

THE CORPORATION OF THE DISTRICT OF BURNABY
TRANSPORTATION COMMITTEE

HIS WORSHIP, THE MAYOR
AND ALDERMEN

REPORT OF THE TRANSPORTATION COMMITTEE

RE: GILLEY ALTERNATE REVIEW

=====

RECOMMENDATIONS:

1. THAT the 5-Year Capital Budget accord high priority to Marine Way/10th Avenue Connector construction coupled with the Griffiths/19th/20th Street improvement in order to allow for the early declassification of Gilley Avenue as a truck route.
2. THAT the construction of the northern portion of the Gilley Alternate that crosses the Byrne Creek Ravine and the B.C. Hydro Right-of-Way and links to Edmonds Street be deleted from the Municipality's 5-Year Capital Budget.
3. THAT authority be given to pursue the upgrading of Stride Avenue southwest of the 19th Street route in recognition of its function as the major link between Edmonds Town Centre South and the wider Community Plan area and a primary gateway to Edmonds Town Centre South.

SUMMARY

At a regular Council Meeting held 1988 June 20, Council requested

"THAT Staff undertake a fundamental review of the need for the Gilley Alternate proposal, firstly as an arterial and secondly as a truck route, and further, staff are to provide updated statistical background information to help substantiate the need for the road, and may wish to relate the road to the transportation plan and past reports on the matter, and it will be expected that staff will provide a recommendation to Council in relationship to the future need for the road. Secondly, assuming the need for the road is confirmed, staff are to examine and recommend any possible alternatives to the existing proposal that will help mitigate the impact on the upper ravine area, for instance, some possible ideas discussed included a bridge structure, a twin cuplet system at the top end or a different, more compatible alignment which does not necessarily link with Edmonds Street.

INTERNAL DISTRIBUTION:

- AGENDA 1988 DECEMBER 12
- COPY - MUNICIPAL MANAGER
- DIR. PL. & BLDG. INSP.
- DIRECTOR ENGINEERING

Thirdly, that these future reports will include all cost estimates of any proposed alternatives and fourthly, that this report will be forwarded to the Transportation Committee prior to being brought back to Council."

This report is intended to respond to this request by Council. Staff have reviewed the Gilley Alternate project in terms of its proposed function as an arterial, truck route, and gateway to land use development in the Edmonds Town Centre South Community Plan area. On the basis of the information available we conclude that the benefits arising from the arterial and truck route functions are not sufficient to offset the cost of the project.

The value of the Gilley Alternate as an element of the Community Plan is more difficult to determine. Initial versions of the Edmonds Town Centre South Community Plan had the northern portion of the Gilley Alternate - the section crossing Byrne Creek and the BCHR/SkyTrain Right-of-Way and linking through 19th/20th Street at Edmonds as an option. Since then however private sector development has proceeded on the basis of this link being a "given".

There is some validity for maintaining the link as a community plan structuring element that knits together the Edmonds Town Centre Community Plan areas. However, expected traffic demand from Edmonds Town Centre South does not indicate that the Gilley Alternate link to 19th Street at Edmonds is a requirement. The linkage of Stride to 19th/20th Street, which exists, is sufficient for local access from a traffic viewpoint and considered appropriate from a Community Plan viewpoint if upgraded to an attractive urban design standard.

A significant project cost factor of the Gilley Alternate, apart from construction cost, is the loss of the Byrne Creek Ravine environment on either side of the BCHR/ SkyTrain right-of-way. Our review of the design has led us to conclude that there is no effective way of mitigating the substantial impact of the road alignment on the ravine. Thus at this stage these cost factors must be balanced against the community plan/consistency benefit. On balance and including consideration of the relatively small route specific functional benefits (arterial, truck route, site access) it is our view that the costs outweigh benefits.

The Municipality however has agreed with the Ministry of Transportation & Highways to preserve the possibility of extending arterial continuity along the Edmonds corridor. Accordingly we do not propose any alteration to the Comprehensive Transportation Plan Road Network Concept but do recommend that the northern portion of the Gilley Alternate alignment between Edmonds Town Centre South and Edmonds Street/19th Street be deleted from the 5-Year Capital Budget at this time. If conditions or requirements were to change significantly in the future, Council could elect to develop this portion of the alignment and could do so whether the route was designated a secondary arterial in the Comprehensive Transportation Plan or not. It should be noted that the southern portion of the alignment which provides the necessary link between Edmonds Town Centre South and the Marine Way/10th arterial is not at issue.

REPORT
REGULAR COUNCIL MEETING
1988 DECEMBER 12

However it must be recognized that if the northern portion of the Gilley Alternate is not built its function as the major gateway to the Edmonds Town Centre South from the north will have to be performed by Stride Avenue. The Stride alignment must be improved beyond what has been presently contemplated. Further consideration should be given to the urban design of the corridor southwest of 19th. The added cost of improving Stride has not been estimated but we expect that it would be considerably less than the expenditure contemplated for the section of the Gilley Alternate that it replaces. Other issues contingent on the Gilley Alternate (especially pedestrian links) will also require review.

