

THE CORPORATION OF THE DISTRICT OF BURNABY

TRAFFIC AND TRANSPORTATION COMMITTEE
(TRANSPORTATION AND TRANSIT DIVISION)

HIS WORSHIP, THE MAYOR
AND ALDERMEN

RE: COMMUNITY TRANSPORTATION PLAN: LAKEVIEW AREA
FOLLOW-UP MONITORING STUDY RESULTS

RECOMMENDATIONS:

1. THAT the Stop signs presently in place along the Sixth Street corridor be retained.
2. THAT the Lakeview residents who participated in the working group be sent a copy of this report.

R E P O R T

"1.0 BACKGROUND

In early October 1989 a petition was received by the Municipality from a group of residents in the Lakeview neighbourhood. The petition advocated the closure of Fourth Street between Reigate and Elwell Streets to discourage commuter traffic using the residential streets in the neighbourhood during the peak periods. As a result, a public participation process was set up to deal with neighbourhood traffic concerns. During July and August 1990, a series of meetings were held with a working group of residents through which elements of a Community Transportation Plan for the Lakeview neighbourhood were developed (Attachment 'A', Figure 1 attached). This culminated with the distribution of a survey describing the plan to area residents in early October 1990 resulting in an overall 89 percent approval of the plan. As the survey results confirmed that the plan offered an effective compromise to the myriad, often conflicting, desires within the neighbourhood, the Lakeview Community Transportation Plan was adopted by Council in 1990 December.

As noted in the excerpt from the earlier report to Council (Attachment 'B') throughout the Community Plan development process staff advised residents that Stop signs were not appropriate devices for speed control and emphasized their preference for traffic circles. As traffic circles were relatively untried in Burnaby, the decision was made to install traffic circles along the most heavily travelled Lakefield Drive/4th Street corridor and Stop signs temporarily, along the more lightly travelled 6th Street corridor. The effect of the traffic circles was then to be monitored for one year with the retention of the Stop signs made "subject to the results of the monitoring study." This report presents the results of the monitoring study.

INTERNAL DISTRIBUTION:

AGENDA - 1992 MAY 11
COPY - ACTING MUNICIPAL MANAGER
- DIRECTOR ENGINEERING
- DIRECTOR PLANNING & BUILDING

2.0 EFFECTIVENESS OF TRAFFIC CIRCLES

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As illustrated in Figure 1 attached three traffic circles were placed along the Lakefield Drive/4th Street corridor; one at Lakefield Drive and Reigate Road, one at Lakefield Drive and Fourth Street and one at Fourth Street and Edmonds Street. The Reigate Road traffic circle was chosen as representative of the three and a speed/ volume study was conducted. The traffic circles were installed in August of 1991, the 'before' traffic count was taken on 1991 June 27 and the 'after' count on 1992 February 26. Figure 2 attached illustrates the results of the before and after study.

The intent of the neighbourhood traffic circle is to cause a diversion in the direction of travel forcing a vehicle to slow. This localized slowing causes both an overall lower average travel speed as well as a reduction in the peak speed. Because route choice is largely dependent on comparative travel time a reduction in travel speed will also sometimes cause a reduction in volume as the competing routes become more favourable. The sensitivity to this, however, is dependent on the characteristics of the alternate routes.

Referring to Figure 2 attached in the case of Lakefield Drive the traffic volumes appear to have 'increased slightly during peak hours and to have decreased during the off peak hours. This would indicate that the disincentive has had some effect but due to the worsening peak hour situation along Canada Way as an arterial route, commuters continue to favour Lakefield Drive. This situation can be expected to favour Lakefield Drive. In the medium term when the intersections of Canada Way and Edmonds and Canada Way and Imperial are upgraded. The Ministry of Transportation and Highways are actively pursuing these improvements and they can be expected to occur in the next two to three years.

Traffic speeds, however, have decreased considerably. Just beyond the traffic circles, the number of vehicles exceeding 50 km per hour has dropped from more than 100 vehicles in the A.M. peak hour to close to 0. However, studies in other jurisdictions have shown that this decrease is localized with the effect tapering out past a zone of influence of 50 to 60 m. from the traffic circle location. However, these same studies show that overall peak speeds, and especially the top 15% 'excessive' speeds, also show a marked reduction beyond this zone of influence. As a result staff can conclude that the traffic circles have had their expected and desired effect on traffic speeds and increasing traffic safety in the area.

3.0 STOP SIGNS

The principle of the use of Stop signs for speed control has been discussed thoroughly in the report to Council on the Lakeview Community Transportation Plan and has been included in Attachment B. As previously noted, however, staff do not favour this inappropriate use of Stop signs as it would lead to a general disregard for regulatory traffic devices. As such, based on the results of the analysis of the effectiveness of the traffic circles, the Stop signs along the Sixth Street corridor could be replaced by traffic circles.

