

RE: G.V.R.D. RAPID TRANSIT STUDY - LRT ROUTES IN BURNABY

Following is a report from the Director of Planning regarding rapid transit.

On Page 113 of this report is a non-colored reproduction of a sketch. It is requested that when members of Council consider this matter, that they refer to the coloured sketch which they received with Item 16, Report No. 15 on 1980 February 25. Anyone wishing another colored sketch may obtain a copy upon request in the Planning Department. It should also be noted that a large coloured sketch will be on display in the Council Chamber during the meeting on April 14.

RECOMMENDATION:

1. THAT the recommendation of the Director of Planning be adopted.

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TO: MUNICIPAL MANAGER
FROM: DIRECTOR OF PLANNING
SUBJECT: G.V.R.D. RAPID TRANSIT STUDY - LRT ROUTES IN BURNABY
PLANNING DEPARTMENT
1980 APRIL 08

RECOMMENDATION:

1. THAT the recommendations (b. to g. inclusive) of the Burnaby Transportation Committee in its report to Council on 1980 March 24 be adopted.

REPORT

INTRODUCTION

The final reports of the G.V.R.D. Rapid Transit project were presented to the G.V.R.D. Board in December 1979. The project was directed by a Rapid Transit staff committee composed of Municipal Administrators and Officials of B.C. Hydro & Power Authority, the Urban Transit Authority and the Greater Vancouver Regional District. Arising from the final reports, staff committee made twenty-six (26) recommendations to the Greater Vancouver Regional District Board. Two of those recommendations dealt with Municipal comment and recommendation regarding station locations, alignments and rights-of-way as shown in a preliminary design. Council considered the attached report which specifically dealt with alignments and rights-of-way at its meeting of 1980 February 25. It is intended that a report dealing with the wider issues arising from the LRT project as embodied in the remaining twenty-four (24) recommendations of the G.V.R.D. Rapid Transit staff committee will be dealt with subsequently and presumably after the Transportation Committee has had ample opportunity to consider this question.

Council referred the staff report of 1980 February 25 to the Transportation Committee for its consideration and recommendation. On 1980 March 04, there was a public meeting of Council in the McPherson Park Junior Secondary School at which the G.V.R.D. staff made a presentation with regard to the LRT project. Subsequently, at their meeting of 1980 March 13, the Transportation Committee considered the subject of alignments and station locations in Burnaby and made the following recommendations to Council:

RECOMMENDATIONS OF THE BURNABY TRANSPORTATION COMMITTEE

- "a) THAT Council approve in principle the first and third priority LRT routing alignments and station locations in the Municipality of Burnaby.
- b) THAT Council request the G.V.R.D. to work in conjunction with Municipal staff to achieve implementation of the Metrotown core station, which accords with the Metrotown development plan, concurrently with the development of the first priority Rapid Transit line.
- c) THAT Council support a subway alignment for LRT through Metrotown and request that the G.V.R.D. provide, for further consideration, a preliminary design for a subway alignment.
- d) THAT Council not support the at-grade alignment of LRT along North Road and request that the G.V.R.D. provide, for further consideration, a preliminary design for an elevated alignment.
- e) THAT Council request the G.V.R.D. to work with Municipal staff to examine the proposed yard site location and layout with respect to the proposed Byrne/10th Connector, the proposed B.C.H.R. right-of-way realignment, and the appropriateness and impact of this facility in the context of existing and proposed land-use development in this area.
- f) THAT Council request the G.V.R.D. to work with Municipal staff to resolve the other areas of concern regarding alignments and station locations as discussed in this report and outlined in the summary.
- g) THAT Council authorize Municipal staff, in consultation with the G.V.R.D. to give further consideration to the design, circulation, accessibility and adjacent land uses at the proposed stations in Burnaby.
- h) THAT Council request the G.V.R.D. to ensure that there is the opportunity for a high degree of Municipal involvement in subsequent design and implementation work that is carried out with regard to LRT routes in Burnaby."

Council considered these recommendations at its meeting of 1980 March 24, and adopted recommendations a) and h) and requested that staff provide further comment on the recommendations b) through g). A more detailed consideration of these recommendations is provided in the attached report which was initially presented to Council at its meeting of 1980 February 25.

TABLED RECOMMENDATIONS OF THE BURNABY TRANSPORTATION COMMITTEE

- "b) THAT Council request the G.V.R.D. to work in conjunction with Municipal staff to achieve implementation of the Metrotown core station which accords with the Metrotown Development Plan, concurrently with the development of the first priority Rapid Transit line."

It is considered that for the proper integration of the LRT and land-use development in the Metrotown Core Area, the Core Station should be sited so as to penetrate to the heart of the Core Area. This station would also have a major bus transit interchange function in accordance with the transit focus concept proposed in the Comprehensive Transportation Plan for the Municipality. The G.V.R.D. Rapid Transit project included this station concept as part of the preliminary design, but because of the uncertainty surrounding the timing of redevelopment of the Core Area, the G.V.R.D. also proposed an at-grade interim station in the vicinity of Dow Avenue along the B.C. Hydro right-of-way. Such an interim station would be undesirable because it would not adequately perform the functions required of a Core Station and there would be added costs involved in ultimately relocating the interim station. Accordingly, it would be desirable if the Metrotown Station, developed to accord with the Metrotown Development Plan, were implemented concurrently with the development of a first priority rapid transit line.