A major concern of Council has been the need to declassify Gilley Avenue as a truck route. Our review indicates that this will not be possible until a suitable alternative routing is provided. The Gilley Alternate has been proposed as the required alternative but the Marine Way/10th Avenue Connector can meet this need more cost effectively. The adopted Comprehensive Transportation Plan originally proposed that the Marine Way/10th Avenue project would be the prerequisite for Gilley's declassification as a truck route. Marine Way/10th also serves a major arterial network function. Accordingly high priority should be placed on the completion of the Marine Way/10th Avenue Connector and the up-grading of the Griffiths/19th/20th route. This would then satisfy the Gilley Alternate truck route requirements, allowing Gilley itself to be declassified.

R E P O R T

1.0 BACKGROUND

A Gilley Alternate route was adopted by Council 1975 November 03. That proposal was to provide arterial continuity between Marine Way and the Stormont/Newcombe/McBride Connector via Byrne Road and Edmonds Street. It replaced the extension of 10th Avenue to Marine Way/Marshland which had been proposed in the initial version of the "Burnaby Transportation Study to 1985". As implied, this new alignment on the south side of Byrne Creek resulted from the desire to strip the truck route function from Gilley Avenue.

The Gilley Alternate route remained in the Draft of the Comprehensive Transportation Plan developed by the Transportation Committee in 1978. Subsequently, after public consultation, the Transportation Committee recommended, and Council adopted, an alternate primary arterial alignment that would use the 10th Avenue rather than the Edmonds corridor to achieve the proposed peripheral arterial routing concept. In abandoning the Gilley Alternate alignment the Comprehensive Transportation Plan did not contemplate retaining Gilley as a truck route. Rather, the intention was that the Marine Way/10th Avenue Connector and the Griffiths/19th/20th Diversion would serve as the required alternative connection between Marine Way at Byrne and the Kingsway corridor.

The Ministry of Transportation & Highways, as a condition of its approval of the Municipality's Conceptual Transportation Plan Road Network hierarchy, requested that the Municipality preserve the Edmonds corridor continuity option. The Municipality accepted the MOTH caveat in order to ensure the eligibility of the municipal road network for Revenue Sharing Funding.

During the design of the ALRT (SkyTrain) alignment, Burnaby specified that guideway column placement not preclude future development of a Gilley Alternate alignment or deleteriously affect the Byrne Creek Ravine.

At the same time the Municipality also negotiated SkyTrain design features which would allow for the development of the Marine Way/10th Avenue Connector. These latter included the acquisition of a semi-graded right-of-way through the SkyTrain works yard site and the prebridging of SkyTrain over the proposed road alignment.

More recently, in response to complaints from Gilley Avenue residents regarding its continued use by trucks, Council requested a review that reactivated the Gilley Alternate proposal. This route is shown in Exhibit 1 attached which illustrates future landuse and transportation plans for the area. The length of Gilley Alternate in question is highlighted.

2.0 THE ISSUES

The major issues related to the development of the Gilley Alternate project are discussed below.

2.1 The Arterial Function

Staff have used the Regional Transportation model to forecast travel patterns arising from various projects in combination with the Gilley Alternate proposal. This evaluation was carried out using the latest version of the model. This model simulates a.m. peak hour and is calibrated against traffic count and origin/destination survey data. Travel demand has been forecasted to 1996 for the region as a whole. While we have some reservations about the model's ability to precisely replicate intra-municipal travel on lower order roads, we have confidence in the model as a predictor of regional travel demands.

Our findings confirm that the Marine Way/10th Avenue Connector is a road of regional significance. On the other hand the Gilley Alternate does not address arterial travel demand well, primarily because it lacks network continuity. This is illustrated by Exhibit 2, (attached) which shows 1996 travel demand assigned to a road network that includes the Gilley Alternate, the Marine/10th Connector and the upgrading to the Griffiths/19th/20th route as well as the widening of Edmonds. We also tested these major road proposals singly as well as in combination. Our conclusion is that the Gilley Alternate would not function as a substitute for the Marine Way/10th Avenue Connector in terms of Regional traffic movement. The Marine Way/10th Connector however does not need to be complemented by the Gilley Alternate proposal.

REPORT
REGULAR COUNCIL MEETING
1988 DECEMBER 12

2.2 The Truck Route Function

Data was collected to evaluate the truck route function of Gilley Avenue and its relationship to the Gilley Alternate proposal. The Engineering Department carried out a number of truck counts at key intersections as well as an origin/destination survey, on 1988 August 04, of trucks on Gilley south of Rumble.

About one-half of the commercial vehicles observed were three axle dump trucks leading to the conclusion that the truck traffic on Gilley is extremely variable, dependent on season and the level of construction activity in the Municipality. We estimate that Gilley typically carries up to 200 trucks per work day. From the origin/destination survey and observation we estimate that about 10 percent of the trucks using Gilley are not subject to the truck route bylaws. The bylaw applies to three axle vehicles with a registered gross vehicle weight of 36,000 pounds or greater.

