

REGIONAL MUNICIPALITY OF OTTAWA-CARLETON
MUNICIPALITÉ RÉGIONALE D'OTTAWA-CARLETON

REPORT
RAPPORT

Our File/N/Réf. **25 RG1036C-20**
Your File/V/Réf.

DATE 14 January 1997

TO/DEST. Co-ordinator
Transportation Committee

FROM/EXP. Environment and Transportation Commissioner

SUBJECT/OBJET **HAZELDEAN ROAD (REGIONAL ROAD 36) - ROADWAY
MODIFICATIONS ALONG THE FRONTAGE OF THE
PROPOSED HAZELDEAN PLAZA**

DEPARTMENTAL RECOMMENDATIONS

That the Transportation Committee recommend Council approve:

- 1. the Region's participation with Penex Hazeldean Limited in the construction of roadway modifications on Hazeldean Road to improve traffic safety and facilitate access to the proposed Hazeldean Plaza development, and;**
- 2. transferring funds in the amount of \$150,000 from Hunt Club Extension (91-30610) to the Safety Improvement Programme (91-30708).**

BACKGROUND

At its meeting on 26 October 1994, Regional Council approved the above-noted roadway modifications which involved a road widening on the north side of Hazeldean Road along the frontage of the proposed commercial development (at that time referred to as Hazeldean Village Square) and the installation of traffic control signals at the westerly access to the plaza. Not only would these modifications benefit access to this development, but they would also have the added effect of significantly enhancing traffic safety along this section of Hazeldean Road. Unfortunately, on 12 December 1994 the Region was informed that the subject lands had been sold and consequently, the related road works did not proceed.

In September 1996, the new owners of this site, Penex Hazeldean Limited, initiated steps to proceed with the original development which included the Council-approved road works (Option A) with 100% of the costs borne by the developer. It was learned in October 1996 that because of the newly discovered requirement for extensive rock excavation to complete the proposed road modifications, the original cost estimates for Option A were far too low and rendered the project not economically viable for the proponent. The developer has maintained that unless a substantial cost sharing for Option A was provided, he would seek approval for the construction of a much less expensive access facility referred to as Option B.

Option B was reviewed by Regional staff and the developer was subsequently informed that this proposal would require Regional Council approval and would be subject to the public hearing process. In addition, because of this option's sub-standard geometry, access encumbrances, and high potential for a decrease in the existing level of traffic safety, it was pointed out to the proponent that Option B would not receive Departmental support. If approval was not granted for Option B, or no significant cost sharing could be negotiated for Option A, it was understood from the developer that he would abandon the project and proceed to sell the property.

Faced with the high probability that this development would not proceed as originally approved, analysis was undertaken to assess the impact that the Option A roadway modifications would have on traffic collision frequencies in this area of Hazeldean Road. If it could be shown that these proposed roadway modifications would provide a safety and economic benefit to the people of Ottawa-Carleton, staff would request Council approval to participate, to a limited degree, with the developer in the funding of these modifications.

DISCUSSION

Attached as Annex A is a summary of the background and analysis that this Department feels clearly illustrates the potential for safety improvements that justify the Region's financial participation in this proposed roadway modification project. The developer's consultant, Cumming Cockburn Limited, has indicated that the total cost to construct the roadway modifications outlined in Option A is \$400,000 including G.S.T. The Region's portion would be 37.5% of the total construction cost to a maximum of \$150,000.

It will be necessary to enter into an agreement with Penex Hazeldean Limited for this work.

CONSULTATION

As required under Sections 297 and 300 of the Ontario Municipal Act, the Transportation Committee, at its meeting on 14 September 1994, received the report and the preliminary design drawings (Option A) for these road works and authorized the initiation of the public hearing process. After having held a public hearing on this matter, the Transportation Committee, at its meeting on 12 October 1994, approved the report and the preliminary design drawings and referred them to Council for final approval. Regional Council approved the Option A road works at its meeting on 26 October 1994.

EXPENDITURE JUSTIFICATION

Motorists travelling along this portion of Hazeldean Road currently experience twice the risk of being involved in a traffic collision when compared to similar road sections throughout Ottawa-Carleton. It is conservatively estimated that if the proposed Option A road works were completed, the collision frequency on this section could be reduced by 60%. In economic terms, the savings to society through collision reduction has been conservatively estimated to be \$54,000 annually and at least \$330,000 (10% annual discount) over a ten-year period (assumed service life of the safety improvements).

The Environment and Transportation Department has no plans to rehabilitate this section of Hazeldean Road within the next five years, nor is it identified for upgrading and/or widening. In view of this, the prospects for road improvements are fairly remote in the short to mid-term; therefore, this would appear to be an ideal opportunity to provide a lengthy and substantial enhancement to traffic safety at a minimum cost to the taxpayers of Ottawa-Carleton. If the RMOC participated with the developer up to a maximum of \$150,000 in the funding of these roadway safety improvements, over the space of ten years the people of Ottawa-Carleton would recoup more than twice their investment through collision reduction alone.

