

To: Board of Management

From: Robin D. Hale
Chief Operating Officer

Subject: **BIOGAS FACILITY - UPDATE**

Date: 2012-09-17

Summary:

This report updates the Board on the signing of the operating and ground lease agreements with ZooShare Biogas Co-operative Inc. (ZooShare). The Biogas Project represents an excellent opportunity to showcase biogas and waste management best practices to the public, consistent with the Zoo's education mandate. The proposal provides a guaranteed financial return to the Zoo and allows the Zoo's organic waste to be processed in the most environmentally friendly manner possible. This facility represents an innovative public-private partnership, which incorporates a unique community funding model. The success of the Biogas Project remains dependent upon ZooShare achieving other milestones, notably approval of the OPA FIT application, securing the necessary financing for the project, and Ministerial approval (if necessary) facilitated through the Toronto and Region Conservation Authority (TRCA).

Recommendation:

It is recommended that this report be received for information.

Financial Impact:

The proposed operating agreement negotiated with ZooShare provides an annual financial contribution to the Zoo of 10% of net earnings or \$50,000, whichever is greater.

Background:

On 2011-06-09, the Board of Management authorized the CEO to enter into an operating agreement with ZooShare Biogas Co-operative Inc. to build a 500kW biogas facility on Zoo managed land.

Previously, on 2008-10-28, the Board of Management approved in principle the building of a medium scale (1.5 MW) biogas facility on site and directed Zoo staff to release a request for proposals for such a facility. Toronto City Council approved (2010-02-22) the "construction of a Biogas Facility at Toronto Zoo, pending the decision by the Board to award the project to a successful proponent, following completion of the Request for Proposal process" and to "report back to Executive Committee prior to making a commitment to a successful proponent, if any unfavourable impacts to future Capital and Operating budgets arise".

The Board did not receive any proposals that satisfied the minimum requirements of the initial RFP, and subsequently, on 2010-10-25 a consortium under the name “Zoo Biogas Co.” provided a detailed proposal to construct a 500kW modular biogas facility on Zoo managed land. Members of Zoo Biogas Co. had previously built five biogas facilities in Ontario.

At its meeting of 2010-11-25, the Board approved a staff report recommending that a Memorandum of Understanding (MOU) be entered into with Zoo Biogas Co. The MOU was signed with Zoo Biogas Co. on 2010-12-23, enabling the consortium to proceed with the facility design, formalizing the consortium structure, discussions with the Ontario Power Authority (OPA) and securing grants from funding sources.

ZooShare Biogas Co-operative Inc. (ZooShare), a not-for-profit non-share capital renewable energy co-op, was formally incorporated in Ontario on 2011-04-26. ZooShare is governed by a Board and will ultimately develop and commission the biogas facility and then to operate and maintain the facility. ZooShare will hold all contracts for the project, including the operating agreement with the Zoo.

The arduous process of negotiating and drafting the unique operating and ground agreements involved the coordination of various City legal resources and the TRCA as well. This process was completed in mid-August 2012 with the signing of the finalized agreements by the Chief Executive Officer and Chief Operating Officer of the Toronto Zoo on 2012-08-16, followed by the execution of the documents by the ZooShare signatories at their Board meeting on 2012-09-11.

Comments/Discussion:

The ZooShare concept for the biogas plant includes a primary digester, two storage tanks and a 500kW generator to be connected to the local distribution grid and sold to the OPA (under a 20 year Feed-in-Tariff or “FIT” contract). Manure from the Toronto Zoo and food waste (including fat, oil, and grease) from a major grocery retailer are mixed in a digester. The anaerobic digestion generates methane as well as liquid and solid digestate. The methane is burned in a generator to produce electrical power. What remains after the conclusion of the anaerobic digestion is called digestate. It comes in liquid and solid form (sediment) and is high in nutrients such as nitrates and phosphates. Digestate can be used and marketed as fertilizer. The burning of methane creates heat that drives the generator, but that can also be used for district heating or to produce hot water. The process also generates carbon dioxide (CO₂) that could be used to heat a nearby building, such as a greenhouse operation.

