

TORONTO STAFF REPORT

October 26, 2005

To: Administration Committee

From: Deputy City Manager and Chief Financial Officer

Subject: Energy Retrofit Program Status and Request for Additional Funding

Purpose:

To report back as requested by the Administration Committee on the status of the \$20 million Energy Retrofit Program (ERP) and to earmark \$15 million for phase two of the Program as part of the 2006 capital budget process in order to continue and expand energy retrofit work in City facilities.

Financial Implications and Impact Statement:

As directed by Council, the Energy Retrofit Program has fully allocated the initial \$20 million in the fund to improve the energy efficiency of City facilities.

In order to continue with the plan to improve energy efficiency in City buildings an additional \$15.0 million is required, including \$6.0 million in total project costs for 2006 for retrofitting the City's pools and community centres, and \$9.0 million in project costs for 2007 for a list of energy efficiency projects to be considered as part of the 2007 capital budget process.

The proposed 2006 project cost of \$6.0 million for energy retrofits of the pools and community centres will be funded by City debt of \$4.5 million and \$1.5 million from a previously approved low interest loan from the Federation of Canadian Municipalities and will require a cash flow of \$1.5 million in 2006 and \$4.5 million in 2007. The remaining \$9.0 million is to be earmarked for phase two of this Program in the 2007 capital budget of which \$6.750 million will be sourced through City debt and \$2.250 million will be sourced from a previously approved low interest loan from the Federation of Canadian Municipalities' Green Municipal Investment Fund. Cash flow requests for the \$9.0 million are as follows: \$2.0 million in 2007, \$5.0 million in 2008 and \$2.0 million in 2009.

Energy savings realized from the energy retrofits are used to repay debt financing over a maximum ten-year period.

Recommendations:

It is recommended that:

- (1) \$15 million be earmarked for the second phase of the Energy Retrofit Program to be allocated to further retrofit projects in the period 2006 to 2009, as follows:

- (a) a total project cost of \$6.0 million for the Energy Retrofit Project of pools and community centres, financed by a low interest loan of \$1.5 million from the Federation of Canadian Municipalities and \$4.5 million City debt, including cash flow of \$1.5 million in 2006 and \$4.5 million in 2007, be authorized; and
- (b) \$9.0 million in total project costs be earmarked for other projects in phase two of the Energy Retrofit Program with \$6.750 million to be funded from City debt and \$2.250 million from a previously approved low interest loan from the Federation of Canadian Municipalities' Green Municipal Investment Fund to be cash flowed as follows: \$2.0 million in 2007, \$5.0 million in 2008 and \$2.0 million in 2009, with detailed allocations to be reported in the 2007 Capital Budget process;
- (2) a detailed status report on the five previously approved projects funded under phase one of the Energy Retrofit Program be provided to the Budget Advisory Committee in November 2005 showing the annual cash flow, energy savings, energy cost savings and debt servicing for each project;
- (3) a list of additional energy retrofit projects for City Divisions and ABCs be prepared before the end of 2006 and submitted for consideration, along with applicable business cases for each project, as part of the 2007 capital budget process;
- (4) this report be forwarded to the Budget Advisory Committee for consideration with the 2006 capital budget; and
- (5) the appropriate City officials be authorized and directed to take any necessary action to give effect thereto.

Background:

The Energy Retrofit Program was established as a 2004 debt financed capital project by Council at its meeting of April 19 - 27, 2004, through the Policy and Finance Committee Report No. 3 Clause 1, entitled "A Framework for Establishing an Energy Retrofit Program and Financing Strategy". The clause set the procedures for approving financing and recovering debt service charges from eligible projects. The ERP was approved with an initial start-up amount of \$20.0 million, which has now been fully allocated. Energy savings realized from the energy retrofits are used to repay debt financing over a maximum ten-year period.

On May 18, 2004, Council approved Report 4, Clause 11 of the Policy and Finance Committee which allocated Energy Retrofit Program funding of \$10.213 million for energy retrofits in the City Arenas.

On July 20, 21 and 22, 2004, Council approved Report 6, Clause 28 of the Policy and Finance Committee which allocated Energy Retrofit Program funding of \$3.624 million for energy retrofits in the City Firehalls.

On November 30, and December 1, 2, 2004, Council approved Report 9, Clause 10(a) of the Policy and Finance Committee which allocated Energy Retrofit Program funding of \$4.4 million for the Exhibition Place Tri-generation Project.

On November 30, and December 1, 2, 2004, Council approved Report 9, Clause 36 of the Policy and Finance Committee which allocated Energy Retrofit Program funding of \$1.4 million for the Energy Efficiency Improvements Project in 5 buildings at Exhibition Place.

On September 28, 29 and 30, 2005 Council approved Report 8, Clause 50 of the Policy and Finance Committee which allocated Energy Retrofit Program funding of \$800,000 to the lighting retrofit work at the National Trade Centre and a reallocation of \$210,000 from the Firehall project to the Exhibition Place 5 building project.