Our review of the origin/destination survey also suggests that about 10 percent of the vehicles which use Gilley might justifiably continue using it as a required access link between the truck route network and a local origin/destination. A further 10 percent or more of the trips, particularly some longer distance trips, are misguided in using Gilley as part of their routing. For example it makes little sense for a trucker traveling from Abbotsford to Richmond to travel through New Westminister, up Kingsway, and down the Gilley Alternate to Marine Way in order to cross the Knight Street bridge.

We estimate that about half of the trucks on Gilley have a trip end such that the elimination of the truck route would require them to travel further than at present. The resulting number of trucks leads to an added cost that is relatively insignificant when compared to road construction costs. In particular Exhibit 3 (attached) indicates that benefits to trucking that arises from the Gilley Alternate is sufficient to offset approximately (\$370-\$230=) \$140 thousand of capital cost.

2.3 Community Plan Requirements

The initial proposals for the Edmonds Town Centre South were developed while review of the Gilley Alternate was in progress. Accordingly those plans showed the alignment, dotted, as a possibility but not a prerequisite for development. The final version of the Edmonds Town Centre South plan was adopted after the inclusion of the Gilley Alternate alignment in the Comprehensive Transportation Plan's Conceptual Road Network. As indicated by Exhibit 4 the Gilley Alternate corridor plays a conceptual role as a structuring link between Edmonds Town Centre South and the rest of the Community Plan Area. The link would function both as a vehicle and pedestrian corridor that knits together elements of the Edmonds Community Plan Area.

It must however be emphasized that the Gilley Alternate is not a requirement for handling the road traffic demands of site access. We estimate that the new development of Edmonds Town Centre South will generate approximately 700 vehicle trips per a.m. peak hour at full development. This estimate reflects the much higher than "normal" usage of transit anticipated because of the site's proximity to the SkyTrain station. Exhibit 5 shows the impact of this vehicle loading on the immediate road network with and without the northern end Gilley Alternate in place. Our analysis of the traffic simulation model confirms that the Stride access alone could readily accommodate anticipated demand.

2.4 Environmental Impact

The proposed Gilley Alternate alignment design straddles Byrne Creek Ravine on both sides of the BC Hydro/ SkyTrain right-of-way. The portion of the ravine between Edmonds and the SkyTrain right-of-way has had its "natural" environment considerably modified and its curtailed length limits its amenity as a "ravine experience". It does retain aesthetic appeal for passing traffic including SkyTrain patrons. There is a much more significant amenity value to the ravine immediately downstream of the BC Hydro Rail crossing. Here the ravine is now crossed by the BC Parkway. This enables pedestrians and cyclists to more directly enjoy a "natural" ravine environment. We have reviewed the design of the Gilley Alternate roadway in this area. The constraints of SkyTrain guideway columns, the BC Hydro Railway, existing road alignments and arterial alignment design standards limit alignment to the one proposed by our engineering design consultants (see Exhibit 6 attached). Unfortunately the "footprint" of this alignment destroys much of the amenity of the ravine environment. It should be noted however that much of the conifer grove west of the railway/ravine crossing is unaffected by the road. Arguably these trees are much superior to the growth that would be lost.

We have examined design alternatives to the fill embankment roadway proposed by the consultant and reviewed the design options in the field with staff from Parks and Recreation. In particular we sought to mitigate the impact of the road by "flying" over the ravine on a viaduct. The bridgework for such a solution would cost up to \$4 million more but even with the viaduct a substantial swath of trees would have to be removed. Some of the ground cover might remain if the construction was handled with sensitivity but much of it would ultimately die back because of the perpetual shade of the viaduct. Our conclusion is that the existing ravine environment between the BC Parkway and Edmonds Street on either side of the SkyTrain and BC Hydro Rail right-of-way would effectively be destroyed by the Gilley Alternate road. Efforts to mitigate the impact would be both costly and ineffective. If the road is constructed it would be best to rely on an extensive landscaping program to create an attractive new environment.

REPORT
REGULAR COUNCIL MEETING
1988 DECEMBER 12

3.0 RELIEF FOR GILLEY

As a designated major residential collector Gilley's use as a truck route must be viewed as an Interim one. Gilley itself is inadequate as a truck route because of its standard (an Interim cap) and the steep grade on approach to Marline Drive. Council has requested staff to consider the immediate declassification of Gilley. Without the Gilley route trucks would have to rely on the existing Griffilths/19th/Stride truck routes for travel between the Kingsway corridor and Byrne/Marline Way. Unfortunately the grade on Griffiths at Rumble and Stride at Marline Drive, coupled with curvature at both locations, limits the utility of such a routing.

We have considered the possibility of some inter remedial measures but unfortunately there are none that are cost effective. The best solution to the Gilley truck route problem would appear to be the construction of a viable alternative truck route. Whereas previously the major thrust of prioritization focused on the Gilley Alternate, a shift in emphasis to improving the Griffilths/19th/20th route and the construction of the Marline Way/10th Avenue Collector would equally achieve the alternate truck route objective whilst meeting the wider needs of arterial traffic.

4.0 COST IMPLICATIONS

The estimated capital costs of the Gilley Alternate and related projects are tabulated below.