Whilst it may be a necessary prerequisite that substantial redevelopment of the Core Area is required to provide such a station, further preliminary design work should be carried out to determine whether this is the case. A brief examination by Municipal staff suggest that it may be possible to provide such a station without necessarily causing substantial dislocation to the existing major property holders. In any case, cooperation and support of the major land holders (vis. Kelly-Douglas, Simpson-Sears, Electrolier) will have to be obtained. Staff have had preliminary discussions with senior officers of two of the key corporate holdings and they have expressed enthusiasm for the Metrotown Development Plan and, in particular, for the LRT station concept in the Plan.

- "c) THAT Council support a subway alignment for LRT through Metrotown and request that the G.V.R.D. provide, for further consideration, a preliminary design for a subway alignment."

The amount of subway alignment shown in the preliminary design by the Rapid Transit Project is the minimum necessary to provide for the penetration of the LRT to the Core Area station. The Metrotown Development Plan, as adopted by Council, suggested more extensive undergrounding. The reservations that staff hold with regard to LRT level crossings suggest that ideally a subway alignment should extend from the LRT undercrossing of Kingsway eastward to beyond Nelson Avenue. A preliminary design for such an alignment is required to fully assess costs relative to benefit.

- "d) THAT Council not support the at-grade alignment of LRT along North Road and request that the G.V.R.D. provide, for further consideration, a preliminary design for an elevated alignment."

The G.V.R.D. preliminary design proposes that the LRT operate at-grade on a median of North Road from the vicinity of the Freeway overpass northward. It is the view of staff that this proposal has major operational drawbacks with regard to traffic congestion and safety. These concerns would be overcome by providing grade separation by means of an elevated structure extending from the vicinity of the Freeway to the proposed at-grade LRT station adjacent to Lougheed Mall.

- "e) THAT Council request the G.V.R.D. to work with Municipal staff to examine the proposed yard site location and layout with respect to the proposed Byrne/10th Connector, the proposed B.C.H.R. right-of-way realignment, and the appropriateness and impact of this facility in the context of existing and proposed land-use development in this area."

The Regional District study has proposed that the LRT yard be located in Burnaby on a site north of Tenth Avenue and bounded by the B.C. Hydro right-of-way to the west and Twentieth Street to the east. However, due consideration has not been given by either the Municipality or the G.V.R.D. as to the appropriateness of this type of land-use at this location. In addition, the yard layout that the G.V.R.D. has shown in its preliminary design does not make provision for the alignment of the Byrne/10th Connector which is a key road link in the Comprehensive Transportation Plan.

"f) THAT Council request the G.V.R.D. to work with Municipal staff to resolve the other areas of concern regarding alignments and station locations as discussed in this report and outlined in the summary."

This recommendation is related to some relatively minor concerns staff have with regard to the preliminary design as presented. These concerns include -

- i. the freight team track in Central Park
- ii. the relationship with the Willingdon/LRT crossing, and
- iii. the operational concerns arising regarding the LRT/Imperial and LRT/Nelson crossings.

"g) THAT Council authorize Municipal staff, in consultation with the G.V.R.D., to give further consideration to the design, circulation, accessibility and adjacent land-uses at the proposed stations in Burnaby."

Whilst the station location sites in Burnaby (apart from Metrotown interim station) appear to be the appropriate ones, further study should be given to the circulation and accessibility of these stations by pedestrians, automobile users and public transit users. A closer study should also be made of the adjacent land-uses at the proposed stations in Burnaby.

DISCUSSIONS AND CONCLUSIONS

The purpose of this report on station locations and LRT alignments is to establish guidelines for further study and refinement of the preliminary design as developed in the Rapid Transit Project. Council's support of the Transportation Committee's recommendations will mandate the ultimate development of an LRT system that accords with the needs of the Municipality.

It should be noted that Council adoption of recommendations with regard to the LRT alignments and station locations does not imply either support or rejection of the LRT system as a whole - the decision whether LRT is implemented should be based on broader overall socio-economic considerations rather than these design details.

PL:lf
cc: Municipal Engineer


A. L. PARR
DIRECTOR OF PLANNING

ITEM
MANAGER'S REPORT NO.
COUNCIL MEETING

16
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1980 02 25

RE: G.V.R.D. RAPID TRANSIT STUDY - LRT ROUTES IN BURNABY

Following is a report from the Director of Planning regarding rapid transit.

