



**STAFF REPORT
ACTION REQUIRED**

Authority to Negotiate and Enter into a Sole Source Agreement for Repairs and New Construction at the Dufferin Organics Processing Facility

Date:	July 22, 2010
To:	Budget Committee
From:	General Manager, Solid Waste Management Services Director, Purchasing & Materials Management Division
Wards:	All
Reference Number:	p:/swms/2010/August/017BC

SUMMARY

The purpose of this report is to request authority for the General Manager, Solid Waste Management Services, to finalize negotiations and enter into a sole-source agreement with CCI-TBN Toronto Inc. (CCI-TBN) for repairs to the existing anaerobic digestion vessel and for the construction of new anaerobic digestion and odour treatment systems and for construction of a new secondary containment structure at the City’s Dufferin organic material processing facility (DOPF) at the Dufferin Waste Management Facility.

CCI-TBN currently operates the DOPF on behalf of the City and also constructed the facility on a design-build basis. The DOPF has been processing source separated organic material (SSO) since the commencement of the Green Bin program in 2002, and currently processes approximately one third of the total annual tonnage of SSO originating from City programs. Routine inspection has revealed that a rubber seal between the roof and walls of the anaerobic digestion vessel, referred to as a ‘scrim’, is deteriorating. Monitoring and patching as required will maintain the integrity of the seal however the scrim needs to be replaced to prevent the uncontrolled release of biogas to the atmosphere. Scrim replacement will require that the anaerobic digester be taken out of service and then re-commissioned over a period of 4 to 6 months.

At this time and for the near future the SSO processing capacity provided by the DOPF is irreplaceable as private processing facilities are at capacity and in some cases have voluntarily shut down or are operating under voluntary capacity reductions as an odour abatement measure requested by the Ministry of the Environment.

To complete the scrim replacement while maintaining the DOPF's processing capacity, SWMS is proposing to advance certain aspects of the planned future upgrades of the DOPF including construction of new anaerobic digestion and odour treatment systems and a new secondary containment structure. The new anaerobic digestion system will enable the DOPF to process at full capacity while repair and re-commissioning of the original digester is completed. CCI-TBN as operator of the DOPF and given CCI-TBN's knowledge from the design-build of the DOPF, CCI-TBN is in the best position to do the work.

RECOMMENDATIONS

The General Manager, Solid Waste Management Services, and the Director, Purchasing and Materials Management, recommend that:

1. City Council authorize the reallocation of funds in SWMS's 2010 Approved Capital Budget and 2011-2019 Capital Plan in the amount of \$7.161 million as detailed in Table 1 of the Financial Impact section, with zero gross and net impact;
2. City Council authorize the General Manager, Solid Waste Management Services, to finalize negotiations and execute a sole-source agreement with CCI-TBN Toronto Inc. for the design, construction and commission of a new odour treatment system and a new anaerobic digestion system, for the construction of a new secondary containment structure and to replace the roof scrim and repair other deficiencies of the existing anaerobic digester, substantially on terms and conditions set out in Attachment 1 and such other terms as may be satisfactory to the General Manager Solid Waste Management Services, and in a form satisfactory to the City Solicitor;
3. Subject to the adoption of Recommendation (1), the authority for the General Manager, Solid Waste Management Services, to execute an agreement with CCI-TBN Toronto Inc. be contingent upon the total cost of the new SSO facility not exceeding \$ 10,932,000.00 net of HST recoveries, as follows:
 - a. for the base scope of work including design, construction and commissioning of a new odour treatment system and a new anaerobic digestion system, design and construction of a new secondary containment structure and cleanout, repair and re-commissioning of the existing anaerobic digester, an amount not to exceed \$ 9,197,603.00 net of HST recoveries;
 - b. for provisional items, an amount not to exceed \$ 508,800.00 net of HST recoveries; and,
 - c. for contingencies an amount not to exceed \$ 1,225,597.00 net of HST recoveries.