ESTIMATED COST OF THE GILLEY ALTERNATE AND RELATED PROJECTS	
PROJECT LIMITS ("FROM" - "TO")	COST [1] \$ MILLIONS
----- BYRNE/10th CONNECTOR MARINE WAY-GILLEY ALT. GILLEY ALT.-20th ST.	\$5.0 \$3.6
GILLEY ALTERNATE BYRNE/10th-19th ST.	\$4.0 [2]
GRIFFITHS/19th STREET KINGSWAY-10th AVE.	\$4.0
TOTAL	\$16.6

Notes:

[1] 1985 cost estimates inflated to 1988

[2] Does not include underpasses or viaducts

The southern portion of the Gilley Alternate alignment, which is required to service land use regardless of whether the alignment is extended to Edmonds/19th, is estimated to cost \$2.2 million. Without the northern portion it is most unlikely that the Province would cost share the project through Revenue Sharing Funding. The \$2.2 million would then be, appropriately, charged against the contiguous land use development of Edmonds Town Centre South. As it happens the Municipality in this instance owns most of the adjoining development property.

The Province has already cost shared initial work on the Gilley Alternate project. The cost sharing expenditure has been on the southern portion of the alignment which is in common with the Byrne/10th Avenue Connector. The Province has indicated that the Byrne/10th Avenue Connector project is also eligible for Revenue Sharing Funding. Thus we anticipate that, a shift in emphasis to priority construction of the Byrne/10th route would not impact the Revenue Sharing support we would have otherwise expected. (The Revenue Sharing Fund for major roads is limited and the funds are spread amongst local government projects throughout the Province).

REPORT
REGULAR COUNCIL MEETING
1988 DECEMBER 12

5.0 CONCLUSIONS

Staff would not hesitate in recommending the construction of the Gilley Alternate roadway if the project benefits demonstrably and substantially exceeded dollar and other costs. However our evaluation of the benefits (accruing from the truck route, arterial and site access functions) suggests they are meagre. Thus the costs must be primarily balanced against some of the conceptual linkage requirements of the Community Plan and the site marketing needs of the developer. On balance we conclude that the Gilley Alternate should not be built at this time.

Our analysis does suggest however that the proposed Marine Way/10th Avenue Connector coupled with an Improved Griffiths/19th/20th route, both of which are part of the Comprehensive Transportation Plan, are much more useful in meeting arterial traffic needs. Implementation of these two projects would also enable the Municipality to declassify Gilley Avenue as a truck route. Accordingly we recommend their early construction and the deferral of the contentious portion of the Gilley Alternate project to such time as it can be demonstrated to be cost effective.

