

CITY OF BURNABY

ENVIRONMENT AND WASTE MANAGEMENT COMMITTEE

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

RE: BURNABY LAKE PILOT DREDGING PROJECT

RECOMMENDATIONS:

1. **THAT** Council authorize staff to advance the pilot dredging program for Burnaby Lake to the tender stage as outlined in this report;
2. **THAT** Council authorize staff to advance a Capital Reserves Bylaw in the amount of \$610,000 to provide interim financing for the construction phase;
3. **THAT** Council request the GVRD Park Committee to extend the 50% cost sharing agreement for the construction phase;
2. **THAT** a copy of this report be forwarded to the Parks & Recreation Commission, the GVRD Parks Department and the Burnaby Lake Park Association.

REPORT

The Environment and Waste Management Committee, at its meeting held on 1999 June 08, received and adopted the attached report regarding the status of the Burnaby Lake Pilot Dredging Project. The Committee advised that the project is technically feasible and that the dewatering and treatment process would meet regulatory requirements. Accordingly, the Committee requested that Council authorize staff to bring down a Capital Reserves Expenditure Bylaw in the amount of \$610,000 for construction phase financing.

Respectfully submitted,

: COPY - CITY MANAGER
- DIRECTOR ENGINEERING
- DIRECTOR FINANCE
- DIR. PLNG. & BLDG.
- DIR. PARKS, REC. & CULT. SERV.

Councillor D. Johnston
Chair

Councillor C. Redman
Member

Councillor D. Lawson
Member

TO: CHAIRPERSON & MEMBERS
ENVIRONMENT & WASTE
MANAGEMENT COMMITTEE

DATE: 1999 06 01

FROM: DIRECTOR ENGINEERING

FILE: 40-09-03

SUBJECT: BURNABY LAKE PILOT DREDGING PROJECT

PURPOSE: To provide the Committee and Council with an update on the Burnaby Lake Pilot Dredging Project

RECOMMENDATION:

1. THAT the Committee recommend to Council that:
 - a. the pilot dredging program for Burnaby Lake be advanced to the tender stage as outlined in this report;
 - b. staff be authorized to advance a Capital Reserves Bylaw in the amount of \$610,000 to provide interim financing for the construction phase;
 - c. the GVRD Park Committee be requested to extend the 50% cost sharing agreement for the construction phase;
 - d. a copy of this report be forwarded to the Parks & Recreation Commission, the GVRD Parks Department and the Burnaby Lake Park Association.

REPORT

1.0 INTRODUCTION

Council at its regular meeting of 1999 May 17 received a status report on the Burnaby Lake Pilot Dredging Project. The report provided an update on the project design process and the projected timetable for the design and tender phases. The purpose of this report is to provide the Committee and Council with a further update on the tasks that have been completed since the last report and to seek Council's concurrence to advance the project to the tender stage.

2.0 WORK PROGRESS TO DATE

2.1 *Design Process*

Based on the proposed dredging site and staging area plan as illustrated in Figure 1, the design program is proceeding well and is substantially complete. As the pilot dredging area would consist of a mixture of open water, water lilies and purple loosestrife environment, a hydraulic auger dredge plant is identified as the most suitable equipment for the proposed work. An auger dredge is equipped with a set of augers that are mounted on a shaft that can be lowered into the water to dredge the material. The augers have adjustable mud shields to increase production and minimize turbidity. The dredgeate is suctioned into a conveying pipe which transfers the material to the processing site. The technology is well proven and will work well for the pilot project.

Further laboratory testing of the water treatment process was conducted and the following conclusions were reached:

- Centrifuges provide the best mechanical separation of the sediment material from the dredgeate to produce a dewatered solids product for off-site disposal.
- Chemical coagulation/flocculation is required in order to produce a treated water quality with a Total Suspended Solids (TSS) concentration of less than 25 mg/L. The treated water can be discharged directly back to the Lake as long as the TSS can be kept at 25 mg/L or less.
- During the first few days of the pilot dredging operation, the treated water must be discharged to the sanitary sewer while water samples are being analysed for chemical and physical parameters to ensure the treated water can be discharged back to the Lake.

2.2 *Regulatory Reviews*

In concert with the design program, meetings were conducted with the GVRD Source Control Department and the Department of Fisheries and Oceans for discharge of the processed water to the sewer and to the Lake. Both agencies have recognized the value of the pilot project and have extended tremendous cooperation in expediting the application and review process. It is expected that final decisions on the permit applications will be made known prior to the tender closing date (early July).

2.3 *Prequalification Process*

An invitation for prequalification submissions of general contractors was issued on May 13 and closed on May 31. A total of 5 submissions were received on the closing date. The submitted documents are being reviewed and only the qualified contractors based on past experience, qualification and financial capacity will be invited to submit full tender for the pilot project.

3.0 NEXT STEPS

With the completion of the sampling, testing and prequalification process, the next steps are to finalize the design package and to proceed with the invitational tender. Based on the design concept as described earlier in this report, the construction and contract administration cost for the pilot dredging program is estimated to be in the order of \$610,000.00. The actual expenditure to date related to the preliminary engineering, environmental and testing phase is approximately \$85,000.00 and this would bring the total projected cost of the pilot program to \$695,000, an increase of \$195,000 over the budget allocation included in the 1999 Capital Program. The latest estimate shows that the cost of the pilot program is significantly higher than the original estimate. The additional cost is mainly attributed to the water treatment process and the environmental measures that need to be taken for the project. The majority of the costs are related to equipment mobilization and set up, and site preparation. The data and information that will be obtained from the pilot program would provide great value to the management direction for Burnaby Lake and future dredging considerations. Although a higher cost efficiency may be gained for the project if a larger dredging program were employed, it would be prudent at this time to test out the dredging/treatment/disposal process before a more comprehensive dredging plan is considered.


