INTERNAL DISTRIBUTION:
AGENDA - 1992 MARCH 23
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- DIRECTOR ENGINEERING
- DIRECTOR PLANNING & BUILDING INSPECTION
- O.I.C., R.C.M.P.

REPORT
Regular Council Meeting
1992 March 23

THE CORPORATION OF THE DISTRICT OF BURNABY

TRAFFIC AND TRANSPORTATION COMMITTEE
(TRAFFIC SAFETY DIVISION)

HIS WORSHIP, THE MAYOR
AND ALDERMEN:

A. PEDESTRIANS CROSSING AT CANADA WAY AND STANLEY STREET

RECOMMENDATION:

1. THAT a copy of this report be sent to Mr. Fred Randall, MLA, at 7671 Edmonds Street, Burnaby, B.C. V3N 1B6.

REPORT

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

"There is a history of requests from area residents for a pedestrian crosswalk at this location to access the bus stops on both sides of Canada Way. Staff have routinely monitored this location and not noted any problems. Most recently to validate (or refute) our more casual observations, staff have carried out pedestrian counts to see whether they approach warrants for a marked pedestrian crossing. Staff found that the pedestrian crossing demand was low and could not support the installation of a crosswalk.

Pedestrian Volumes (1992 February 04)

Time	Number	Location
07:00-07:30	1	Stanley
07:30-08:00	1	Hazelmere
08:00-08:30	1	Hazelmere
08:30-09:00	1	Stanley
11:00-11:30	0	
11:30-12:00	0	
12:00-12:30	1	Stanley
12:30-13:00	1	Hazelmere
16:00-16:30	1	Stanley
16:30-17:00	3	Stanley
17:00-17:30	1	Stanley
17:30-18:00	0	

During this latest pedestrian count staff noted that although Canada Way is a busy street, pedestrians had no observed problems crossing and the longest wait was approximately one minute. It was also noted that the pedestrians were crossing at both Stanley and at Hazelmere which is 72.20 meters (237 feet) away.

Given observed pedestrian volumes staff cannot recommend the installation of a marked crosswalk to the Ministry of Transportation & Highways at this time. As former Alderman Randall initially passed on these concerns it would be appropriate to forward a copy of this report to him."

B. TRAFFIC CONCERNS ON MARINE DRIVE

RECOMMENDATIONS:

1. THAT truck route signs be installed on Keith Street at Greenall Avenue, directing trucks to Marine Way.

2. THAT Nelson Avenue at Marine Drive be converted from two-way to four-way stop control.

REPORT

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

"1.0 BACKGROUND

At its regular meeting held on 1992 January 20, Council recommended that staff review the 'No Truck Route' signage on Marine Drive and examine the advisability of placing stop signs at three or four points on Marine Drive to discourage commuter traffic.

2.0 TRUCK ROUTE SIGNAGE

Staff have reviewed the locations of existing truck route signage at all intersections that have direct access to Marine Drive from legal truck routes, eg. Marine Way, and found that all required signage is in place.

Upon further review staff believe that a significant volume of truck traffic on Marine Drive may be generated by the light industrial areas that take access off of Greenall Avenue via Keith Street. Staff feel that placement of truck route signage on Keith Street at Greenall Avenue, directing trucks southbound to Marine Way may decrease the volume of truck traffic which uses Marine Drive, and originates from the industrial areas flanking Greenall Avenue.

3.0 STOP-SIGN CONTROL

In most cases stop signs are used to control traffic movements and hence reduce accidents - more specifically right angle collisions. Stop signs are not recommended as speed control devices and are not usually deployed on major routes where side street volumes are significantly less than on the main street. Staff have recently completed the analysis of intersection accident statistics for 1991.

The following table is a summary of RIGHT ANGLE collisions at significant intersections on Marine Drive during the past five years.

Table 1: Right Angle Intersection Accident History on Marine Drive

	91	90	89	88	87
Sussex Ave (T)	0	1	1	0	0
Patterson Ave (T)	0	5	7	0	1
Royal Oak Ave	0	0	2	0	0
Nelson Ave	7	9	4	2	5
Gilley Ave (T)	0	0	4	1	3
Byrne Rd *	2	0	2	1	0

NOTE: (T) Denotes 'T' intersection
* Byrne Rd is existing four-way stop

In comparing accident data in Table 1, it would appear that Nelson Avenue has a more significant accident experience than other intersections along Marine Drive the past five years.

