



## City of Richmond

## Report to Committee

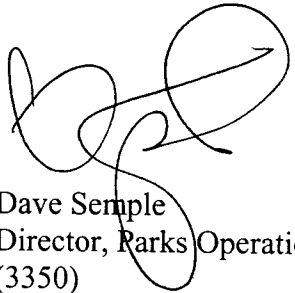
**To:** Finance Select Committee  
**From:** Dave Semple  
Director, Parks Operations

**Date:** November 14, 2003  
**File:** 7200-01

**Re:** Dredging of Scotch Pond and Entrance Channel

### Staff Recommendation

1. That Council approve \$160,000 of additional funding from Capital Reserve as part of the 2004 Capital Program to complete dredging operations at Scotch Pond; and
2. That staff develop an operating agreement with the Scotch Pond Fishers Heritage Cooperative to establish a dredging reserve fund for the future.



Dave Semple  
Director, Parks Operations  
(3350)

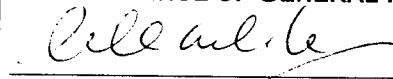
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**ROUTED TO:**

**CONCURRENCE**

**CONCURRENCE OF GENERAL MANAGER**

Budgets..... Y ☒ N ☐



## **Staff Report**

### **Origin**

Staff have completed the application and Request for Quotation process for the proposal to dredge Scotch Pond Moorage Basin.

The current sediment build-up depth at the mouth of the entrance to Scotch Pond prevents the local commercial fishing and recreational users from entering or exiting the basin during low tides and severely limits the efficiency of the facility.

The purpose of this report is to update Council on the dredging information and to seek approval for funding to complete the dredging operations at Scotch Pond, as required.

### **Analysis**

In 2003 staff initiated the process for determining the required work to dredge the basin at Scotch Pond at Garry Point. After completing permit reviews, as well as soundings at the site, tenders for the project exceed available funding in surplus existing dredging accounts: Macdonald Beach and Britannia Dredging. Council approved available funding for City dredging operations at the site at present is \$132,000.

After tendering for dredging operations the average tender estimates range from \$250,000 to \$300,000. It should be noted that tender costs for dredging at this site are double what the City faced in the year 2002 for dredging operations particularly due to the mobilization and limited access to the scotch pond site. In order to complete the dredging operations as the Scotch Pond site, an additional \$160,000 of General Revenue funding capital will be required.

Depth soundings survey information received confirm that some areas of the channel basin and the moorage basin at the Scotch Pond Facility has risen more than 2 metres since it was last dredged in 1994. During local low water levels, these areas would only be a few inches deep and in some areas is above water.

This condition must be corrected before boats completely lose the ability to utilize Scotch Pond. Staff have also received the chemical soil analysis report, which suggests the basin's sediment material is suitable for ocean disposal and/or landfill. Volume calculations suggest the removal of approximately 16,000 cubic metres from the basin would be required to restore the facility's capabilities.

### **Request for Quotations Received.**

1. Removal of 16,000 cubic metres of sediment material from the basin-ocean disposal

With this option the sediment would be towed out for ocean disposal. This scope of work would involve using a clamshell bucket and crane to scoop up deposits and transfer them onto a barge and later towed out to the Sand Heads Ocean Disposal Site.

*Request for Quotation results for Contract 2539Q: Dredging of 16,000m<sup>3</sup> (Sept. 12<sup>th</sup>, 2003)*

<u>Company Name</u>	<u>Methodology</u>	<u>Quotation Bid</u>
Fraser River Pile & Dredge Ltd.	clamshell/ocean disposal	\$227,482
Vancouver Pile Driving Ltd	clamshell/ocean disposal	\$316,292

2. Removal of 10,000 cubic meters of sediment and dispose of on to Garry Point Park

With this option, the scope of work would involve using a combination clamshell bucket and a large suction pipe to transfer materials from the basin directly onto Garry Point Park (to be used as future fill material). This would also result in lesser water depth levels in the basin due to the lower volume; therefore dredging of the basin will need to be done again much sooner.

*Request for Quotation results for Contract 2544Q: Dredging of 10,000m<sup>3</sup> (Oct. 15<sup>th</sup>, 2003)*

<u>Company Name</u>	<u>Methodology</u>	<u>Quotation Bid</u>
Fraser River Pile & Dredge Ltd.	clamshell/suction/fill onto Garry Point	\$224,486
Vancouver Pile Driving Ltd.	clamshell/suction/fill onto Garry Point	\$231,120
JJM Construction Ltd.	clamshell/suction/fill onto Garry Point	\$224,700

3. Removal of 16,000 cubic metres of sediment material from the basin-ocean disposal

The third RFQ was issued to reflect the original scope of work identical to the first (since the second one had no cost savings and the first had to be voided to proceed with the second). The third results however, had shown a substantial increase of the quotes in comparison to the first RFQ. The dredging companies commented that this was the result of higher construction costs and equipment availability.