FINANCIAL STATEMENT

	<u>912-30708</u> \$	<u>912-30610</u> \$
Approved Budget to Date	1,450,000	41,050,000
Total Paid & Committed	<u>(1,448,732)</u>	<u>(32,651,870)</u>
Balance Available	1,268	8,398,130
THIS REQUEST	(150,000)	-
ADDITIONAL FUNDING REQUIRED	<u>150,000</u>	<u>(150,000)</u>
Balance Remaining	<u>1,268</u>	<u>8,248,130</u>

Funds are requested for transfer from Hunt Club Extension, Account No. 912-30610, (reference Page 377, 1996 Capital Budget) in the amount of \$150,000, bringing the revised total budget to \$40,900,000, to the Safety Improvement Programme, Account No. 912-30708 (Reference Page 113, 1996 Capital Budget) bringing the revised total budget to \$1,600,000. Enc. No. CA9279.

Approved by
M.J.E. Sheflin, P.Eng.

FINANCE DEPARTMENT COMMENT

Funds are available for transfer from Account 912-30610, Hunt Club Extension, to Account 912-30708, Safety Improvement Program. Subject to Council Approval

*Approved by T. Fedec
on behalf of the Finance Commissioner*

Economic Analysis and Benefit-Cost Considerations for Hazeldean Road Safety Improvements along the Frontage of the Proposed Hazeldean Plaza

Of the 44 collisions reported along the frontage of this proposed development, 39 (89%) are categorized as treatable primarily through the provision of left-turn lanes and the installation of a traffic signal located at an existing access (#462 Hazeldean Road). Both of these measures have been incorporated in a design approved by Regional Council (Option A) which are considered to be very effective treatments in the reduction of traffic collisions.

Over many years this Division's experience in traffic safety improvement has been that in circumstances where these treatments are warranted, the installation of traffic signals reduce right-angle collisions by a factor of approximately 90% and the introduction of left-turn lanes (includes two-way left-turn lanes) reduce same direction collisions involving left-turning motorists by at least 80%. In addition, we know that the provision of traffic signals significantly reduce right angle accidents at intersections/accesses that are downstream from a traffic signal for distances of up to 100 m by providing gaps in main-street traffic that are acceptable to motorists to safely complete their turns. It is conservatively estimated that a reduction factor for this type of collision would be 40%.

There is an inherent cost to society with every traffic collision, which according to figures developed by Transport Canada, amounts to a Canada-wide average of \$3,720.00 for a collision involving only property damage and an average of \$15,260.00 for each collision involving an injury and/or fatality.

The attached table provides a summary of the present value calculation used in this analysis in order to derive the annual traffic collision costs to society along this portion of Hazeldean Road. In addition, the table illustrates how much can be invested now in collision treatment with an eventual recuperation of this investment in ten years. Assuming a ten-year service life after the installation of these proposed collision countermeasures, and an annual discount rate of 10%, it is conservatively estimated that the minimum present value (1996 dollars) of the economic benefit to society totals \$332,580.00.

Not only do these roadway modifications aid the developer in providing a safe and efficient access to the site which attracts customers, they provide a net benefit to all motorists travelling on this section of Hazeldean Road. If the RMOC is willing to participate with the developer and invest \$150,000.00 to improve the safety of this road, in the space of ten years, the people of Ottawa-Carleton would recoup more than twice their investment through collision reduction.

Annual Average Cost of Treatable Collisions Mitigatable by the Installation of Traffic Control Signals and the Construction of a Two-way Left-turn Lane on Hazeldean Road (Regional Road 36) Along the Frontage of the Proposed Hazeldean Plaza

Traffic Control Signals	Existing Access Address on Hazeldean			
	#462	#444	#442	#440
Total property damage only (3.5 yrs.)	3	7	5	1
Annual frequency	0.86	2.0	1.43	0.29
Average cost/collision	\$3760	\$3760	\$3760	\$3760
Total cost	\$3230	\$7520	\$5380	\$1090
Collision reduction factor	0.9	0.4	0.4	0.4
Net annual cost	\$2910	\$3010	\$2150	\$440

Total injury/fatal collisions (3.5 yrs.)	2	---	1	---
Annual frequency	0.6	---	0.29	---
Average cost of collision	\$15260	---	\$15260	---
Total cost	\$9160	---	\$4430	---
Collision reduction factor	0.9	---	0.4	---
Net annual cost	\$8240	---	\$1770	---

