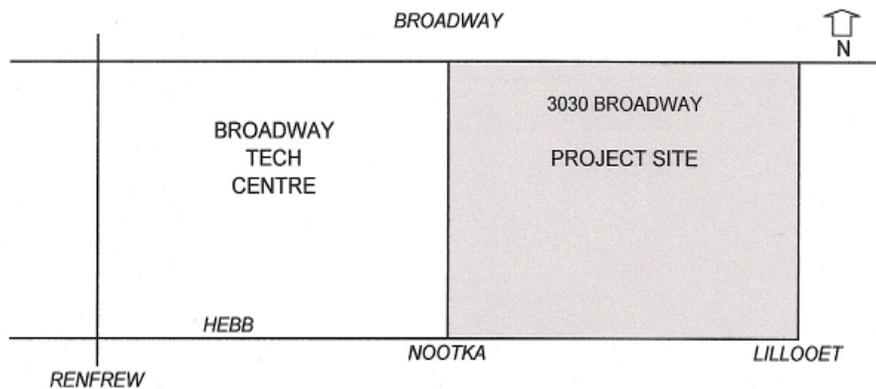


# BROADWAY TECH CENTRE EAST

## TRAFFIC REVIEW

### INTRODUCTION

Bentall Real Estate Services is proposing to redevelop the block bounded by Broadway, Lillooet, Hebb and Nootka that is immediately east of the Broadway Tech Centre. (See Sketch 1) Bentall has commissioned BWW CONSULTING (BWWC) to provide assistance relative to traffic and parking issues and to prepare a traffic review for the project.



SKETCH 1

### PROPOSED DEVELOPMENT

The proposed development would replace all the existing buildings on the site with five buildings that would have 800,000 sqft of office space and 70,000 sqft of flex space. All parking is to be under the buildings with driveways on Nootka and on Lillooet. Loading is to be on-site as well. There will be no vehicle access directly from Broadway or Hebb.

### EXISTING CONDITIONS

#### Streets

The site is bounded by one major street and three minor streets. Broadway is a six lane arterial with a west to south left turn bay at Nootka. Nootka/Broadway and Renfrew/Broadway are signalized. There are left turn bays on all four legs at Renfrew/Broadway. Nootka, Lillooet and Hebb have a travel lane in each direction and parking on one or both sides. Hebb is signalized at Renfrew.

#### Transit

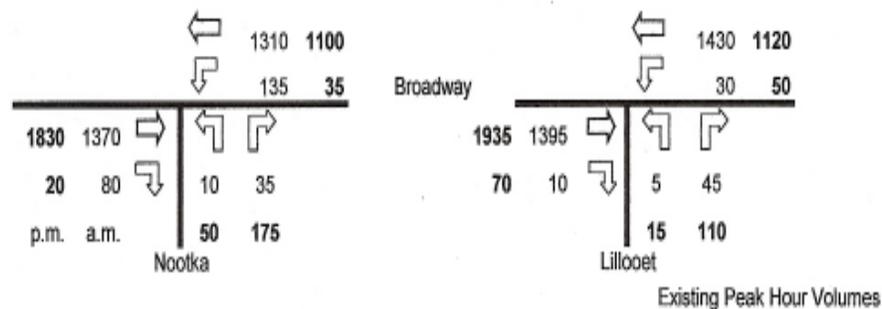
There is bus service on both Broadway and Renfrew. There are two Millennium Line stations within walking distance of the project – at Renfrew and at Rupert.

## Adjacent Development

The north side of Broadway is developed with residential houses. The block east of Lillooet is industrial/warehouse, the block west is the Broadway Tech Centre and to the south is the Millennium Line, the rail corridor and the Greenway.

## EXISTING TRAFFIC

Existing a.m. and p.m. peak hour traffic volumes are shown on Sketch 2. These volumes were derived from City data and counts by BWWC staff.



SKETCH 2

Also, traffic data was collected at the driveways serving the Broadway Tech Centre and the existing development on the project site. This data was collected in order to:

- determine vehicle trip generation rates as the traditional ITE rates would not be applicable;
- determine the amount of traffic to be eliminated by clearing the project site.

The Broadway Tech Centre vehicular traffic activity is summarized below.