RECOMMENDATION:

1. THAT the recommendations of the Director of Planning be adopted.

ITEM 1
MANAGER'S REPORT NO. 29
COUNCIL MEETING 1980 04 14

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TO: MUNICIPAL MANAGER PLANNING DEPARTMENT
FROM: DIRECTOR OF PLANNING 1980 February 15
SUBJECT: G.V.R.D. RAPID TRANSIT STUDY - LRT ROUTES IN BURNABY

RECOMMENDATIONS:

1. THAT Council approve in principle the first and third priority LRT routing alignments and station locations in the Municipality of Burnaby.
2. THAT Council request the G.V.R.D. to work in conjunction with Municipal staff to achieve implementation of the Metrotown core station, which accords with the Metrotown development plan, concurrently with the development of the first priority Rapid Transit line.
3. THAT Council request that the G.V.R.D. provide, for further consideration, preliminary designs for a subway alignment through Metrotown and an elevated alignment along North Road.
4. THAT Council request the G.V.R.D. to work with Municipal staff to examine the proposed yard site location and layout with respect to the proposed Byrne/10th Connector, the proposed B.C.H.R. right-of-way realignment, and the appropriateness and impact of this facility in the context of existing and proposed land use development in this area.
5. THAT Council request the G.V.R.D. to work with Municipal staff to resolve the other areas of concern regarding alignments and station locations as discussed in this report and outlined in the summary.
6. THAT Council authorize Municipal staff, in consultation with the G.V.R.D. to give further consideration to the design, circulation, accessibility and adjacent land uses at the proposed stations in Burnaby.
7. THAT Council request the G.V.R.D. to ensure that there is the opportunity for a high degree of Municipal involvement in subsequent design and implementation work that is carried out with regard to LRT routes in Burnaby.

REPORT

1.0 SUMMARY AND CONCLUSIONS

Staff are of the opinion that the LRT alignment and station locations in Burnaby as defined in the preliminary design by the G.V.R.D. Rapid Transit study should be supported in principle by Council. However, there are a number of major concerns and minor issues that should be resolved before work on the LRT advances beyond the preliminary design stage. These concerns are outlined below and discussed more fully in the main body of this report.

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1.1 Metrotown Concept - In order to avoid the problems associated with the interim Metrotown station and surface alignment, the G.V.R.D. in concert with the Municipality should strive to ensure the Metrotown core area station concept is implemented concurrently with the development of the first priority line. To achieve this, further work will have to be done on the design of the Metrotown core station and the cooperation of the major land holders in the area will have to be obtained. In order to protect the right-of-way, some residential property in the core area will have to be acquired. Further consideration should be given to extension of the underground alignment westward to Kingsway and eastward beyond Nelson in accordance with the Metrotown development plan.

1.2 North Road - The proposed operation of LRT, on surface, along a median strip on North Road is considered to be undesirable due to conflicts with road traffic. Therefore, it is proposed that the preliminary design should specify an elevated alignment between the freeway and the proposed station adjacent to Loughheed Mall.

1.3 LRT Yard Site - The yard site layout proposed should be redefined relative to the proposed Byrne/10th Connector and the B.C.H.R. right-of-way realignment (see 1.10). The land use implications relative to the yard site location also require further study.

1.4 Smith Avenue Station - If there is not to be a station at Smith Avenue, at this time, the design of the LRT and the future development of this area should not prejudice the addition of a station at this location at some future date.

1.5 Freight Team Track - The team track facility in Central Park should be relocated elsewhere in advance of the construction of the LRT.

1.6 Patterson Station - Further examination should be given by the Municipality to the possibility of including an automobile waiting area at the Patterson station.

1.7 Willingdon - The relationship of the Willingdon Avenue extension to the LRT line must be defined by a preliminary design. This consideration is related to point 1.1 above.

1.8 Imperial/Nelson - In advance of LRT construction, operational concerns related to proposed grade crossing at Imperial and Nelson in the vicinity of the Nelson/Imperial junction should be resolved. Grade separation by way of extension of the Metrotown underground alignment (see 1.1 above) is a possible means of overcoming these problems.

1.9 Rumble Station - Relative to relocation of the Edmonds bus loop and the implementation of a bus interchange at this station, some further examination should be made of the bus routing and street pattern in the vicinity of the station.

1.10 BCHR Realignment - There is a recent proposal to realign the BCHR right-of-way in the vicinity of 12th Avenue. The G.V.R.D. should be apprised of this proposal so that any right-of-way realignment does not prejudice the implementation of LRT.

ITEM

MANAGER'S REPORT NO.

COUNCIL MEETING

1980 02 25

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2.0 INTRODUCTION

At their meeting on January 14, 1980, Council received an information report regarding the conclusion of the G.V.R.D. high capacity rapid transit study. Attached to the Council's agenda was a copy of the final report's summary which included recommendations of the staff committee which had overall control of the study. Two of the study committee recommendations which are of immediate concern to Burnaby are as follows:

"Item 8: Councils of Municipalities along the first LRT alignment should at first examine the alignments and station locations shown in report two and make recommendations to the G.V.R.D. Board by 1980 March 01 on their choice of alignment options for the first LRT line.