Staff conducted a previous intersection study in 1991 March at Nelson. The intersection did not meet the Council adopted warrant for signalization or four-way stop control at that time. It was found that the peak accident figures coincided with a lengthy detour during reconstruction of Byrne Road in 1990. However, the accident trend at Nelson Avenue has continued through 1991 and staff now conclude that four-way stop control would be appropriate.

Vehicular volumes and accident history at other streets intersecting Marine Drive do not approach warrants for signalization or additional stop sign control.

4.0 CONCLUSIONS

Marine Drive has historically served as a major residential collector and traffic volumes have remained relatively stable since the opening of Marine Way.

To address the accident history at the Nelson Avenue intersection, staff recommend that the existing two-way control stop be converted to a four-way stop. The location of this intersection, midway between Boundary and Byrne might also be considered appropriate from a perspective of using stop signs to control speed.

Staff do not recommend installing additional stop signs on Marine Drive at this time."

C. TRAFFIC ON UNION STREET

RECOMMENDATION:

1. THAT Council approve the installation of a 4-way stop at the intersection of Springer Avenue and Union Street.

2. THAT Mr. & Mrs. Steve Fogale of 5409 Union Street, Burnaby, B.C. receive a copy of this report.

REPORT

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

"BACKGROUND

Union Street, from Boundary Road to Holdom Avenue is a minor local residential collector route. As such, it has stop sign right-of-way at all intersections, other than at those intersecting streets of equal or greater importance. Recently stop signs have been installed at Delta Street. In the past the right of way at Gilmore Street had been eliminated (the four-way stop has since been reinstated).

Although used as a collector street it has not been "promoted" as such, due to resident concerns over speed and volume of traffic as well as intent on the part of the municipality. All road improvements, such as that done under L.I.P., are done to an 8.5m width - typical of a local residential standard.

Despite these measures, traffic uses this street as an alternate to either Hastings Street or Parker Street because of its continuity. Once again concerns over speed and volume of traffic as well as accident rates at the intersections of Union/Springer and Union/Howard have been expressed in correspondence received. Staff have investigated these concerns.

INVESTIGATION

Staff have recently gathered traffic count and speed data as well as pertinent accident information. This has revealed that traffic volumes have remained virtually unchanged over the last several years. A count taken in July of 1984 indicated a volume of 2669, the current figure is 2666.

While volume has not increased, and is not unreasonable for this classification of roadway, speeding appears prevalent. A 25-30% of all traffic is travelling in excess of 55 KMH. By copy staff will be informing the Burnaby R.C.M.P. Traffic Section of the possible need to monitor speeding violations.

Staff have also reviewed accident records for the intersections of Union/Springer and Union/Howard. In 1988, 7 accidents were reported at Union and Howard. Prior to, and since 1988 accident counts have averaged 1-2 per year leading staff to believe that the 1988 totals were a statistical anomaly. Staff will, of course, continue to monitor this intersection. For Union and Springer, the accident rates are higher.

Staff recommend that, based on accident history, meeting the council adopted warrant for multi-way stop installations, a 4-way stop should be installed. As a possible side benefit, the installation of stop signs on Union Street at Springer Avenue may assist in reduction of speed on Union Street by interrupting the free flow of traffic."

D. TRAFFIC CONCERNS - MRS. ROSE CHALLENGER

RECOMMENDATION:

1. THAT a copy of this report be sent to Mrs. Rose Challenger, 8749 Yarrow Place, Burnaby, B.C., V3N 4W2.

REPORT

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

"1.0 BACKGROUND

The Committee has been sent a letter by Rose Challenger regarding a number of traffic related concerns in the vicinity of her home. She resides in a developing Municipal subdivision of the Cariboo Heights area. Accordingly, staff passed a copy of her letter to the Land Use Planner for the project as well as the Transportation Planner for comment.

Staff also accompanied Alderman Young to a site meeting with Ms. Challenger who walked the group around the immediate neighbourhood (shown on Exhibit 1, attached), noting her concerns. Council has approved a pedestrian actuated signal on 16th at Cascade. However, the installation of this signal indirectly and only partially addresses the concerns that are further discussed below.