The ZooShare project concept also includes an education display area, which can be used to showcase biogas technology to the public. Education programs can be developed in collaboration with the Zoo, to increase awareness and understanding of this and other renewable energy sources.

The ZooShare Biogas Project proposal is an excellent opportunity for the Toronto Zoo and represents an innovative public-private partnership that also incorporates a unique community funding model. The biogas facility fits with the Zoo’s vision and is consistent with the Toronto Zoo Five-Year Strategic Plan, the Zoo Green Plan (2007) and the recent Zoo Wildlife

Conservation and Sustainable Living Plan (2011). This facility will be the flagship site to showcase biogas and waste management best practices to the public, consistent with the Zoo's education mandate. It allows the Zoo's organic waste to be processed in an anaerobic system, the most environmentally friendly manner possible. Additionally, there is a guaranteed financial return to the Zoo with no investment of operating or capital funds.

The risks to the Zoo are minimal. ZooShare is responsible for raising the required funds and the Biogas Project will only proceed if financing is secured. Another critical factor is the approval of the FIT contract by the Ontario Power Authority, which sets out the rate to be paid to ZooShare for supplying energy to the grid over a 20 year period. There is a window of opportunity for ZooShare to file their FIT application with the OPA in October 2012 and approval is anticipated within the March 2013 timeframe. The application credibility is supported by the signed agreements now in place. Following OPA approval, ZooShare will need to secure Renewable Energy Approval (REA), Connection Impact Assessment (CIA), as well as financing for the project. The co-op has already undertaken public consultation for the project and there is support in the community. Upon approval of the FIT application and securing the REA and CIA, the OPA will issue a Notice-to-Proceed, upon which construction will commence.

The planned facility is modular in design and there are expansion capabilities for the future if demand warrants. This would be negotiated in a separate agreement with the Board and is not part of the current signed agreement. ZooShare has a long term strategy of expanding biogas technology to other sites in Ontario and potentially to other markets across North America. The biogas facility at the Toronto Zoo would be the first of its kind at a zoo in Canada.

For your information, a summary of the key dates in the agreements is outlined in Schedule I.

R. D. Hale
Chief Operating Officer

List of Attachments:

Schedule I – BIOGAS AGREEMENT MILESTONES – KEY DATES

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BIOGAS AGREEMENT MILESTONES – KEY DATES

Ground Lease

Base Rent Commencement Date	December 31, 2013
Design and Development period completed on or before:-	December 31, 2013
Final plans and specifications due from ZooShare by:	January 31, 2014
Construction period completed on or before	July 30, 2014
MOE approval certificates for air and noise on or before:	December 31, 2013
TRCA's Approval and the Ministerial Approval on or before:	December 31, 2013

Operating Agreement

Completion of model and display of Facility	December 31, 2012
Obtain all necessary permits and approvals	July 30, 2013
Completed Design	December 31, 2013
Completion of Comprehensive Transportation Plan	December 31, 2013
Commissioning to begin no later than	September 30, 2014
Completion of Visitor station and interpretive exhibit	December 31, 2014
"Commercial Start Date" commences:	December 31, 2014

Other Key Dates: Conditions precedent in Ground Lease (section 4.3)

The Tenant shall:

- (a) execute the Lease,
- (b) execute the Operating Agreement;
- (c) obtain the relevant site plan and minor variance approval (if required),
- (d) obtain MOE approval certificates for air and noise on or before December 31, 2013,
- (e) obtain TRCA's Approval and the Ministerial Approval on or before December 31, 2013,
- (f) provide evidence satisfactory to the Landlord that it has arranged, at its sole cost and expense, all necessary financing to complete the Biogas Project by the Commencement Date,

Failing which, the Landlord shall be entitled to terminate the Lease, without notice, payment or compensation of any kind to the Tenant, and the Tenant shall pay all Rent to and including the termination date.