the fund pertain to commercial waste tipping fees and are based on a per tonne set amount. For each tonne of commercial waste collected at City transfer stations, \$4.42 is contributed to the Perpetual Care Reserve Fund. Although the per tonne amount has not changed since 2004, waste diversion programs have been successful and less material is being disposed of with the City. Consequently, contributions to the reserve fund have declined. Since 2006, the annual tipping fees have decreased on average, 12 per cent per year.

For 2009, the total contributions, including interest, into the Reserve Fund was \$3.9 million. However, operating costs paid out of the fund over that same year were \$5.3 million, leaving a deficit of \$1.4 million.

While there is ongoing reference to the Perpetual Care Reserve Fund in annual budget submissions to Council there has been no specific reporting back to Council on a “long term financing plan”.

In addition to the issue of ongoing deficits, the recent recommendation made by the City Manager in connection with the fund has significant implications. In a report to the Executive Committee dated January 17, 2011, the City Manager recommended an expenditure of “up to \$23 million, funded by Reserve Funds, for soil remediation of the parcel of land in Scarborough to be used for the Pan Am Aquatic Centre/Canadian Sport Institute Ontario Facility.” The report further states that “total remediation costs are estimated at \$52 million with the City being responsible for up to \$23 million and the University of Toronto for the balance. The City's share is recommended to be funded from available funds within the Solid Waste Perpetual Care of Landfills Reserve Fund.”

The charge of \$23 million to the Perpetual Care Reserve Fund significantly depletes this fund to the extent that its balance as of December 31, 2011, after operating costs, will likely be in the range of \$200,000.

It is also important to note that the expenditure of \$23 million will have negligible impact on the long term liability as the liability pertains to the ongoing maintenance of all 161 closed landfill sites to protect the environment not to future remediation costs.

In this context, it is arguable that the amount of \$23 million should not be charged to a reserve fund the purpose of which was to provide for ongoing post closure costs to protect the environment and not remediation expenditures to ready a site for redevelopment.

In any event, the charging of the \$23 million to this fund is Council's decision. Nevertheless, Council should be aware that this action will increase this unfunded liability by a further \$23 million.

Further, the “Financial Impact” statement on the January 17, 2011 report makes reference to the fact that funds of \$23 million are available in the Solid Waste Perpetual Care Reserve Fund and the withdrawal of this amount “will have no debt impact on the 2011 recommended City Capital Budget.” While this is the case, there is an impact on the City’s Operating Budget through an increased contribution to the Reserve Fund.

For 2012 onwards, the projected contributions to the Reserve Fund will be increased to over \$6 million (previously \$3.5 million) in part to compensate for the lost interest revenue as well as projected increased maintenance costs.

Recommendation:

- 1. The Deputy City Manager responsible for Solid Waste Management, in consultation with the Deputy City Manager and Chief Financial Officer, review the current and ongoing status of the Perpetual Care Reserve Fund with an emphasis on maintaining its long-term viability to fund at least ongoing operating costs. Any action to increase the level of revenue to the fund be reported to City Council along with details of the unfunded liability.**

Management of Royalty Contracts Requires Oversight

Three inactive landfills have been utilized for electrical power production

Three of Toronto’s inactive landfill sites utilize landfill gas for electrical power production projects. The site at Brock West was the first landfill gas recovery utilization project in Canada and Keele Valley is the largest. The third site is the Beare Road landfill site in Scarborough. These sites are the only ones of significant size to warrant gas collection. Total annual royalties from the three gas production projects average \$1 million dollars.

The City has three separate royalty contracts with external vendors for the monitoring, collection, and use of the landfill gas produced at these three sites. Contractors are required to pay a royalty for gas collected. The amount of royalty due is based on a formula specified in each contract. The terms of gas royalty contracts vary but certain clauses are standard including:

- the right of the city to inspect and audit and / or request a financial statement;
- the requirement of the contractor to submit a royalty calculation with timely payment;
- the requirement to submit an annual letter of credit; and
- the requirement to maintain insurance.

Required documentation not consistently provided

All contracts require the royalty calculation and supporting documentation be submitted to the City for verification. Only one contractor has consistently provided this documentation. The following need to be addressed in regards to the verification of royalty calculations:

- need for enhanced and consistent documentation from all contractors in support of royalty payments, and
- Ontario Hydro power buy-back rates are reported by the contractor but not verified by staff.

Finally, a supervisory review and verification of royalty calculations was not always present. To ensure these calculations are accurate, documentation and verification by a supervisor should be on file.

Recommendation:

2. **The Executive Director of Technical Services Division ensure that the City receives all the royalty revenues to which it is entitled. In this context management should:**
 - a. **obtain and retain consistent documentation supporting royalty payments;**
 - b. **document evidence of appropriate verification and review of royalty payments; and**
 - c. **exercise contract right by periodic request of financial statements or conducting audits to verify the accuracy of royalty payments.**

Tracking and Annual Reporting of Landfill Operations Requires Improvements

As of 2008, a voluntary annual site inspection program was established in addition to the scheduled monitoring and maintenance.

Documentation to support annual site inspections needs improvement

For the sample of inspections reviewed we noted:

- there are no documented procedures in relation to inspections;
- inspections do not appear to have been completed as required within the voluntary annual site inspection program for all sites listed on the landfill database;
- manual inspection data sheets were not always submitted to the supervisor for review; and
- not always evidence of supervisory review, actions taken and date of follow up.

These deficiencies would be avoided if procedures were formalized, followed, and subject to management review. Procedures should address sites to be inspected, frequency of inspections, required documentation, evidence of follow up where required, and evidence of supervisory review.

Recommendation:

- 3. The Executive Director of Technical Services Division formalize procedures to ensure accurate and complete performance and tracking of annual site inspections including sites to be inspected, date completed, actions taken and evidence of supervisory review.**

Consultant developed landfill monitoring protocols

A number of years ago, consultants were engaged to perform a risk assessment and analysis of the City's inactive landfills. Based on their risk assessment, 53 of the 161 sites were prioritized and a landfill monitoring program was implemented. A consultant was also engaged to help City staff identify protocols for field monitoring and collection of water samples for inactive landfill sites. The consultant summarized these protocols in a document entitled "*Groundwater and Surface Water Sampling Protocols Manual*" for use as a reference by City staff.

In April 2003, City Council adopted a report titled "*Old Landfills Program: Harmonized Policy, Guidelines and Procedures*", established to assess and manage the risk and set priorities relating to inactive landfill sites.

Consultant's submit annual recommendations for the inactive landfill program

Due to the specialized inspection process involved with inactive landfills, the City engages consultants each year to review and report on four different landfill sites. Each report details the consultant's analysis of monitoring, their interpretation of laboratory sample results and their recommendations for ongoing monitoring for the future.

Follow up of recommendations requires tracking

There is a lack of documentation in relation to the implementation of the consultant's recommendations, actions taken and rationale for actions not taken and delays.

Documentation should be maintained on the status of all consultant recommendations.

Recommendation:

- 4. The Executive Director Technical Services Division ensure that documentation is maintained for all recommendations made by external consultants. Supporting documentation should include action taken on all recommendations.**

CONCLUSION

This report contains four recommendations related to strengthening controls in funding and providing monitoring and maintenance for the City's inactive landfills.

Implementing the recommendations in this report will improve managements control over inactive landfills.