

CITY OF BURNABY

TRAFFIC AND TRANSPORTATION COMMITTEE
(TRAFFIC SAFETY DIVISION)

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

A. SCHOOL SAFETY PATROL INCENTIVE GRANT

RECOMMENDATION:

1. THAT a grant in the amount of \$3,000 be awarded to School District No. 41 - Burnaby for its School Safety Patrol Incentive Program.

R E P O R T

A letter dated 1993 May 12 was received from Mr. R.D. Ingram, Secretary - Treasurer, School District No. 41 - Burnaby advising that during the 1992/93 school year, 28 Elementary schools in the District operated school patrols which involved a total of 1125 students. In support of this program, the City of Burnaby has, in past years, forwarded a grant which has been distributed to the schools on the basis of the number of pupils participating.

Following is a list of School Safety Patrol Incentive grants for previous years:

1992 -	\$ 3,000
1991 -	3,000
1990 -	2,500
1989 -	2,500
1988 -	2,500

B. BOUNDARY ROAD AT KINGSWAY TRAFFIC SIGNAL

RECOMMENDATION:

1. THAT the City Solicitor be requested to prepare the necessary bylaw to enter a cost sharing agreement with the City of Vancouver for Burnaby's share of the traffic signal modification costs.

The Assistant Director Engineering - Traffic and Engineering Systems submitted the following report to the Committee:

: - COPY - CITY MANAGER
- DIRECTOR ENGINEERING
- DIR. ADMIN & COMM. SERVICES
- DIRECTOR FINANCE
- DIRECTOR PLANNING AND BUILDING
- O.I.C. - R.C.M.P.

R E P O R T

"Burnaby staff have been discussing changes to the signal phasing at Kingsway and Boundary Road with City of Vancouver staff to improve the safety of the north - south left turn movements. The City of Vancouver has agreed to change the signal operation to provide protected left turn phases for north and southbound traffic. This operation will separate the left turning traffic from the through traffic, eliminating the conflict between these movements. The cost of this work is estimated at \$40,000 to be borne 25% by Burnaby, 25% by the Ministry of Transportation and Highways, and 50% by Vancouver."

C. TRAFFIC SAFETY AT ELEMENTARY SCHOOLS

RECOMMENDATIONS:

1. THAT existing policy be amended to extend posting of 30 km/h speed limits in elementary school zones adjacent to major collector streets.
2. THAT double solid centre lines to denote no passing be used in school zones on all centre lined streets.
3. THAT the approach to child pedestrian safety at elementary schools as outlined in this report be endorsed by Council.
4. THAT a copy of this report be sent to the Burnaby School Board for distribution.

The Assistant Director Engineering - Traffic and Engineering Systems submitted the following report to the Committee:

R E P O R T

"1.0 INTRODUCTION

In 1989 the Committee and Council endorsed in principle a comprehensive review of traffic regulation and signing at elementary schools. Subsequently in 1991 that policy was amended to 'allow for the posting of a 30 km/h zone on local collector streets adjacent to elementary schools'. Earlier this year Council requested the Traffic Safety Committee review 'traffic policies and related matters in the vicinity of all schools in Burnaby'. That wide direction arose out of Council's consideration of a request for a 30 km/h speed zone at Nelson School. This report addresses the referral of this matter to staff.

2.0 BACKGROUND

This policy review focuses on child pedestrian safety at elementary schools. Statistics confirm that young children are significantly more at risk to injury in traffic accidents than any other age group. In particular a disproportionate number of school walking trips involve students 5 to 8 years of age. Beyond this age the risk diminishes with maturation which brings with it improved perception and understanding. While the number of child pedestrian fatalities (per population in the age group) has been dropping (its about 1/3 of what it was twenty years ago) the perception of risk continues to increase with each succeeding generation of new parents. Adding to the perception of risk is the fact that an increasing number of parents drive their children to school. Thus they are adding to the risk while in many cases striving to minimize it. This policy review includes a recognition of the community values and perception of the public in dealing with this real safety issue.

3.0 RESPONSIBILITIES

3.1 Parental Responsibility

While it may be trite to say that 'safety begins at home' there is no denying that a child's behaviour reflects the behaviour of parents and the lessons taught by parents. While all parents are concerned with the safety of their child some may not be aware of what all the rules of the road mean, the necessity for regulation of parking at schools, the rationale behind signing of crosswalks, etc. This report will be used as a basis for clearing up some of the misunderstanding.