Financial Impact

The approval of this report will result in the reallocation of \$7.161 million in the approved 2010 Capital Budget and 2011-2019 Capital Plan as illustrated in Table 1. These reallocations will have a zero net impact.

Table 1: 2010 Capital Budget and 2011-2019 Capital Plan Reallocations (\$000's)

Project	Sub-Project Description	Adj. to Project Cost	2010 Gross Expenditures	2011 Gross Expenditures
CSW004-6	Dufferin-Disco SSO Processing Facilities	7,161	2,261	4,900
CSW004-18	Reuse Centres	(1,661)	(1,661)	0
CSW004-27	Diversion Facilities Asset Management	(250)	(100)	(150)
CSW008-01	Dufferin Single Stream Recycling Facility	(1,250)	0	(1,250)
CSW011-01	Reuse Centres – Future Sites	(4,000)	(500)	(3,500)
Subtotal – Budget Adjustments for SWMS		0	0	0
Total – Budget Adjustments		0	0	0

Funds can be reallocated from the following projects:

- CSW004-18-03 Reuse Centres, and CSW011-01-01 Reuse Centres – Future Sites, because key aspects of the scope of Work, including the need for additional sites and the nature of the facilities required at each site, are not yet defined.
- CSW004-27-01 Diversion Facilities Asset Management, because the repairs to the existing digester are within the scope of this project.
- CSW008-01-05 Dufferin Single-Stream Recycling Facility due to delays in the announcement of changes to provincial policies governing single-stream recycling programs which will affect the scope of the work.

The total cost for the repairs and new construction will not exceed \$ 10,932,000.00 including all charges and applicable taxes, net of HST recoveries, to be funded from the Capital Budget of the Solid Waste Management Services as set out in Table 2.

Table 2: Capital Funding for the Dufferin-Disco SSO Processing Facility (CSW004-6) by Year (\$000's)

	2010	2011	Total
Current Plan	3,771	0	3,771
Reallocation For New Construction	2,261	4,900	7,161
Revised Plan	6,032	4,900	10,932

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact statement.

DECISION HISTORY

City Council at its meeting on June 19, 20 and 22, 2007, considered Report PW6.1 “SSO Public Facility Business Plan - Recommendations of the Planning Study for Expanded Public SSO Processing Capacity” of the Public Works Committee and adopted the following motions, among others:

1. A new organics processing facility to process 55,000 tonnes of SSO using wet pre-treatment operations and anaerobic digestion be constructed at the Disco Transfer Station.
2. The Dufferin Organic Processing Facility be reconstructed to increase processing capacity to 55,000 tonnes of SSO using wet pre-treatment operations and anaerobic digestion.

City Council decision document can be viewed at:

<http://www.toronto.ca/legdocs/mmis/2007/cc/decisions/2007-06-19-cc10-dd.pdf>

Report can be viewed at:

<http://www.toronto.ca/legdocs/mmis/2007/pw/bgrd/backgroundfile-3867.pdf>

City Council at its meeting on November 30, December 1, 2, 4 and 7, 2009, considered report PW28.13 “Design, Build and Operate a New Source Separated Organic Material Processing Facility at the Disco Road Transfer Station on a Sole Source Basis” of the Public Works and Infrastructure Committee which directed the General Manager to enter into sole source negotiations with AECOM Canada Inc., for a contract to design, build and operate a new SSO processing facility at the Disco Transfer Station and to report back on the results of the negotiations.

City Council decision document can be viewed at:

<http://www.toronto.ca/legdocs/mmis/2009/cc/decisions/2009-11-30-cc42-dd.htm>

Report can be viewed at:

<http://www.toronto.ca/legdocs/mmis/2009/pw/bgrd/backgroundfile-24368.pdf>

City Council at its meeting on February 22 and 23, 2010, considered report PW30.4 “Authority to Negotiate and Enter into an Agreement with AECOM Canada Inc. to Design, Build, Commission and Operate a New SSO Processing Facility at Disco Transfer Station” which authorized the General Manager to finalize negotiations and enter into an agreement with AECOM Canada Inc. for the design, build and operation of a new SSO Facility at the Disco Transfer Station.

