

ITEM 11
MANAGER'S REPORT NO. 26
COUNCIL MEETING 1979 04 02

RE: ENGINEERING SERVICES FOR A PRELIMINARY STUDY TO UPGRADE BYRNE ROAD
(ITEM 11, REPORT NO. 30, 1978 NOVEMBER 14)
(ITEM 20, REPORT NO. 87, 1978 DECEMBER 11)
(ITEM 15, REPORT NO. 08, 1979 JANUARY 29)

Following is a report from the Municipal Engineer regarding proposals which have been received from engineering consultants for the preparation of a preliminary design and cost estimate for the upgrading of Byrne Road.

As noted in the last report which Council received on this matter on January 29, it is intended to have the cost of the subject study included in the 1979 Capital Improvement Program prior to the final adoption of the budget in May. The final detailed engineering design is not expected to proceed before 1980 and the costs for this final design phase would be included in the 1980 budget.

RECOMMENDATION:

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

* * * * *

TO: MUNICIPAL MANAGER 79 03 28
FROM: MUNICIPAL ENGINEER
SUBJECT: ENGINEERING SERVICES FOR PRELIMINARY STUDY TO UPGRADE
BYRNE ROAD

RECOMMENDATION:

1. THAT the Corporation of Burnaby enter into an Engineering Agreement with McElhanney Surveying and Engineering Ltd. to provide the engineering services as outlined in the Municipal Engineer's terms of reference and in accordance with the Consultant's proposal dated 1979 March 21 for fees estimated to be \$17,773.

REPORT

At their meeting of 1979 January 29, Council authorized the Municipal Engineer to prepare the terms of reference for engaging an Engineering Consultant to prepare a preliminary design which will establish the method and standards for constructing the services requisite to upgrading Byrne Road including a cost estimate of these services and further authorized the Municipal Engineer to invite proposals for the preparation of this preliminary design and cost estimate.

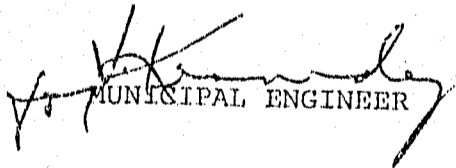
Attached hereto is a copy of the Municipal Engineer's invitation, including the terms of reference, which was sent to four reputable Engineering Consultants. Proposals have now been received from each of these Consultants and a brief summary of their proposal and fee structure is as follows:

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1. Underwood McLellan (1977) Ltd. - This proposal outlined in considerable detail their methodology for this study as well as a concise summary of the scope of the project. It also included a work schedule bar chart which would see this study completed within a three month period as well as a rather detailed estimate sheet including staff personnel, subconsultants, and the associated fees for these people. Their total estimate of fees was \$33,000 of which \$3,000 was allocated for a landscape architect which was not required in the original terms of reference.
 2. DeLeuw Cather, Canada Ltd. - This proposal addressed itself to each item within the given terms of reference and showed, by means of a work flow diagram, how they would complete the various facets within a 15 week period. Their proposal included a complete breakdown of staff and subconsultants complete with estimated fees totaling \$29,800.
 3. McElhanney Surveying & Engineering Ltd. - Their proposal clearly indicates that they fully understand all facets of the terms of reference and that they are prepared to complete this study for a fee estimated at \$17,773. This fee includes the fee for their geotechnical subconsultant.
 4. Robert F. Binnie Ltd. - This proposal was presented as a two stage proposal in which stage 1 consisted of a minimum amount of work required to assess the cost of constructing the necessary improvements based on preliminary studies only. Stage 2 would be necessary to fully comply with the comprehensive studies outlined in the terms of reference and consequently would result in a more accurate estimate of the costs of completing the various facets of the project. Stage 2 would also deal with detailed recommendations regarding design requirements and construction procedures. The estimated fees for Stage 1 is \$11,384.40 and the total estimated fees for Stage 2 are \$29,514.60 for a total fee of \$40,899.

Having carefully reviewed these four proposals it my conclusion that each of the consultants is competent to perform the work outlined in our terms of reference; however, I am unable to consider Stage 1 of proposal No. 4 as a viable and independent proposal on the basis that too many details are left to Stage 2. Based on this, therefore, it is my recommendation that the Corporation of Burnaby enter into an Engineering Agreement with McElhanney Surveying and Engineering Ltd. to provide the engineering services as outlined in the Municipal Engineer's terms of reference and in accordance with the Consultant's proposal dated 1979 March 21 for fees estimated to be \$17,773.

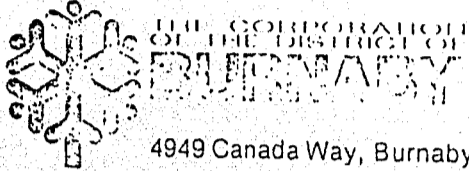

MUNICIPAL ENGINEER

VNW/ch

Atts.

- c.c. () Director of Planning
() Parks and Recreation Administrator
() Municipal Treasurer

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4949 Canada Way, Burnaby, B.C. V5G 1M2
Engineering Department

Telephone (604) 294-7460

79 03 08

McElhanney Surveying & Engineering Ltd.
13160 - 88th Avenue
Surrey, B.C.
V3W 3K3

Attention: Mr. L. Staples, P. Eng.

