

## **PROPOSED BIOGAS FACILITY AT THE TORONTO ZOO**

<b>Date:</b>	January 9, 2010
<b>To:</b>	Executive Committee
<b>From:</b>	Peter J. Evans, Acting Chief Executive Officer, Toronto Zoo
<b>Wards:</b>	N/A
<b>Reference Number:</b>	

### **SUMMARY**

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This report recommends approval for the construction of a Biogas Facility at the Toronto Zoo. Approval is being sought in accordance with the Tripartite Agreement between the Toronto Zoo, the City of Toronto and the Toronto and Region Conservation Authority. The goal of the proposed project is to generate clean renewable energy from organic “waste” (e.g. fuel), to meet the Zoo’s goal of being carbon neutral, and to visually demonstrate the benefits of biogas technology as an educational tool.

### **RECOMMENDATIONS**

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The Board of Management recommends approval for the construction of a Biogas Facility at the Toronto Zoo.

#### **Financial Impact**

There is no capital impact related to this decision. It is anticipated that there will be a donation component and a cost offset from energy provided to the Toronto Zoo from the biogas operator, subject to the RFP process and related negotiations with the successful proponent. It is not possible to quantify the amount of the benefit at this time.

#### **DECISION HISTORY**

At its meeting of October 28, 2008, the Board of Management of the Toronto Zoo approved in principle, a staff report entitled “Towards a Carbon Neutral Zoo, and directed staff to prepare a Request for Proposal (RFP) for a large-scale biogas facility on the Zoo site.

## **ISSUE BACKGROUND**

It is proposed that a large-scale (3-5MW) biogas facility (based on the principles of anaerobic digestion) be built on a 10 acre parcel of Zoo land by a third party on a design/build/own/operate basis. At a minimum, the biogas facility will generate enough energy to power all facilities and operations on-site, and to offset all CO<sub>2</sub> emissions (~7500 tonnes annually) of all Zoo operations and processes. Electricity generated from the biogas facility will power 100% of Zoo needs and excess will be sold to the Ontario Power Authority through the Feed-In-Tariff Program. Co-generated thermal energy (heat) from the facility will be used for the operating needs of the facility and excess heat will be directed to the Rouge Valley Foundation offices and the Toronto Zoo site proper. The biogas plant will include a visitor education area, accessible during regular Zoo operating hours.

City of Toronto Building Division has provided a Permitted Use Letter that confirms the zoning designation, including site-specific by-laws, and the permitted use of the property. Zoo staff hired energy and waste management consultants to assist with the preparation of an RFP. City legal has reviewed the draft RFP.

## **COMMENTS**

Currently, the parcel of land best suited for this project is being used by the Zoo to manage our generated compost and other organic fuel. Approximately 2,000 tonnes per annum is generated and stored at this site, and there is an estimated 100,000 tonnes of compost in various stages of decomposition located at the site. In the long-term, this parcel of land will not be sufficiently large enough to host the continual stream of organic fuel generated by Zoo operations and processes.

The proposed biogas facility will accept all Zoo organic fuel as well as an estimated 70,000 tonnes of industrial, commercial and agricultural organic fuel from the City of Toronto and the Greater Toronto Area. An estimated 35 commercial trucks (18-wheel, closed contained trucks) will be required every day, 364 days per year to deliver the needed fuel to operate the biogas facility. The schedule of delivery is very flexible and can occur during times when Meadowvale Road is not busy, thereby avoiding peak Zoo visitation and daily commuting times. Currently, the industrial and commercial organic fuel generated in Toronto and the GTA is being delivered (by similar trucks) to landfill and open-air compost facilities as close as London, Ontario and as far away as Michigan or Quebec.

The Board of Management of the Toronto Zoo is seeking approval, in accordance with the Tripartite Agreement dated April 28, 1978 (Article 9(1)), for the construction of permanent facilities to house the biogas electrical generation plant operations. Normally approvals for construction projects are granted by Council as part of the Capital Works Program approval process. Insofar as there is no capital component to this project, separate approval for the construction of a structure on the Zoo site is required from Council.

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**SIGNATURE**

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