

Re: Design of Kensington Avenue Grade Separation
Structure and Associated Roadworks

ITEM 5

MANAGER'S REPORT NO. 31

COUNCIL MEETING April 28/75

On February 17, 1975, Council adopted the following recommendations with respect to the proposed Kensington Avenue Grade Separation Structure and related works between Laurel and Broadway:

- "1. THAT the Kensington alignment be adopted as the future alignment for the north-south route in the Central Valley Area.
2. THAT the financing for this proposed project between Sprott Street and Hastings Street be sought in a referendum to be placed before the electorate in November, 1975.
3. THAT design of the project on the Kensington alignment be allowed to proceed.
4. THAT the Canadian Transport Commission be formally approached for a ruling on available subsidies.
5. THAT the Department of Highways as the authority responsible for the Lougheed Highway be kept informed of these proposals and their considerations be included in the final design.
6. THAT the G.V.R.D. be kept informed of these proposals.
7. THAT the Burlington Northern Railway Company be kept fully informed of these proposals to overpass their right-of-way.
8. THAT the utility companies be informed of these proposals as they may affect a substation and other services.
9. THAT attention be directed to determining what short-term palliatives will ease the traffic circulation in the intervening period of two to three years before the structure can be completed."

Following is a report from the Municipal Engineer on the proposals that have been received from consultants for the design of the subject structure.

RECOMMENDATION:

1. THAT the Corporation enter into an engineering agreement with Associated Engineering Services Ltd. to carry out the engineering services as outlined in the attached terms of reference, with payment to be as follows:
A maximum fee of \$116,500 including disbursements in accordance with "Outline of Services and Scale of Minimum Fees" of Association of Professional Engineers of the Province of British Columbia dated Sept. 5, 1973 (Scale I - Payroll plus 100%).

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TO: MUNICIPAL MANAGER

23 April, 1975

FROM: MUNICIPAL ENGINEER

SUBJECT: DESIGN OF KENSINGTON AVENUE GRADE SEPARATION STRUCTURE
AND ASSOCIATED ROADWORKS

In response to Council direction on 17 February, 1975, on the captioned subject, we have prepared terms of reference and invited proposals for provision of Engineering Services to design the Kensington Avenue Grade Separation Structure and associated roadworks.

The terms of reference, a copy of which is attached, were given to three consultants who are considered to be competent to undertake this type of work.

Proposals have now been received from each Consultant and we submit the following synopsis with comments:

(a) N.D. Lea & Associates Ltd.

Their proposal is in accordance with our prepared terms of reference. The fees for the work are estimated to be \$113,000 and will be charged in accordance with Scale I of the Professional Engineers Schedule of Fees (Payroll plus 100%) published 5 September, 1973.

(b) Associated Engineering Services Ltd.

Their proposal is also in accordance with our prepared terms of reference. The fees they have requested are also based on Scale I (Payroll cost plus 100%) of the B.C. Association of Professional Engineers Schedule of Fees published 5 September, 1973. They state in their proposal that the maximum or upset fee, including disbursements and soft costs investigation, will be \$116,500 on the condition that the project concept is not significantly altered.

It should also be noted that A.E.S.L. has just completed the preliminary study and are now actively preparing a submission to the Canadian Transport Commission, on behalf of the Corporation, for a grade separation subsidy.

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(c) Fenco

As with the other two proposals their proposal also is in accordance with our prepared terms of reference and their requested fees are based on the "Outline of Services and Scale of Minimum Fees" published by the Association of Professional Engineers of B.C. dated 5 September, 1973. Their proposal is to charge in accordance with Scale 2 --Percentage of Cost of Construction for all work excluding field surveys and special services for which they will charge according to Scale 1. No estimate of cost was given.

