

CITY OF BURNABY

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TRAFFIC AND TRANSPORTATION COMMITTEE  
(TRANSPORTATION AND TRANSIT DIVISION)

*HIS WORSHIP, THE MAYOR  
AND COUNCILLORS*

RE: BOUNDARY/VANNESS INTERSECTION SIGNALIZATION

RECOMMENDATIONS:

1. **THAT** Council approve the full signalization of the intersection of Boundary Road and Vanness subject to the City of Vancouver confirming in writing they will support the installation of a pedestrian signal at Boundary and Burke.
2. **THAT** a copy of this report be forwarded to I. Adam, Assistant City Engineer Transportation.

REPORT

The Traffic and Transportation Committee (Transportation and Transit Division), at its meeting held on 2000 April 12, received and adopted the *attached* report to advise on an approach to address the issue of the signalization of the intersection of Boundary Road and Vanness Avenue.

Respectfully submitted,

Councillor N. Volkow  
Chair

Councillor D. Evans  
Vice Chair

Councillor N. Harris  
Member

:COPY - CITY MANAGER  
- DIRECTOR ENGINEERING  
- DIRECTOR FINANCE  
- DIRECTOR PLANNING & BUILDING

**TO:** CHAIR AND MEMBERS 2000 April 04  
TRAFFIC AND TRANSPORTATION COMMITTEE  
(Transportation and Transit Division)

**FROM:** DIRECTOR PLANNING & BUILDING OUR FILE: 08.640B

**SUBJECT: BOUNDARY / VANNESS INTERSECTION SIGNALIZATION**

**PURPOSE:** To advise the Traffic and Transportation Committee on an approach to address the issue of the signalization of the intersection of Boundary Road and Vanness Avenue.

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**RECOMMENDATIONS:**

1. **THAT** the Traffic and Transportation Committee approve the full signalization of the intersection of Boundary Road and Vanness subject to the City of Vancouver confirming in writing they will support the installation of a pedestrian signal at Boundary and Burke.
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**REPORT**

**1. INTRODUCTION**

The Kingsway-Boundary Road intersection project undertaken in 1997 involved the reconstruction of Boundary Road to a six-lane standard and the provision of a pedestrian signal with transit actuation at Boundary and Vanness. Left turns from Vanness onto Boundary Road northbound were prohibited to all but transit vehicles. At the time of installation however the City of Vancouver preferred the installation of a full traffic signal that would accommodate left turns for general traffic serving the Collingwood Village residential development. The City of Burnaby, however, did not support a full signal citing several concerns including the following:

- the potential increase in traffic from Collingwood Village left turning onto Boundary Road to use Burke Street as an access via Willingdon to Highway 1 and points north.
- the interruption to traffic flow on Boundary Road as one of the major north-south arterial roads in Burnaby.
- the safety issue from vehicles northbound on Boundary Road coming through the intersection at Kingsway and having to come to an abrupt stop on a downhill grade at the Vanness signal.

- the delay to buses by having to share the transit-only left turn lane from Vanness onto Boundary Road.

The City of Vancouver raised full signalization of the intersection as an issue in the recent discussions regarding the installation of a pedestrian signal at Boundary and Burke to accommodate the rerouting of the #28 bus along Burke and Smith and to assist transit riders to cross Boundary Road at Burke to use this rerouted service. As City of Vancouver agreement is necessary for this signal to proceed, it was prudent for the City of Burnaby to reopen discussion on the signalization of the Boundary and Vanness intersection to determine whether circumstances have changed. Accordingly, at its 1999 meeting, the Traffic and Transportation Committee directed staff to review the implications of the full signalization of Boundary and Vanness.

## 2. ISSUES

To evaluate the issues, staff requested information from the City of Vancouver that would address Burnaby's aforementioned concerns regarding full signalization of the intersection. To help assess the impact of signalization on Burke Street, the City of Burnaby conducted a licence plate survey to trace the magnitude and movements of traffic flow between Vanness and Burke Street, notwithstanding that left turns from Vanness onto Boundary Road are currently not legally permitted.

