

TRAFFIC AND TRANSPORTATION COMMITTEE
(TRANSPORTATION & TRAFFIC DIVISION)

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

SUBJECT: BURNABY HEIGHTS TRAFFIC CALMING PLAN

RECOMMENDATIONS:

1. **THAT** Council authorize the removal of the six-month trial of street narrowings on Eton, Oxford and Penzance within Burnaby Heights.
2. **THAT** Council authorize staff to investigate the use of traffic circles as outlined in section 2.3 of this report as a potential element of the interim or long term traffic calming options to be circulated to the broader Burnaby Heights community.
3. **THAT** Council authorize staff to develop draft public consultation material as outlined in section 3 of this report for the review of the Committee and Council.
4. **THAT** a copy of this report be sent to Glen Leicester, Manager of Implementation Planning, TransLink; Jim Hall, Manager Neighbourhood Transportation Branch, City of Vancouver; Doug Penn, Deputy Fire Chief (Operations), City of Burnaby Fire Department; Bruce Hartford, BC Ambulance Service; Bill Shamborski, Traffic Section, RCMP and local residents whom attended the recent series of Resident Working Group meetings.

REPORT

The Traffic and Transportation Committee (Transportation and Transit Division), at its meeting held on 2002 June 12, received and adopted the attached report regarding the removal of the six-month trial of street narrowings in Burnaby Heights and providing an update on the proposed next steps in the process.

Respectfully submitted,

Councillor N. Volkow
Chair

Councillor D. Evans
Vice Chair

Councillor B. Der
Member

COPY: - CITY MANAGER
- DIR. ENGINEERING
- DIR. PLNG. & BLDG.
- DIR. FINANCE

TO: CHAIR & MEMBERS
TRAFFIC & TRANSPORTATION COMMITTEE
(TRANSPORTATION AND TRANSIT DIVISION)

2002 June 12

FROM: DIRECTOR PLANNING AND BUILDING

Our File: 08.116.12

SUBJECT: BURNABY HEIGHTS TRAFFIC CALMING PLAN

PURPOSE: Seek Council authorization for the removal of the six-month trial of street narrowings in Burnaby Heights and update Council on the proposed next steps in the process.

RECOMMENDATIONS:

1. **THAT** the Traffic and Transportation Committee request Council to authorize the removal of the six-month trial of street narrowings on Eton, Oxford and Penzance within Burnaby Heights.
2. **THAT** the Traffic and Transportation Committee request Council to authorize staff to investigate the use of traffic circles as outlined in section 2.3 of this report as a potential element of the interim or long term traffic calming options to be circulated to the broader Burnaby Heights community.
3. **THAT** the Traffic and Transportation Committee request Council to authorize staff to develop draft public consultation material as outlined in section 3 of this report for the review of the Committee and Council.
4. **THAT** a copy of this report be sent to Glen Leicester, Manager of Implementation Planning, TransLink; Jim Hall, Manager Neighbourhood Transportation Branch, City of Vancouver; Doug Penn, Deputy Fire Chief (Operations), City of Burnaby Fire Department; Bruce Hartford, BC Ambulance Service; Bill Shamborski, Traffic Section, RCMP and local residents whom attended the recent series of Resident Working Group meetings.

REPORT

1.0 BACKGROUND

At its regular meeting of 2000 February 2001, Council approved a number of traffic calming elements which were widely supported by the Burnaby Heights neighbourhood during the first phase of public consultation.

These projects included:

- 1) **Added stop signs along Eton** at Madison and Ingleton to reflect the alternating stop sign pattern already in place on Oxford. These new stop signs were implemented in the *Spring of 2000*.
- 2) **Reduced size of the bus** serving the neighbourhood, previously the #139 now the #C1. The new smaller community shuttle service was implemented in *September of 2000* and has been well received by both transit users and non-transit users.
- 3) **Introduction of the Hastings "Green-Wave"** or signal progression. This project linked the fifteen signals on Hastings between Inlet Drive and Ingleton Avenue to smooth traffic flows on Hastings. This project was officially opened in *August of 2001*.
- 4) **Increased enforcement** of speed limit and stop sign adherence. The RCMP have committed to monitoring speed and stop sign adherence whenever their officers are returning from calls in the area.