Fenco with their proposal suggested a further look at the possibility of an underpass at Sperling and the B.N.R.R. We have looked at the suggestion and do not recommend an underpass for the following reasons:

1. The Kensington route approved by Council provides in one span a grade separation at Lougheed Highway as well as at the B.N.R.R. The underpass proposal at Sperling would in all likelihood prohibit ever achieving grade separation at Lougheed because of grade problems.
2. The Kensington span provides for proposed future B.N.R.R. additional trackage. The underpass suggested by Fenco does not.
3. Peat conditions at Sperling are the most difficult in the Central Valley Area; i.e. several years ago Sperling Avenue, of its own accord, slipped about 10 feet west in front of Dairyland, recently a serious train derailment occurred immediately west of Sperling. We have all heard of the engine that was lost in the peat during railway construction and was never recovered. For these reasons we (the B.N.R.R. engineer agrees) are of the opinion that an underpass structure would not be advisable because of dewatering problems, excavation trenching, sidewall support and general instability hazards to be expected in such unstable ground. Other than piled foundation supports the overhead structure as proposed avoids the above-named problems and eliminates the need of expensive railway and roadway relocation during construction.
4. An underpass has perpetual drainage disposal problems and always is subject to the likelihood of flooding. Pedestrian use of an underpass is associated with a safety problem (i.e. mugging, vandalism, etc.) not usually associated with an overpass.

Having carefully reviewed all the proposals we recommend the proposal submitted by Associated Engineering Services Ltd. be accepted and an agreement for engineering services for this work be entered into with them.

The Treasurer advises that the budget contains approximately \$45,000 for this specific project and the balance of approximately \$71,500 would be obtained from the Contingency Fund that was established in the budget for this purpose.

RECOMMENDATION:

THAT the Corporation enter into an engineering agreement with Associated Engineering Services Ltd. to carry out the engineering services as outlined in the attached terms of reference, payment to be as follows:

Maximum fee of \$116,500 including disbursements in accordance with "Outline of Services and Scale of Minimum Fees" of Association of Professional Engineers of the Province of British Columbia dated 5 September, 1973. (Scale 1 - Payroll plus 100%).


MUNICIPAL ENGINEER

VHW:VK:cmg

Atch.

c.c. () Planning Director
() Municipal Treasurer

Engineering Services for the Design of
the Kensington Avenue Grade Separation
Structure and Associated Roadworks, Ramps,
& Intersections Between Laurel & Broadway

This project shall include all field survey, drafting and design work necessary to prepare a complete set of construction drawings, specifications and tender-contract documents. This work shall be carried out in consultation with and in accordance with the requirements of the Corporation, and shall be generally based on the following:

- (a) Design and prepare plans and specifications for a 4-lane roadway with curb and gutter both sides and an abutting sidewalk on west side. Provision for cyclists is required.
- (b) Design and prepare plans and specifications for storm sewers and culverts where necessary to complete the project.
- (c) Design and prepare plans and specifications for ornamental street lighting throughout the project.
- (d) Design and prepare plans and specifications for the structure overpassing the Burlington Northern Railway and the Lougheed Highway, including related drainage facilities and ramps as required.
- (e) Desirable maximum grade to be 6 percent.
- (f) Make arrangements with all affected Government agencies and Utility Companies with regard to securing approval for the proposed works, and provide estimates related thereto.
- (g) Pavement design to be based on the Golder Brawner Soils Report (attached to the A.E.S.L. report).
- (h) Provide a schedule of quantities for the structure and all roadways, ramps, drainage and ancillary works and an estimate of cost of all works;
- (i) Provide detail sketches of all right-of-way requirements in sufficient detail to have the Corporation B.C.L.S. prepare necessary legal plans.
- (j) Alignment of the roadway and location of ramps and ancillary improvements (i.e. connections to Broadway, Lougheed and/or the new road north of Hydro Sub Station) to be generally based on preliminary information contained in the A.E.S.L. report on "Kensington-Sperling Grade Separation Study" and in Burnaby's Planning Department report dated December 1974, "Kensington & Sperling Alignments - a Comparative Review" (a copy of each report is attached). Preference to be given to the best combination of ramps from Schemes II and III.
- (k) Proposals should be returned by Wednesday, 16 April, 1975.