2.0 THE ROLE OF 16TH
(Volume of Traffic, Type of Traffic, Future Concerns)

With regard to these issues the Transportation Planner wrote:

"1. Sixteenth is a major collector in the current Plan and will likely retain this status in the renewed Plan. Major collectors are intended to carry a reasonable proportion of non-local traffic and accommodate transit.

2. Measures such as traffic circles, barriers, etc., are not appropriate on major collector streets as they would restrict access for local residents, promote increased infiltration onto local streets in the area and restrict transit usage.

3. Major improvements to the arterial system are the most effective solution to the problem of increased traffic on 16th Avenue, specifically the upgrading of Highway 1 and the Stormont/McBride Connector.

As a major collector, 16th is not a truck route and basically can be considered prohibited to through movement of vehicles having more than three axles. However there is a significant amount of construction activity in this area and indeed there are lots in the vicinity of Mrs. Challenger that are yet to be developed. Staff believe that this construction activity results in added truck traffic. Staff traffic observations have not led us to conclude that there is any significant extraneous truck traffic in the area.

3.0 SAFETY AT YARROW AND CASCADE

Ms. Challenger has suggested a stop sign at this intersection to slow down vehicles on Cascade. Staff observations indicate that this is a relatively minor neighbourhood intersection. Much of the activity that staff have observed is attributable to construction traffic. When the neighbourhood is complete staff would expect this intersection to be more innocuous than it may be presently perceived as being. Accordingly staff do not recommend any stop sign control at this time.

4.0 ENVIRONMENTAL IMPACT
(Trespassing and Noise Pollution)

Staff believe that these concerns are to be addressed through completion of the subdivision. In particular the Director Planning & Building Inspection writes:

> "The Challenger's property, addressed at 8749 Yarrow Place, is separated from 16th Avenue by a lane and a buffer area as shown on the attached EXHIBIT 1.
>
> With the development of the Cariboo Heights area, the Corporation is to landscape this buffer, provide a pedestrian connection along the south side of 16th and construct a fence along the south side of the buffer area ...
>
> It is the Corporation's intention, therefore, to now proceed with the installation of a separated sidewalk on the south side of 16th through to Cariboo Road, landscape the buffer area, and provide a 1.8m wood fence at all private properties which abut the buffer area.
>
> Initially the landscape plans provided for a 1.2m chain link fence to be constructed adjacent the lane. However, in view of the concerns expressed by the Challengers regarding noise attenuation and trespassing, it is staff's intention to construct a continuous 1.8m wood fence in this area at a 1 metre offset from the lane. Moreover, staff will review the landscape materials to be planted in the buffer area to ensure that they also address the concerns raised."

5.0 DISCUSSION & CONCLUSION

As stated previously, staff have benefited from a site meeting with Mrs. Challenger and believe that fencing and landscaping will substantially address the immediate concerns. Staff have discussed the gist of this report with Mrs. Challenger on the phone and note that she remains concerned about the Yarrow/Cascade intersection. It would be appropriate if a copy of this report were forwarded to Mrs. Challenger."

E. ROYAL OAK AVENUE/KINGSWAY-LANEWAY NORTH OF INTERSECTION

RECOMMENDATION:

1. THAT a left turn restriction for northbound Royal Oak Avenue be installed in the first laneway north of Kingsway.

REPORT

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

"At the Traffic Safety meeting 1992 January 07, a concern was raised regarding vehicles travelling northbound on Royal Oak Avenue and turning left into the first laneway north of Kingsway. In response, a manual traffic count was conducted 1992 January 17 during the time that the turning restrictions for Royal Oak Avenue are in effect (3:00pm-6:00pm). During the 3 hour period, 48 vehicles turned left into the laneway, an average of 16 vehicles per hour during peak times.

Staff believe that a significant proportion of this volume is related to the implementation of the recent left turn restriction on Kingsway.

The medium to long range plans for the Royal Oak/Kingsway intersection include road widening, left turn channelization and a raised median, which would restrict laneway access to right turn in and right turn out.

In light of future road improvements scheduled at this location, staff recommend, as a cost effective short term measure, that a sign be installed at the southwest corner of the laneway at Royal Oak, prohibiting northbound Royal Oak traffic from making a left turn into the laneway."