The Parents' Associations that exist at most schools can be invaluable in peer education and assisting in 'enforcing' safe behaviour. At some schools volunteer parents routinely monitor parking and stopping by other parents in order to explain regulations. There are also schools where parents as a group have determined that their children should be dropped off and picked up some distance from the school in order to minimize congestion at the school itself.

A particularly laudable initiative is that of the Burnaby Safety Society which will deploy a roadside radar unit coupled to display showing vehicle speeds. In other areas this type of 'radar van', manned by volunteers, has been successful in heightening drivers' awareness. Apart from the attitude adjustment that occurs from this type of feed back the wider participation of community in traffic safety underscores an increasing societal concern regarding driver behaviour and traffic safety.

3.2 SCHOOLS AND SCHOOL BOARD

Schools are the obvious starting place for safety education given that children are assembled there for learning. The schools also have a responsibility for seeing the safe arrival of their charges. Individual schools have prime responsibility for defining safe routes to school providing properly trained and equipped child patrols, etc.

The School Board distributes information and educational material to the schools to insure a consistent approach to child safety across the city. The School Board is also responsible for training, equipping and funding adult crossing guards at the more hazardous crossing locations. At the present time the Burnaby School Board funds 26 adult guards in response to community need. By contrast other larger jurisdictions have none.

3.3 CITY ENGINEERING DEPARTMENT

The City's Engineering Department is responsible for the provision of signs, road markings and traffic control devices which provide the regulatory framework for traffic safety at schools. In meeting this accountability Engineering staff operate in the context of National Standards, the Provincial Motor Vehicle Act, as well as the practice of other jurisdictions in the Lower Mainland.

3.4 THE R.C.M.P.

Enforcement of traffic safety regulations is the responsibility of RCMP. In carrying out this role the RCMP operate within the constraints of the Provincial Motor Vehicle Act and to a lesser extent the City's Street and Traffic Bylaw. Other considerations faced by the RCMP include resource constraints, the courts, etc.

The RCMP also participate in safety education through school visits and assist in the training of patrols and adult guards as resources permit.

3.5 Other Agencies

The Provincial Government principally through the Ministry of Transportation and Highways provides leadership in framing Motor Vehicle Act regulations as well as promulgating traffic engineering practice.

National Traffic Engineering standards are established by the Transportation Association of Canada which publishes the Manual of Uniform Traffic Control Devices. The committee has recently received a copy of the new draft standard on Pedestrian Traffic Control.

This document outlines school crosswalk application guidelines, introduces crosswalk warrants and extensively deals with school safety through discussions of safe routes to school, school patrols and adult crossing guards. The document closes with an identification of the need for more public education/information.

ICBC as the provincial provider of motor vehicle insurance is a major stakeholder in traffic safety and already plays a significant role in education. As a provincial agency ICBC provides leadership and coordination for a variety of safety campaigns.

4.0 RESOLUTION OF CONCERNS

All of the stakeholders listed in the previous section play a role in resolving safety issues at schools. The extent of participation in this joint problem solving exercise varies with the issue but typically a local coordinating agent is the school principal. In the previous policy report it was noted that:

'When traffic staff receive a complaint regarding signage/regulation at schools our investigation includes consultation with the principal. At the conclusion of our investigation we discuss our intentions with the complainant and principal. Minor changes are usually implemented with no further ado. We would propose maintaining this procedure for routine items that are covered by 'policy'. For more major issues - items that typically fall under the wing of the Traffic Safety Committee - we propose extending the consultation to the School Board representative or the Traffic Safety Committee and if applicable the RCMP representative. This might prolong response to an issue but we believe that it would result in a more effective response.'

We believe that this consultative process has worked well except where school issues have become mixed in with wider community concerns. In the future we will involve the School Board and RCMP earlier especially when approached by umbrella groups representing parents at more than one school to ensure that a comprehensive review is not pre-empted.

5.0 TRAFFIC CONTROL AND REGULATION

Specific traffic control regulations that are deployed around elementary schools are discussed below, along with proposals for refinement of those regulations. Traffic Division staff consider it imperative that the traffic regulations that we use in the City are consistent internally as well as with the practice employed by other jurisdictions, most particularly our neighbours. Consistency of approach amongst various jurisdictions obviates confusion and minimizes accidents resulting from misunderstanding. To this end we participate in continuing discussion with Traffic Engineering staff from various jurisdictions in the Lower Mainland.