In this particular instance, however, it should be emphasized that the Stop signs are presently in place and functioning with little neighbourhood disruption. Replacement with traffic circles could appear to be replication of municipal work already performed and would cost \$8,000. As a result although in principle the Stop signs could be replaced, staff does not recommend this action.

4.0 CONCLUSION

The implementation of traffic circles as traffic control devices has beneficial consequences with regard to speed control within neighbourhoods. In addition, the traffic circle is a more appropriate speed control device than the Stop sign and it is highly recommended for this use. Given the cost of the traffic circles, however, the Municipality should consider their implementation within the scope of an Area Local Improvement Program whereby the residents would carry a portion of the cost. A program such as this would carry the additional benefit of ensuring that residents would have a greater stake in the outcome of a Community Transportation Plan Process."

Respectfully submitted,

Members:

Mr. Ernest Neumann
Mr. Peter Miller
Mr. Len Werden

Alderman J. Young
Chairman

Alderman D. Evans
Member

Alderman D. Lawson
Member

Alderman C. Redman
Member

ATTACHMENT 'A'
COMMUNITY TRANSPORTATION PLAN
LAKEVIEW AREA

RECOMMENDED PLAN AND IMPLEMENTATION SCHEDULE

JANUARY - JUNE 1991

1(a) Signage

(i) 6th Street/Edmonds

Description: Install Improved left directional arrow and no entry signage on traffic barrier.

(ii) Canada Way/Edmonds

Description: Install larger left turn prohibition sign - subject to agreement by MOTH.

(b) Pedestrian School Crossing

Install crossing at Reigate Road at Berkley Street - subject to agreement by Burnaby School Board regarding manning.

(c) Stop Signs

Sixth Street/Nursery Street

Description: Install four way stop signs

Welsley Drive/Reigate Road

Description: Install three way stop signs

(d) Traffic Circles (Roundabouts)

Construction of traffic circles at:

Lakefield Drive/Reigate Road
 Lakefield Drive/Fourth Street
 Fourth Street/Edmonds

JULY - DECEMBER 1991

2(a) Intersection Improvements

Canada Way/Edmonds Intersection

Description: Addition of left turn lanes to Canada Way legs of intersection and through and left turn lanes to Edmonds Street legs of intersection.

(b) Street Improvements

6th Street - Nursery Street to Welsley Drive

Description: Municipality to initiate local Improvement for reconstruction of 6th Street to a standard 28 foot local street including sidewalks.

JANUARY - JULY 1992

3(a) Intersection Improvements

Canada Way/Imperial Street

Description: Addition of left turn lane northbound and right turn lane southbound on Canada Way.

ATTACHMENT "B"

EXCERPT FROM REPORT TO COUNCIL : DECEMBER 1990

"COMMUNITY TRANSPORTATION PLAN : LAKEVIEW AREA"

3.1

Sixth Street Stop Signs

Traffic Engineering practice is to follow a specific warrant for signage in order to prevent a loss of effectiveness due to overuse. These warrants are provided as general practice and policy guidelines that provide a good framework for traffic safety. However, there is some scope for deviation on the basis of judgment. In the case of stop signs, the warrants state that the basic purpose of a stop sign is to assign right-of-way at intersections; they do not recommend the use of stop signs for speed control in residential neighbourhoods.

Experience with the use of 4-way stop signs used as speed controls can be summarized as follows:

Negative Aspects

- (i) Could cause levels of disregard for regulatory signage to increase.
- (ii) May have little or no effectiveness in controlling mean speeds past a 200 ft. (60m) radius of the intersection.
- (iii) Could have a negative impact on residences in the immediate vicinity in terms of additional noise and air pollution generated by the frequent stops and starts.

Positive Aspects

- (i) The speeds of the excessive speeders (top 15%) may be reduced slightly.
- (ii) Could provide greater opportunities for pedestrians to cross the street.
- (iii) They are viewed as preferable by the residents.

The stop signs requested as speed controls through the Community Transportation Plan development process have been included in the proposed Community Transportation Plan for the Lakeview neighbourhood. However, from a traffic engineering perspective, it may be preferable to install traffic circles rather than unwarranted stop signs, particularly where there is a consistent application of roundabouts elsewhere in the neighbourhood. The approach suggested in the Plan reflects a consensus reached with the Committee and the working group and would involve the installation of stop signs as originally proposed with their retention subject to the results of a monitoring study.