### 2.1 Traffic Impacts on Burke Street

The most significant issue in the full signalization of Boundary and Vanness has been the potential impact on the Burnaby street system (particularly Burke Street) of the improved access to and from the Collingwood Village multi-family residential development clustered around Vanness Street between Joyce Street and Boundary Road. The license plate survey conducted on March 20, 2000 traced the magnitude of the traffic flows between Vanness and Burke Street in the morning and evening peak periods. As shown in *Figure 1 and 2 attached* the results are summarized as follows:

#### **Morning 8:00 - 9:30 A.M. Traffic (Figure 1)**

Of the 250 vehicles traveling eastbound on Burke Street, only five vehicles (2%) originate from Vanness turning left onto Boundary Road and right on Burke.

Of the 215 vehicles traveling westbound on Burke Street, only seventeen (8%) are destined to Vanness turning left at Boundary and right on Vanness.

### **Evening 3:00 - 5:00 P.M. Traffic (Figure 2)**

Of the 660 vehicles traveling eastbound on Burke Street, only twenty-two (3%) originate from Vanness turning left onto Boundary Road and right on Burke.

Of the 215 vehicles traveling westbound on Burke Street, only eight vehicles (4%) are destined for Vanness turning left on Boundary and right on Burke

In summary in the morning peak period less than 5% of the traffic on Burke Street in both directions originates or is destined to Vanness; in the evening peak period this proportion is 3%.

As there currently is a left turn prohibition in place for general traffic to turn left from Vanness onto Boundary, it is anticipated that with the installation of a full traffic signal that the magnitude of the volume of traffic in the morning and evening peak periods could be slightly higher than indicated by these counts. However, a similar licence plate trace done by the City of Vancouver in 1998 September prior to installation of the left turn prohibition showed a left turning volume of six vehicles from Vanness to Boundary and right on Burke representing only 2% of the total traffic on Burke Street.

## **2.2 Traffic Flow on Boundary Road**

Correspondence from the City of Vancouver was received dealing with the issue of a full traffic signal at Vanness potentially disrupting the flow of traffic on Boundary Road by creating traffic queuing in the north-south direction up to the signal. To address this issue, the City of Vancouver assessed the operation of the intersection under traffic volumes generated by full build-out of the Collingwood Village development with the addition of 1600 dwelling units by 2010.

The results of this analysis showed that in both the morning and afternoon peak hours, assuming coordination with the signal at Kingsway, the north and southbound movements would operate in almost free flow conditions with only 12-14 seconds of delay. In the afternoon peak hour, however, the left turn movement from Boundary Road southbound into Vanness westbound could exceed the capacity of the left turn lane at some times resulting in queuing back into the adjacent southbound through-lane. While this is an issue, the availability of the two other northbound through lanes provide some opportunity to bypass this potential queue without backing up traffic into Kingsway.

## **2.3 Traffic Safety**

A significant safety concern was the potential for northbound vehicles coming through the Kingsway intersection and having to come to an abrupt stop on a downhill grade at the Vanness signal. The City of Vancouver has given assurances that this issue has been addressed by coordinating the signals at Kingsway and at Vanness so that the two signals


are offset to favor northbound traffic flow. This would prevent the Vanness signal from actuating until the traffic northbound on Boundary through the Kingsway intersection clears the Vanness intersection.

#### 2.4 Transit Considerations

Currently buses have a bus-actuated signal and exclusive use of the left turn lane from Vanness onto Boundary northbound. Provision of a standard signal would allow general traffic to use this left turn lane thus potentially incurring increased delay for buses. However, by the City of Vancouver estimates, at full build-out future peak period traffic volumes making the left turn are estimated to increase to approximately 100 vehicles during the morning peak hour or an average of 2-3 vehicles queued at the signal at any one time. Under these conditions a bus, on average, would be delayed only a few seconds.