Respectfully submitted,

Alderman J.M. Sawicki,
Acting Chairman

Alderman F.G. Randall
Member

Alderman R.G. Begin
Chairman

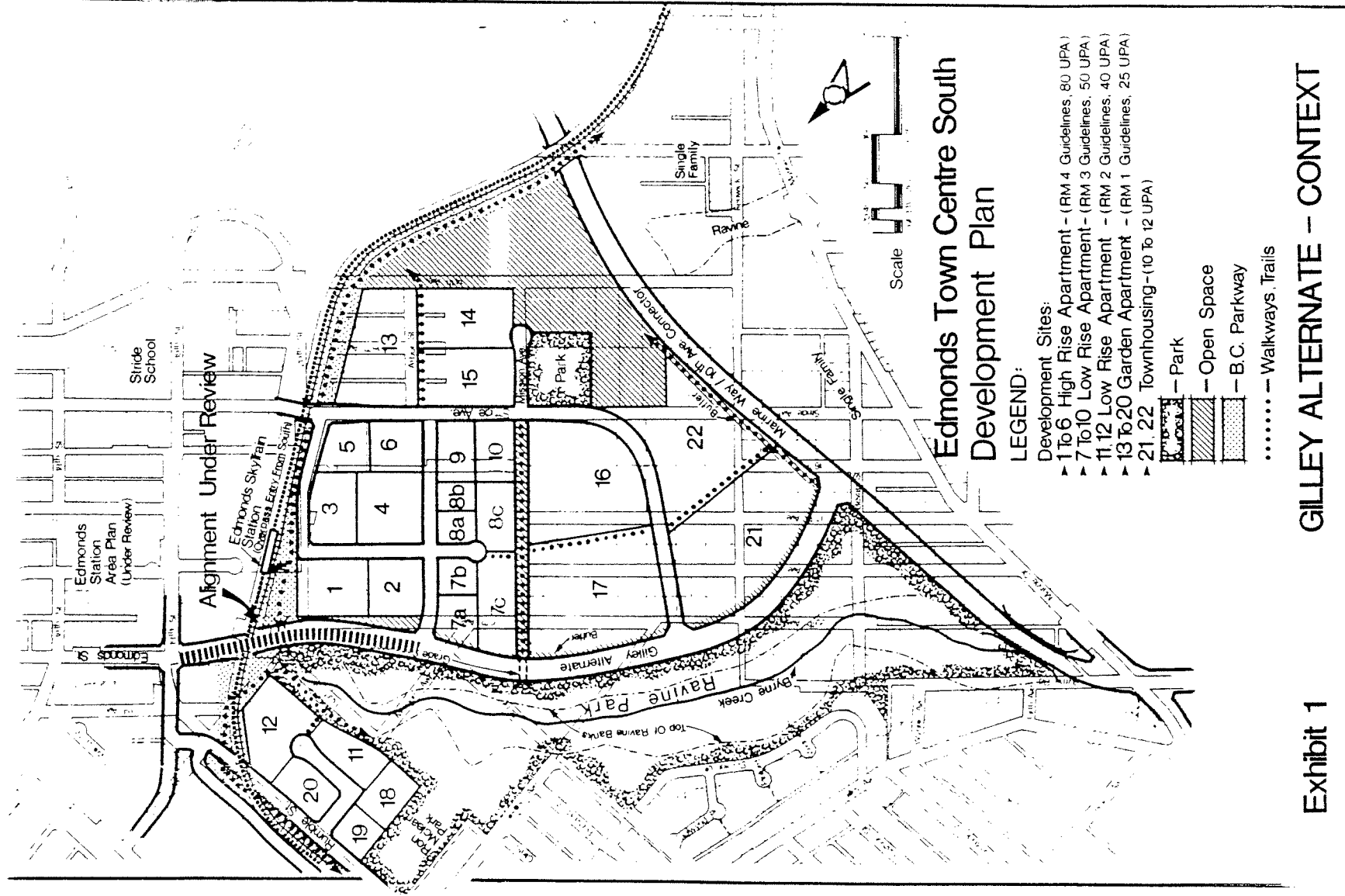


Exhibit 1

GILLEY ALTERNATE - CONTEXT

EXHIBIT 2 FORECASTED TRAVEL ON THE EDMONDS AREA ROAD NETWORK
(1996 A.M. PEAK HOUR SIMULATION)