However, during the first phase of public consultation, there was a large difference of opinion about the issue of the future width of Eton and Oxford. Concerns of spill-over traffic to other adjacent streets were raised as the primary concern if Eton and Oxford were allowed to become narrower streets. Council recognized the divisive nature of this issue and authorized staff to undertake a six-month trial of street narrowings as a mechanism to explore the issues and concerns surrounding this policy decision for Eton and Oxford (ie. Local Collector (11.0 m wide) or Local Residential Street (8.5 m wide)). A full description of the residential street standards is located in **Attachment "A"**. The purpose of this report is to report on the findings of the six-month trial of street narrowings, to seek Council authorization for the removal of the six-month trial of street narrowings. It also outlines the next steps in the process designed to report these findings to the broader community and poll their opinion on future width of Eton and Oxford.

2.0 SIX-MONTH TRIAL OF STREET NARROWINGS

As shown in **Figure 1**, the six-month trial of street narrowings was designed to: (1) generally simulate a "local" (8.5 m wide) street standard; (2) slow travel speeds on Eton and Oxford; (3) discourage through traffic; and (4) assess the potential spill-over of traffic onto other parallel streets within the Burnaby Heights neighbourhood.

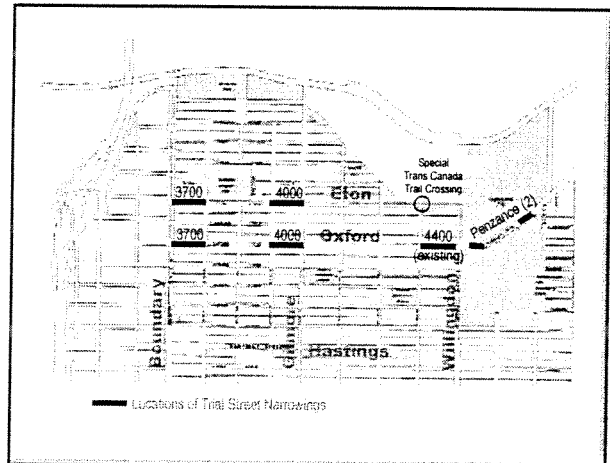


Figure 1
Location of the Six-month Trial Narrowings

2.1 The Resident Working Group

A *Resident Working Group* was assembled in the Fall of 2001 to assist the City in the evaluation of the six-month trial of street narrowings. The mandate of the Resident Working Group was to assist the City in the evaluation of the six-month trial prior to the holding of a second community open house. These meetings were meant to be informal and were designed to assist in building consensus by providing a forum where perspectives could be shared, and information could be reviewed in detail. During the first stage of public consultation, some eighteen residents put their names forward. This group represented seven different east-west streets from Edinburgh in the north, to Albert in the south. All of these meetings were open to the public and attendance ranged from 12 to 28.

There have been three meetings of the Resident Working Group: one, prior to the start-up of the trial (2001 July) one, following the implementation of the temporary measures (2001 November) and one, to present the data collection results of the six-month trial (2002 May). A number of changes were undertaken to the narrowings on Penzance in response to issues raised by the Working Group at the second meeting. Moreover, a newsletter was also suggested as a way of providing more information to the entire neighbourhood on the objectives of the six-month trial at the second meeting and this was undertaken by staff in 2002 April.

2.2 Summary of Results

The six-month trial was started in early November of 2001 and had been in place for about five months before the data collection was undertaken. This five month period was allocated to allow for peoples travel patterns to adjust to these physical changes. The City collected traffic counts on every east-west street in the neighbourhood as part of the data collection process. Before and after accident statistics have also be compiled. The four stated objectives of the six-month trial are used below as a framework for evaluating its effectiveness.