Total net annual cost	\$11150	\$3010	\$3920	\$440
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Combined net annual cost	\$18520
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Two-way left-turn lane	Existing Access Address on Hazeldean			
	#462	#444	#442	#440
Total property damage only (3.5 yrs.)	5	2	5	1
Annual frequency	1.43	0.6	1.43	0.29
Average cost/collision	\$3760	\$3760	\$3760	\$3760
Total cost	\$5380	\$2260	\$5380	\$1090
Collision reduction factor	0.8	0.8	0.8	0.8
Net annual cost	\$4300	\$1800	\$4300	\$870

Total injury/fatal collisions (3.5 yrs.)	3	---	4	---
Annual frequency	0.86	---	1.14	---
Average cost of collision	\$15260	---	\$15260	---
Total cost	\$13120	---	\$17400	---
Collision reduction factor	0.8	---	0.8	---
Net annual cost	\$10,500	---	\$13920	---

Total net annual cost	\$14800	\$1800	\$18220	\$870
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Combined net annual cost	\$35690
Total combined net annual cost of all proposed collision countermeasures	\$54210

PRESENT VALUE CALCULATION

Minimum Present Value (P)

$$\begin{aligned}
 P &= ((1+i)^n - 1/i(1+i)^n)A \\
 &= (6.14)(\$54,210) \\
 &= \underline{\$332,580.00}
 \end{aligned}$$

where: i = annual interest or discount rate of 10% (0.1)

n = 10 (number of time periods - 10 years)

A = annual cost (\$54,210.00)

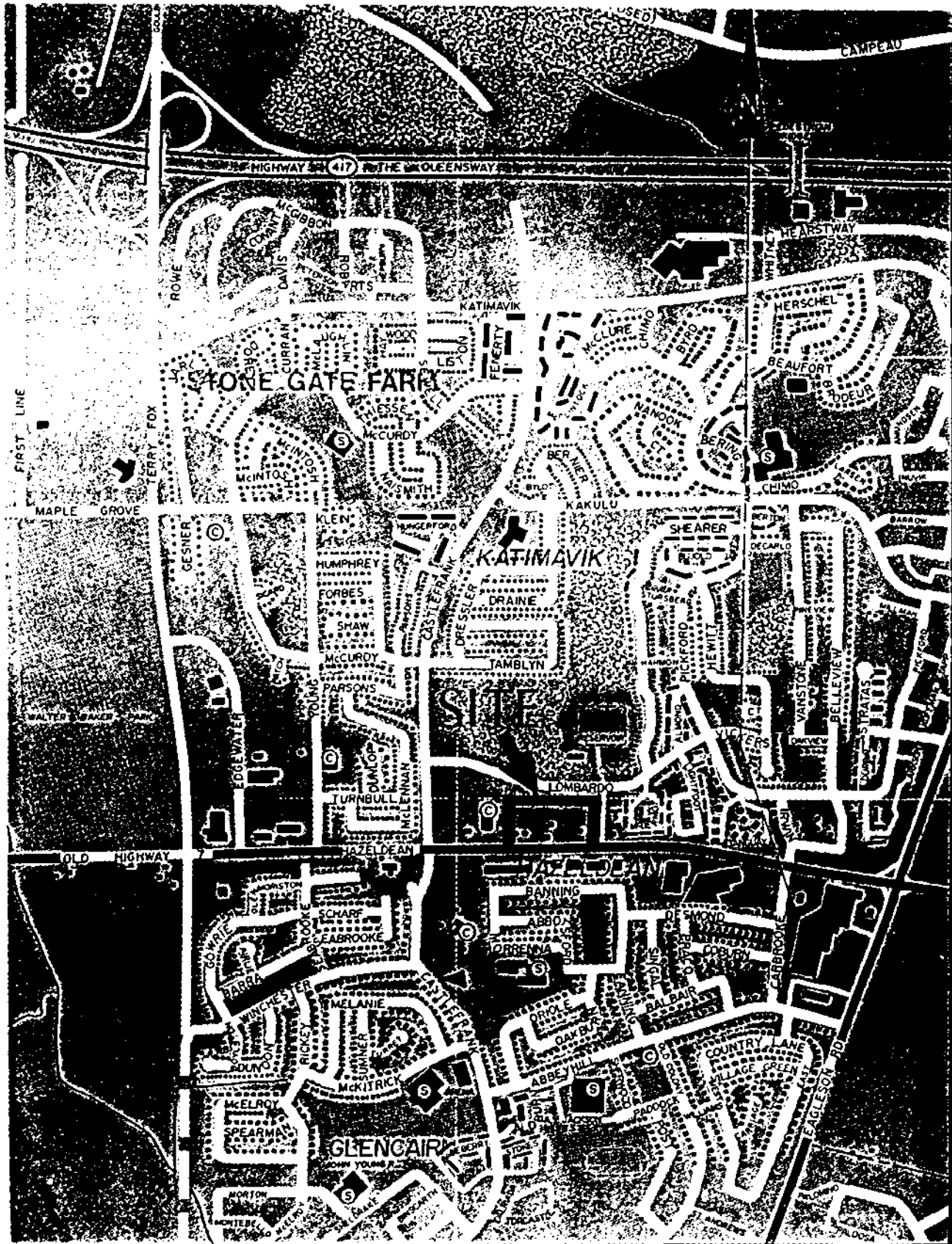
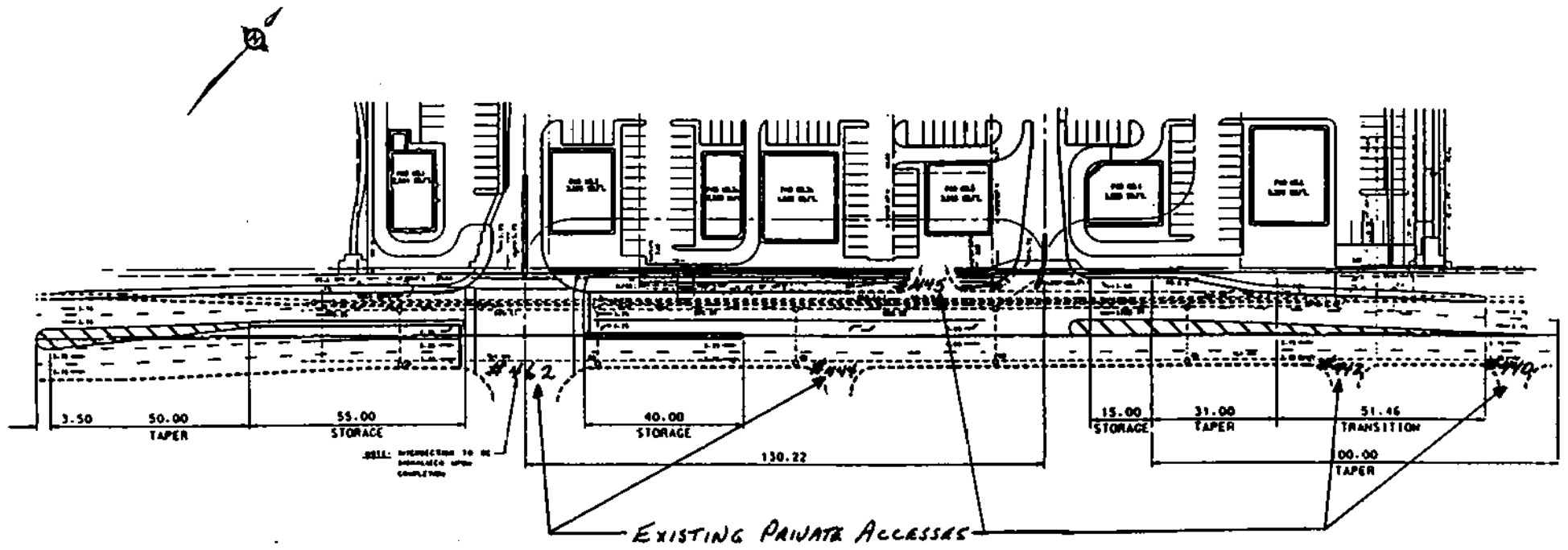