Item 11: Councils of Municipalities along the second and third priority LRT routes should make recommendations to the G.V.R.D. Board by 1980 March 01 as to the specific rights-of-way plan for the second and third LRT lines. "

The purpose of this report is to place before Council sufficient background information and staff views to enable them to respond to the above recommendations. This report to Council on the LRT alignments (shown on Figures 1 and 2 attached) will discuss the relationship of the LRT to adopted Council policy, briefly detail the alignments and station locations, and the concerns of Municipal staff regarding the preliminary LRT design. These concerns are briefly outlined in the preceding Summary. It is expected that other, wider issues regarding the Rapid Transit study will be addressed at a forthcoming public meeting of Council and G.V.R.D. staff.

3.0 ADOPTED COUNCIL POLICY

Burnaby Council has dealt with LRT in its consideration and adoption of Burnaby Metrotown Development Plan and, more recently, the Comprehensive Transportation Plan for Burnaby. The LRT alignments and station locations now under consideration are not substantially at variance with the concepts proposed in the aforementioned reports.

In the development plan for Metrotown provision for LRT was seen as a prerequisite to the full development of a regional town centre in the vicinity of Central Park. A subsequent study (Metrotown Transportation Study by N.D. Lea & Associates) in 1978 confirmed that LRT would be required to meet the increased travel demand generated by the development proposed in Figure 3 attached shows the LRT concept for Metrotown that was proposed in the development plan. The most important element in this concept is the Metrotown core area station which is proposed to be on an underground alignment penetrating to the heart of the maximum activity area. This station is to be a major interchange bus transit to further enforce the integration between land-use development and transportation. The other stations in the vicinity of Metrotown would have a lesser function and this accords with the preliminary design proposed by the Rapid Transit study.

The Metrotown Concept suggested that a substantial proportion of the LRT alignment through Metrotown would be either in deep-cut or in cut-and-cover, and that the freight railway would be phased out of the B.C. Hydro right-of-way in the longer term. The Rapid Transit project assumes that it would not be necessary or cost-effective to extinguish the freight track from the B.C. Hydro right-of-way and, therefore, the retention of the freight track effectively rules out the placement of LRT in cut within the confines of the right-of-way. The preliminary LRT design indicates a minimal length of subway alignment which is related to the Metrotown core station. An underground alignment, in addition to the obvious environmental benefits offers operational advantages with respect to cross traffic and accordingly the LRT design should consider extension of the core area subway westward to link up with the Kingsway grade separation and eastward beyond Nelson.

ITEM
MANAGER'S REPORT NO. 1
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COUNCIL MEETING 1980 04 14

In the development of the Comprehensive Transportation Plan, the Burnaby Transportation Committee considered first priority LRT line to be an integral component of their plan. The Conceptual Transportation Plan adopted by Council is shown on Figure 2 attached. Superimposed on this map are the station locations identified in the preliminary design and also placed on the map is the Northeast Sector to New Westminster branch of the LRT system in Burnaby. This latter alignment was omitted from the Conceptual Plan because the Transportation Committee was not certain of the immediate viability of this proposal. The LRT station locations proposed for Burnaby and the types of stations defined in the preliminary design fully accord with the transit focus concept proposed in the Comprehensive Transportation Plan.

It should be noted that the concurrent development of the Comprehensive Transportation Plan and the design of the LRT prevented the Rapid Transit Study from taking full account of how the road component of the Conceptual Transportation Plan would relate to the LRT system. These differences are discussed in the following sections.

4.0 FIRST PRIORITY LINE (VANCOUVER TO NEW WESTMINSTER)

The G.V.R.D. Rapid Transit project has worked in consultation with Municipal staff and therefore the final report does reflect consideration of Municipal needs. Nevertheless, staff do have some concerns with the preliminary design presented and these concerns are discussed below along with background information regarding station locations and alignments. The discussion of the first priority line below is ordered in a sequential fashion proceeding eastward from Boundary Road.

The Vancouver/New Westminster LRT alignment in Burnaby (see Figure 4 attached) makes use of the B.C. Hydro right-of-way for its entire length, except where it deviates to penetrate the Metrotown core. The LRT line is at grade throughout its length except for the subway section at the Metrotown core station and grade separations with the freight railway and Kingsway. Apart from Kingsway and Stride, cross streets are not grade separated from the LRT line and road/rail junctions are signal controlled with priority given to LRT. Noise attenuation barriers have been assumed in the preliminary design.

4.1 Boundary Road - The LRT overcrosses Boundary Road at the same grade as the freight railway does presently. There was some initial discussion of placing a station at this location; however, preliminary examination by the G.V.R.D. consultants showed that a station here would be very expensive to implement.

4.2 Smith Avenue Station - The Rapid Transit project has considered "alternative" station location at the foot of Smith Avenue. This station was considered as an alternative to one at Patterson, but this location, relative to demand, is not as desirable as the Patterson one. Provision of two stations in this area would, of course, not only slow down the LRT, but stations would also tend to "compete" because of overlapping catchment areas. The Metro Development Plan Concept suggests stations at both Patterson and Smith but on balance if one of these stations is to be considered redundant, it is preferable to retain the Patterson Avenue station. However, depending on what station locations are chosen in Vancouver, there may ultimately be a need to provide a station at Smith Avenue and, therefore, it would be desirable if the LRT were constructed so as not to prejudice the future addition of a station at this location.