Objective 1 - Simulate a "local" (8.5 m wide) street standard.

As shown in **Figure 2**, the six-month trial of narrowings was implemented to resemble the position of parked cars on Eton and Oxford if they were allowed to be narrowed to an 8.5 m (or 28') width. These temporary concrete barriers are somewhat unsightly and do impact some resident's on-street parking, but these concrete barriers were not meant to be part of the long term solution for Eton and Oxford regardless of the outcome of the six-month trial.

It is important to note that the 4400 block of Oxford was reconstructed to a narrow width of 8.5 m (or 28') in the late 1990's and carries similar traffic volumes to the rest of Oxford and Eton, only at lower speeds. As part of the six-month trial, three blocks in total were narrowed on Eton and Oxford to balance the average number of blocks already reconstructed to the narrower width 8.5 m (or 28') on the other adjacent parallel streets. On Oxford these three blocks included the reconstructed 4400 block.

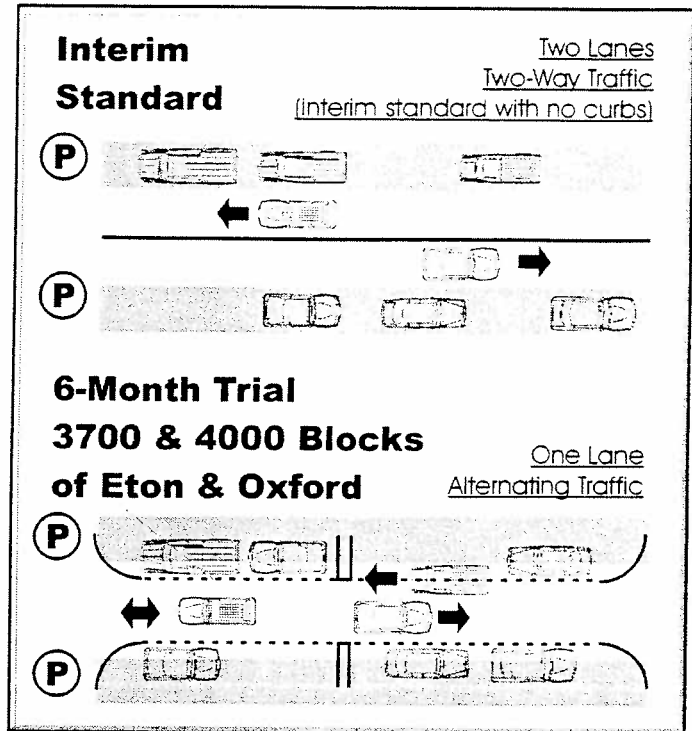


Figure 2
Detail of the Street Narrowings



Objective 2 - Slow travel speeds on Eton and Oxford.

Research from the City of Seattle noted that between narrowings a 24 hour average speed of 47 km/h resulted. For comparative purposes, the 24 hour average speed on the 4400 block of Oxford, Rosser to Willingdon, (narrowed to 28') was a similar 48 km/h. However, on other blocks within Burnaby Heights, as shown in **Figure 3**, 24 hour speeds were significantly higher.

