

THE CORPORATION OF THE DISTRICT OF BURNABY

TRANSPORTATION COMMITTEE

HIS WORSHIP, THE MAYOR
AND MEMBERS OF COUNCIL

Madam/Gentlemen:

REPORT OF THE TRANSPORTATION COMMITTEE

1. Annacis Island Crossing System

Recommendation:

"THAT this report be received for information purposes."

R E P O R T

Council, on 1980 March 10, referred Item 3, Municipal Manager's Report No. 19, 1980 March 10, concerning the recently announced new major crossing of the Fraser River at Annacis Island to the Transportation Committee for consideration.

The Transportation Committee met on 1980 April 08, to review the land use and transportation implications arising from this proposal as discussed in the attached staff report. (Item 3, Municipal Manager's Report No. 19, 1980 March 10 as amended)

Arising out of the Transportation Committee deliberations regarding the Annacis Island Crossing System, they wish to advise as follows:

- (a) That, in the opinion of the Transportation Committee, the Comprehensive Transportation Plan for Burnaby has the capability of accommodating the Annacis Island Crossing System.
- (b) That it is absolutely imperative that Burnaby staff members continue to liaise with Ministry of Transportation and Highways staff on the design of the northern bridgehead crossing to ensure that northbound automobile traffic over the Annacis Crossing does not infiltrate Burnaby's residential areas.
- (c) As more information becomes available, the Transportation Committee will monitor the effects of the Annacis Crossing on the Implementation Strategy for the Comprehensive Transportation Plan for Burnaby and advise Council accordingly.

AGENDA 1980 04 21

COPY - MANAGER

- ENGINEER

- PLANNER

Respectfully submitted,

Alderman W.A. Lewarne,
Chairman

Alderman G.D. Ast,
Member

Alderman D.N. Brown,
Member

Mr. G.W. Ramsell,
Community Group Representative

Mr. R.W. Tarling,
Community Group Representative

RDS:ef

attach. Item 3, Municipal Manager's Report No. 19, 80 03 10 as amended

ITEM	3
MANAGER'S REPORT NO.	19
COUNCIL MEETING	1980 03 10

RE: ANNACIS ISLAND CROSSING SYSTEM

Following is a report from the Director of Planning regarding an announced new major crossing of the Fraser River at Annacis Island.

RECOMMENDATION:

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

* * * * *

TO: MUNICIPAL MANAGER 1980 March 04
 FROM: DIRECTOR OF PLANNING
 RE: ANNACIS ISLAND CROSSING SYSTEM

RECOMMENDATION

1. THAT Council forward a copy of this report to the Transportation Committee for its consideration.

REPORT

INTRODUCTION

On 1980 February 22 the Province of British Columbia announced the immediate start of construction of a major new crossing of the Fraser River at Annacis Island. Subsequently at its meeting of 1980 February 25 Council requested a report from staff on the ramifications of the Annacis crossing system. The purpose of this report is to provide Council with a preliminary assessment of the land use and transportation implications arising from this proposal. The fact sheet on the Annacis system that was issued by the Provincial Government is attached as Appendix 1, and also attached as Figure 1 is a plan showing the location of the bridge crossing and its approaches.

TRANSPORTATION IMPLICATIONS

1. Regional-

In the course of the LRT Study the GVRD transportation model was used to predict 1986 travel at a regional level relative to two alternative land use patterns, and a variety of road and public transportation options. For the purpose of assessing some of the implications on regional travel patterns, staff have further examined the model results which included an Annacis crossing relative to model tests which did not.



Our interpretation of these data suggests that there will be considerable restructuring of travel patterns across the Fraser River because of the Annacis crossing and that this reorientation includes additional trips which would otherwise have been deterred by congestion arising as a consequence of capacity short falls.