### 3. CONCLUSION

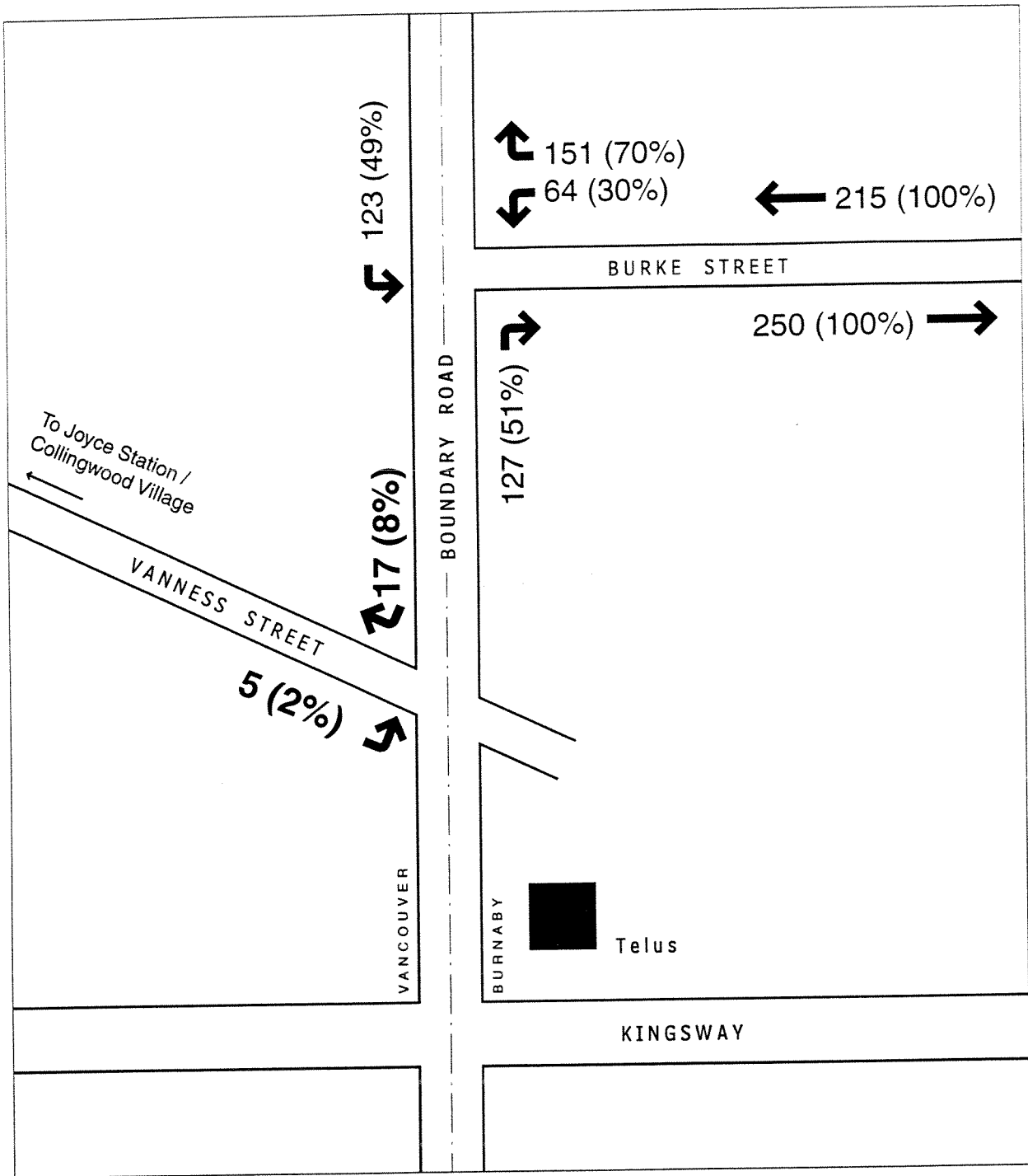
The City of Vancouver has provided information to address the longstanding issues over the full signalization of the intersection of Boundary Road and Vanness. Based on this information and the results of the licence plate survey conducted by the City of Burnaby, staff are able to recommend that the Committee approve full signalization of the intersection subject to the City of Vancouver supporting the installation of a transit actuated and pedestrian signal at Boundary Road and Burke Street. The cost of the signal would be shared between TransLink (50%) and the Cities of Vancouver and Burnaby (the remaining 50%).