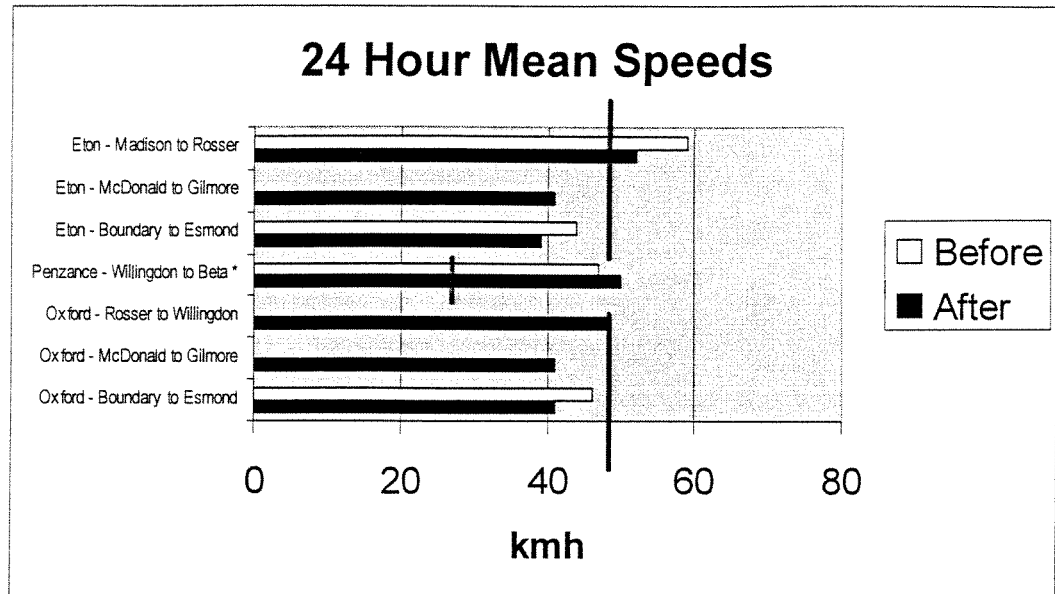


Figure 3
 24 Hour Speeds - Before and After

Peak Hour 85% Speed

	Before (km/h)	After (km/h)	kmh Change	% Change	
Oxford - Boundary to Esmond wb pm	57	52	-5	-9%	< narrowing
Oxford - McDonald to Gilmore		55			< narrowing
Oxford - Gilmore to Carleton		58			
Oxford - Madison to Rosser wb am	67	65	-2	-3%	
Oxford - Rosser to Willingdon		59			< existing 28' section
Penzance - Willingdon to Beta* eb pm	64	68	4	6%	< narrowing
Eton - Boundary to Esmond wb am	54	50	-4	-7%	< narrowing
Eton - McDonald to Gilmore		52			< narrowing
Eton - Carlton to Gilmore		59			
Eton - Madison to Rosser eb pm	72	66	-6	-8%	< narrowing (TCH crossing)
Eton - Rosser to Willingdon		62			

Table 1
 24 Hour Speeds - Before and After

Please note the vertical line on **Figure 3** notes the existing speed limit (50 km/h on all streets except Penzance where it is 30 km/h as it is adjacent to Confederation Park). The before and after results shown in **Figure 3** and **Table 1** indicate that 24 hour speeds reduced between 3 and 7 km/h (or a reduction of 6%-12%) on residential streets. These reductions resulted in average 24 hour speeds of between 39 km/h and 53 km/h during the trial. The exception to these reductions was Penzance where yield signs were installed in association with the narrowings. The before and after results for the 85th percentile speeds (the speed at which 15% of the people using the street during the peak hour are travelling at or above) is shown in **Figure 4** and **Table 2**.

