Re: Engineering Study Regarding the Infilling Problem Burnaby Lake Rowing Course (Item 32, Report No. 7, January 28, 1974)

	ITEM	-					
	MANA	GER'S	REPOR	T NO.	37		
l	COUN	CIL M	EETING	May	13	174	

On January 28, 1974, Council was advised that the rowing course at Burnaby Lake was infilling at a substantial rate (approximately 0.6 feet per year). The report that was received on that date contained an opinion from the consultant on the reasons for the occurrence, and also, a recommendation to have the consultant submit a proposal on the cost of a study to ascertain the best and most economical way of stabilizing the invert of the course. As noted in the following report from the Engineer, that recommendation was adopted by Council.

There is provision in the 1974 Annual Parks & Recreation Budget for the \$6,000 that would be required for the proposed study of the rowing course by Golder Brawner Associates, and the study work has been approved by the Parks & Recreation Commission.

RECOMMENDATIONS:

THAT Golder Brawner Associates be engaged to carry out a study and prepare a report recommending the most economical and best method of

- (a) Redredging the rowing course including method of disposal of the dredged material and
- (b) Remedial measures to implement that will prevent reoccurrence of the infilling; and

THAT the study, which is to include an evaluation of all environmental aspects of redredging and remedial measures, be done for the estimated cost of \$6,000, and that payment for this work be charged to Code 25-03-53 (Consultants); and

THAT a copy of this report be forwarded to the Parks & Recreation Commission, the Canada Summer Games Society, the City of New Westminster and Mr. D. Helliwell, Chairman, Rowing Committee, Canada Summer Games Society.

이는 방법에 가지 못했다. 동안이 가셨는지 못했다.

MAY 7, 1974

TO: MUNICIPAL MANAGER

FROM: MUNICIPAL ENGINEER

RE:

ENGINEERING STUDY REGARDING INFILLING PROBLEM BURNABY LAKE ROWING COURSE

Municipal Council on 28 January, 1974 approved of a recommendation that Golder Brawner Associates be asked to submit a proposal indicating the cost of a study to advise on the best method of (a) restoring the rowing course to its

> original invert elevation of 124.0 and
> (b) recommend remedial and preventative measures which could be implemented to prevent any reoccurrence of the infilling.

Golder Brawner Associates in a letter dated 26 February, 1974 (copy <u>attached</u>) submitted a proposal estimating the cost of the report at \$6,000. maximum. Although it is not specifically mentioned in their proposal, they are to include an evaluation of environmental aspects of the remedial measures and estimates of cost of alternate methods of redredding and remedial measures.

The Parks & Recreation Commission has approved of proceeding with the report and has budgeted for the \$6,000. cost.

RECOMMENDATION:

THAT Golder Brawner Associates be engaged to carry out a study and prepare a report recommending the most economical and best method of

(a) Reducing the rowing course including method of disposal of the drodged material and

(b) Remedial measures to implement that will prevent reoccurrence of the infilling.

The work shall be done as outlined in Golder Brawner's proposal dated 26 February, 1974 with payment estimated not to exceed \$6,000, which will include an evaluation of all environmental aspects of redredging and remedial measures.

VK:wlb 2 Att. cc: () Municipal Solicitor) Municipal Treasurer () Parks & Peccention Administrator (

ITEM 2 Manager's Report No. 37 Council Meeting May 13/74

H. Q. GOLDER
C. O. BRAWNER
V. MILLIGAN
J. L. SEYCHUK
N. R. McCAMMON
R. M. WILSON
D. L. PENTZ
D. B. CAMPBELL
A. A. GASS
H. G. GILCHRIST

3

Golder Brawner Associates

CONSULTING GEOTECHNICAL ENGINEERS

		February 26, 1974
		ENCONSULING DEPT.
The Corporation	of the District of Burnaby,	FEB 27 1974
Municipal Hall, 4949 Canada Way	그는 한 것 같은 것	NATE
Burnaby, B.C.	V5G 1M2	
ATTENTION: Mr.	E.E. Olson, P.Eng.	
RE :	Infilling of the Burnaby Lake	
한 것 같은 것 같은 바람가 있는 것 같이 있는 것이 같은 것 같은 것 같은 것 같은 것 같은 것 같이	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 calcualtions 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.

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

and the second second

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

following:

(B)

2)

- (A) Review of methods to prevent future infilling.
 - 1) The use of semi-pervious barriers to isolate
 - all or part of the rowing course.
 - 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 naterial source areas adjacent to the rowing course.

Review methods of both initial and future maintenance dredging. 1) The use of available dredging equipment, similar to

that used for the original construction.

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 reloction 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.

and the state of t

4

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

Review methods of disposal of dredge spoil.

(C)

1) The use of the G.V.S.D.D. sewer.

2) The use of the Brunnette River below the Cariboo Dam.

- 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.

.iil. inte

R.M. Wilson, P.Eng.

RM/jm V74823

GOLDER BRAWNER & ASSOCIATES

5

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

Outline of Services

and

Schedule of Minimum Fees

excerpted from

CONSULTING PROFESSIONAL ENGINEERS DIVISION ASSOCIATION OF PROFESSIONAL ENGINEERS OF BRITISH COLUMBIA

말 가장에 넣는 것 같이 많은 것 같아요. 것이 같아요.

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.

治理事務がいたいようというではないないない

いたいのなどのないないないであるという

- 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.

1) 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

6

-

The second s