If present trends in growth continue, the 1986 peak period demand for vehicular travel across the Fraser River is estimated to be at or near the total capacity that would be provided by the existing crossings and the Annacis system. However, without the Annacis crossing the congestion level would be considerably worse at the three existing crossings of the Fraser main channel (viz., George Massey Tunnel, Pattullo Bridge and Port Mann).

It has been suggested that the Fraser crossings act as a "throttle" which effectively regulates the amount of congestion in the Burrard Peninsula. This is undoubtedly true but the capacity of a new major crossing at Annacis is small relative to the total capacity of the arterial road network in the Burrard Peninsula, and therefore any overall increase in the level of congestion resulting from Annacis would be marginal.

2. Relationship to LRT-

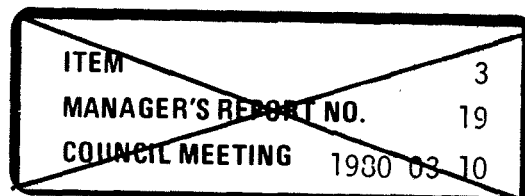
There has been some discussion as to whether the construction of the Annacis system would in any way be prejudicial to the development of LRT. Inasmuch as both projects are very expensive and must therefore compete for limited funds it can be argued that Annacis might defer the LRT project's initiation but this type of argument can be advanced to relate LRT to any other major public expenditure item.

Whilst the new crossing has been designed so that it may ultimately incorporate an exclusive public transit right-of-way, the demand for mass transit in this corridor would appear to be limited in the foreseeable future and in any event it is clear that the appropriate LRT crossing point of the Fraser is at or near Pattullo Bridge. However, this location is inappropriate for an additional road crossing of the Fraser main channel. The substantial addition of extra road capacity across the Fraser at Pattullo would have a major undesirable impact on both Burnaby and New Westminster streets on the north end as well as Surrey streets to the south, even with the considerable expenditure that would be required to augment the capacity of the roads that service the existing Pattullo bridgeheads. In order to maximize accessibility and to disperse the traffic effects of major bridge crossings it is desirable that they should be well spaced - the proposed Annacis crossing alignment fulfills this requirement.

Whilst the additional congestion that would arise from not providing an Annacis crossing might well force more people to use LRT to cross the Fraser River, there is no reason to believe that the viability of LRT is contingent upon this effect.

3. Burnaby-

The proposed Annacis crossing system relies on existing crossings of the north channel of the Fraser, and in particular, the Queensborough Bridge, the capacity of which is presently under-utilized. It is expected that the Municipality's adopted Comprehensive Transportation Plan is capable of coping with this traffic but, as discussed below, further work is required to determine the precise effects on individual road network elements in Burnaby. A preliminary examination suggests that Marine Way will be adequate in distributing Annacis traffic from Queensborough westward. Northbound traffic will impose additional loading on 19th/20th Streets, eastbound traffic destined for New Westminster will use Stewardson Way/6th Avenue. This pattern of movement is in accordance with Burnaby's adopted Conceptual Transportation Plan.



However the full ramifications of Annacis traffic on roads in South Burnaby, particularly those on the south slope, can only be assessed after a more refined estimate is made of future travel patterns. It has been proposed that a detailed Transportation Study of Burnaby be carried out utilizing the GVRD model as an analysis tool with the Annacis crossing considered in the course of this work. This study was outlined in the report to Council of 1980 February 18, at which time Council authorized that financial support should be sought from the Provincial Government via a 1980 Planning Grant. Subsequent to the further analysis of Annacis traffic, consideration should be given to the implications that Annacis has on the Implementation Scheduling currently proposed for the projects in the Comprehensive Transportation Plan.

