

ITEM 4  
MANAGER'S REPORT NO. 14  
COUNCIL MEETING 89/02/20

RE: GRANGE STREET AND MCMURRAY AVENUE TRAFFIC SIGNAL

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendation of the Director Engineering be adopted.

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**TO: MUNICIPAL MANAGER 1989 FEBRUARY 13**

**FROM: DIRECTOR ENGINEERING**

**SUBJECT: GRANGE STREET AND MCMURRAY AVENUE TRAFFIC SIGNAL**

**PURPOSE: TO RESPOND TO THE CONCERNS EXPRESSED BY MR. G.H. STAFFORD REGARDING THE OPERATING SEQUENCE OF THE TRAFFIC SIGNAL AT THE INTERSECTION OF GRANGE STREET AND MCMURRAY AVENUE**

RECOMMENDATIONS:

1. THAT a copy of this report be sent to Mr. G. H. Stafford, Apt. 1804, 4769 Hazel Street, Burnaby.

BACKGROUND

Appearing on the agenda for the regular Council meeting of 1989 February 13 was a letter from Mr. G. H. Stafford of Apt. 1804, 4789 Hazel Street, regarding the operating sequence of the traffic signal at McMurray Avenue and Grange Street.

REPORT

In his letter of 1989 January 30, Mr. Stafford expressed confusion regarding the operating sequence of the traffic signal at McMurray Avenue and Grange Street. He also compared the operation of this signal with the one at McKay Avenue and Grange Street as it appears to operate on a different sequence when the pedestrian pushbutton has been pushed.

These two traffic signals have been designed and programmed to operate in a fully actuated manner to minimize delay and to optimize traffic flow, both vehicular and pedestrian, through the intersections. This allows each green light to vary in length from a preset minimum time to a preset maximum time to accommodate varying traffic flows. This is accomplished through the placement of loops of wire in the pavement to detect the presence of vehicles. Pedestrian pushbuttons are installed to allow pedestrians to call up the walk signal to cross the street. If no vehicles are present on the detectors, or no pedestrians have pushed the buttons, the signal controller will omit certain segments of the operating sequence.

At an intersection without a separate left-turn lane, as is the case at both McMurray and Grange and at McKay and Grange, the standard procedure is to place the detector that activates the left-turn arrow twenty metres back from the stop bar. This is done to reduce the frequency of activation of the left-turn arrows during periods of lower traffic volumes.

To activate the left-turn arrow, a queue of at least three or four cars must be present to cover the detection zone. If traffic has not backed up sufficiently to activate the detector, the green arrow will not come on and the signal would indicate green for both east and westbound traffic. If a vehicle is present on the detector a few seconds prior to the end of the green on the northbound leg of the intersection, the flashing green arrow will come on with the westbound green. During this interval, the eastbound light will stay red and the east-west walk signal will not come on. Upon termination of the green arrow, the eastbound light will turn green and, if a pedestrian has pushed the button, the walk signal will come on.

If a queue of left-turning vehicles builds up over the detector during the eastbound green interval and no vehicles or pedestrians are present on the northbound leg of the intersection, we have programmed the controller to allow termination of the eastbound green light if a gap appears in the approaching traffic and if the pedestrian sequence has completed timing. The flashing green arrow will then appear with the westbound green light. Apparently, Mr. Stafford has witnessed this sequence at McMurray and Grange but not at McKay and Grange. This sequence is possible at both locations but may not occur very often at McKay due to difference in the traffic flows.

We have checked our accident records for both intersections and have no indication that this phasing sequence is generating left-turn accidents. We have also observed both intersections and have found them to be operating as programmed. As this operating sequence is the most efficient method of operating this signal at this time, we are recommending no changes.

The contents of this report have been discussed with Mr. Stafford.



E. E. Olson, P. Eng.  
DIRECTOR ENGINEERING