

ITEM	10
MANAGER'S REPORT NO.	32
COUNCIL MEETING	1980 04 28

Re: ENGINEERING SERVICES FOR THE UPGRADING
 OF BUCKINGHAM CREEK
 (Item 4, Manager's In-Camera Report No. 20, 1980 March 10)
 (Item 16, Manager's Supplementary Report No. 19, 1980 March 10)

At its meeting of 1980 March 10, Council received two reports from the Municipal Engineer pertaining to the flooding problems that arose in connection with the rain storms during December of last year. One of the specific locations mentioned in the Municipal Engineer's earlier reports was Buckingham Creek. Following is a report from the Municipal Engineer requesting approval for retaining the services of Web Engineering Ltd. on this subject matter.

RECOMMENDATION:

1. THAT the recommendation of the Municipal Engineer be adopted.

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TO: MUNICIPAL MANAGER 80 04 15
 FROM: MUNICIPAL ENGINEER
 SUBJECT: ENGINEERING SERVICES FOR THE UPGRADING OF
 BUCKINGHAM CREEK

RECOMMENDATION:

1. THAT Web Engineering Ltd. be retained to provide engineering services for the study of alternative solutions, the preparation of design drawings and contract documents and for contract supervision and field inspection for the upgrading of Buckingham Creek in accordance with the Municipal Engineer's Terms of Reference dated 1980 March 27 (copy attached) and the proposal received from Web Engineering Ltd. dated 1980 April 03.

REPORT

Council will recall receipt of my report for information purposes at their meeting of 1980 March 10 in which I outlined numerous problems and damage resulting from flooding in 1979 December.

One of the specific locations noted in the two reports mentioned was Buckingham Creek. As noted in my earlier reports, the basic problem is one of watercourse invert erosion and ravine slope failures with the material from these resultant slippages being transported downstream causing blockages and random creek re-routing.

Based on the recommendation to reflect the effect of the 1979 December floods in the 1980 budget I have initiated a study of alternative remedial actions which may be considered. In an effort to obtain the best professional advice on this subject matter I requested a proposal for engineering services from the consulting firm of Web Engineering Ltd. This consultant, in

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conjunction with Golder Associates, who are a recognized geotechnical consultant, successfully dealt with the creek erosion and ravine slope stability problems which the Corporation of Burnaby experienced in the Kaymar ravine approximately four years ago. From a very preliminary investigation the Engineering Department staff have concluded that the circumstances and problems relating to Buckingham Creek are very similar to those that existed prior to the improvements in the Kaymar ravine and for this reason are recommending the retention of the same consulting team as was involved in the Kaymar ravine improvements.

Their proposal addresses the three basic elements as outlined in my Terms of Reference. The first phase would be to review a number of possible alternatives with a recommendation as to the most appropriate solution. The fee for this review is estimated to be \$ 5,000. The second phase of this project would be to prepare the necessary design drawings and contract documents for the recommended solution. As the consultant is unable to determine at this early stage which might be the best engineering alternative, he is only able to prepare a very preliminary estimate of the cost of the works. Based on his preliminary estimate of approximately \$400,000. for the construction of the improvements, he has stated in his proposal that the Engineering fees for this phase will not exceed \$30,000. The third and final element of this project is the construction which would involve the consultant with respect to contract supervision and field inspection. Here again, it is difficult for the consultant to, at this time, fully assess the scope of such a construction contract; therefore, he is only able to give a very preliminary estimate of his fee. He has indicated in his proposal that the fee for this phase of the project should not exceed \$6,000.00 per month. In summary, this report has attempted to be realistic in the appraisal of the most appropriate method of choosing a consultant for specialized engineering works and that this project qualifies as such and accordingly I would recommend the consulting team of Web Engineering Ltd. and Golder Associates because of their previous experience with a similar project in Burnaby.


MUNICIPAL ENGINEER

VW:sp
Attach.

cc: () Municipal Treasurer
() Parks Administrator

80 03 27

Webb Engineering Ltd.
#101 - 1861 Welch Street
North Vancouver, B.C.
V7P 1B7

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Attention: Mr. R. Dyck, P. Eng.