	IN	OUT
a.m. peak hour	291	42
p.m. peak hour	49	295

In the a.m. and p.m. approximately 10% and 15% respectively of the above traffic uses Hebb as a route to or from the site.

The developer has advised that the site has 415,000 sqft of office/call centre and about 100,000 sqft of warehouse/carrier centre occupied at present. Using this

amount of occupied space and the volumes noted above results in the following vehicle trip generation rates. The 100,000 sqft has not been included in the calculation for the following reasons:

- low number of employees; with start/end work times outside the peak period
- use a conservative estimate of trip rates (slightly higher) for planning purposes.

	IN	OUT	2WAY
a.m. peak hour	0.70	0.10	0.80
p.m. peak hour	0.12	0.71	0.83

These rates are well below typical rates from more suburban locations with little or no transit service. Examples of such rates are shown below;

ITE 2 way:	a.m.: 1.56	p.m.: 1.49
MoT TGM 2 way:	a.m.: 1.90	p.m.: 1.80
Crestwood Richmond 2 way:	a.m.: 1.25	p.m.: 1.94

The existing development on the project site generates the vehicle trips shown below.

	IN	OUT
a.m. peak hour	44	13
p.m. peak hour	20	65

Approximately 40% (a.m.) and 35% (p.m.) of the above volumes use Hebb.

### **EXISTING OPERATING CONDITIONS**

At Nootka/Broadway SYNCHRO analyses have been done for the existing a.m. and p.m. traffic for comparison with future traffic conditions.

The SYNCHRO results are:

A.M. peak hour	<u>Movement</u>	<u>LoS(1)</u>
	WBT	A
	WBL	A
	EBT	B
	EBR	A
	NBL	C
	NBR	B
	<i>Intersection</i>	A
P.M. peak hour	<u>Movement</u>	<u>LoS</u>
	WBT	A

WBL	A
EBT	A
EBR	A
NBL	C
NBR	B
<i>Intersection</i>	A

(1) Level of Service: A = very good to F = very poor

The above results indicate that current operating conditions are satisfactory and that there is room for additional traffic before unsatisfactory conditions are reached.

The intersection of Renfrew/Broadway has not been analyzed because:

- no physical changes will be made
- operation of the signal will be monitored and possibly modified by City staff as traffic volumes change over time.

**INITIAL CITY COMMENTS**

City staff have provided the following initial comments that have been used to develop future traffic patterns:

- no increase in traffic on Hebb Street (measures to control this are to be developed by the City)
- traffic signal installation at Lillooet/Broadway
- construction of a west to south left turn bay on the east leg of Lillooet/Broadway
- based on current City policy no other street widenings will be permitted.

**PROJECT TRAFFIC**

It is expected that the trip generation rates for the new project would be similar to the Broadway Tech Centre because of the proximity to transit services. The project is essentially in the same location as the Broadway Tech Centre relative to transit services. Using the trip generation rates calculated previously the project traffic (rounded up) is estimated to be:

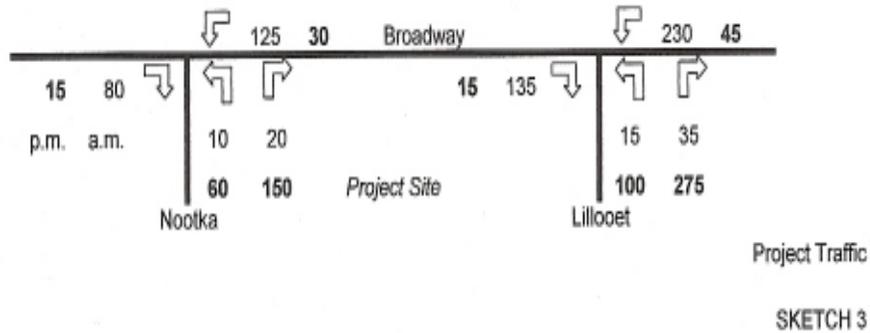
	IN	OUT
a.m. peak hour	570	80
p.m. peak hour	105	585

The project traffic has been distributed onto the street system based on the following:

- no traffic oriented to or from Hebb (worst case scenario)