- 4.3 Kingsway - Because of high traffic volumes on Kingsway, the LRT dips under the road, however the freight track level crossing would remain because substantial changes to its grade are not feasible.
- 4.4 Central Park Team Track - After undercrossing Kingsway, the LRT line swings south in order to retain a team track loading facility in Central Park that is serviced off Kingsway. Because this necessitates moving a 20" gas main and as the retention of the team track within a park setting is not considered desirable, further effort should be given to the relocation of this facility.
- 4.5 Patterson Avenue Station - The station at Patterson Avenue is seen as a community-orientated station with informal onstreet "kiss and ride" drop-off of passengers and a minor interchange with bus transit. This station location requires no additional property acquisition beyond the existing rights-of-way; however, the Municipality should consider reserving the option of providing an auto pick-up area along the side of the station on Beresford. Some property acquisition may be required to reserve this option.
- 4.6 Willingdon - The LRT design does not include consideration of the Willingdon extension through to Patterson which is shown as part of the Metrotown collector network in the Conceptual Transportation Plan. It is expected that with a subway alignment Willingdon would cross over the LRT and intersect the freight railway at a level crossing.
- 4.7 Metrotown Core Station - The G.V.R.D. in a preliminary design has considered two core area station possibilities. The design team was concerned that "no definite schedule for the development of the Metrotown core has been set by the Municipality of Burnaby. It is therefore possible that relocation or redevelopment of Simpson-Sears, Kelly Douglas, Electrolier and other properties on the subway alignment assumed by the project could take place before, during or several years after the construction of an LRT line. If development of the core occurs before or during construction, then a detailed easement for the subway alignment and construction of a cut-and-cover station should be secured before the Municipality begins considering applications for the development approval in the area".

To allow for the possibility that LRT is implemented in advance of the redevelopment of the core area, the G.V.R.D. has also considered a surface alignment south of the Hydro freight track with the station located in the vicinity of Dow Avenue. The view of Municipal staff is that such a station is highly undesirable even as an interim measure because of the awkward access to the commercial core as well as the inadequate bus interchange facilities. The Metrotown core area station would function as a major transit interchange and therefore there are a number of conditions that should be fulfilled:

- 4.7.1 The bus station should be as close to the LRT as possible in order to minimize the interchange time.
- 4.7.2 The interchange between buses should be convenient.
- 4.7.3 There should be direct access to Metrotown core area for both LRT and bus users.
- 4.7.4 Pedestrians should be segregated from bus traffic and road traffic.

Clearly, the interim station which would be located at grade and south of the freight tracks behind Sears would not adequately fulfill these criteria.

If the interim station is constructed, and subsequently the core area station is implemented, added unwarranted expense would have been incurred in the initial provision of the interim facility and there would be additional expenses arising from the inevitable dislocation that is caused by the upgrading of the alignment. If the core area station is provided concurrently with the construction of the LRT line, then it will be possible to make additional savings by way of eliminating LRT/freight rail conflicts. The long term viability of the Metrotown core requires the provision of this LRT station and the early implementation of the station concept outlined in the Metrotown Development Plan would, it is expected, act as a catalyst for major redevelopment.

However, the implementation of the core station is contingent upon the redevelopment of some, if not all, of the major land holdings in the core area. In addition to requisite underground easements through the major land parcels right-of-way through the residential area west of the core will have to be procured.

4.8 Metrotown Subway - The Metrotown Development Plan proposes that "the LRT will be underground or in a bridged open cut in selected locations as it passes through Metrotown to avoid the danger of at grade crossings and to reduce noise intrusions by LRT vehicles into adjacent higher density residential areas". However, the Rapid Transit study, as discussed previously, proposes a minimal length of underground alignment.

4.9 Nelson/Imperial - The LRT line will cross both Imperial and Nelson at grade at signalized junctions. Municipal staff anticipate a problem with this arrangement because of the proximity of the level crossings to the intersection of Nelson and Imperial. The Rapid Transit project has considered this problem in light of present day traffic but they feel that grade separation would not be warranted. In advance of construction of the LRT line, it would be desirable to further examine traffic flow projections to obviate any possibility of having to provide a grade separation or expensive alterations to the road network a short time after the LRT commences operation. Extension of the Metrotown subway alignment eastward beyond Nelson would alleviate the operational concerns.

In the vicinity of Marlborough Avenue, the LRT alignment crosses the freight railway by underpassing it from south to north. It has been suggested to the G.V.R.D. that this crossover should be made at Nelson Avenue and/or Imperial in order to provide a grade separation of the road as well but the G.V.R.D. maintains that this is not cost effective. It should be noted that the need for this rail freight/LRT grade separation would be eliminated if the subway alignment penetrating the Metrotown core area were implemented as part of the initial construction.