F. BROADWAY AT UNDERHILL

RECOMMENDATION:

1. THAT Council approve the laning improvements at Underhill and Broadway as discussed in this report.

REPORT

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

"BACKGROUND

Burnaby Council, at its meeting of 1991 October 7, was made aware of residents' concerns over traffic problems at the Broadway-Underhill intersection. This matter has been referred to the Committee and subsequently to staff for investigation. In the complaints staff have received, conflicts between northbound to westbound left turns and eastbound to northbound left turns is the primary concern. It has also been noted that drivers of vehicles stopped at the southbound stop sign on Underhill are unclear about when to enter the intersection. Northbound to westbound traffic seldom signals when making their left turn onto Broadway. It has been suggested that stop signs be installed on the south and the west legs of the Broadway-Underhill intersection to clarify the right of way and reduce conflicts or that the intersection be signalized. Currently only the north leg is stop sign controlled.

EVALUATION

Staff have recently compiled traffic volumes, 24 hour automatic and peak hour manual counts, and accident statistics for the Broadway-Underhill intersection. This data has been run through recognized evaluation warrants for both signalization and multi-way stop installation. The results of the warrant review indicates that neither signalization or additional stop sign installation is considered appropriate. The intersection also does not meet the Council adopted warrant for multi-way stop sign installation based on accident rate.

As can be seen in Exhibit 2, there is a definite peak traffic movement. This is the northbound to westbound left turn in the morning and the reverse eastbound to southbound right turn in afternoon. The conflicts arise when vehicles making other movements competing for the same road space enter the intersection.

IMPROVEMENTS

As noted, warrants are not met for additional traffic control. While staff concur with the warrant procedure, staff have also, more qualitatively, reviewed a multi-way stop sign installation as a way of improving the perceived traffic problems at the intersection. Staff do not however feel that, on balance, a three way stop will be as effective as the lane management solution discussed below. As the

main movements have very high volumes and other movements are relatively low, staff need to find a way for the more minor movements to safely maneuver through this intersection without significantly affecting the bulk of the traffic. Staff believe that this can best be accomplished by realigning the intersection so that it is obvious to all traffic what the intent of other drivers is and when it would be safe to enter the intersection.

Exhibit 3 is a proposed re-alignment of the intersection. What this shows is a realignment of the intersection with the north leg of Underhill Avenue becoming the base of the "T" of the intersection. All southbound traffic will be required to stop. Northbound left turns and eastbound right turns will continue to have unimpeded right-of-way by way of exclusive lanes. Stopping these movements by installing three-way stops, would accomplish little more than backing up traffic.

A bay will be marked for eastbound left turn traffic. This traffic will be required to yield right-of-way to northbound to westbound traffic as defined under the Provincial Motor Vehicle Act. Northbound traffic will be split into two lanes. Northbound to westbound left turns will be the main movement with its right-of-way being clear, as previously discussed. Traffic going straight northbound will not affect nor be affected by other movements as staff will utilize the existing pavement and curb line to provide a separate, segregated lane.

SUMMARY & CONCLUSIONS

It is felt that the changes shown and described will go a long way in reducing conflicts and improving perceived safety at the Broadway-Underhill intersection, while having no negative major effect on the main traffic flows. Staff propose that the changes be implemented and that the intersection be re-evaluated six months after implementation. The cost of the improvement is estimated to be $18,500. Funding for this expenditure has been provided in the draft 1992 Provisional Capital Budget under Traffic Management."

MEMBERS:

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

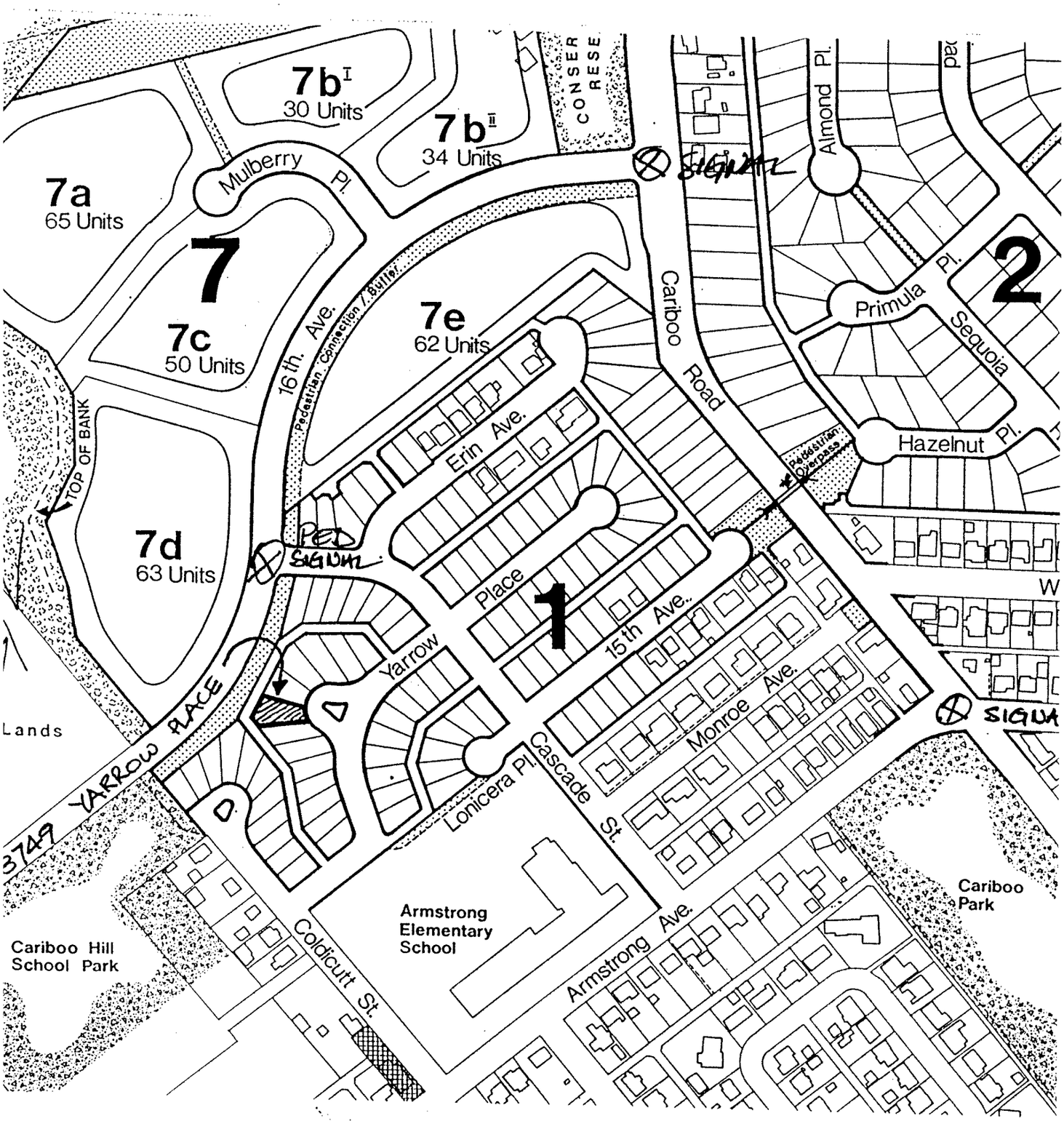
Respectfully submitted,

Alderman J. Young
Chairman

Alderman D. Evans
Member

Alderman D. Lawson
Member

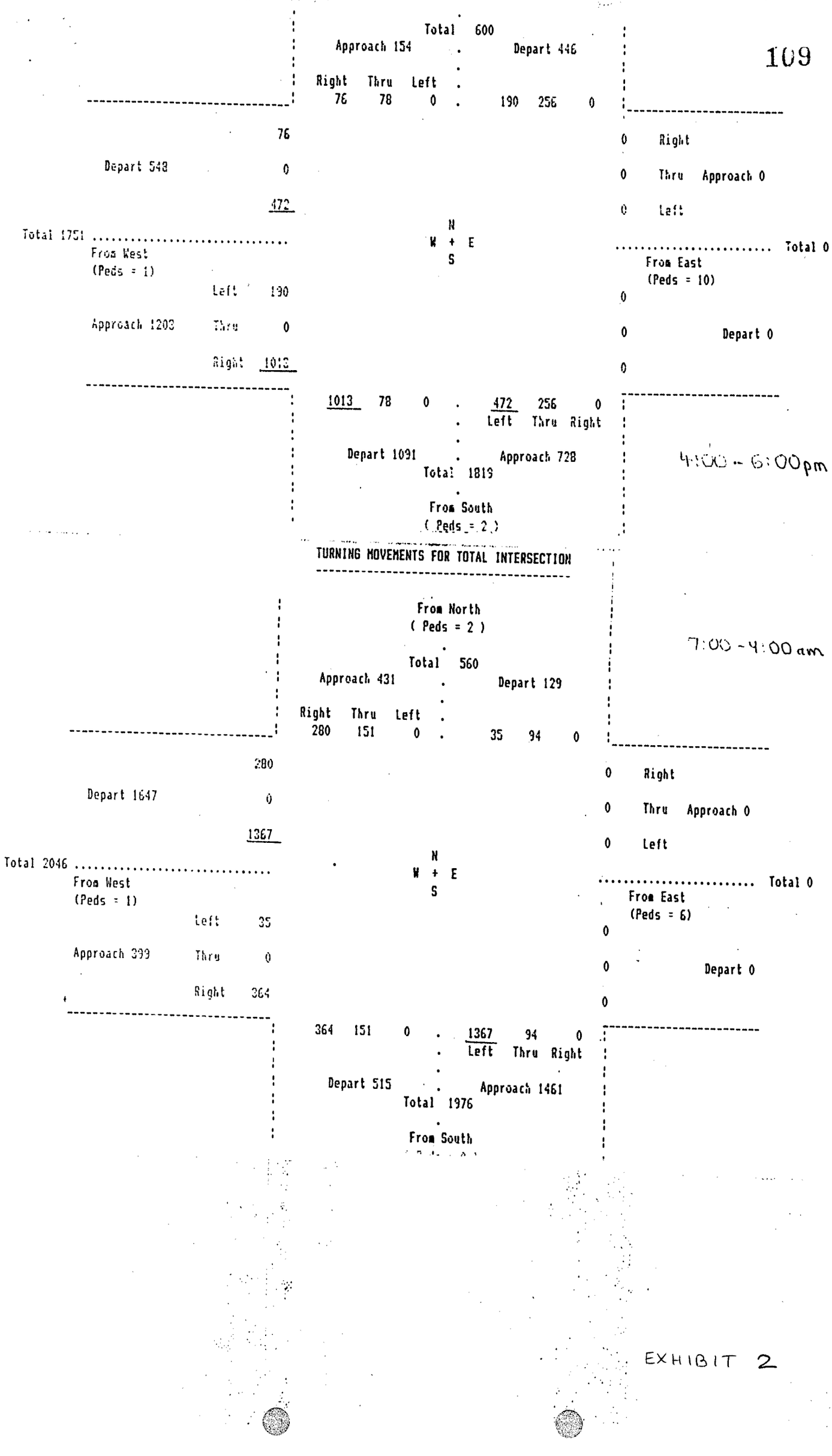
Alderman C. Redman
Member



CARIBOO HEIGHTS SUBDIVISION

16th / CASCADE AREA

EXHIBIT 1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Depart 446
Right Thru Left
76 78 0
190 256 0
76
Depart 548
0
472
Total 1751
From West
(Peds = 1)
Left 190
Approach 1203
Thru 0
Right 1013
N
W + E
S
0 Right
0 Thru Approach 0
0 Left
Total 0
From East
(Peds = 10)
0
0 Depart 0
0
1013 78 0
472 256 0
Left Thru Right
Depart 1091
Approach 728
Total 1819
From South
(Peds = 2)
4:00 - 6:00pm
TURNING MOVEMENTS FOR TOTAL INTERSECTION
From North
(Peds = 2)
Total 560
Approach 431
Depart 129
Right Thru Left
280 151 0
35 94 0
280
Depart 1647
0
1367
Total 2046
From West
(Peds = 1)
Left 35
Approach 399
Thru 0
Right 364
N
W + E
S
0 Right
0 Thru Approach 0
0 Left
Total 0
From East
(Peds = 6)
0
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0
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Depart 515
Approach 1461
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From South
7:00 - 9:00 am