City Council on May 17, 18 and 19, 2005 approved Report 4, Clause of the Administration Committee which requested the Deputy City Manager and Chief Financial Officer to report to the Administration Committee for consideration during the 2006 capital budget process on possible energy efficiency projects; and the amount (\$10 to \$20 million) and a list of specific projects for implementation in 2006 be included in the report. The Administration Committee recommends that Council express its support, in principle, for the financing of the Energy Retrofit Program in the 2006 capital budget process, subject to regular budget approval.

City of Toronto has been approved to receive a low interest loan from the Federation of Canadian Municipalities (FCM) in the amount of \$8.75 million to undertake energy efficiency retrofits in City buildings. Up to 25% of project costs can be funded through this low interest loan of which \$4,805,259 has been allocated. The \$8.75 million loan is based on a planned \$35 million energy retrofit program.

No additional funds were set aside in the City's 2005 capital program.

Comments:

Prior to the announcement of the Energy Retrofit Program, energy efficiency projects had difficulty in competing for the City's limited capital funding. The Energy Retrofit Program has allowed planned energy retrofits to move forward.

The \$20 million ERP has now been fully allocated to undertake energy efficiency improvements in City facilities and the following is a summary of the approved projects and their respective funding:

Project	Total Project Cost	City Capital	FCM Funds \$8.75M	Other Funds (TAF)	Grants & Incentives
City Arenas	\$10,212,964	\$7,564,000	\$2,521,000		\$127,317*
Firehalls	\$2,977,036	\$2,007,777	\$669,259		\$300,000*
Exhibition Place. Retrofit	\$1,610,000	\$1,020,000	\$340,000		\$250,000*
Exhibition Place. Trigen	\$4,400,000	\$2,325,000	\$1,075,000	\$1,000,000	
Exhibition Place. NTC Lighting	\$800,000	\$600,000	\$200,000		
Total	\$20,000,000	\$13,516,777	\$4,805,259	\$1,000,000	\$677,317*

* preliminary estimate and subject to change

City Arenas

Retrofitting of the City's Arenas was the first project to be approved from the Council approved \$20.0 million Energy Retrofit Program. The project was awarded to Cinergy Solutions in May 2004 at a cost of \$10.213 million and will focus on efficiency improvements such as heating and ventilation, lighting retrofits and temperature control. A number of steps are involved in getting this work implemented, including:

- contract negotiation
- completion of detailed energy audit/feasibility study at each facility
- review of audits and recommendations
- completion of grant applications
- engineering, construction scheduling
- implementation

Projects of this type take longer than a general construction project due to the time required in completing all the steps listed above and the need to obtain grant approvals prior to construction.

Construction of the arena project is now underway and the majority of the work is to be completed in 2006. On full implementation of this project in 2007, annual cost savings of \$1.346 million will be generated. Projected capital expenditures to year-end 2005 will be \$2.5 million.

Firehalls

This project for energy and water efficiency improvements was awarded to MCW Energy Reduction Services Inc. in July 2004. The energy audit has been completed and project construction will start in the fall of 2005 and will be completed in 2006. Delay in this project was due to the process involved in receiving grant approval from the Federal government. The project was originally approved at a cost of \$3.624 million, but on completion of the energy audit the cost was reduced to \$2.977 million to reflect the scope of the work required. Annual cost savings of \$0.290 million will be generated by this project starting in 2007. Projected capital expenditures to year-end 2005 will be \$0.9 million.

Exhibition Place Energy Retrofits

Exhibition Place submitted an application to the ERP for financing to retrofit five buildings, at an initial cost of \$1.400 million. This project was awarded to Toronto Hydro Energy Services Inc. in December 2004 and focuses on efficiency improvements in heating and ventilation, lighting retrofit, building envelope upgrade and water conservation measures. The feasibility studies have been completed and additional energy retrofit work was identified in the amount of \$0.210 million, and allocated from funding arising from reduction in the project costs of the Firehalls, bringing the total project cost to \$1.610 million.

Construction is expected to begin in the fall of 2005 and will be completed in 2006. Annual cost savings of \$0.133 million will begin in 2007. Projected capital expenditures to year-end 2005 will be \$0.780 million.

Exhibition Place – Tri-generation

The Tri-generation project addresses the heating, cooling and electrical loads of several large buildings at the Exhibition Place site by substituting natural gas as the energy source. Gas turbine technology will be used to generate electricity and steam for heating and cooling and will operate with existing cooling equipment to improve energy efficiency and reduce costs. The estimated budget for this project is \$4.4 million and Toronto Hydro Energy Services Inc is the consulting firm on this project. There are two main components to this project: the equipment purchase for which a tender has been awarded under a separate contract, and the installation of the equipment to be done by a general contractor who will be hired soon.

This project has estimated cost savings of \$0.520 million in 2007, the first full year of implementation. Construction will be completed in 2006 and projected capital expenditures to year-end 2005 will be \$2.2 million.