NOTE: Edmonds Town Centre South Traffic Not Included

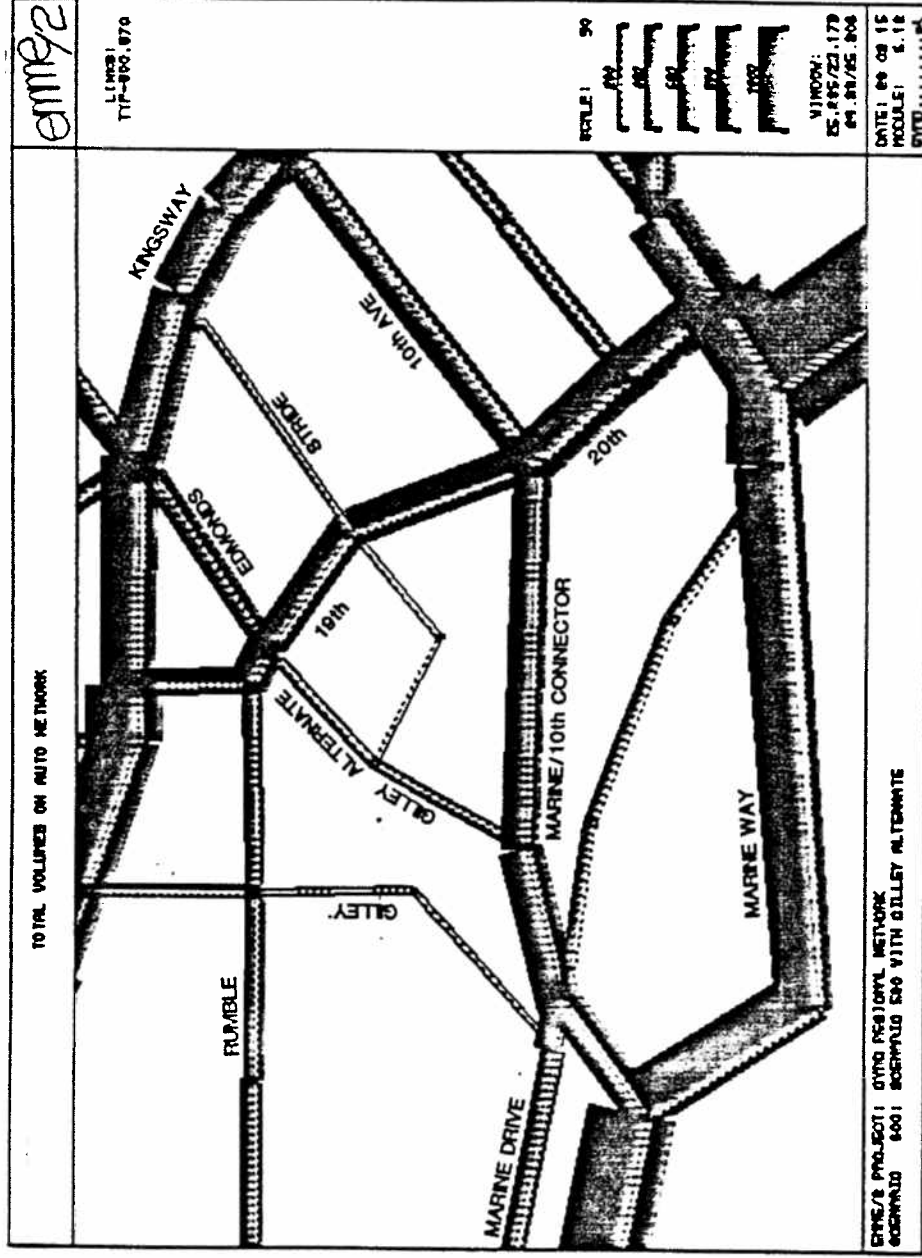


EXHIBIT 3 EFFECT OF TRUCK ROUTE DISTANCE CHANGES FOR TRAVEL
between GILLEY/KINGSWAY and MARINE WAY/BYRNE

	VIA GILLEY	VIA GRIFFITHS & EDMONDS & (EXISTING) GILLEY ALT.	VIA MARINE/10th CONNECTOR	VIA EDMONDS & EDMONDS & EDMONDS & EDMONDS &	VIA KINGSWAY	VIA MARINE/10th
DISTANCE (km.)	2.4	3.6	4.3	4.4	5.5	
ADDITIONAL to EXISTING	0	1.2	1.9	2	3.1	
ADDITIONAL COST/TRUCK (3,4)	\$0	\$1.37	\$2.17	\$2.29	\$3.54	