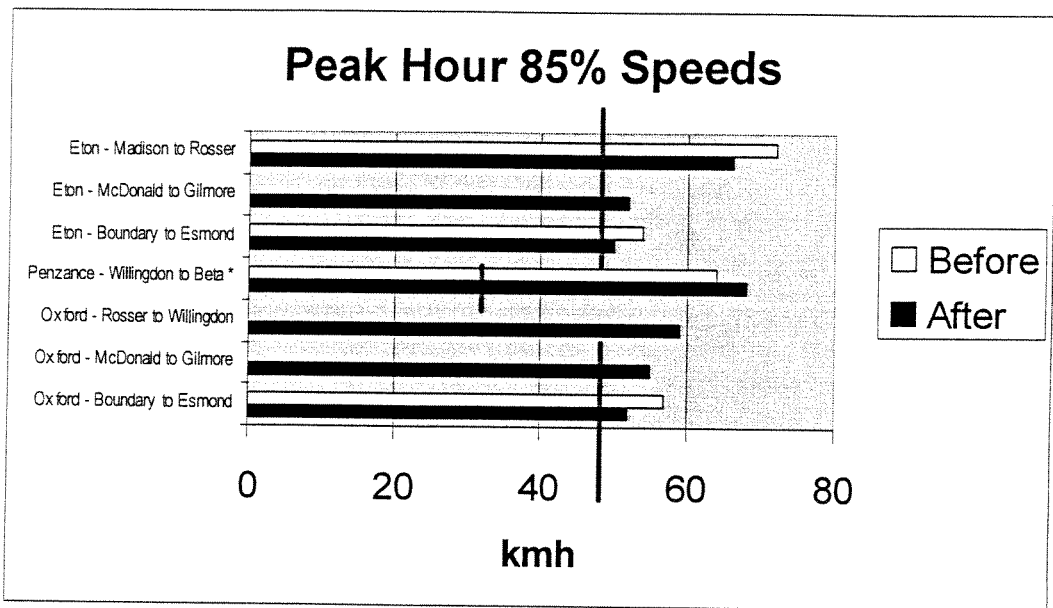


Figure 4
Peak Hour 85th Percentile Speeds - Before and After

<u>Peak Hour 85% Speed</u>		Before (kmh)	After (kmh)	kmh Change	% Change	
Oxford - Boundary to Esmond	w b pm	57	52	-5	-9%	< narrowing
Oxford - McDonald to Gilmore			55			< narrowing
Oxford - Gilmore to Carleton			58			
Oxford - Madison to Rosser	w b am	67	65	-2	-3%	
Oxford - Rosser to Willingdon			59			< existing 28' section
Penzance - Willingdon to Beta *	eb pm	64	68	4	6%	< narrowing
Eton - Boundary to Esmond	w b am	54	50	-4	-7%	< narrowing
Eton - McDonald to Gilmore			52			< narrowing
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Table 2
Peak Hour 85th Percentile Speeds - Before and After

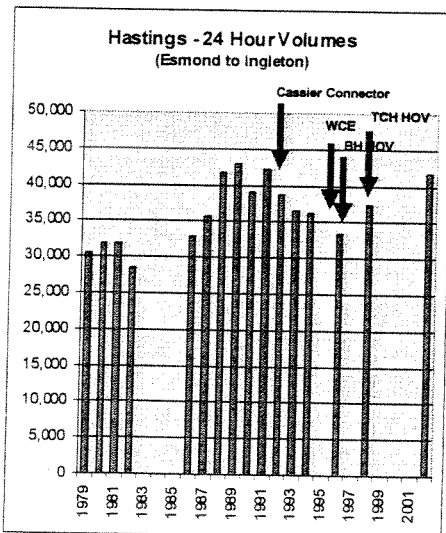
As shown in **Figure 4** and **Table 2**, the peak hour 85th percentile speed reduced by 4 km/h to 6 km/h (or a reduction of between 7% to 9%) resulting in 85th percentile speeds of between 52 km/h and 66 km/h during the trial. Again, the exception to these reductions was Penzance were yield signs were installed in association with the narrowings.

Objective 3 - Discourage through traffic.

As shown in **Table 3**, overall traffic volumes for the entire neighbourhood (all count stations) showed little change before and after the trial. Total change was about 2%.