Dear Sirs:

RE: ENGINEERING SERVICES FOR THE UPGRADING
OF BUCKINGHAM CREEK

As a result of the heavy rainfall during the last several months the Corporation of Burnaby has experienced considerable difficulty in maintaining the Buckingham Creek channel as well as not being able to provide adequate flood protection to abutting property owners.

In view of this the Corporation hereby requests your proposal to provide the necessary engineering services to review a number of alternative solutions which may be available to us as a means of correcting this situation in a permanent manner. Your proposal should identify three basic areas, namely:

1. The study or review of a number of possible alternatives with a recommendation as to which is the most appropriate engineering solution to the problem.
2. The preparation of design drawings and contract documents.
3. Contract supervision and field inspection.

Your proposal should also include the use of sub-consultants (if applicable) as well as an estimate of your fees where possible so that we may complete our budget.

The area in question is shown on the attached plan, and more specifically, falls between Charing Court and a point just east of Burris Street. The basic concern in this section is invert erosion and slope failures which have caused the transportation of a great deal of material and debris to Deer Lake.

As this is a very current problem and we believe that any remedial construction should be done during the dry summer months, I would hereby advise that time is of the essence both with regard to the submission of your proposal as well as completion of the various phases of study, design and inspection. I would therefore appreciate receipt of your proposal by not later than 1980 April 08 which would allow me the opportunity to secure Council's authority to enter into an Engineering Agreement with the successful consultant by 1980 April 14.

Should you have any questions, please do not hesitate to contact the undersigned.

