

CITY OF BURNABY

TRAFFIC SAFETY COMMITTEE

*HIS WORSHIP, THE MAYOR
AND COUNCILLORS*

**SUBJECT: PEDESTRIAN CROSSING CONTROL AT THE INTERSECTIONS OF
HASTINGS STREET & ESMOND AVENUE AND HASTINGS STREET &
BETA AVENUE**

RECOMMENDATIONS:

1. **“THAT** funding be included in the 2006 Capital Budget as described in this report for the construction of a pedestrian signal at Hastings Street and Beta Avenue.
2. **THAT** funding be included in the 2007 Capital Budget as described in this report for the construction of a pedestrian signal at Hastings Street and Esmond Avenue.
3. **THAT** a copy of this report be forwarded to Isabel Kolic, Executive Director Heights Merchants Association, 102-4011 Hastings St, Burnaby BC, V5C 2J1.”

REPORT

The Traffic Safety Committee, at its meeting held on 2005 June 07, received and adopted the attached report responding to concerns raised by the Heights Merchants Association with regard to pedestrian safety when trying to cross Hastings St at either Beta Ave or Esmond Ave.

Respectfully submitted,

Councillor D. Evans
Chair

Councillor N. Volkow
Vice Chair

Councillor L. Rankin
Member

COPY: CITY MANAGER DIR. ENGINEERING
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TO: TRAFFIC SAFETY COMMITTEE **DATE:** 2005 May 24
FROM: ASST. DIRECTOR ENGINEERING, **FILE:** 38000-03
TRAFFIC & ENGINEERING SYSTEMS
SUBJECT: PEDESTRIAN CROSSING CONTROL AT THE INTERSECTIONS OF
HASTINGS ST & ESMOND AVE, AND HASTINGS ST & BETA AVE
PURPOSE: To respond to concerns raised by the Heights Merchants Association with regard
to pedestrian safety when trying to cross Hastings St at either Beta Ave or
Esmond Ave.

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R E P O R T

1.0 INTRODUCTION

In response to a request from the Heights Merchants Association for pedestrian actuated traffic signals on Hastings St at Esmond Ave and on Hastings St at Beta Ave staff have conducted a review of the two locations.

2.0 BACKGROUND

Hastings St is classified as a Primary Arterial, and carries heavy east-west commuter traffic on weekdays with approximately 40,000 to 45,000 vehicles per day. At both Beta and Esmond, Hastings is constructed to a six lane cross section, with two full time travel lanes and a parking lane in either direction. During rush hours, the parking lane in the peak direction (westbound in the morning and eastbound in the afternoon) becomes a high occupancy vehicle (HOV) travel lane.

Between Delta Ave and Boundary Road every road intersecting Hastings is equipped with a traffic signal (7 pedestrian signals, and 4 full signals) except for Esmond and Beta. Distance from either intersection (east or west) to an adjacent intersection with a signal is 200 metres. Both locations have bus stops nearby which generate some crossing demand from pedestrians.

Both Beta and Esmond are minor local roads and carry modest amounts of vehicle traffic. As such, there is no plan to signalise either location to accommodate vehicle movements.

The attached plans show the intersections and the nearest adjacent signalised crossing facilities.

3.0 REVIEW

Hastings St is a primary arterial roadway, hence trying to cross anywhere along its length is difficult, especially during rush hours. The six lane cross section means pedestrians must spend a considerable amount of time on the road when crossing, and the heavy traffic volumes limit the number of reasonable gaps to allow for crossing. The number of pedestrians crossing and the proximity to adjacent signalised intersections that could accommodate their needs must also be considered when evaluating a location.

Pedestrian counts on Hastings at Beta and Esmond were evaluated along with adjacent signalised intersections to determine the overall crossing demand for the area. If a location is perceived as difficult or dangerous to cross, and there is an easier crossing nearby, prudent pedestrians will divert to that intersection. The otherwise preferable location may not see enough pedestrians to trigger a signal warrant. Therefore polling of adjacent facilities indicates the overall demand for the area that needs to be serviced.

Hastings St @	Pedestrians		Accidents - '99 to '03	Warrant
	AM	PM		
Esmond Ave	3	8	6	None
Ingleton Ave	37	54	2	Ped Signal
Alpha Ave	86	170	23	Ped Signal
Beta Ave	2	19	5	None
Gamma Ave	43	23	10	Signalized I/S

The number of pedestrians crossing at Alpha was significant, with the peak hour showing 170 pedestrians crossing at Alpha compared to 19 at Beta. It may be argued that introduction of a signal at Beta could attract some pedestrians from the heavily used Alpha intersection, which may bring the warrant closer to a signal requirement after the fact.

Ingleton has much more modest pedestrian traffic, showing 54 pedestrians in the peak hour, which puts this signalised intersection at the warrant threshold. The number of pedestrians crossing at Esmond is, as expected, also dramatically lower, with a peak hour count of 8. Unlike the Beta/Alpha area there is not an abundance of pedestrians in the area which could be notionally “reallocated” to Esmond to warrant a signal.

The accident data comes from copies of RCMP MV104 forms and includes motor vehicle accident records. There were no recorded pedestrian accidents on Hastings at Ingleton or Esmond and a total of 4 accidents involving pedestrians at Gamma, Beta and Alpha over the five years investigated. The comparatively high number of vehicle collisions at Alpha are attributed to rear-end types, arising stopping for a red light. There is nothing shown within the accident data which would favour consideration of a pedestrian signal.

4.0 DISCUSSION: HASTINGS ST & ESMOND AVE

With two of the corners at Esmond & Hastings currently vacant, pedestrian crossing demand is relatively light. The adjacent signalised intersections of Ingleton Ave and Boundary Road also show only moderate pedestrian activity. There is some street level commercial activity and bus stops located on both sides of Hastings which generate some crossing demand.