City Council Decision document can be viewed at:

<http://www.toronto.ca/legdocs/mmis/2010/cc/decisions/2010-02-22-cc46-dd.htm>

Report and attachments can be viewed at:

<http://www.toronto.ca/legdocs/mmis/2010/pw/bgrd/backgroundfile-26686.pdf>

<http://www.toronto.ca/legdocs/mmis/2010/pw/bgrd/backgroundfile-26687.pdf>

<http://www.toronto.ca/legdocs/mmis/2010/pw/bgrd/backgroundfile-26688.pdf>

City Council at its meeting on June 8 and 9, 2010, considered report PW33.13, “Authority to Enter into a Biogas Pilot Project Agreement with Enbridge Gas Distribution Inc. to Supply, Install, Own and Operate a Biomethane System at the Dufferin Waste Management Facility” directing the General Manager to enter into a Biogas Pilot Project Agreement with Enbridge Gas Distribution Inc. to supply, install, own and operate a biomethane system at the Dufferin Waste Management Facility to receive and refine biogas produced by the DOPF.

City Council Decision document can be viewed at:

<http://www.toronto.ca/legdocs/mmis/2010/cc/decisions/2010-06-08-cc50-dd.htm>

Report and attachments can be viewed at:

<http://www.toronto.ca/legdocs/mmis/2010/pw/bgrd/backgroundfile-29805.pdf>

<http://www.toronto.ca/legdocs/mmis/2010/pw/bgrd/backgroundfile-29806.pdf>

<http://www.toronto.ca/legdocs/mmis/2010/pw/bgrd/backgroundfile-29807.pdf>

<http://www.toronto.ca/legdocs/mmis/2010/pw/bgrd/backgroundfile-29808.pdf>

<http://www.toronto.ca/legdocs/mmis/2010/pw/bgrd/backgroundfile-29809.pdf>

COMMENTS

SWMS is implementing City Council’s direction to increase the City-owned capacity to process SSO by constructing a new facility to process up to 90,000 tonnes per year of SSO at the Disco transfer station site above and by upgrading the existing DOPF.

City Council awarded a contract to AECOM Canada Ltd. to design, build and operate the new Disco SSO processing facility (see Decision History above). Construction on this facility is expected to begin in 2010 with full operations commencing in 2013.

It was planned that the DOPF would continue operating in its current configuration until its processing capacity could be temporarily replaced by the new Disco SSO facility at which time it would be shut-down for the time required to complete the upgrades. The planned upgrades to the DOPF include adding a second anaerobic digestion vessel, expanding the pre-processing capacity, expanding the tipping floor and installing a new odour and wastewater treatment systems.

Routine inspection of the anaerobic digestion vessel revealed that the flexible seal between the walls and roof, referred to as the 'scrim', is deteriorated. The purpose of the scrim is to provide an air-tight seal while allowing the digester roof to raise and lower in response to changes in the pressure of biogas within the anaerobic digester; the biogas pressure increases and decreases when the digester is being filled and emptied respectively. Failure of the scrim would allow the uncontrolled release of biogas to the atmosphere.

The scrim is now being closely monitored and small holes are being patched to maintain the integrity of the seal by CCI-TBN. Although the remaining life of the scrim cannot be known precisely, the consensus opinion of SWMS, CCI-TBN and the original supplier of the scrim is that replacement is required in the in the very near term, i.e. within 6 to 9 months.

Replacement of the scrim requires shutting down and emptying the anaerobic digester.

Without additional measures to compensate for the loss of the anaerobic digester, the SSO processing capacity of the DOPF would be lost for the 2 – 3 month duration of the repair work. A 2 to 3 month re-commissioning period would follow completion of the repairs during which the DOPF's processing capacity would only be partially available.

The DOPF's SSO processing capacity cannot be replaced in the near term. SWMS has determined that local facilities capable of processing the City's SSO are operating at near full capacity, and in some cases have voluntarily shut-down or are operating under a voluntary capacity reduction as an odour abatement measure as requested by the Ministry of the Environment.

