

Date: February 8, 2007



**TO: Board Members – Vancouver Park Board**  
**FROM: General Manager – Parks and Recreation**  
**SUBJECT: GHG Reduction (Climate Action Plan) Phase 2 Approval**

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## RECOMMENDATION

- A. *THAT the Board endorse recommendations A, B, C & D in the attached Council report entitled Corporate Climate Change Action Plan Phase 2 (Park Board Energy Performance Contract) dated February 1, 2007 (Appendix 1).***
- B. *THAT the Board reserve \$310,000 from the 2007 Major Maintenance account – Community Centres \$130,000, Rinks \$60,000 and Pools \$120,000 – to contribute to the Greenhouse Gas Reduction program.***

## POLICY

The Board endorses major plans for capital work that are related to Park Board facilities. The Board's strategic plan calls for the implementation of best facility management practices such as ongoing evaluation of energy use.

## BACKGROUND

On December 3, 2003 the Board endorsed Council's Corporate Climate Change Action Plan. This plan aims to reduce Green House Gas (GHG) emissions by 20% from 1990 levels by 2010.

GHG emissions from buildings are significant and the selected delivery method uses an Energy Service Company ('ESCO') to investigate buildings' energy use and determine what improvements should be made. The process of carrying out this work is termed an Energy Performance Contract (EPC); it is managed by the ESCO.

Phase 1 of the City plan to reduce GHG emissions was a scheme (\$1.8 million) implemented at City Hall campus; this is now complete and is exceeding the predicted GHG reduction targets (320 tonnes GHG/year). The funding for this project was internal, with a pay back model based on savings in utilities.

In 2005 the Park Board authorized the installation of a new condensing boiler at Kitsilano Outdoor Pool. This project saved 140 tonnes per year of GHG and had a payback of

seven years. Additionally all new building projects such as the Killarney Pool, Mount Pleasant Community Centre, Sunset Community Centre, Hillcrest/Percy Norman, and the Trout Lake and Killarney Rinks are all designed to achieve the lowest possible level of GHG emissions while maintaining customer comfort levels.

## DISCUSSION

The Corporate Climate Change Action Plan Phase 2 project is directed at the Park Board as it is a large energy consumer with discrete and large loads, for example pools, rinks and community centres. The analysis of Park Board facilities was extensive and a list of projects at 30 different sites has been developed. The capital cost is \$8.6 million and the target for Phase 2 is a GHG reduction of 2,240 tonnes GHG/year.

A list of facilities and description of work is contained in Appendix A in the attached Council report. The breakdown of the different types of measures are described in Table 1.

Table 1

Measure	Measure cost	Other funding	Net cost	Saving	Simple Payback	GHG reduction
Lighting	\$991,215	\$175,347	\$815,869	\$82,350	9.9 years	75 tonnes
DDC	\$1,054,745		\$1,054,745	\$83,874	12.6 years	353 tonnes
Boilers	\$3,881,929	\$250,000	\$3,631,929	\$193,975	18.7 years	996 tonnes
HVAC & Mech	\$2,099,674	\$60,000	\$2,039,674	\$143,268	14.2 years	738 tonnes
Water	\$218,540		\$218,540	\$27,167	8.0 years	63 tonnes
Other	\$140,644		\$140,644	\$12,531	11.2 years	16 tonnes
Fees	\$248,400					
<b>Total</b>	<b>\$8,635,148</b>	<b>\$485,347</b>	<b>\$8,149,801</b>	<b>\$543,166</b>	<b>15.0 years</b>	<b>2,240 tonnes</b>

The Lighting and Direct Digital Control budgets are intended to build on the existing systems and bring all of these up to a common standard. The Boiler and HVAC budgets are mainly focussed on the renewal of existing equipment that has become inefficient or reached the end of service life. The Other category includes vending machine controls to reduce energy consumption (sleep mode) and measures to reduce water consumption with associated reduction in energy to heat water.

Some noteworthy projects include the introduction of solar heat at Templeton Pool and the transfer of heat from the refrigeration plant at Sunset Arena to the Nursery. Other substantive projects with budgets over \$500,000 include Kensington Community Centre/Pool, Renfrew Community Centre/Pool, Kerrisdale Arena, and the Vancouver Aquatic Centre.

While most projects are solely funded by the EPC, BC Hydro is contributing \$175,000 to lighting projects and the Board is contributing to three projects. The reason for cost sharing is that, although the equipment at West End arena, the Aquatic Centre and Kensington Community Centre are reaching the end of their life cycles, the energy savings alone do not meet the criteria for inclusion in the EPC. The Park Board has \$310,000 in the appropriate capital accounts (major maintenance: community centre, pools and rinks) that ensures these projects can be added into the EPC. This further enhances the GHG reduction whilst replacing aging equipment.

The lighting, heating and ventilation improvements will result in improved occupant comfort as the systems will be better controlled and operate more efficiently.

The energy savings secured through these projects will be used to pay back the capital investments, since the utility budget is controlled by City. The Park Board does not take on the responsibility for repayment.

## **SUMMARY**

The GHG Reduction Plan Phase 2 will inject approximately \$8.3 million into the Park Board's infrastructure and will reduce GHG emissions by 2,130 tonnes per year. The project is largely funded by the reduction in utility costs within the City's budget, not a Park Board serviced loan from City.

The Park Board contribution of \$310,000 will reduce emissions by a further 110 tonnes to make a grand total of 2,240 tonnes, equivalent to the emissions from 430 cars. It also reduces maintenance costs associated with older equipment.

A significant amount of the work will involve replacing infrastructure that is nearing the end of its service life.

The attached report to Council is submitted for endorsement by the Board.

Prepared by:

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