TOTAL ADDED COST/ANNUM (1,2)	\$0	\$27,429	\$43,429	\$45,714	\$70,857	
PRESENT VALUE of ADDED COST (5,6)	\$0	\$233,515	\$369,732	\$389,191	\$603,247	

- ASSUMPTIONS:
- 1 100 -AFFECTED TRUCKS PER AVERAGE WORK DAY
 - 2 200 -TRUCK WORK DAYS PER ANNUM
 - 3 35 -AVERAGE TRUCK SPEED IN KM./HR.
 - 4 40 -MARGINAL COST OF TRUCK OPERATION \$/HR.
 - 5 10% -DISCOUNT ("INTEREST") RATE %/ANNUM
 - 6 20 -PROJECT VALUATION TERM IN YEARS

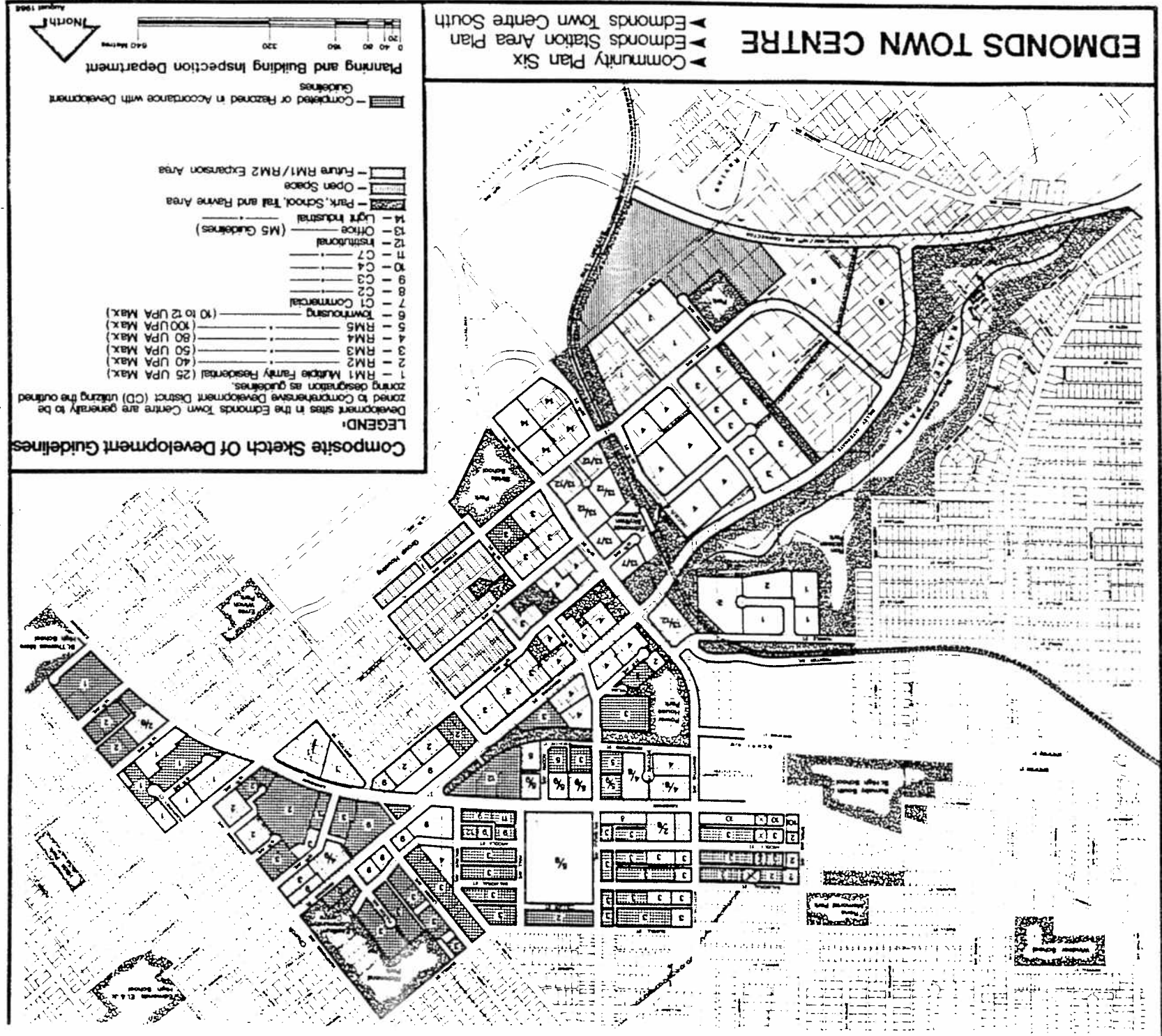
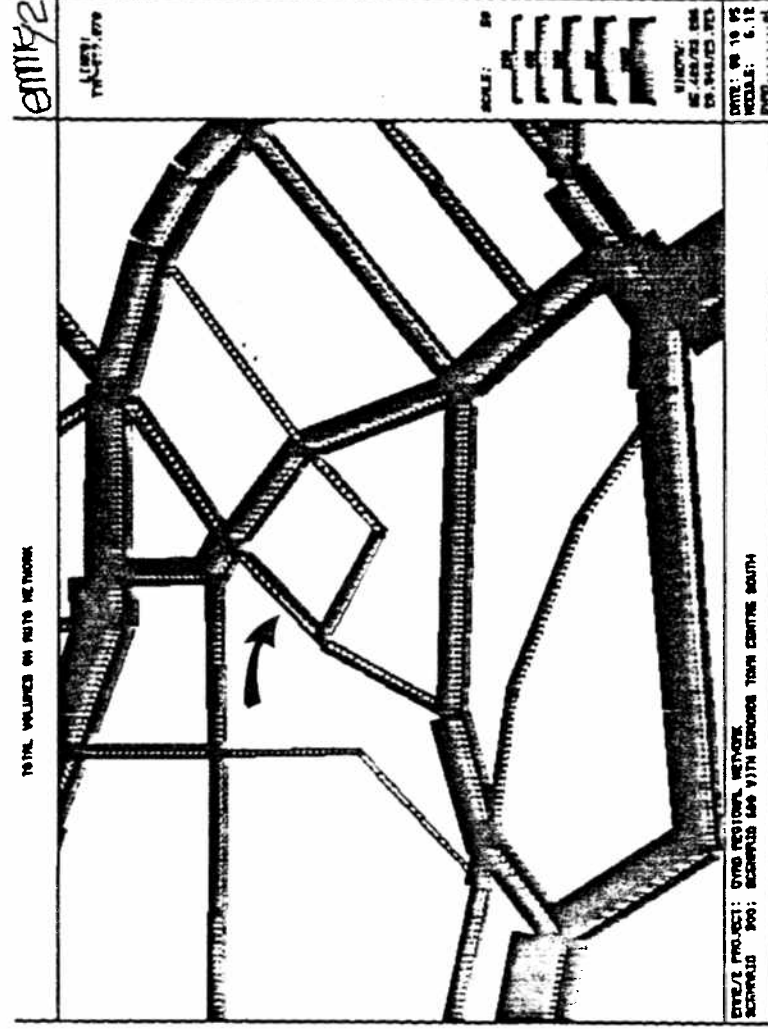