The Provincial Government's consultants on the Annacis Island project are CBA Engineering Ltd. and their report predicts that of the traffic crossing the main arm of the Fraser at Annacis Island 50% would cross the north arm utilizing the Queensborough Bridge. Of this 50%, half would have destinations to the west and therefore be channelled onto Marine Way, and the other half would proceed east towards New Westminster. Our analysis of the GVRD model work suggests that traffic flows on the Queensborough Bridge would probably be greater than those implied by the bridge traffic decay data put forward by CBA. CBA have suggested that 30% of the north bridgehead traffic would be dispersed along the Westminster Highway towards Richmond, however, GVRD model data indicates that the Knight and Oak Street crossings of the Fraser north arm will be heavily congested by 1986 (trend growth). For these crossings the diversion of traffic from George Massey Tunnel to Annacis will be offset by growth in traffic from Richmond as well as the Annacis traffic which would be distributed to the north arm crossings by way of the Westminster Highway. Thus congestion at the Oak and Knight Street Bridges arising from projected capacity shortfalls may further encourage Annacis traffic to use the Queensborough Bridge.

LAND USE IMPLICATIONS

1. Regional-

In the course of the LRT Study (as mentioned in Transportation Implications - Regional above) a number of land use and infrastructure alternatives were tested utilizing the GVRD transportation model and an analysis was undertaken of travel demand relative to capacity across various screen-lines in the Lower Mainland. It was found that the most important variable in determining whether demand exceeds capacity is the land use pattern. Two land use patterns were considered in the GVRD Study, viz.

- (i) The "trend growth" settlement pattern basis was that the present trend towards a larger share of new employment in Vancouver and new homes in suburban communities would continue
- (ii) The "managed growth" pattern assumes that a better balance between jobs and resident labour force in various parts of the region would be achieved in accordance with the "Livable Region Plan".

The model tests show that the "trend" land use pattern results in considerably more congestion than a land use pattern that accords with the GVRD Livable Region Program. Consequently, it would be more desirable that growth in the region were channelled so that employment was dispersed and so that labour force, and therefore population, were concentrated in existing built up areas.

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Shortfalls in capacity across some screenlines were predicted by the model regardless of the transportation improvements made. For example, the increased capacity provided by a new Annacis crossing would not eliminate traffic congestion that people would experience crossing the Fraser River because a considerable proportion of the new capacity would be offset by the increased number of trips that would cross the river in the trend land use scenario. However, in the case of the managed growth (LRP) land use scenario with minimum transportation improvements the apparent congestion level on the Fraser arm crossings would be less than the level of congestion that the trend land use would project for the Fraser crossings, even with Annacis.

Similarly, the provision of an LRT network offers marginal benefits with regard to projected shortfalls in road capacity, if present trends continue. A policy of managed growth in accordance with the Livable Region Plan would not only improve the viability of LRT but also reduce the amount of traffic congestion projected.

Although it may be suggested that the provision of an Annacis crossing would tend to reinforce the trend growth patterns which will ultimately result in the worsening of traffic congestion in the Lower Mainland, it is questionable whether the restriction of transportation supply is the most effective tool for managing growth. Clearly it is important that in the first instance land-use development must be regulated so that travel demand does not outstrip capacity. The Lower Mainland is currently "on the road" to achieving the trend land-use scenarios that resulted in the high growth in congestion in the G.V.R.D. model studies, but the provision of an Annacis crossing will have little effect on this ultimate level of congestion.

The Annacis Crossing itself will not necessarily have an adverse effect on growth management. Although the crossing will provide an incentive for further residential development in North Surrey and Delta, it will also create the opportunity for further development of employment outside of Vancouver in accordance with the Livable Region proposals. In this regard, the crossing may be seen as a catalyst to industrial development on Annacis Island, in the Queensborough area of New Westminster and in Burnaby's Big Bend area.