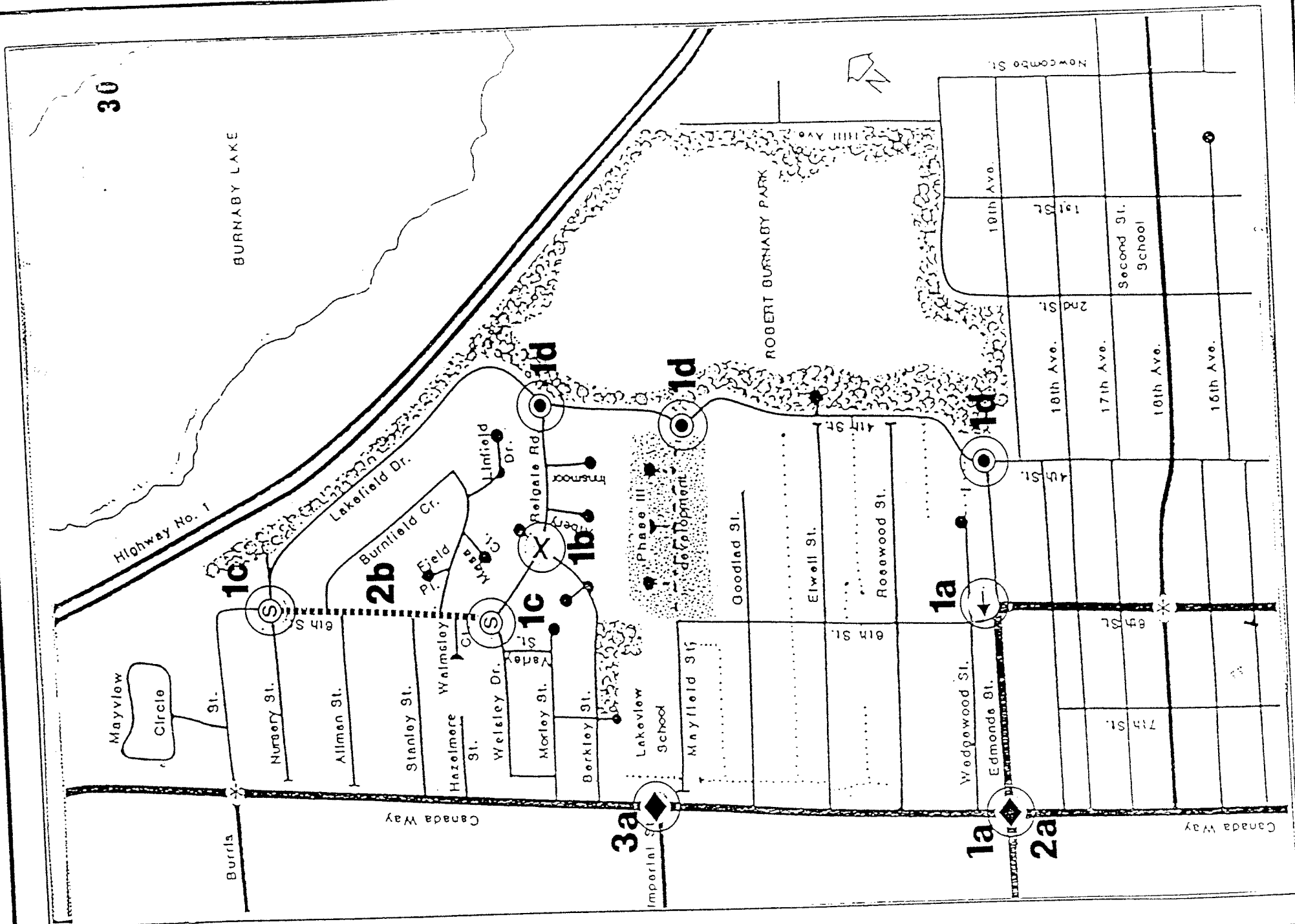
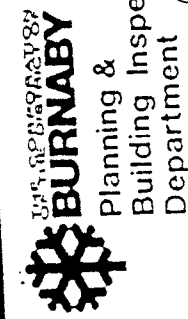


FIGURE 1
COMMUNITY TRANSPORTATION PLAN
LAKEVIEW AREA



- TRAFFIC CIRCLES
- STOP SIGN
- PEDESTRIAN CROSSWALK
- INTERSECTION IMPROVEMENTS
- LEFT ARROW
- SIXTH STREET

FIGURE 1

Date:	1990 NOV
Scale:	N.T.S.
Drawn By:	REN.



Date: 1992 APRIL

Scale:

Drawn By:



Planning & Building Inspection Department

FIGURE 2

TRAFFIC VOLUMES AND SPEED

LAKEFIELD DRIVE/
REIGATE ROAD
TRAFFIC CIRCLE

FIGURE 2

