

Date: June 29, 2006



**TO: Board Members – Vancouver Park Board**  
**FROM: General Manager – Parks and Recreation**  
**SUBJECT: Vivian Creek Reinstatement**

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## **RECOMMENDATION**

*THAT the Board approve the allocation of \$150,000 from the Water Conservation Capital account as partial funding for the reinstatement of Vivian Creek on the Fraserview Golf Course.*

## **POLICY**

The reallocation of capital funds in excess of \$50,000 requires Board approval.

## **BACKGROUND**

Vivian Creek flows through Fraserview Golf Course in a series of creeks and culverts. In November 2005 the creek overflowed #1 fairway following the failure of a wood stave culvert. The washed out areas were stabilized with a temporary infill of crushed rock and the cart path was reinstated. The storm water was diverted through the use of a large rented water pump.

On January 16, 2006 the Board approved a report for a consultant, Kerr Wood Leidal Associates Ltd., to review options for reinstating that portion of the creek, including a detailed design and cost estimate.

## **DISCUSSION**

Immediately after the culvert failure a range of solutions was reviewed including culverts and daylighting. A budget assessment of costs was made with the assistance of the City of Vancouver Engineering Department and their consultant. The concept of daylighting the creek was considered and the overall costs appeared to be manageable within the 2006 operating budget, with appropriate support from City Engineering. Following detailed design, however, the final costs estimate demonstrated that the daylighting option was significantly more expensive than installing a culvert, and therefore staff are recommending the culvert option.

### Water Conservation

Fraserview Golf Course has a system to store and use storm water for irrigation, but in summer additional potable water is required. The creek arm at #1 fairway can easily be converted into a holding pond, and the additional available storm water would reduce potable water consumption for irrigation, providing an environmental benefit. The pond would also act as a separator for solids carried in with storm water, providing a benefit for the City sewer system.

### Culvert Survey

There is one other wood stave located upstream on Vivian Creek whose remaining life is three to five years. The judgement of both Park Board staff and City Engineering is that this culvert should be replaced as part of this project, as the consequence of failure is considerable and there are construction efficiencies that can be realised.

The storm water passage through #1 fairway must be reinstated before the fall, when rental pump charges start to increase. The Department of Fisheries and Oceans (DFO) has issued a letter of approval for the project, subject to twice daily environmental inspections and a completion date of mid September.

### Costs

The costs for pump rental, excavation and stabilization incurred to date in 2006 are approximately \$185,000, and with the addition of ongoing pump rental will total \$200,000 by the end of summer 2006.

The consultancy fees of \$57,300 were funded from the Golf Course capital reserve. An application has been made to a Provincial grant program that can provide up to \$10,000 for design work related to environmental enhancement.

The estimated cost to reinstate the culvert, provide a holding pond and replace the upstream wood stave culvert is \$162,000. By comparison, the estimated cost to daylight the creek and replace the upstream wood stave culvert would be \$355,000.

### Construction Logistics and Schedule

The construction of the project will be in four phases: culvert installation, spill pools construction, cart path repaving and retention pond development.

City of Vancouver Sewers Department will install the culvert, and they anticipate that the installation will take one week. The culvert installation will prevent access to the men's tee box on the #1 fairway. Using the ladies tee box will reduce the hole from a par four to a par three and require an adjustment in green fees.

The balance of the construction work can be accomplished safely while the long tee box is being used, through work timing and the use of netting to protect the work areas.

To minimise the risk of rain affecting the work it must be completed in the first half of August, and the entire route for water flow (retention pond, culvert, spill pools, discharge) should be completed by the end of August at the latest. DFO has issued a letter of approval for the project, subject to twice daily environmental inspections and a completion date of mid September.

## **BUDGET**

The 2006 forecast expenditure is:

Pump rental, excavation, stabilization	\$200,000
Culvert construction costs	\$162,000
<b>Total:</b>	<b>\$362,000</b>

The proposed funding is:

Park Board Operating Budget - Added Basic	\$52,000
Provincial Grant to examine environmental options	\$10,000
Park Board Capital Budget	\$150,000
City Engineering Capital Budget	\$150,000
<b>Total:</b>	<b>\$362,000</b>

It is proposed that the Park Board Capital Budget funding would come from the 2006-2008 Water Conservation Budget of \$300,000. Half of this budget is identified for playing field irrigation system support and refurbishment, which is critical to the operation and availability of the playing fields, and is a continuation of previous budget commitments. The other \$150,000 was intended to finance new conservation projects. The addition of a retention pond at #1 fairway will supplement the existing storm water storage system at Fraserview, where daily irrigation water consumption during peak periods can reach 300,000 imperial gallons (\$770 in potable water).

## **SUMMARY**

This report recommends that the cost of the reinstatement of Vivian Creek through #1 fairway at Fraserview Golf Course be funded in part from the Water Conservation capital account.

Prepared by:

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