5.1 School Zones

Road segments contiguous to school sites are usually defined as school zones, while roads that don't abut schools are not. Following current guidelines entry to school zones is marked by the 'walking school children' pentagon sign. Typically these signs will be posted on all street approaches to schools to warn drivers that 'school children may be walking along or crossing the highway'. It should be noted that this conforms with the practice employed by the City of Vancouver and other Municipalities. Any review of signs at schools should first confirm the presence of school zone pentagon signing. It should be noted that the new 'standard' pentagon sign has the walking school children silhouette but it is more stylized than the one previously employed.

5.2 Speed Limits

There has been a continuing debate between traffic engineering practitioners and parents regarding the usefulness of signed speed zones around schools. Speed zones are established by a 30 km/h tab sign used below the school zone pentagon. 'The back of the sign assembly erected for the opposite direction of travel designates the end of the restricted zone.' Motor Vehicle Act regulations further state that the reduced speed zone is in effect 'between 8:00am and 5:00pm' on school days. Thus for much of the day, when children aren't going to and from school the sign is redundant to need. Drivers habitually disregard the speed zone signs except when children (or the police) are present. Given that drivers do tend to slow down in the presence of children many jurisdictions reserve reduced speed zones to unique conditions such as school front streets, streets adjacent to unfenced play grounds, etc.

Initially Burnaby was in conformance with its neighbours in posting speed zones only on local residential streets. The speed limit policy was recently extended to include local collectors adjacent schools and now we are proposing it be further extended to major residential collectors adjacent schools. Our recommendation to do so is based more on a pragmatic recognition of community values than any objective evidence as to the safety effectiveness of the measure. A concern is that the ability of the RCMP to monitor speed zones effectively is limited by available enforcement resources.

5.3 Marked Crosswalks

When the elementary school policy was last reviewed it was recommended that school crosswalk installations be 'upgraded' to reflect the then emerging provincial standards. Since then, apart from revisiting existing installations the city has installed a significant number of new crosswalks in accordance with these standards.

School crosswalks have been installed in close consultation with school officials and usually parent groups with recognition paid to safe routes. A number of crossings of busier roads have been approved for upgrading to provide signal protection. The crossing installations also conform to draft national application standards and we expect to rely on the draft 'Pedestrian Crossing Control' document discussed previously as a significant resource.

5.4 Pavement Marking - No Passing

The City has recently moved to standardize road centre line markings to maintain a solid yellow line. It was felt that the dashed lines previously used now inappropriately invited passing. The anecdotal evidence of inappropriate passing remains focused at schools notwithstanding signing and marking that prohibits this behaviour on the approach to crosswalks. To address this concern we are further proposing that where streets are centre lined adjacent to schools the centre line through the school zone should be a double solid yellow line.

5.5 Parking Prohibitions

Because more and more parents are driving their children to school there is increased congestion and parking problems at schools. Ideally schools should have on-site pick up and drop off facilities but it is not feasible to retrofit most Burnaby schools with such facilities - there is neither sufficient space nor budget. Accordingly much of this activity must continue on the street.

Since the previous policy was adopted we have reviewed and signed parking restrictions at all schools. Generally stopping at the entrance way to the school is prohibited. The entrance is the most congested area for child pedestrians and would be the natural magnet for parents' vehicles. To avoid (moving and parked) vehicular congestion, to maintain lines of sight for and to children and to maintain emergency access a total prohibition of stopping has been implemented. To allow parents to drop off and await their children while minimizing the need for children to cross the street the rest of the area adjacent to the school is typically signed as a no parking zone. Accordingly, if parents have to accompany their child to school or have to leave their car to retrieve the child they have to park further away from the school in an unregulated area. The stopping/parking regulations adjacent schools are in effect from 8:00am to 5:00pm in conformance with the Motor Vehicle Act regulations for schools and the City Street and Traffic Bylaw. Other regulations such as those that maintain clearances at driveways or approaches to crosswalks are in effect at all times.

Bylaw enforcement officers have related how these regulations are often flouted by parents who want to park close to the school. Further continuing education is needed to inform parents that the regulations are in the best interest of their child and other children.

