
TO: CITY MANAGER **DATE:** 2010 December 03

FROM: DIRECTOR ENGINEERING **FILE:** 35000 20
Reference: Burnaby Lake

SUBJECT: BURNABY LAKE REJUVENATION PROJECT

PURPOSE: To provide a project update to Council and to seek Council approval of the revised project budget.

RECOMMENDATION:

1. **THAT** Council approve the revised project cost of \$20.567M plus HST and the expenditure increase for contract 2009-15 with Hazco as outlined in this report.
2. **THAT** A copy of this report be forwarded to the Finance and Civic Development Committee for information.

REPORT**1.0 INTRODUCTION**

In early 2010 March, Hazco, the contractor retained by the City for the Burnaby Lake rejuvenation project, commenced dredging in the lake after all the additional environmental conditions related to turtle management as stipulated in the Ministry of Environment's Water Act approval had been met.

The contractor is making good progress on the dredging and dredgeate treatment work and is able to maintain an average dredging production rate of approximately 900m³/day based on a 16-hour day and 6 days a week operation. A comprehensive environmental monitoring plan required under the regulatory permits is ongoing in concert with the dredging work. Results of the monitoring program indicate that the dredging work has no negative impact on the lake water quality and the environment. A significant volume of contaminated sediment and invasive vegetation has been removed and the once heavily sediment laden part of the lake is beginning to be transformed back to open water. Based on the current progress, it is estimated that the dredging operations will be complete by the end of 2011 March. A review of the project finances and projected expenditure was conducted recently and the results are summarized in this report.

The purpose of this report is to provide a project update to Council and to seek Council approval of the revised project cost and additional budget allocation required for the completion of the project.

2.0 PROJECT STATUS

2.1 Dredging

The current scope of contract with Hazco includes the area that covers the rowing basin and the outlet of Still Creek, Deer Lake Brook, Ramsey Creek and Eagle Creek. Dredging of these areas was identified in the original project plan approved by the Province in 2002 and it is for the purpose of providing environmental benefits with respect to improved fish passage, enhanced fish and wildlife habitat complexing and removal of contaminated sediments. Presently, final approval of dredging in the Still Creek, Deer Lake Brook and Ramsey Creek outlets has not been granted by the Ministry, and it is unlikely that these zones will be dredged due to the closing of the available environmental windows and work sequence limitations. It is projected that the final dredging volume excluding these three creek outlets will be in the order of 185,000 m³. In the last few months the dredging operations have removed many tonnes of debris and waste including car/truck tires, pop cans, plastic bags/sheets and other metal objects from the lake. Significant milfoil masses were encountered in the course of dredging and were removed from the lake.

2.2 Environmental Monitoring

In the months of 2010 March and April, Ground Penetrating Radar (GPR) equipment was used to detect turtles in the lake bottom prior to commencing dredging, but no over-wintering turtles were found in the lake sediment. Meanwhile, the City's turtle telemetry programs of 2009 and 2010 concluded that the Western Painted Turtle (WPT) neither over-winters in the lake, nor hibernates in the lake sediments. The data collected show the WPT moves to the tributaries in the winter months and basks in the shallow water areas even on cold winter days.

Sediments removed from the lake are tested daily in accordance with the contaminated soil regulations. Results of the testing program confirm data obtained in earlier studies that the lake sediments contain elevated levels of zinc, copper and cadmium that are harmful to aquatic and animal life. Other pollutants found in the sediment include lead, polycyclic aromatic hydrocarbons (PAHs) and petroleum products. The removal of contaminated materials from the lake greatly enhances the environment of the lake and improves the long term animal and plant health in the lake. Sediments removed from the lake are deposited on a City site west of Kensington Ave designated for future sports use. Test results of the dredged sediments confirm that these materials are suitable fill material for the site which will be capped prior to the construction of the future sport field surface.

3.0 PROJECT FINANCE

The estimated cost for the original project was in the order of \$30M. Due to the lack of funding support from the federal government and the regional district, the project scope was reduced to meet the budgetary constraint of \$20M. The Province contributed \$10M toward the project in 2008 while the City funded the remaining \$10M share of the cost from its Gaming Fund.

Taking into account the extra work performed as required under the Wildlife Permit, and the contract delay costs incurred by the City, a revised project cost has been developed and is summarized as follows:

a)	Hazco contract (with final payment based on actual quantities and extras)	\$17.8M
b)	Engineering and contract inspection	\$550,000
c)	Environmental management, monitoring and inspection	\$1,235,000
d)	Soils and water sampling and testing	\$370,000
e)	GPR equipment and detection services	\$462,000
f)	Fill site grading	<u>\$150,000</u>
	Revised Project Budget	\$20,567,000
		Plus HST

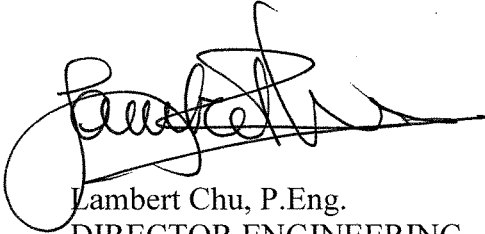
Since the start of the dredging program, the City, the consultant team and Hazco have been working together to identify cost saving measures and operational changes that may be employed to reduce project costs. Changes implemented include extending the daily operating hours, modifying landfilling practice and testing protocol to gain operational efficiencies, and implementing adaptive technical and environmental controls have helped to reduce the overall project costs. The estimated project cost of \$20.567M is based on current work projection and anticipated conditions for the remaining work. It is recommended that Council approve the revised budget and authorize the allocation of Gaming Funds to cover the budget shortfall. It is further recommended that the upset limit for the Hazco contract No. 2009-15 be capped at \$17.8M plus tax with final payment based on actual quantity and cost settlement.

4.0 CONCLUSION

The City has made significant investment over a period of 12 years to protect and preserve Burnaby Lake and its diverse ecosystem. The rejuvenation project, when completed in 2011, will have removed 185,000 m³ of contaminated sediments towards

To: City Manager
From: Director Engineering
Re: BURNABY LAKE REJUVENATION PROJECT
2010 December 03..... Page 4

creating better fish passage and enhancing the aquatic and animal life in the lake. The lake will also be restored to its former glory of a world class rowing, canoeing and kayaking facility. A healthier lake environment will sustain Burnaby Lake for future generations to enjoy the natural habitat, diverse ecosystem and the best freshwater lake recreation facility in the region. With the advancement of the dredging program, this report seeks Council approval of the additional budget allocation and the associated expenditures.



Lambert Chu, P.Eng.
DIRECTOR ENGINEERING

LSC:br

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