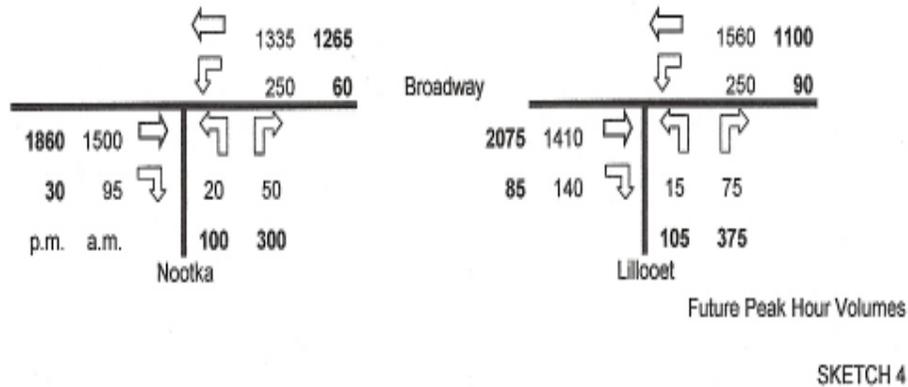
- distribution similar to Broadway Tech Centre
- use of Lillooet weighted more because of the existing higher volumes on Nootka (balance flows).

The project traffic as assigned to the street system is shown on Sketch 3.



### FUTURE TRAFFIC

Future traffic volumes have been calculated based on the existing volumes less the traffic generated by the existing development on the project site plus the project traffic noted above. Future peak hour volumes are shown on Sketch 4.



SYNCHRO analyses have been done for Nootka/Broadway and Lillooet/Broadway. The results are summarized below.

Nootka/Broadway A.M. peak hour

<u>Movement</u>	<u>LoS</u>
WBT	A
WBL	B
EBT	B
EBR	B
NBL	B
NBR	A
<i>Intersection</i>	A

Nootka/Broadway P.M. peak hour

<u>Movement</u>	<u>LoS</u>
WBT	A
WBL	A
EBT	B
EBR	B
NBL	B
NBR	C
<i>Intersection</i>	B

Lillooet/Broadway A.M. peak hour

<u>Movement</u>	<u>LoS</u>
WBT	A
WBL	B
EBT	B
EBR	B
NBL	B
NBR	A
<i>Intersection</i>	A

Lillooet/Broadway P.M. peak hour

<u>Movement</u>	<u>LoS</u>
WBT	A
WBL	B
EBT	C
EBR	C
NBL	C
NBR	D
<i>Intersection</i>	C

The above results indicate that overall operating conditions are satisfactory however the northbound approach on Lillooet is starting to show significant

delays and queuing. It should be noted that the above results are based on no project traffic being assigned to Hebb. If drivers perceive conditions on Lillooet (NB: LoS C&D) are worse than on Nootka (NB: LoS B&C) in the p.m. peak some may switch from Lillooet to Nootka.

## **PEDESTRIANS**

A major focus of pedestrian movements will be to and from the Renfrew Millennium Line station. Accordingly, the site plan has included a significant pedestrian gateway at the southwest corner of the site. On all streets around the site perimeter City-standard sidewalks will be provided.

An east-west pedestrian corridor between the existing Broadway Tech Centre and the project is planned basically as a continuation of the Virtual Way alignment. In order to provide a visual presence to what is a mid-block pedestrian crossing of Nootka a special design treatment is proposed and is shown on the landscape architect's drawings.

## **TRANSPORTATION DEMAND MANAGEMENT (TDM)**

The biggest transportation demand management element is the proximity of the project to transit services – particularly the Millennium Line. As evidenced by the vehicle trip generation rates for the Broadway Tech Centre non-vehicle modes are being used to a high degree.

Other TDM elements that will be considered on-site are:

- bicycle facilities per City standards
- provision for car pooling and car share vehicles (car share programs work better at the residential end)
- transit use promotion; possibly including subsidized monthly passes
- bicycle use promotion.

## **SUMMARY**

This project is an extension of the Broadway Tech Centre which has shown to be successful in reducing private vehicle trips primarily because of the proximity to the Millennium Line. Similar trip generation rates are expected for the project thus minimizing the impacts on the adjacent street system. Future operating conditions at Nootka/Broadway and at Lillooet/Broadway are satisfactory with some capacity available for additional traffic.

## **BWW CONSULTING**

BWWC737  
July 2010