Exhibition Place – National Trade Centre Lighting

The lighting systems in the National Trade Centre have been of concern to the staff at Exhibition Place. The lamp ballasts are no longer being manufactured and have resulted in maintenance problems and have affected performance efficiency. Improved energy efficiency can be obtained through the installation of new fixtures and/or new lamp ballasts. A staff report recommending financing of this project from the Council approved \$20.0 million Energy Retrofit Program was approved at Council's meeting of September 28, 2005. This report recommended funding in the amount of \$0.800 million, with a payback period of 5.4 years and estimated annual cost savings of \$0.150 million.

The following is a summary of the \$20 million ERP approved cash flows:

	2005	2006	2007	Total
Cash Flow	11,515,000	7,682,000	803,000	20,000,000

Actual expenditures to year-end 2005 are projected to be \$6.430 million (net of gst) or 57% of the 2005 Approved budget. This will result in a 2005 cash flow funding of \$4.821 million being carried forward to 2006.

ERP Funding Required for Additional Projects

In order to continue with the plan to improve energy efficiency in City buildings and to reduce energy use by a target amount of 15 percent, additional ERP funding will be required. Energy retrofit projects are still to be developed by the end of 2006 in most of the City's energy consuming Divisions and ABCs. The following is a very preliminary list and estimate of the potential energy retrofit opportunities in a number of City Divisions and ABCs. It should be noted that this is not an inclusive list and that there will be changes and additions to this list as the program is developed and the respective business cases are assessed.

Facilities	Project Costs	Annual Savings	Payback
Transfer Stations	\$750,000	\$93,750	8 Years
Homes for the Aged	\$2,500,000	\$312,500	8 Years
Police Facilities	\$2,750,000	\$343,750	8 Years
Child Care Centres	\$500,000	\$62,500	8 Years
Parks, Yards and Sport Fields	\$2,000,000	\$250,000	8 Years
Ambulance Stations	<u>\$500,000</u>	<u>\$62,500</u>	<u>8 Years</u>
	\$9,000,000	\$1,125,000	8 Years
Parks Pools and Comm Ctrs	<u>\$6,000,000</u>	<u>\$750,000</u>	<u>8 Years</u>
Total ERP Funding Request	\$15,000,000	\$1,875,000	8 Years

The 2006 preliminary list of projects for additional ERP funding has a project cost of \$15 million. All the projects would be subject to the existing ERP approval process with one of the main criteria being that the simple payback period be no more than 8 years.

The project that is ready to moving forward is the energy retrofit of the City's pools and community centres in the Parks, Forestry and Recreation Division and a request for proposal is ready to be issued. It is expected that the cost of this work will amount to approximately \$6 million with annual energy savings of \$750,000 providing for an 8 year payback. The 2006 cash flow of \$1.5 million is for the feasibility study on the City's pools and arenas at a cost of \$0.250 million and \$1.250 million for construction. Cash flow of \$4.5 million will be required in 2007 to complete the project.

Given that a comprehensive list of energy efficiency projects in City Divisions and ABCs will not be available before the end of 2006, and since the other six sub-projects submitted in this preliminary list are not yet ready to move forward, it is being recommended that these six sub-projects be included in the list to be completed by the end of 2006 and be submitted, along with the necessary business cases, for consideration as part of the 2007 capital budget process.

The proposed cash flow for the \$15.0 million of energy efficiency projects is as follows:

ERP Phase 2	2006	2007	2008	2009	Totals
Pools & C Cs	\$1,500,000	\$4,500,000			\$6,000,000
Projects TBD		\$2,000,000	\$5,000,000	\$2,000,000	\$9,000,000
Totals	\$1,500,000	\$6,500,000	\$5,000,000	\$2,000,000	\$15,000,000

It should be noted that Council previously approved a loan of \$8.75 million from FCM based on a funding ratio of 75% City financing and 25% FCM loan. This funding formula will support energy efficiency projects totalling \$35.0 million in City Divisions/ABCs. Energy efficiency projects in the amount of \$20.0 million were approved for budget years 2004 and 2005 and were funded by the FCM loan of \$5.0 million and City debt of \$15.0 million. Of the \$6.0 million now being requested for retrofitting the City's pools and arenas, 25% or \$1.5 million would be sourced from this previously approved low interest FCM loan and the remaining \$4.5 million would be funded from City debt. This would bring the total FCM loan applied to energy efficiency projects to \$6.5 million, with a balance of \$2.250 million of the FCM loan to be utilized in 2007.

Administration and Accountability of the Energy Retrofit Program

An Interdivisional Team has been established with representation from the following: Financial Planning, Facilities & Real Estate, Toronto Atmospheric Fund and the City Manager's Office. The Interdivisional Team reviews Energy Retrofit Program funding applications and assists Facilities & Real Estate (chair of Interdepartmental Team) in making recommendations to the Deputy City Manager and Chief Financial Officer. The Interdivisional Team has responsibility to assess the business cases, cost/volume-savings to determine if these are sufficient to repay the cost of financing within the maximum ten-year period. Specific Council approval will be required to allocate funds for the implementation of each project.

Conclusions:

The Energy Retrofit Program has been very successful and has allowed \$20 million of energy retrofit projects to proceed. In order to undertake additional energy retrofits and to continue and support the City's energy management plan, additional funds in the amount of \$15 million should be earmarked for the Energy Retrofit Program in 2006.

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