Approach grades are significant on Hastings at Esmond, there is a 7% downhill slope in the westbound direction and 6% rise in the eastbound. With the downhill slope an advance warning flasher would be required which will reduce the responsiveness for pedestrian actuation and add to the installation cost.

Sight lines are good for vehicles approaching the intersection on Hastings in both the east and westbound directions, and the minimum distance standard of 200 metres (400 metres preferred) from adjacent traffic control signals indicated in the TAC application guidelines is met.

There is a development currently under construction on the north-east corner which when reviewed was not anticipated to add sufficient pedestrian crossing demand to warrant a signal. However another high density development is anticipated in the near future on the currently vacant property located on the south-east corner, and with all four corners occupied we anticipate the warrant should then approach or exceed required thresholds. Funding for a pedestrian actuated signal from the developer will therefore be sought as a condition of development. The project may also be eligible for cost sharing with TransLink under the MRN Minor Capital Program if the signal warrants are met.

Given the width and heavy traffic on Hastings, distance between adjacent signalised intersections (which allows for timing plan coordination) and the overall neighbourhood plan, staff recommend implementation of a pedestrian actuated signal at this location. Total cost of installing a pedestrian actuated traffic signal with an advance warning flasher is estimated to be \$130,000.

5.0 DISCUSSION: HASTINGS ST & BETA AVE

Comparing the observed peak hour total of pedestrians crossing at Beta with the evaluation warrant of the Pedestrian Crossing Control Manual there is a deficiency for consideration of installing a signal. However if we assume a majority of pedestrians are being diverted to the adjacent signalized crossings, notably at Alpha Ave where crossing is more assured, and assumed, say, a third of the pedestrians at Alpha might use Beta if it were similarly equipped, then there could be sufficient activity to justify a pedestrian actuated signal.

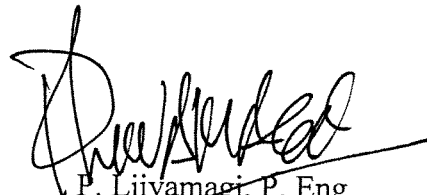
Approach grades are reasonable on Hastings at Beta, with a 4% downhill slope in the westbound direction, and a 3% rise in the eastbound direction. Sight lines are good for vehicles approaching the intersection on Hastings from either direction, and the minimum distance of 200 metres (400 metres preferred) from adjacent traffic control signals indicated in the application guidelines is met.

Given the heavy traffic on Hastings, the breadth of crossing distance, the potentially significant latent demand for an improved crossing, distance between adjacent signalised intersections (which allows for timing plan coordination), staff recommend implementation of a pedestrian actuated signal at this location. The cost of installing a pedestrian actuated traffic signal is estimated to be \$120,000. However, the project may not be considered eligible for cost sharing by TransLink staff under the MRN Minor Capital Program if the signal warrants are not met.

6.0 CONCLUSION

From the data collected, a pedestrian signal at Esmond Ave & Hastings St is not currently warranted, however with a major development underway on the northeast corner and a subsequent high density development slated for the southeast corner, a pedestrian signal will be required when these are complete and occupied. Staff are projecting that development may proceed in late 2006 or 2007. With this in mind, a requirement of development for the southeast corner will be to provide funding towards a pedestrian actuated signal at Esmond. An initial estimate to construct a pedestrian actuated traffic signal with an advance warning flasher for westbound vehicles is \$130,000. If approved, Staff would then ensure funding was made a requirement of the development, and once secure, incorporate this project into the 2007 Capital Budget process. The possibility of cost sharing with TransLink will be concurrently pursued.

For the intersection of Beta Ave & Hastings St it is recommended that a pedestrian actuated traffic signal should be installed to improve pedestrian service. Pedestrian counts show there is sufficient crossing demand in the area, and it would be in keeping with the street front commercial design that predominates here. While there will be some delay to motorists on Hastings as a result, a coordinated timing plan should mitigate much of that delay to the peak rush hour direction. An initial estimate suggests a cost of \$120,000 to construct a pedestrian actuated traffic signal. If approved, Staff would incorporate this project into the 2006 Capital Budget process and review the cost sharing possibilities with TransLink staff.



P. Liivamagi, P. Eng.
ASST. DIRECTOR ENGINEERING,
TRAFFIC & ENG. SYSTEMS

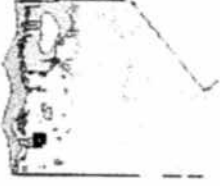
MDS:
Enclosure

Copied to: City Manager



Hastings St @ Beta Ave

April 06, 2006



Boundary

Contours

5m

1m

Strata Units

Skytrain Stations

Skytrain Lines

Addresses

Lot

Street Intersections

Traffic Signal

Speed Humps

Speed Humps

Roads

Lot

Contours

Address

File/Air

BVV 2002

Parks

Proposed/Underway

Future

This information has been gathered and assembled on the City of Burnaby's computer systems. Data provided herein is derived from a number of sources with varying levels of accuracy. The City of Burnaby disclaims all responsibility for the accuracy or completeness of information contained herein.

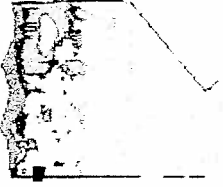
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Map Scale
1 : 2453



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- Contours
- Boundary
- Stairs
- Stairs Units
- Skytrain
- Skytrain Stations
- Skytrain Lines
- Addresses
- Lot
- Street Intersections
- Traffic Signals
- Speed Limits
- Speed Limits
- Speed Limits
- Roads
- Utility
- Canals
- Adoptive
- Fireworks
- BW 2002
- Parks
- Proposed to Be Adopted
- Proposed

Map Scale
1 : 2145