4.10 Royal Oak Station - A station is proposed to be located immediately to the east of Royal Oak. This is a community-orientated station with onstreet interchange with local transit and a waiting area for cars is provided along side the station and to the south of it.

4.11 Buller Avenue - Immediately to the west of Buller Avenue is the point where the B.C. Hydro right-of-way branches with the 100' right-of-way continuing on to the Edmonds bus loop. The LRT takes the southward branch of the right-of-way towards New Westminster. Because this right-of-way is only 50' wide, it would be desirable to provide for future buffering of the enclave of residential area abutting the railway right-of-way west of Gilley Avenue when redevelopment occurs. Further study would be required to determine whether property acquisition for expansion of the right-of-way was warranted.

4.12 Rumble Station - The Rumble station as shown in the preliminary design is located south of Rumble in the vicinity of Edmonds. The station is to incorporate a bus loop and auto drop-off. It would be a secondary transit interchange as shown on the Conceptual Transportation Plan and is intended to replace the bus loop at Edmonds and Kingsway. It should be noted that the preliminary design for the LRT station in this area still incorporates the possibility of a Gilley alternate road link; although of course this proposal has been dropped in the Comprehensive Transportation Plan.

4.13 Stride Avenue - The LRT is grade-separated from Stride Avenue by an underpass which is required because of the need to grade separate the LRT from the freight railway spur servicing Safeway.

4.14 B.C.H.R. Right-of-Way Relocation - Municipal staff and the B.C. Hydro Railway have recently considered the possibility of realigning the railway right-of-way eastward in order to create a suitable industrial site east of Stride and north of Mission. Council was shown a preliminary sketch of this realignment at its meeting of 1980 02 11 (Item 11, Manager's Report No. 11) in its consideration of a soils study for the Stride Avenue Industrial Area. Whilst it is not anticipated that this realignment will in any way prejudice the development of the LRT, the G.V.R.D. should participate in the further precise definition of the right-of-way relocation.

4.15 LRT Yard Site - The G.V.R.D. proposes to locate the LRT yard site in the redundant gravel work site north of Tenth Avenue and west of Twentieth Street. Apparently work on the LRT study had progressed to the point where it was not possible to incorporate Comprehensive Transportation Plan and, therefore, the yard site plan does not include the possibility of the Byrne/Tenth Connector which would impinge on the yard lay-out shown. The preliminary design of the LRT yard site will have to be revised to reflect the proposed road link as well as the possibility of the rail right-of-way realignment discussed above. Municipal staff have not had sufficient opportunity to consider fully the ramifications of an LRT yard at the proposed location.

5.0 FIRST PRIORITY LINE (NEW WESTMINSTER TO LOUGHEED MALL)

It is proposed that the LRT line from New Westminster to the northeast sector be only extended as far as the Lougheed Mall in the provision of the first priority rapid transit line. The basic alignment utilizes railway rights-of-way to carry it from New Westminster to the Brunette Interchange, where a park and ride station would be provided, and thence to North Road. An alternative alignment which would utilize North Road south of the Freeway was considered, however this alignment would require considerable land-use dislocation and the opportunity for providing a park and ride interchange station that was accessible to the Freeway would be limited. The LRT alignment in Burnaby would be at grade in a central median on North Road from the Freeway to a terminus station at Lougheed Mall.

The primary concern with the preliminary design is related to the at-grade operation of LRT. This requires a signal controlled LRT crossing at the point where LRT makes a transition into the median of North Road (to effect this the LRT has to swing across the northbound lanes) and the LRT would cross Lougheed and Austin at the existing intersections with North Road. The preliminary design proposes that these intersections "be reconstructed to preserve all traffic movements including left turns". However, the North Road/Lougheed intersection and the immediately adjacent major road junctions are heavily congested during peak periods at present and the introduction of LRT into the North Road traffic stream would tend to exacerbate matters. In addition to operational problems there are concerns regarding the safety of effecting a left turn movement across adjacent LRT tracks. Therefore it would appear to be desirable to grade separate the roadway and LRT. The grade on North Road and the expense of subway suggest that an elevated alignment for the LRT is more cost effective particularly because this is a commercial area where an overhead structure would not necessarily be environmentally intrusive. A preliminary examination indicates that approximately 0.8 km (kilometres) of LRT viaduct extending from north of the Freeway to the vicinity of the proposed station is required.

ITEM

MANAGER'S REPORT NO.

COUNCIL MEETING 1980 02 25

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Some aspects of this alignment are discussed below in a northward ordered sequence:

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- 5.1 Freeway - The LRT basic alignment passes underneath the Freeway overpass alongside North Road. Immediately north of the Freeway the LRT alignment crosses over the northbound traffic lanes to gain an alignment in the road median. To accomplish this operational plan North Road will have to be reconstructed and additional right-of-way may be required.
- 5.2 Lougheed Highway/Austin - The proposed LRT alignment, in the median of North Road, crosses the Lougheed Highway and Austin at grade. Some of the problems related to this operational plan are discussed above.
- 5.3 Lougheed Station - There would be a centre platform at grade station adjacent the Lougheed Mall on North Road which would be the terminus of this branch of the first priority line. The station would be connected by underpasses to the Lougheed Mall parking lot and the existing bus interchange. A new access road to the shopping centre from North Road would have to be provided and in their concept of the station the G.V.R.D. suggests the possibility of additional commercial development above the existing parking lot adjacent the station. This station would function as a major transit focus in accordance with the Burnaby Comprehensive Transportation Plan.