EXHIBIT 2

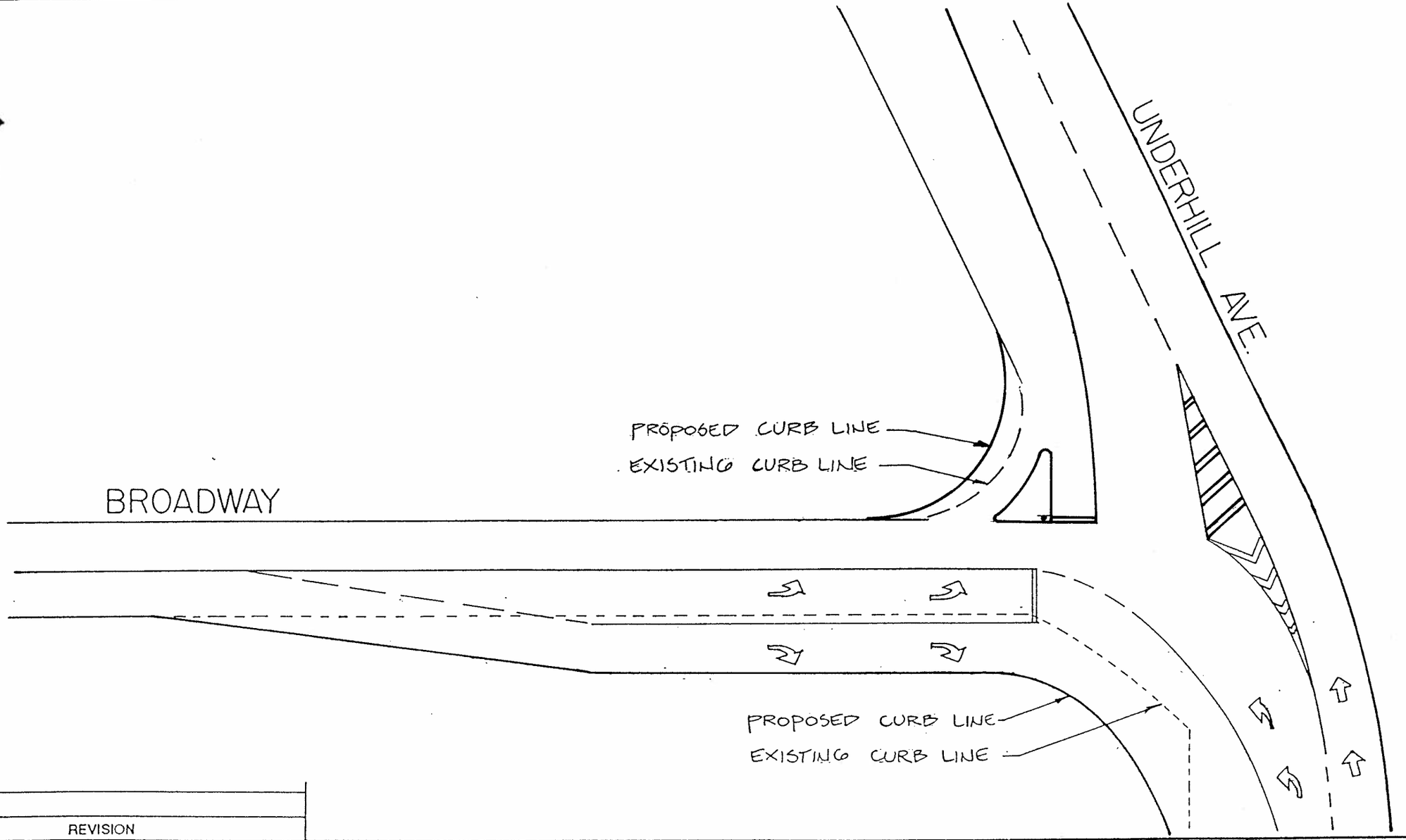

EXHIBIT 3

110

NO.	DATE	REVISION
1	3/18	

THE CORPORATION OF THE DISTRICT OF BURNABY
ENGINEERING DEPARTMENT

PROPOSED LANE RE-ALIGNMENT
INTERSECTION OF
BROADWAY AND UNDERHILL AVE.

SCHEMATIC ONLY

DESIGNED BY: E.J.	SCALE: N.T.S.
DRAWN BY: H.D.	DATE: FEB 21/92
CHECKED BY: P.L.	L
APPRV'D BY:	