

ITEM 2
MANAGER'S REPORT NO. 37
COUNCIL MEETING May 13/74

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Golder Brawner Associates

CONSULTING GEOTECHNICAL ENGINEERS

February 26, 1974
RECEIVED IN
ENGINEERING DEPT.

FEB 27 1974

The Corporation of the District of Burnaby,
Municipal Hall,
4949 Canada Way,
Burnaby, B.C. V5G 1M2

ATTENTION: Mr. E.E. Olson, P.Eng.

RE: Infilling of the Burnaby Lake
Rowing Course

Dear Sir:

Further to your request, we are pleased to submit our proposal for the second stage study of the infilling of the Burnaby Lake Rowing Course. Our report dated July, 1973 deals with the causes of infilling. It is understood that the Stage II study would be a program to determine the most economical and permanent treatment of the Burnaby Lake Rowing Course infilling problem. This treatment would include redredging of the course to the original design invert elevation of 124.0 ft.

We are of the opinion that the infilling problem can be solved by either redredging the course and providing a means of preventing infilling, or redredging the course and providing maintenance dredging as required in the future. Our calculations indicate the initial volume to be dredged is about 100,000 cu.yd. while maintenance dredging would be about 50,000 cu.yd. per year at the present rate of infilling. It is our opinion that the yearly volume of infill material should decrease with time. The material which is infilling the rowing course consists of granular peat fines. Therefore, in our opinion, only light duty, suction dredging equipment would be required.

Based on the above we propose that our study consists of the following:

- (A) Review of methods to prevent future infilling.
 - 1) The use of semi-pervious barriers to isolate all or part of the rowing course.
 - 2) The use of natural hydraulic conditions to create scour and flushing of the rowing course invert.
 - 3) The use of natural aquatic vegetation to stabilize the infill material source areas adjacent to the rowing course.
- (B) Review methods of both initial and future maintenance dredging.
 - 1) The use of available dredging equipment, similar to that used for the original construction.
 - 2) The use of a dredging system, specifically designed and built to suit the initial and future maintenance dredging conditions in the rowing course, possibly including:
 - a) the relocation and channelization of Still Creek, parallel to the rowing course, to provide convenient disposal of dredging spoil.
 - b) A permanent disposal pipeline to discharge into the Brunette River.
 - c) A portable pipeline to discharge into local sewers.
 - 3) The use of portable, land based dredging equipment to be used in conjunction with a sump system of dredging.
 - 4) The possibility of overdredging the rowing course to provide a sediment storage volume below 124.0 ft. elevation.

- (C) Review methods of disposal of dredge spoil.
- 1) The use of the G.V.S.D.D. sewer.
 - 2) The use of the Brunette River below the Cariboo Dam.
 - 3) The use of the dredge spoil as opposed to wasting it.
 - e.g. i) as a soil conditioning additive
 - ii) in sanitary landfill operations

We estimate our cost for this study to be about \$6,000.00 maximum. All charges for the study would be invoiced in accordance with the attached schedule of fees.

In order to prepare the above proposal, it has been necessary to consider general engineering concepts which may be acceptable. Further detailed consideration of these and other methods would be made.

We appreciate the opportunity to present this proposal. Should you wish to discuss this proposal or require more detail, please contact us.

Yours very truly,

GOLDER BRAWNER & ASSOCIATES LTD.

R.M. Wilson
R.M. Wilson, P.Eng.

RMW/jm

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GOLDER BRAWNER & ASSOCIATES

Outline of Services
and
Schedule of Minimum Fees
excerpted from

CONSULTING PROFESSIONAL ENGINEERS DIVISION
ASSOCIATION OF PROFESSIONAL ENGINEERS
OF BRITISH COLUMBIA
SCHEDULE OF FEES, MAY, 1972

1. Principals and Specialists - not less than \$35.00 per hour.
2. Engineers, Technicians, Draftsmen, etc. - payroll cost plus 125%

Payroll costs are obtained by adding 25 percent to salary cost to cover statutory holidays, vacations with pay, unemployment insurance, health, medical and liability insurance, group life insurance, pension plan contributions and holiday time allowance.

Hourly salaries are based on a work week of 37 1/2 hours, 52 weeks a year.
3. Disbursements. The cost of all disbursements shall be increased not less than 5% to cover office service, and cost of handling and shall be applicable to the following.
 - a) Reproduction of drawings and documents for tender and construction purposes, except those required by the contract agreement.
 - b) Travel Expenses.
 - c) Telegraph and telex messages and long distance telephone calls.
 - d) Living expenses for personnel where authorized by the Client.
 - e) Advertising for tenders on the Client's behalf
 - f) Use of special Consultants as approved by the Client.
 - g) Use of highly specialized equipment.
 - h) Use of computer services.
 - i) Any other proper expense paid out by the Consultant on the Client's behalf, and not specifically named as being covered by the normal fee.

All time expended on the work, in the engineer's office, at the client's office or in the field shall be charged. This shall include travel.

GOLDER, BRAWNER & ASSOCIATES