SWMS is proposing to compensate for the loss of the anaerobic digester by undertaking certain of the planned future upgrades to the DOPF now rather than after the commissioning of the new Disco SSO facility as originally planned. The upgrades proposed to be undertaken now (the 'Phase 1 Work') will not disrupt the operations of the DOPF, can be completed within 6 - 9 months and, when complete, will enable the deteriorated scrim to be replaced without requiring an extended shut-down of the DOPF.

The proposed Phase 1 Work includes construction of a new anaerobic digestion system. Once commissioned, the biological operations which generate biogas occurring in the existing anaerobic digester can be transferred to the new anaerobic digestion system without interrupting the operation of the DOPF. Once the new anaerobic digestion system

is operating, the existing anaerobic digester can be emptied, the scrim replaced, and re-commissioned, also without interrupting the operation of the DOPF.

The proposed Phase 1 Work also includes the construction of a new odour treatment system, relocation of the existing biogas flare, and construction of a new containment structure, all required to accommodate the construction of the new anaerobic digestion system.

Space at the DOPF is limited and the only suitable location for the new anaerobic digestion system is the space currently occupied by the existing biofilter for odour treatment. A new odour treatment system including a new enclosed inorganic medium biofilter, with a 40 metre stack to aid dispersion, will need to be constructed and commissioned before the existing biofilter is removed to make space for the new anaerobic digestion system.

It will be necessary to relocate the existing biogas flare in order to provide the separation distance between the flare and the new and existing anaerobic digesters required by regulation.

Finally, the Ministry of the Environment will require that the Phase 1 Work include a new secondary containment structure designed for the existing and new anaerobic digesters. The secondary containment structure would retain the liquid contents of the anaerobic digesters on-site in the event of a major spill or leak.

The proposed Phase 1 Work is complementary to the biogas pilot project to be undertaken with Enbridge Gas Distribution Inc. (see Decision History above). The Phase 1 Work will allow for the future installation of the on-site components of the biogas pilot project equipment.

SWMS plans to complete the remaining upgrades to the DOPF (the 'Phase 2 Work'), which includes expanding the pre-processing capacity, expanding the tipping floor and the install of a new wastewater treatment system after the new Disco SSO facility is commissioned.

Attachment 2 provides a site plan of the DOPF showing the proposed Phase 1 Work and Phase 2 Work.

SWMS is recommending that the Phase 1 Work be performed by CCI-TBN on a sole-source basis. CCI-TBN completed the design-build contract that created the DOPF and has been operating the Facility since 2002. Continual operation of the DOPF throughout the Phase 1 Work will require CCI-TBN's direct involvement in all aspects of the Phase 1 Work, most importantly in the integration of the new construction with existing facilities and process control systems, and in coordinating the changeover between existing and new systems. As well, the area in which the Phase 1 Work will be undertaken will encompass much of the DOPF making physical separation of Phase 1 Work from ongoing Facility operations impossible.

The Contractor has stated that that the price being charged to the City of Toronto for the Phase 1 Work is fair and reasonable when compared to similar work being provided to other organizations or municipalities.

The Fair Wage Office has reported that the recommended firm has indicated that it has reviewed and understands the Fair Wage Policy and Labour Trades requirements and has agreed to comply fully.

Staff are requesting that the existing 10-Year Capital Plan & Forecast for CSW004 - Diversion Systems be adjusted to accommodate the work required in 2010 and 2011 by realigning approved funding from CSW-004-18 - Reuse Centres, CSW004-27 - Diversion Facilities Asset Management, CSW008-01 - Dufferin Single Stream Recycling Facility and CSW011-01 - Reuse Centres - Future Sites. There will be no net impact on the approved 10 Year Plan as a result of the realignment and scheduling of work.

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ATTACHMENTS

Attachment 1 –Terms and Conditions

Attachment 2 – Dufferin Organics Processing Facility Site Plan