Dear Sirs:

Re: ENGINEERING SERVICES FOR PRELIMINARY
STUDY TO UPGRADE BYRNE ROAD

Subsequent to our earlier correspondence dated 1979 February 23 and our interview last week, I would hereby invite your company to submit a formal proposal for engineering services to prepare a comprehensive preliminary study of methods and standards, including cost estimates, for the upgrading of Byrne Road between Marine Drive and the Fraser River foreshore.

The terms of reference for this study are as attached to our earlier correspondence dated 1973 February 23. As a result of our interviews I would hereby advise that greater emphasis should be placed on the fact that this is a preliminary feasibility study which will identify the estimated cost to construct the requisite services for the upgrading of Byrne Road. Although this study will primarily deal with the question of preparing a realistic cost estimate for these works we do not want to mislead you into believing that extensive design work is necessary in order to achieve a reasonable order of accuracy for this cost estimate.

Our interviews also indicated to us that due to the scope and diversity of this project we should introduce some form of standardization for the submission of your proposal. In this regard we have developed the enclosed form entitled "Estimate Sheet" and would respectfully request that a completed copy of this form be an integral part of your proposal. I would also advise that this engineering work will be done under a standard engineering agreement as per the copy attached.

In order to provide you sufficient time to prepare and submit your proposal we have set our deadline for receipt of proposals at 1979 March 21.

Yours truly,

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

VNW/ch
Att.

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

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BYRNE ROAD UPGRADING

Terms of Reference for Preliminary Study

To prepare a comprehensive study which will establish the methods and standards for constructing the services requisite to upgrading Byrne Road, including a cost estimate of these services. This project has been the subject of three separate reports to our Municipal Council and copies of each of these reports are attached for your information.

More specifically, this preliminary study shall make specific recommendations or alternatives and cost estimates for the following:

1. **Byrne Creek:** The existing Byrne Creek is to be relocated in a proposed linear parkway west of Byrne Road. In assessing this relocation the Consultant will have to deal with the construction problems due to constructing a new channel in poor ground; the type of bank protection; the method of slope stability; the hydraulics and the criteria outlined by the Fisheries Department. In addition, the Consultant will have to maintain a close liaison with a landscape architect as it is the Municipality's intention to construct a facility which is simple and natural but at the same time satisfies the hydraulic, aesthetic and Fisheries Department criteria. For your information we have enclosed a preliminary sketch (Drawing L-1840) showing a proposed cross-section of Sketch No. 2 showing some ideas with regard to landscaping. These are strictly conceptual and may very well have to be revised when all criteria have been considered.
2. **Storm Sewers:** A local storm sewer for the street drainage as well as the collection of the drainage from the adjacent properties will be required to be constructed within the Byrne Road street allowance. The Consultant should address himself to the question as to whether or not the existing Byrne Creek channel can be used as a trench for this local storm sewer.

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3. Sanitary Sewer:

The entire length of Byrne Road is currently unsewered except for the extreme southerly limit which is served by a Greater Vancouver Sewerage and Drainage District's trunk sewer which traverses the Byrne Road right-of-way. In considering the design of the sanitary facilities to serve this area, the Consultant shall review such alternatives as a gravity collection system, a vacuum system, a pressurized system or any combination thereof. As additional comment with regard to a gravity system, the Consultant should investigate the viability of twining the sanitary sewer with the storm sewer thereby taking advantage of common pile supports in the existing Byrne Creek channel.

4. Road Construction:

The required road standard will be a 14 metre wide industrial standard with curb and gutter, boulevard grassing, tree planting and sidewalks on both sides. The sidewalks will be a standard 1.5 metres wide located 0.5 of a metre behind the face of curb. This will provide a utility strip to accommodate ornamental lamp standards. The Consultant should also recognize the likelihood of having to allow for left turn bays at the intersection of Byrne Road and the future Marine Way and possibly at the intersection of Byrne and the future proposed industrial loop road. In addition to the aforementioned locations there will also be a need for additional lanes at Marine Drive. Recognizing the poor ground and the fact that this roadway must be flood-proofed, the Consultant must review alternative methods of construction for the road cross-section and must determine the necessary right-of-way required to support the recommended road cross-section. He must also deal with the problems of adding additional loading to existing underground facilities such as a water main and a jet fuel line. The Consultant should also recommend a specific phasing of the various components involved in the road-way cross-section (for example, should the concrete works such as the sidewalks and curb and gutter be constructed after the road cross-section has been established and been in use for a period of six months to a year).

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5. Street Lighting: The Ornamental Street Lighting for this road will have to recognize that the bases for the standards will be founded in poor ground.
6. Other Utilities: These will include such utilities as B.C. Hydro Power and Gas, B.C. Tel, and any oil or jet fuel lines. With respect to these, the Consultant will be responsible for liaisoning directly with the respective utility agencies with regard to their criteria for protection of their utilities.

In summary the Corporation is looking for a comprehensive preliminary study of the most viable and economical solution to the overall upgrading of Byrne Road. As this total project will be a major undertaking it is proposed that the construction be phased over a number of years.

In this respect we are looking for a firm recommendation as to the most logical grouping of construction components and the sequencing of these components. As one of the major items related to this project is the concern of the environmental impact of this project, we cannot emphasize strongly enough the need for the Consultant to recognize the criteria established by the Department of Fisheries. In this regard the staff has had a number of preliminary discussions with the Fisheries Department and would be willing to share what information we have available.

VNW/ch
Att.