Fig Title Site Location Plan - Hazeldean Village Square		Date Aug-94
Robinson Consultants Inc. CONSULTING ENGINEERS P.O. Box 13130, Kanata, Ontario K2K 1X3 Tel. (613) 592-6060 FAX (613) 592-5995	Job Title HAZELDEAN VILLAGE SQUARE SITE ACCESS DESIGN	
	Scale N.T.S.	
	Job N 94035	
		File N 1 - 1
REGIONAL MUNICIPALITY OF OTTAWA CARLETON		

HAZELDEAN ROAD (REG. RD. 36)

APPROVED ROADWAY MODIFICATIONS



NOTE: THIS DESIGN AND GRAPHIC PRODUCED USING INTERGRAPH® SOFTWARE

NO.	DATE	REVISION	BY	CHK.	DATE	REVISION	BY
1		LAST ENTRANCE DIMENSION	056				
2		LAST ENTRANCE DIMENSION	056				
3		DRIVE IN STORAGE	000				
4		RED DIM. IN STORAGE					



SCALE
1:1500
DATE
P. 2.

Robinson Consultants Inc.
CONSULTING ENGINEERS
P. O. Box 10730 Aurora, Ontario L4P 1L1
Telephone (918) 940-0000

DESIGNED	DATE
DRAWN	DATE
CHECKED	DATE
APPROVED	DATE

DEV/COM INVESTMENTS CORPORATION

HAZELDEAN VILLAGE SQUARE
FUNCTIONAL DESIGN
SITE ACCESS REQUIREMENTS

PROJECT NO.
DATE
DRAWN BY
CHECKED BY
DATE
94035-03