6.0 DISCUSSION

The approach taken in this report is based on a collective review amongst Engineering staff, the RCMP and School Board Officials. It reflects accumulated input from parents and principals. Our review confirms that the traffic regulations and devices at Burnaby elementary schools which were implemented as a result of the previous policy related to Traffic Safety at elementary schools are appropriate and sufficient.

A review of other jurisdictions and application standards confirms that while our signing and approach to regulations conforms to standards of practice we may in fact be somewhat 'over regulated'. Arguably this reflects Burnaby's particular needs given its location in the Region and the location of many elementary schools. Our community has a continuing if not increasing concern for child pedestrian safety. To address community concerns we are recommending additional regulatory measures. First we are proposing extending the speed limited school zone to include major residential collector streets. Second we are proposing to prohibit passing through school zones by a double solid yellow line on centre lined streets.

Often we are attempting to address wider driver behaviour problems through signing, regulation and traffic control devices. While there are current education initiatives that address this issue they are fragmented among agencies. The greatest opportunity for improvement lies with community based initiatives including parents' groups, the Burnaby Safety Society, etc. A major institutional stakeholder in traffic safety is ICBC which already supports community education. We will be asking that ICBC coordinate a series of educational videos on child pedestrian safety targeted by situation and audience."

Arising from the discussion of the report, the Committee requested that a traffic safety brochure be prepared for distribution to parents of school aged children. The Committee also requested that staff investigate the feasibility of preparing the brochure in more than one language.

D. EDMONDS STREET AT 6TH STREET

RECOMMENDATIONS:

1. THAT additional pavement markings be installed to provide additional guidance for motorists as indicated on Figure 5.1 of APPENDIX 1 attached to this report.
2. THAT the options for proposed signal operation of the intersection be further evaluated through consultation with affected area residents.
3. THAT a copy of this report be sent to B.C. Bio Medical (Attn: Theresa Jurisic-Safety Committee).

The Assistant Director Engineering - Traffic and Engineering Systems submitted the following report to the Committee:

R E P O R T

"Engineering staff recently completed a review of a report titled 'Traffic Operations Review: Edmonds Street and 6th Street Intersection' prepared for Burnaby by G.D. Hamilton Associates Consulting Ltd. The Executive Summary of this report has been attached as APPENDIX 1 to this report. The complete document is available in the Traffic Division. This study included a complete review of the intersection geometry, traffic volumes, and accident data; the collection of peak hour turning volumes, an analysis of intersection capacity, a traffic conflict study, the identification of intersection deficiencies, and a review of improvement options.

The short term improvement scheme described as Option 1 in the Executive Summary outlines a practical, immediate improvement to the pavement markings on the intersection approaches and through the curve. We have recommended the immediate implementation of this option as interim measure.

Option 3, the installation of a vehicle-actuated traffic signal, is presented as a near-term improvement. Although we support this recommendation, this issue should be reviewed with the residents of the area bounded by Mayfield, Wedgewood, 6th and Canada Way as well as Edmonds east of the intersection. Configuration options for this signal should be included in that review and the final approval delayed until completion of the public consultation process. Funding for this signal will be included in planning the 1994 Capital Budget.

We also support the application of Option 5 as a long term improvement to the intersection. Acquisition of right-of-way to complete this project should be included in the long term development plans for the Edmonds area. Traffic Engineering and Transportation Planning staff will discuss the method of including this modification in the long term development proposals for the Edmonds-6th Street corridor and advise the Committee and Council as necessary."

MEMBERS:

Respectfully submitted,

Mr. D. Rankin
Mr. W.B. Bennett
Mr. M. Bloomfield
Mrs. L. Brown
Mrs. M. Canessa
Mrs. G. Evans
Mr. T. Hulme
Mr. E. Fourchalk
Mr. D. Ramsbotham
Mr. W.B. Roxburgh
Mr. R. Weston

Councillor J. Young
Chairman

Councillor D. Evans
Member

Councillor C. Redman
Member

EXECUTIVE SUMMARY

The City of Burnaby Engineering staff has received complaints regarding the intersection of Edmonds Street and 6th Street. The complaints stem from the apparent traffic congestion, the lack of adequate pedestrian crossing opportunities or gaps and, on occasion, "rat-running" or through traffic infiltration into the adjacent residential area. Furthermore, the motor vehicle accident history of this intersection is also considered to be significant. A traffic study has therefore been initiated to identify deficiencies at the Edmonds Street and 6th Street intersection with the goal of providing safe and efficient traffic operations for vehicles and pedestrians, while maintaining adequate accessibility for the adjacent residential area.