The GVRD has been an active participant in the design phase of the pilot program and it is recommended that the GVRD be requested to provide further cost sharing on the construction program. In discussion with the GVRD Park staff, the cost sharing request from the City can be included in the next GVRD Park Committee meeting of 1999 July 14. In order to meet the optimum construction period of August/September, the tender for the pilot program must be awarded by the 1999 July 12 Council meeting. Therefore, should Council concur to proceed with the pilot construction phase, it is recommended that a Capital Reserves Expenditure Bylaw be brought down to provide interim financing for the project, and subsequent cost sharing approved by the GVRD Board would be used to offset the City costs.

Based on the foregoing discussion, it is expected that the following timetable can be met:

- Council approval of funding allocation and tender phase 1999 June 14
- Invitation to tender 1999 June 16
- Environmental approval and tender award 1999 July 12
- Construction 1999 August - Sept.

4.0 CONCLUSION

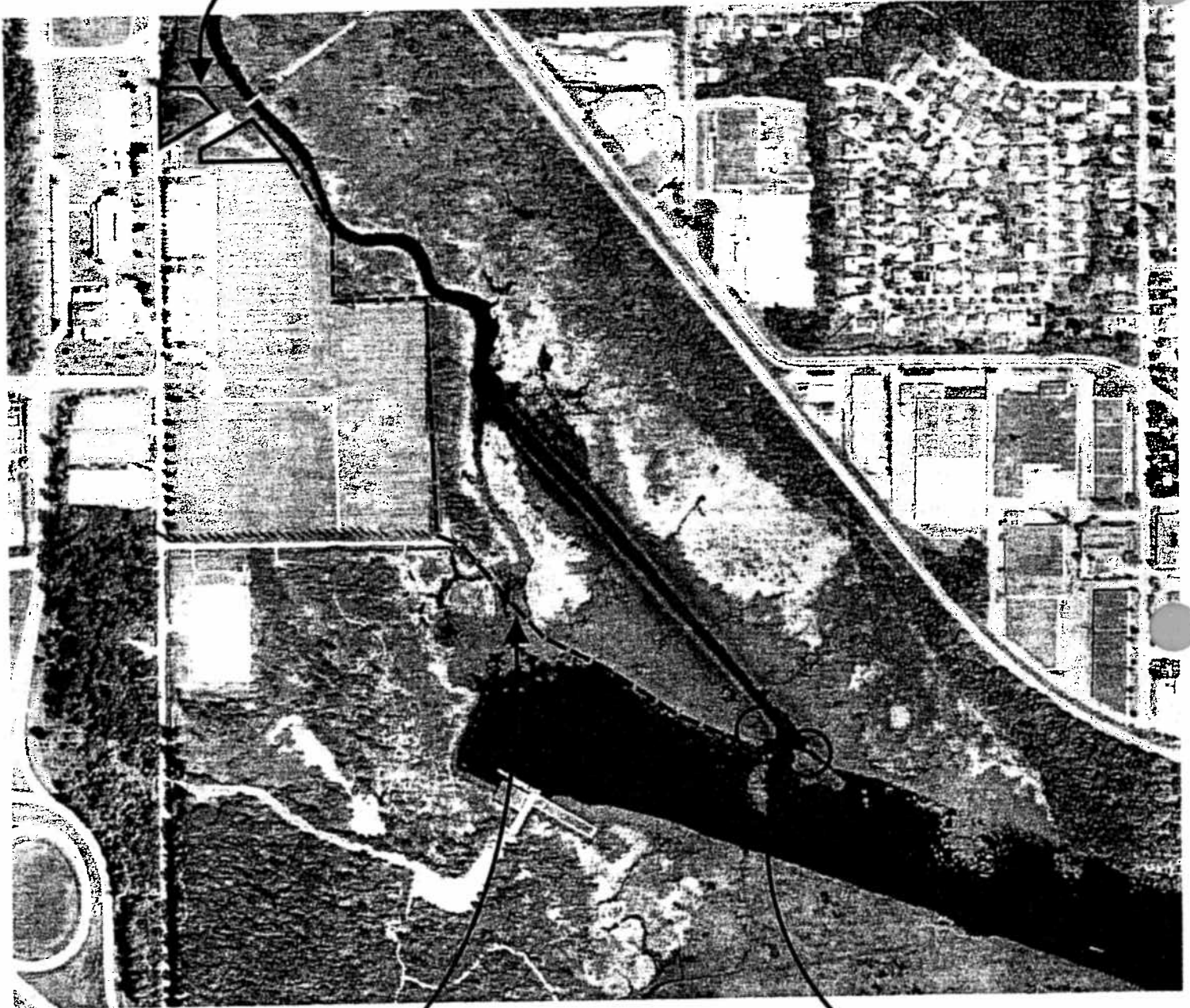
Having completed the sampling and laboratory testing program, we are confident that the pilot dredging project is technically feasible and the dewatering and treatment process would meet regulatory requirements. Subject to Council approval to proceed with the construction phase, it is recommended that staff be authorized to bring down a Capital Reserves Expenditure Bylaw in the amount of \$610,000 for construction phase financing. It is further recommended that the GVRD Park Committee be requested to provide 50% cost sharing on the project.


DIRETOR ENGINEERING

LSC: jh
Attachment

cc: City Manager
Director Planning & Building
Director Parks, Recreation & Cultural Services
Manager - GVRD Parks

STAGING / DEWATERING
AREA



PROPOSED DRAINAGE PIPE
ALIGNMENT

PROPOSED DREDGING
AREA

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FIGURE 1 BURNABY LAKE PILOT DREDGING PROGRAM

MAY 1999