6.0 THIRD PRIORITY LINE (LOUGHEED MALL TO NORTHEAST SECTOR)

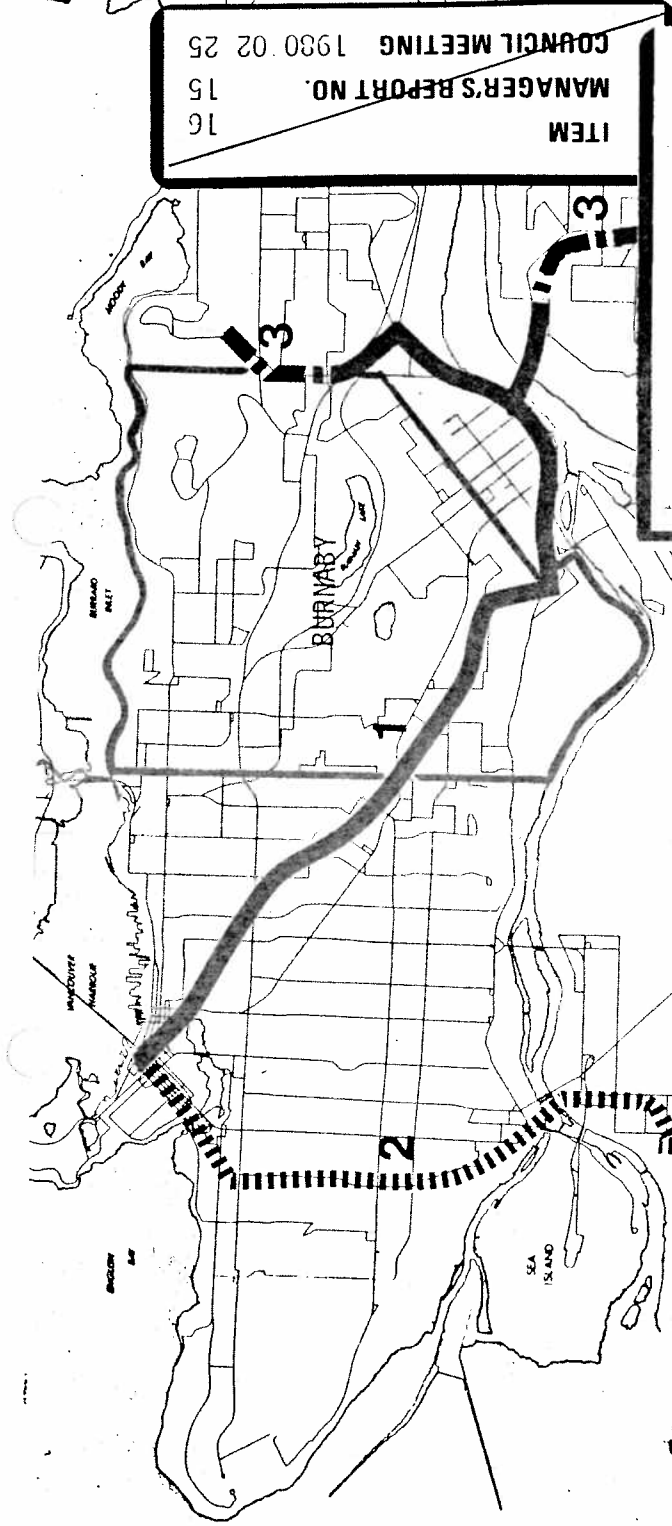
The third priority line in Burnaby consists of the extension of the New Westminster to northeast sector rapid transit branch line up North Road and Clark Drive from Lougheed Mall to Burquitlam Plaza and beyond. The LRT would operate in the median of the roadway and, because there are no major intersecting streets, there would appear to be no serious concerns regarding this method of operation in Burnaby although there may well be constraints in terms of cross traffic in Coquitlam.