East-West Streets				
	Before	After	Change	% Change
Hastings - Esmond to Ingleton	36,200	41,800	5,600	15%
Albert - Carelton to Madison	5,500	6,000	500	9%
Pandora - Madison to Rosser	600	600	0	0%
Triumph - MacDonald to Gilmore	900	1,100	200	22%
Dundas - Madison to Rosser	500	550	50	10%
Penzance - Willingdon to Beta	2,500	2,700	200	8%
Oxford - Rosser to Willingdon	2,200	2,200	0	0%
Oxford - Gilmore to Carleton	2,400	2,700	300	13%
Oxford - Boundary to Esmond	2,600	2,300	-300	-12%
Cambridge - Madison to Rosser	300	400	100	33%
Eton - Madison to Rosser	2,300	2,350	50	2%
Eton - Gilmore to Carleton	2,200	2,000	-200	-9%
Eton - Boundary to Esmond	2,000	1,600	-400	-20%
McGill - Boundary to Esmond	550	500	-50	-9%
Trinity - Boundary to Esmond	400	400	0	0%
Yale - Boundary to Esmond	200	250	50	25%
Edinburgh - Boundary to Esmond	300	375	75	25%
<i>All neighbourhood count stations - Albert to Edinburgh</i>	25,450	26,025	575	2%
<i>Hastings only</i>	36,200	41,800	5,600	15%

Table 3
Traffic Volumes - Before and After



63 **Figure 5**
Volumes on Hastings Over Time

The exception to this pattern is Hastings, where volumes appear to have increased. As shown in **Figure 5**, volumes on Hastings have fluctuated over time but recently appear to be on the rise. This is encouraging as the majority of through traffic in the area appears to be travelling on Hastings, the Primary Arterial street.

Objective 4 - Assess the spill-over of traffic onto other parallel streets within the Burnaby Heights neighbourhood.

As shown in **Figure 6**, the pattern of traffic within the Burnaby Heights neighbourhood remained similar before and after the start of the trial. However, as shown in **Table 4** and **Table 5** there are some differences worth noting.