Edmonds Street is oriented in a northeast-southwest direction while 6th Street is oriented in a northwest-southeast direction. However, for the purpose of this study, Edmonds Street is assumed to be oriented in an east-west direction while 6th Street is assumed to be oriented in a north-south direction.

The systematic study approach included: the review of the intersection geometry; the review of available hourly traffic volume and motor vehicle accident data; the collection of peak hour turning movement volumes; the analysis of the intersection capacity; a comprehensive traffic conflict study in accordance with methods established in the Traffic Conflict Procedure Manual, produced by the University of British Columbia in association with the Insurance Corporation of British Columbia; the identification of intersection deficiencies; and, the generation and evaluation of improvement options.

The results of the analysis identified the following:

- There is a propensity for motor vehicle accidents at the study intersection. This can be attributed primarily to poor driver behaviour and the geometry of the intersection. Currently, the heaviest turning movements at the intersection are the northbound left-turn movement along 6th Street and the eastbound right-turn movement along Edmonds Street.

The lack of roadway superelevation and adequate guidance for these movements in the vicinity of the intersection may have contributed to the difficulties in successfully manoeuvring through the curve at higher speeds.

- The traffic conflict characteristics of the study intersection indicated that there is a significant motor vehicle accident potential due to the insufficient capacity of the minor street movements, the geometry of the intersection which may be confusing to motorists and the apparent speeding through the intersection.

A total of five improvement options were generated. Option 1, which is illustrated in FIGURE 5.1, includes the provision of additional guidance through the intersection. Option 2, which is illustrated in FIGURE 5.2, involves the provision of a STOP-sign controlled T-intersection and the elimination of the southbound access at the study intersection. Option 3 includes the installation of a semi-actuated traffic signal with pedestrian crossing buttons, in conjunction with the provision of right-in only turn movement limitations along selected intersections on Canada Way. The selected intersections along Canada Way include Goodlad, Elwell, Rosewood and Wedgewood Streets and are shown in FIGURE 5.3. Right-turns from these streets onto Canada Way as well as all left-turn manoeuvres at these selected intersections are proposed to be restricted.

Option 4 involves the provision of a STOP-sign controlled T-intersection with an improved intersection geometry. As well, the Option 4 improvements, which are shown in FIGURE 5.4, include the right-in only turn movement limitations along the same Canada Way intersections as described for Option 3. Option 5, which is illustrated in FIGURE 5.5, includes the provision of a semi-actuated traffic signal with a similar intersection configuration as described in Option 4. Furthermore, the right-in only turn movement limitations are proposed along the same Canada Way intersections as described for Option 3.

The findings of the improvement option evaluation indicated that Option 1, the provision of additional guidance, could be readily implemented at a low cost. The Option 1 improvements are therefore considered to be the Short-term Improvement Requirements and should be implemented immediately. The results also indicated that Option 3, the provision of a semi-actuated traffic signal, could be implemented at a relatively low cost. The provision of the Option 3 improvements are also expected to provide the highest level of protection for crossing pedestrians, and improved intersection traffic operations and access. As well, these improvements are anticipated to virtually eliminate the through traffic infiltration into the adjacent residential area. The Option 3 improvements, as shown in FIGURE 5.3, should therefore be considered as the Near-term Improvement Requirements.

The findings indicated that Option 5, the provision of a semi-actuated traffic signal with an improved intersection geometry, is expected to ameliorate all the identified deficiencies. However, it is noted that the Option 5 improvements would entail significant right-of-way, roadway construction and traffic signal installation costs. Such a provision could therefore be considered as the Long-term Improvement Requirements for the intersection. This option could be included as part of future Official Community Plans (OCP) or in conjunction with any major developments introduced into the area.

The Improvement Strategy for the Edmonds Street and 6th Street intersection therefore involves the immediate provision of additional guidance (Option 1, as illustrated in FIGURE 5.1), with the planned provision of a semi-actuated traffic signal for vehicles and pedestrians in the near-term (Option 3, as shown in FIGURE 5.3) or whenever sufficient funding becomes available. The provision of the semi-actuated traffic signal with an improved intersection geometry (Option 5, as shown in FIGURE 5.5), should be considered in conjunction with the long-term plans for the area. The implementation of this Improvement Strategy is expected to ameliorate the intersection traffic operations, promote safe and efficient traffic movements through the intersection, improve safety for pedestrians, and protect the adjacent residential area from through traffic infiltration.