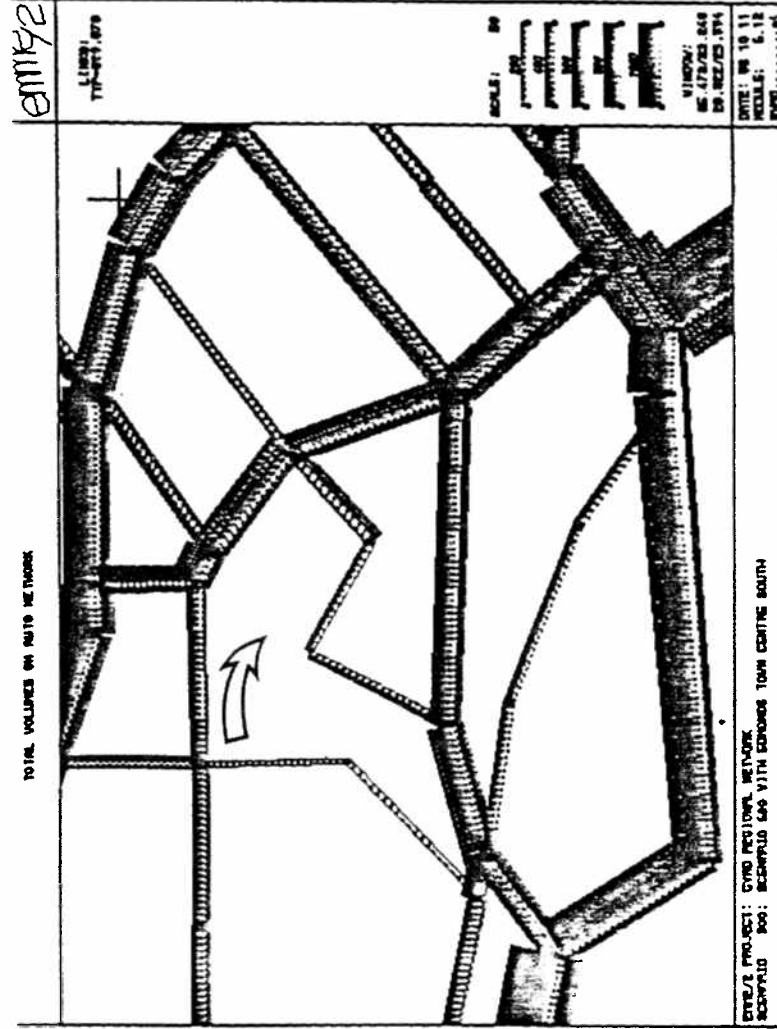
EXHIBIT 4

EXHIBIT 5 FORECASTED TRAVEL ON THE EDMONDS AREA ROAD NETWORK
 WITH FULL DEVELOPMENT OF EDMONDS TOWN CENTRE SOUTH
 (1996 A.M. PEAK HOUR REGIONAL SIMULATION)

A. With Gilley Alternate Extended To Edmonds



B. Without Gilley Alternate Extended To Edmonds



NOTE: Street Names as on EXHIBIT 2 Previous

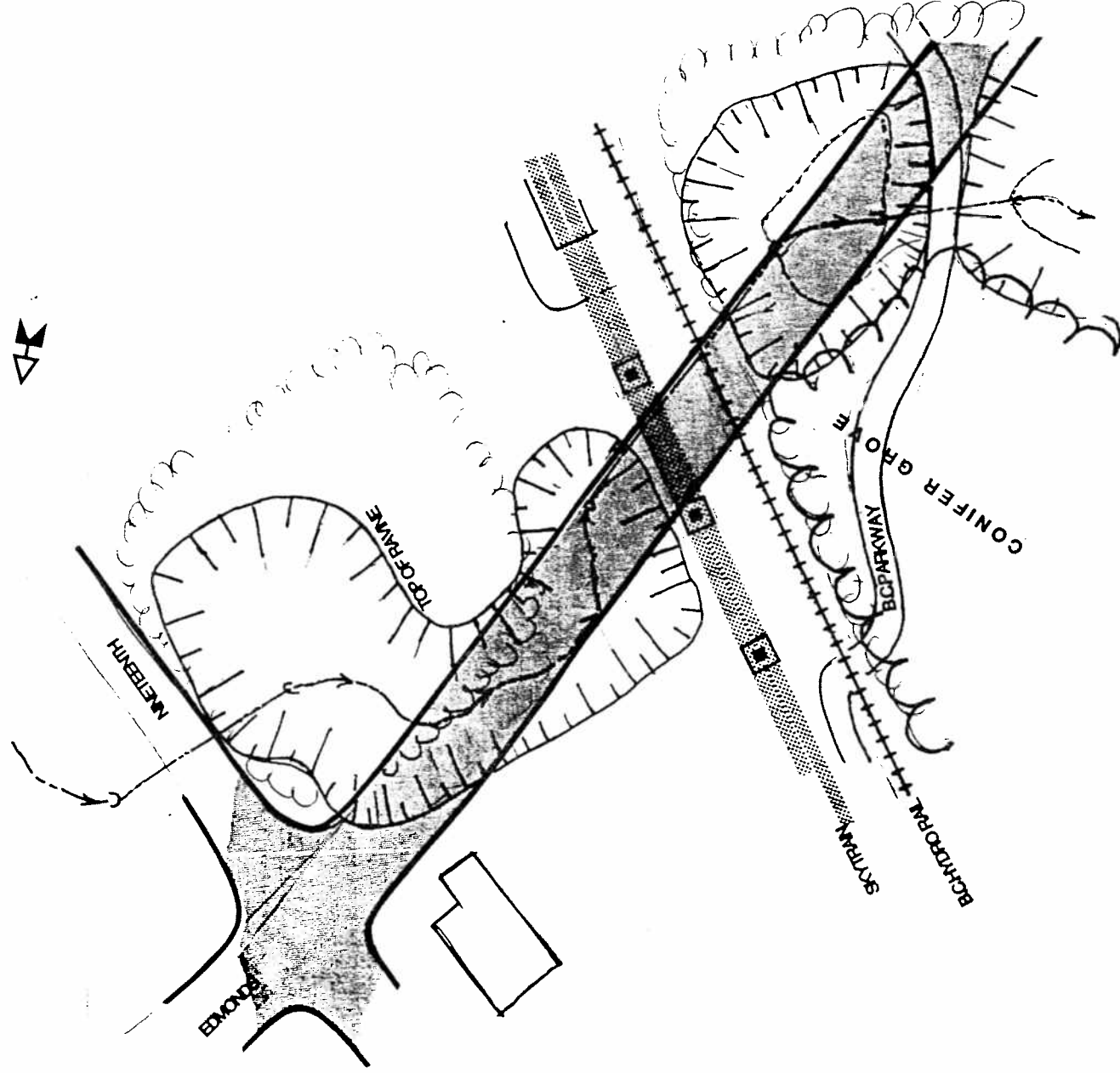


Exhibit 6 GILLEY ALTERNATE - ENVIRONMENTAL CONTEXT