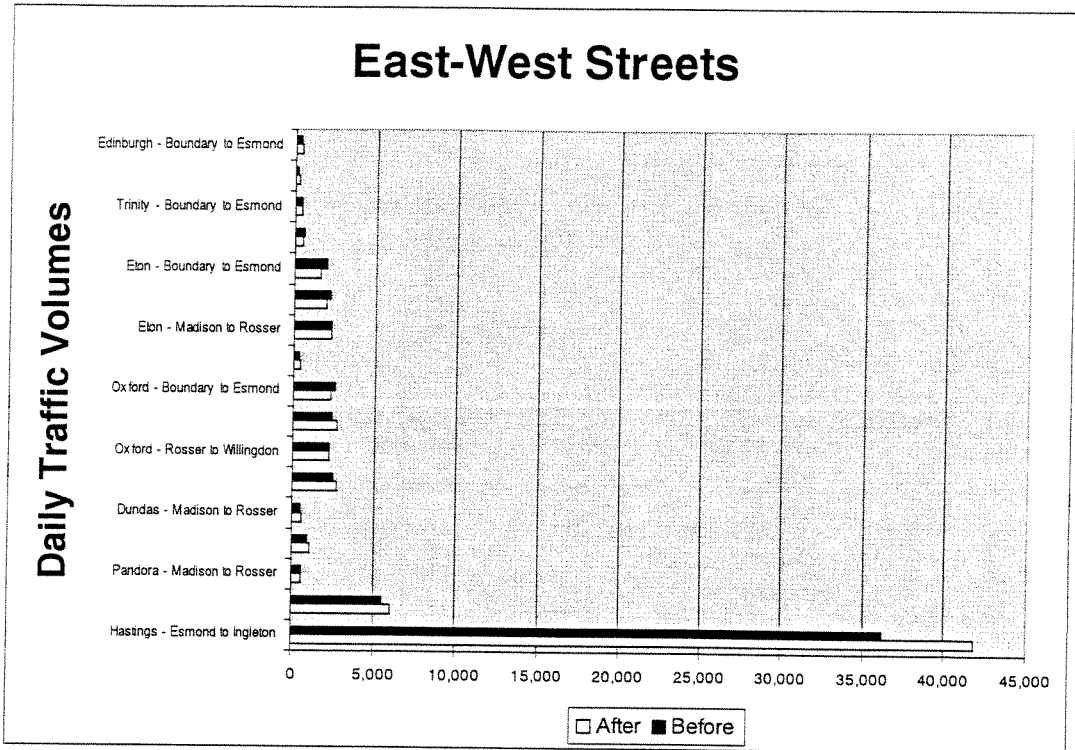


Figure 6
Overall Neighbourhood Traffic Patterns - Before and After

East-West Streets, West of Gilmore				
	Before	After	Change	% Change
Triumph - MacDonald to Gilmore	900	1,100	200	22%
Oxford - Boundary to Esmond	2,600	2,300	-300	-12%
Eton - Boundary to Esmond	2,000	1,600	-400	-20%
McGill - Boundary to Esmond	550	500	-50	-9%
Trinity - Boundary to Esmond	400	400	0	0%
Yale - Boundary to Esmond	200	250	50	25%
Edinburgh - Boundary to Esmond	300	375	75	25%
<i>E-W Neighbourhood count stations west of Gilmore</i>	<u>6,950</u>	<u>6,525</u>	<u>-425</u>	<u>-6%</u>

Table 4
Traffic Volumes West of Gilmore, Before and After

West of Gilmore, as shown in **Table 4**, the volume of traffic appears slightly lighter north of Oxford, however, there does appear to some diversion of traffic away from Eton and Oxford on the other streets. East of Gilmore, as shown in **Table 5**, the overall volume of traffic appears slightly higher. There also appears to be no diversion away from Eton and Oxford.

East-West Streets, East of Gilmore				
	Before	After	Change	% Change
Albert - Carelton to Madison	5,500	6,000	500	9%
Pandora - Madison to Rosser	600	600	0	0%
Dundas - Madison to Rosser	500	550	50	10%
Oxford - Rosser to Willingdon	2,200	2,200	0	0%
Cambridge - Madison to Rosser	300	400	100	33%
Eton - Madison to Rosser	<u>2,300</u>	<u>2,350</u>	50	<u>2%</u>
<i>E-W Neighbourhood count stations east of Gilmore</i>	<u>11,400</u>	<u>12,100</u>	<u>700</u>	<u>6%</u>

Table 5
Traffic Volumes, East of Gilmore - Before and After

Although not stated as an objective of the six-month trial, before and after accident rates provided by ICBC, as shown in **Table 6**, were also reviewed. During the six-month trial there was no significant increase in accident rates on Eton, Oxford or Penzance when compared to the similar six-month winter period from the previous year. Moreover, only two of the 10 accidents reported during the course of the six-month trial, both of which occurred on Penzance., could be attributed directly to the street narrowings.

Six Month Trial			
June 2000 - Oct 2000 <i>summer</i>	Nov 2000 - May 2001 <i>winter</i>	June 2001 - Oct 2001 <i>summer</i>	Nov 2001 - May 2002 <i>winter</i>
4	10	2	10

Table 6
Accident Rates - Before and After

2.3 Recent Changes in Vancouver Heights (City of Vancouver)

As shown in **Figure 7**, late in 1998 the City of Vancouver had installed two small traffic circles along Skeena (Skeena/Triumph and Skeena/Oxford) to discourage truck traffic from using Skeena to reach the Skeena tunnel from Hastings. These traffic circles diverted the truck traffic up to Cambridge within the City of Vancouver via Boundary Road. Cambridge within the City of Vancouver is designated a secondary arterial and as such the City of Vancouver usually does not apply traffic calming devices to such streets. However, in this case there was a need to discourage truck traffic from the area. As a result the City of Vancouver has since installed a traffic circle and curb extensions at the intersection of Cambridge/Kootenay (see **Figures 7 and 8**). Please note that the width of this section of Cambridge allows for two travel lanes and two parking lanes.