Both methods would require the existing wharf and piles at the moorage facility to be dismantled and re-assembled once dredging operations were completed.

It is recommended to complete the dredging operations before the Federal Permits expire in March, 2004.

*Request for Quotation results for Contract 2544Q: Dredging of 16,000m<sup>3</sup> (Nov. 4<sup>th</sup>, 2003)  
Revised to reflect original specifications of Contract 2539Q*

<u>Company Name</u>	<u>Methodology</u>	<u>Quotation Bid</u>
Fraser River Pile & Dredge Ltd.	clamshell/ocean disposal	\$295,106
JJM Construction Ltd.	clamshell/ocean disposal	\$283,550

***Options for consideration:***

***Option 1:*** Delay dredging operations for future consideration

***Consequences***

- the Scotch Pond facility will be shut down due to inaccessibility and safety concerns for its users

***Option 2:*** Complete the dredging operations with the removal of 16,000 cubic metres and ocean disposal of the sediment materials

***Consequences***

- financial impact of approx. \$290,000

***Option 3:*** Complete dredging operations with the removal of 10,000 cubic metres and place the sediment material onto Garry Point Park.

- provides additional landscaping features onto the Park

***Consequences***

- financial impact of approx. \$290,000 est. (including 30% contingency)
- as per Environment Canada & FREMP's requirements and mitigation measures, the dredged sediment material will need to be placed into a containment pond constructed of a concrete lock-block perimeter, waterproof membrane and extensive drainage pipes to channel water back into Scotch Pond without impacting existing grounds and foreshore vegetation.
- the containment pond will take approx. 75% (32,000 sq metres / 8 Acres) of Garry Point Park's available green space during the "drying process" and may take over a year to dry (depending on weather conditions and drainage system) This would result in closure of the subject area during that time.
- any overflow of sediment material onto the existing foreshore vegetation will result in fines from the Environment Review Committee (EC, FREMP, Fisheries & Ocean) and may stop the dredging operations from being completed.
- the sediment material consists of small amounts of metals and PAH levels that are not acceptable by Environment Canada during the liquid sludge phase (directly from the basin). However, after all the water/restricted liquid contents are carefully drained back into the basin it came from, then the dried sediment (silt) is suitable for fill use.
- reduction of volume material to be removed from 16,000m<sup>3</sup> to 10,000m<sup>3</sup> (minus 2.00 elevation to minus 1.5 elevation) will result in lesser water depths and may still impact certain vessels from utilizing the facility. Maintenance dredging of the facility will also be required to completed sooner than expected in the future (currently every 10 years).

Staff have met with the Scotch Pond Heritage Fishers Co-operative to explore options to assist in the funding of the dredging. They have no funds at this time due to the extensive work recently done on the floats and the electrical upgrade of the site. However, they have indicated they are willing to look at a contingency fund for dredging in the future.

**Based on the information collected to date, the scope of work required and the options available, staff recommend Option 2 as the best viable option if Scotch Pond is to continue its boating and moorage operations.**

### **Financial Impact**

Council in January 2003 approved the use of the available surplus dredging funding in the capital accounts from the 2002 Britannia Dredging and McDonald Beach Dredging accounts. Total funds available from these two accounts is \$132,906.63.

To date, the following expenditures for the topographical depth sounding survey, chemical soil analysis report, environmental assessment and application fees are:

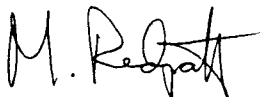
Topographical Survey & Depth Soundings	\$10,000
Collection & Chemical Soil Analysis Report	\$ 8,000
FREMP/EC/Environmental Review Committee Application	\$2,500
Ocean Disposal Application/Dumping fees	\$7,520
Design drawings, disbursements, printing, etc.	\$500

In order to complete the dredging operations as designed and proposed, the project would require additional funding of \$160,000 from Capital Reserve.


### **Conclusion**

In order for the Scotch Pond Moorage Basin Facility to continue its operations, dredging of the entrance channel and basin will need to take place as soon as possible. Staff have completed the research, site analysis, application requirements and volume calculations in order for dredging operations to commence. Approval permits from ERC/FREMP have been received. Final permits from Environment Canada are expected by mid-November, 2003.

The quotations received from the Dredging Contractors confirm a substantial increase of labour and equipment costs compared to 2002 dredging operations for the Tall Ships Event. In part, the higher costs reflect the complexity of the scope of work for the mobilization and demobilization of equipment and existing wharf components within the confinement of the basin's location. In addition, the current environment in the construction industry, which commands a much higher premium than in the past, is also reflected.



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