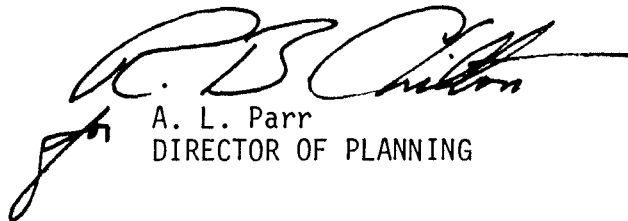
2. Implications in Burnaby

As previously mentioned, it is expected that the Annacis crossing and the prerequisite provision of the Marine Way will enhance the industrial development potential of Burnaby's Big Bend area. The crossing will also make Burnaby's Metrotown more accessible to people residing in North Delta/Surrey and thereby increase the viability of this proposed regional commercial core area.

Although there will be more travel in South Burnaby, preliminary analysis of traffic capacity suggests that with the new road proposals there would be spare capacity on arterials that will not be offset by Annacis traffic. However, the provision of further additional crossings such as a new crossing at Pattullo Bridge, or a new north arm crossing of the Fraser through the Big Bend area might well cause problems for South Burnaby residential areas.

SUMMARY AND CONCLUSIONS

1. The proposed Annacis system addresses a definite short term need for additional road capacity across the Fraser River.
2. Given that such a crossing is required, the alignment of the Annacis system including the use of the existing Queensborough Bridge provides the most effective solution.
3. The crossing system proposed does not conflict with the adopted Comprehensive Transportation Plan for Burnaby and the additional traffic that would be placed in Burnaby by the Annacis system would appear to be adequately provided for by the Conceptual Transportation Plan.
4. There should be no disruption to residential areas in Burnaby as a result of the construction of the Annacis system, however, further detailed analysis should be carried out in order to fully assess the ramifications of this proposal. The implementation schedule for the Comprehensive Transportation Plan may have to be refined as a result of this further study.
5. It is expected that there will be positive benefits in terms of the development of Burnaby's Big Bend and Metrotown as a result of the implementation of the Annacis system.
6. Notwithstanding the short term benefits that would accrue from the proposed Annacis system, there is a need for managing growth throughout the region in accordance with the Livable Region Plan in order to minimize future traffic congestion (and the need for major capital expenditure on road improvements).



A. L. Parr
DIRECTOR OF PLANNING

PL/hf

Attach.

c.c. - Municipal Engineer



FACT SHEET
THE ANNACIS SYSTEM

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BACKGROUND: to relieve congestion on Massey Tunnel, Pattullo Bridge and Port Mann Bridge - these three crossings now carry 11,100 vehicles per hour during peak periods - 1,100 vph over acceptable safety limits.

from the 1971 census year to 1985, the population of the area to be served by the new Annacis System is expected to double.

by 1985, 29% of GVRD population will live in this area.

ROUTE: from Highway 99 and 112th Avenue, Delta to Marine Way, Burnaby

paralleling Burlington Northern railway track corridor to River Road; bridge crossing at south arm of Fraser River to Annacis Island and at Annacis Channel; connecting to Queensborough Bridge and onto Marine Way.

SPECIFICATIONS: 4 lanes, 60 km/h maximum speed limit

Interchanges at Hwy. 99, Annacis Island, Westminster Hwy. with other access to existing road networks via signalized intersections.

can be expanded to 6 lanes to accommodate preferential bus access and lanes or light rapid transit.

BRIDGES: Main bridge at Annacis Island: length - 2560 metres span - 440 m, navigational clearance - 56 m, channel width - 365 m; cable stayed design - first in western Canada