A. L. PARR
DIRECTOR OF PLANNING

PL:lf
Attachments
cc: Municipal Engineer

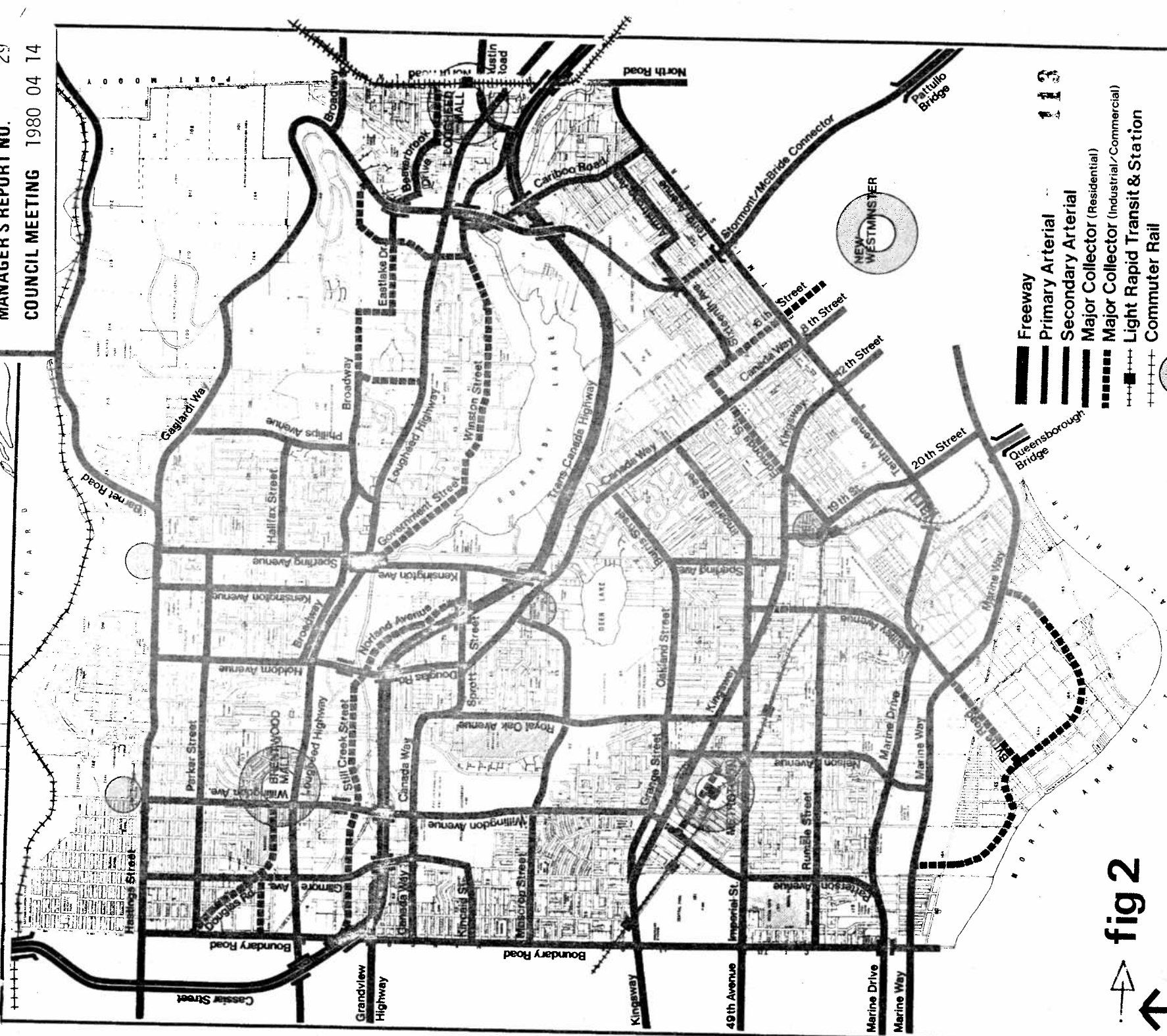
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▲ **fig 1** PRIORITIES FOR LRT CONSTRUCTION

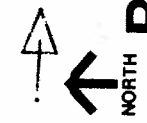
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- Freeway
- Primary Arterial
- Secondary Arterial
- Major Collector (Residential)
- Major Collector (Industrial/Commercial)
- Light Rapid Transit & Station
- Commuter Rail
- Major Transit Focus
- Secondary Transit Interchange

fig 2



Relationship of LRT to the

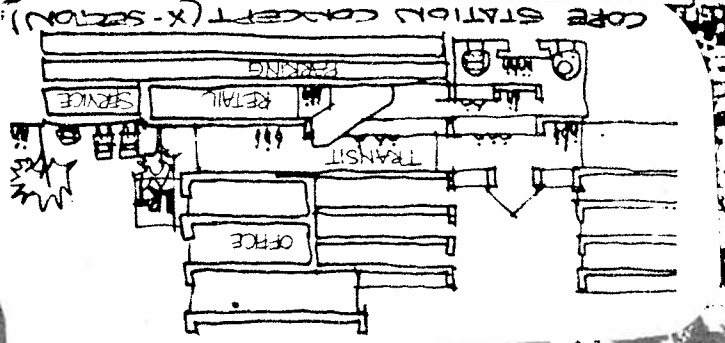
CONCENTRAL TRANSPORTATION

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fig 3 Metrotown Concept

source: BURNABY METROTOWN - A Development Plan, June 1977

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FIRST PRIORITY LRT LINE
(Vancouver to New Westminster)

Crossing Treatment
c road closure
s signalized
(grade separation
? to be defined

115

fig 4

