

TRAFFIC SAFETY COMMITTEE

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*HIS WORSHIP, THE MAYOR
AND COUNCILLORS*

**SUBJECT: WILLINGDON AVENUE AND LOUGHEED HIGHWAY
TRAFFIC SIGNAL OPERATION**

RECOMMENDATION:

1. THAT a copy of this report be forwarded to Rob James of Coast Mountain Bus Company.

REPORT

The Traffic Safety Committee, at its meeting held on 2006 October 03, received and adopted the *attached* report reviewing the traffic signal timing plan at Willingdon and Lougheed in conjunction with the Beta Avenue and Lougheed signal as traffic is backing up in the eastbound direction during the afternoon rush hour.

Respectfully submitted,

Councillor Nick Volkow
Chair

Councillor Sav Dhaliwal
Vice Chair

Councillor Garth Evans
Member

Copied to: City Manager Director Engineering

TO: CHAIR AND MEMBERS
TRAFFIC SAFETY COMMITTEE

DATE: 2006 September 25

FROM: ASST. DIRECTOR ENGINEERING,
TRAFFIC & ENGINEERING SYSTEMS

FILE:
Reference:

SUBJECT: WILLINGDON AVE & LOUGHEED HWY TRAFFIC SIGNAL OPERATION

PURPOSE: To review the traffic signal timing plan at Willingdon & Lougheed in conjunction with the Beta Avenue & Lougheed signal as traffic is backing up in the eastbound direction during the afternoon rush hour.

RECOMMENDATIONS:

1. **THAT** A copy of this report be forwarded to Rob James of Coast Mountain Bus Company.

REPORT**1.0 INTRODUCTION**

At the September 6, 2006 Traffic Safety Committee correspondence was received from Mr. Robert James of Coast Mountain Bus Company raising a concern over extensive eastbound queues of traffic and the impact on southbound to eastbound left turning vehicles at Willingdon Avenue & Lougheed Highway. A suggestion to alter the sequence of the traffic signal phase at Willingdon & Lougheed, or coordinating the signal with the adjacent Beta Avenue traffic signal to mitigate the delays was made.

2.0 BACKGROUND

Willingdon & Lougheed is an arterial/arterial intersection directly adjacent the Brentwood SkyTrain station with heavy pedestrian volumes and protected left turns. With the heavy rush hour traffic flows, several legs experience capacity problems at different times of the day.

Both the traffic signals at Willingdon & Lougheed and at Beta & Lougheed have time of day coordination plans in effect, with the coordinated phases being the east/west Lougheed through movements. The current timing plans for signals in the Lougheed-Brentwood corridor were designed in 2003. Counts at that time showed extensive queues on all the existing left turns and notable back-ups on three of the four through legs in the PM peak at the intersection of Lougheed & Willingdon. Modelling analysis shows that even with optimal timing plans in place some of the legs remain over-capacity.

3.0 DISCUSSION

Extending the green time on Lougheed to clear out queued traffic requires an extension to the overall cycle length for all signals coordinated along the corridor to maintain synchronization. The longer the cycle length under coordination, the less "active" the signal is to respond to detected vehicle/pedestrian demand. So while east/west traffic may acquire some benefit, north/south traffic, left turning vehicles and pedestrians will all experience additional queuing and delay which is already significant. Modelling longer

To: Traffic Safety Committee
From: Asst. Director Engineering, Traffic & Eng. Systems
Re: Willingdon Ave & Lougheed Hwy Traffic Signal Operation
2006 September 25 Page 2

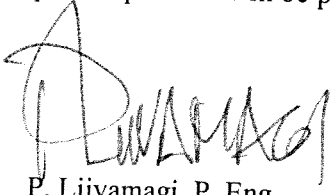
cycle lengths than those already in place did not yield an improvement to any of the stressed movements. This would confirm the observation that the roadway has reached its carrying capacity in the rush hour.

To increase capacity, turning movement restrictions at key intersections to maintain corridor flow, or the addition of travel lanes is needed. The need for an additional travel lane in both the east and westbound direction has been identified as a requirement for the Brentwood area plan with the increase in development and density. As the properties east of Willingdon develop, the Lougheed widening/road improvements will be made alleviating much of the current backup.

4.0 CONCLUSION

Obstructed sight lines on Beta Avenue at Lougheed, mean the north and south phases must operate independently. This "split phase" requires more time to serve north/south traffic on Beta than if they were run concurrently, utilizing approximately 10% more of the available cycle length that could otherwise be used to clear Lougheed traffic. Restriction of the northbound Beta Avenue traffic at Lougheed to right turns only would eliminate the split phase and reduce significantly the bottleneck of Lougheed traffic at Beta. Alternative routing via Willingdon & Dawson is available for area businesses, but implementation of such a restrictive measure should have some advance public hearings before being instituted.

Modifying the signal phase order to display the north and southbound left turns after the north and south through phases is an idea that has merit as it would allow the left turn vehicle queues more receiving storage area. This will need to be evaluated in greater detail with a comprehensive timing plan review involving adjacent traffic signals since this will require a controller programming change and mandatory signage. Manual counts are scheduled to review and revise the timing plans in detail, and the "lag" left turn phase operation will be part of this review.



P. Liivamagi, P. Eng.
Asst. Director Engineering,
Traffic & Engineering Systems

MDS
Attachment

Copied to: City Manager