  
D.G. Stenson, Director  
PLANNING & BUILDING

RG/ma  
Attach.

cc: City Manager  
Director Engineering  
Director Finance

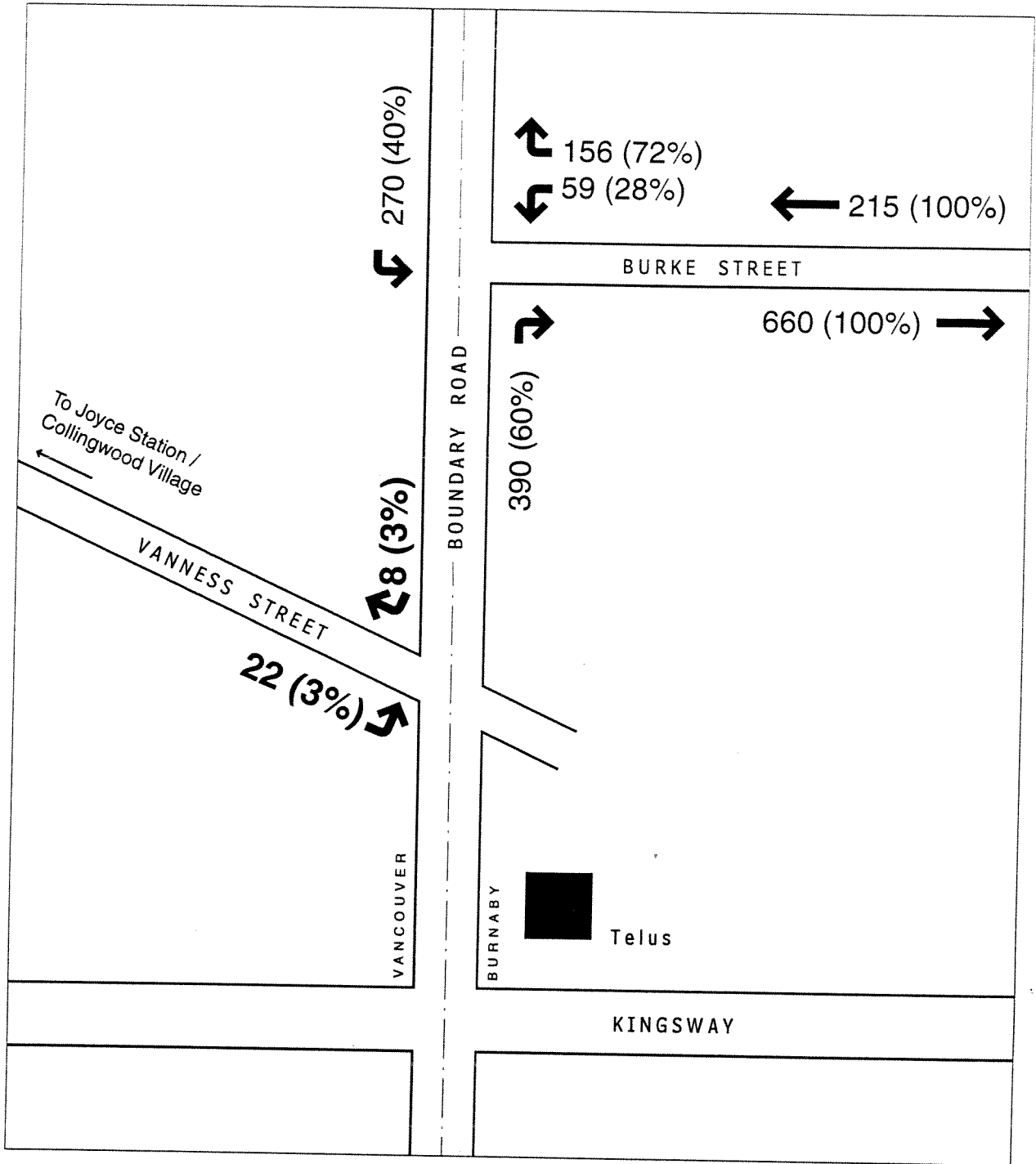
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**Traffic on Burke Street**  
to and from Vanness  
(8:00 - 9:30AM)



Figure 1



**Traffic on Burke Street**  
to and from Vanness  
(3:00 - 5:00PM)

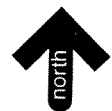


Figure 2