Low level bridge over Annacis Channel

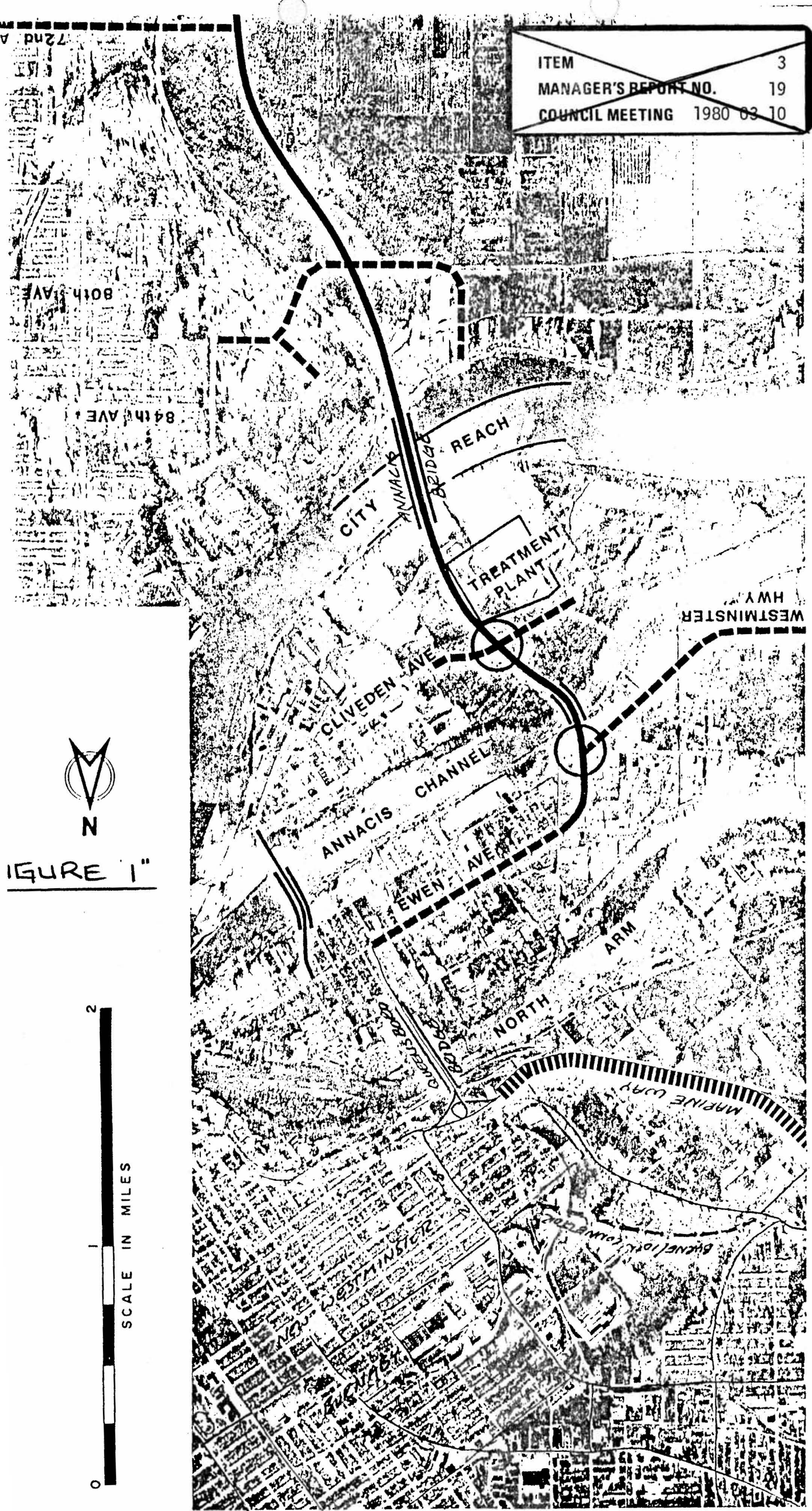
Existing causeway and railway link over Annacis Channel to be rebuilt into swing bridge to allow continued access to Channel

COST: Highway and bridges: \$130 million total of which
 main span at Annacis Island: \$76. million
 Annacis Channel bridges: \$13.25 million
 balance for approaches, engineering etc.

ECONOMIC BENEFITS: Employment at peak construction: 4,000 new jobs of which 1,000 will arise directly from the construction and 3,000 from related industries.

"APPENDIX 1"

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ANNACIS ISLAND CROSSING