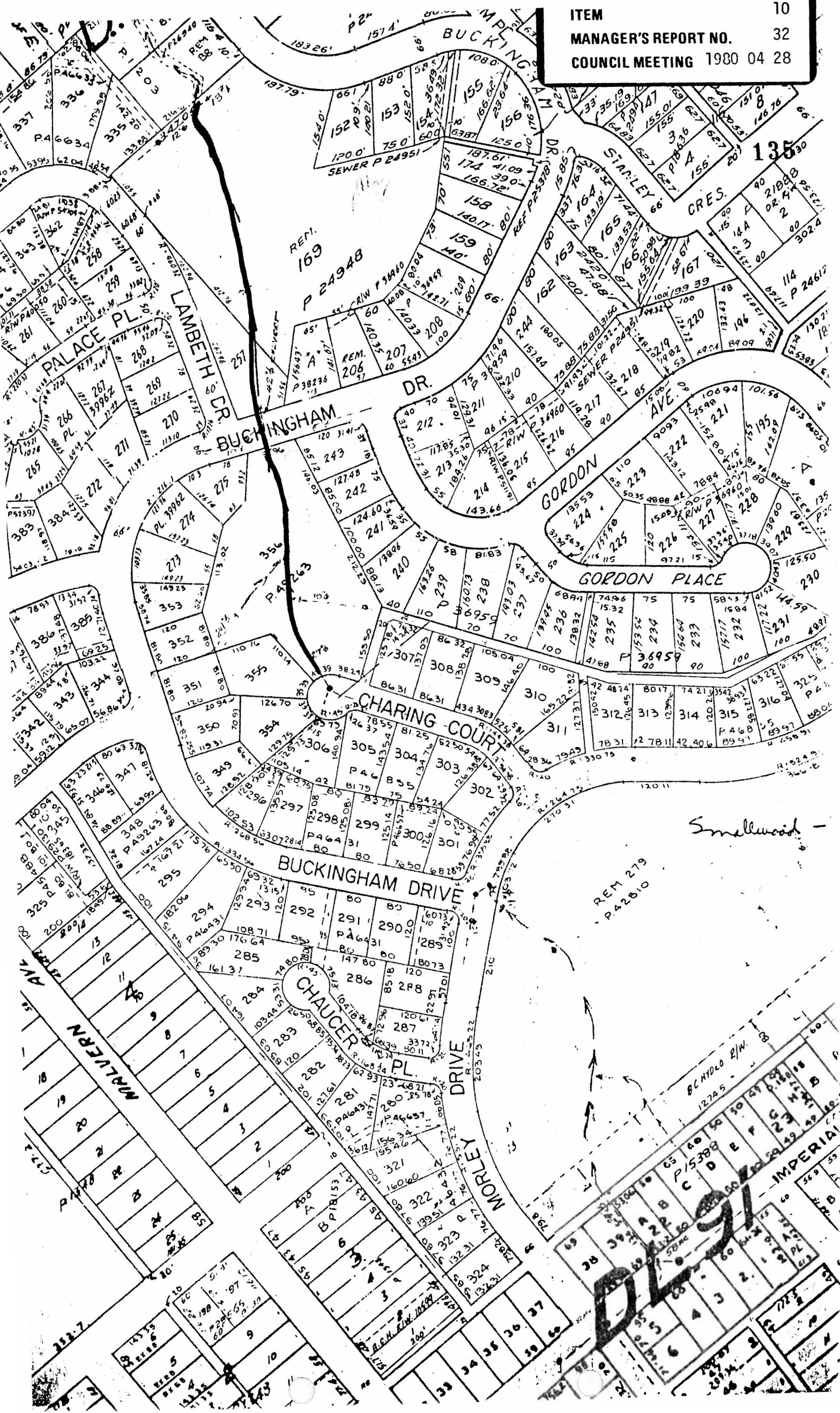
Yours truly,

E. E. Olson, P. Eng.,
MUNICIPAL ENGINEER


by: V. N. Wiebe, P. Eng.,
DESIGN ENGINEER

:sp
ach.

(✓) Design Engineer



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WEB Engineering Ltd.

101 - 1861 Welch Street
 North Vancouver, B.C. V7P 1B7
 Telephone 985-9556

April 3, 1980

RECEIVED IN
 ENGINEERING DEPT

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

Attention: Mr. V.N. Wiebe, P. Eng.
Design Engineer

Dear Sirs:

Re: Engineering Proposal for the Upgrading
of Buckingham Creek

APR 8 1980

REFER TO	DATE	INITIALS
VW		

Thank you for the opportunity to submit a proposal on the above-mentioned project. We have examined the site and have determined the range of problems which need to be considered in resolving this matter. Among these factors are consideration of bank stability in several sites, stream bed erosion within the study area, control of bed load and peak quantities of runoff in consideration of private properties downstream of the study area. Concern must also be expressed in protecting other works which cross or may cross this channel. It is noted as well that the drainage channel abuts an area of high value homes, mostly new, with extensive landscaping improvements, and streets of recent standard. It is presumed that the completed works would present the equivalent result experienced at the Kaymar Ravine restoration.

In addressing our proposal to the three basic areas outlined in your letter for purposes of selection of a consultant, and the completion of your budget, we propose:

1. That we would study or review a number of possible alternatives with a recommendation as to which is the most appropriate engineering solution. These alternates would include but not be limited to the application of storm water management techniques, open channels stabilized where necessary, conduits, alternate channels, stabilized slide areas, area restoration, sediment control and impoundments. The work would include a review of all pertinent plans and reports, if any, relating to this area, and would include any field surveys and inspections appropriate to the study. As sub-consultants in this project, should we be awarded the assignment, it is proposed that Golder Associates would be retained by us to advise on the soils stability and restoration aspects.

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April 3, 1980

The Corporation of the District of Burnaby

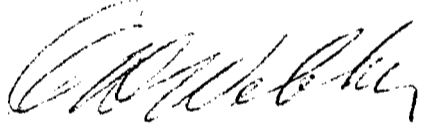
The study or review with recommendations would be undertaken for a fee of \$5,000.00.

2. Design drawings and contract documents would be prepared appropriate to the chosen solution and, because of the inexact knowledge of the chosen solution, would be undertaken at time charge rates. Based upon the probable design work estimated to be expended, the engineering fees would not exceed \$30,000.00, including the work of sub-consultants. From the limited examination of the site it is considered that a resolution of the problem could be effected by a level of effort in the amount of \$400,000 total cost providing no land acquisitions are contemplated. This number is not a rationalized estimate but is given as an assistance in preparing your budget.
3. Contract supervision and field inspection would be undertaken on a time and expenses basis which would not exceed \$6,000.00 per month for both on site inspection, engineering evaluation of the work and supervision of the Contract.

We are at present well able to undertake this project, and look forward in anticipation to being successful in achieving the award.

Yours very truly,

WEB Engineering Ltd.



E.D. Webber, P. Eng.

EDW:wh
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