TRAFFIC OPERATIONS REVIEW: EDMONDS STREET AND 6TH STREET INTERSECTION
 BURNABY, BRITISH COLUMBIA

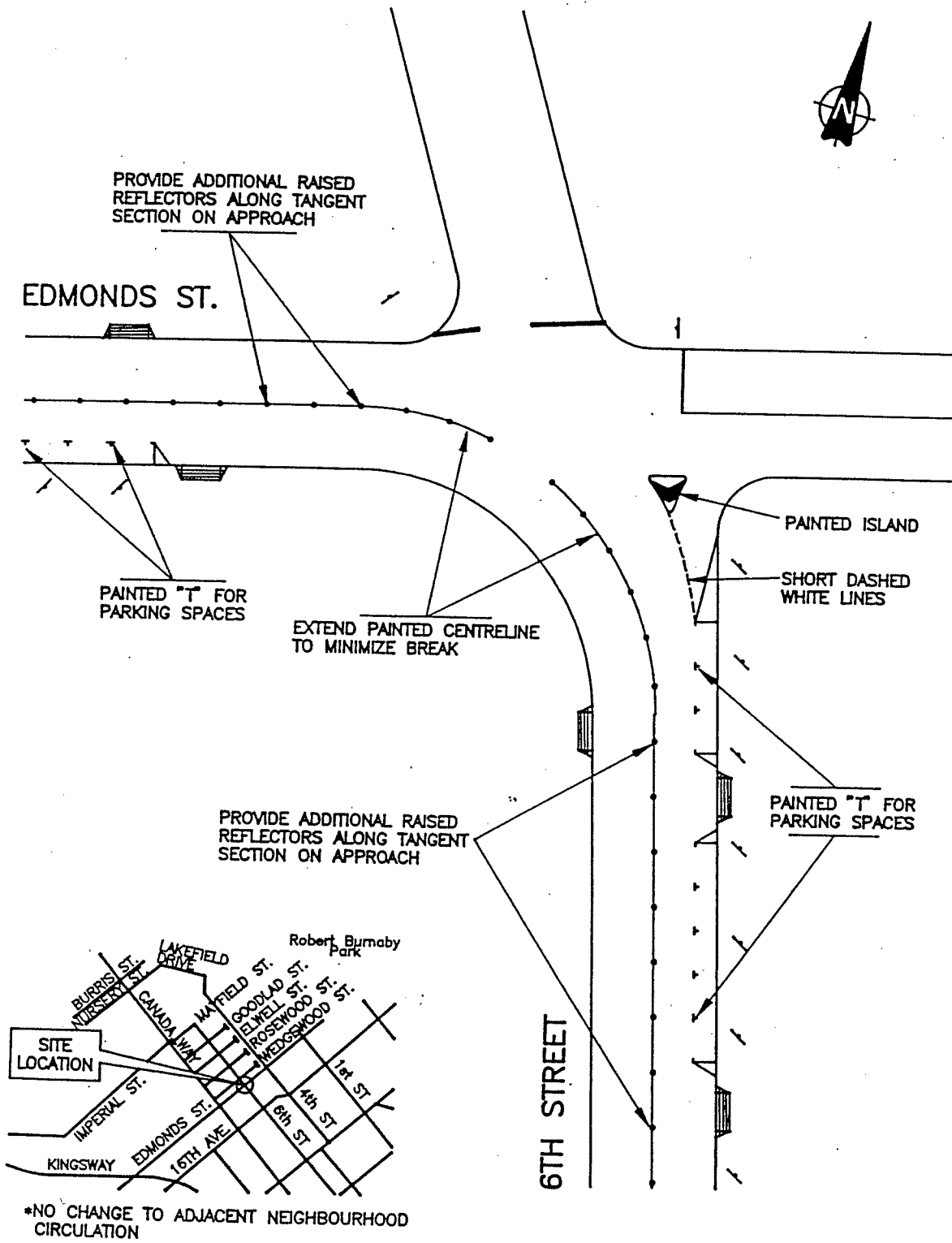


FIGURE 5.1 OPTION 1: PROVIDE ADDITIONAL GUIDANCE
 (SCHEMATIC)