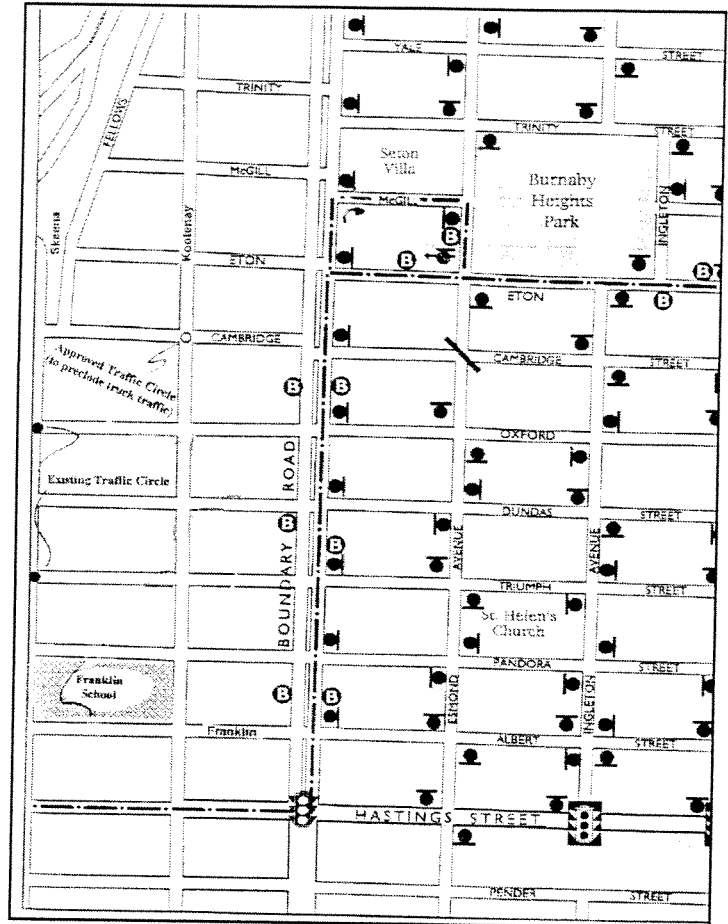


Figure 7
Traffic Circles in Vancouver Heights

When contacted, City of Vancouver staff noted that this new measure was successful in discouraging truck traffic from Skeena and that although no data was available regarding post-implementation speeds or volumes, no complaints have been received regarding increases in traffic volumes from the surrounding residential streets. It is interesting to note that the Burnaby residents who attended the Working Group meetings perceived a decrease in vehicle speeds on this section of Cambridge following the installation of this traffic circle and also stated that there has been little diversion of traffic associated with this traffic calming measure.



Figure 8
Traffic Circle at Skeena/Kootenay (City of Vancouver)

As there is currently a number of residential street blocks within Burnaby currently awaiting LIP related construction, even if Eton and Oxford were to be reclassified and their LIP petitions were successful, it would likely be at least four years and perhaps longer before these blocks could be reconstructed. As a result, with or without the reclassification of Eton and Oxford, the type of traffic circle recently applied by the City of Vancouver to the intersection of Skeena/Kootenay is worthy of consideration as an element of an interim traffic calming plan for the Burnaby Heights neighbourhood.

3.0 NEXT STEPS

Staff are recommending that a neighbourhood mailer be developed for the consideration of the Committee and Council. The purpose of this mailer would be to:

- 1) Invite residents to the second community open house.
- 2) To broadcast the findings of the six-month trial to the broader community.

- 3) To poll the broader community on their opinion on a number of neighbourhood transportation issues, potentially including:
 - a) *Would you support the use of traffic circles on Eton and Oxford (support, neutral, oppose)?*
 - b) *Would you support the reclassification (narrowing) of Eton and Oxford to allow for the reconstruction of Eton and Oxford at the narrower width of 8.5 m (28') through the Local Improvement Process (support, neutral, oppose)?*

As we are entering the summer vacation season, staff will work to have the draft mailer and open house material available for review at the September meeting of the Traffic and Transportation Committee (Transportation and Transit Division). This would result in an open house likely in early October. Aside from avoiding the summer holiday season staff also feel it is important to allow some time between the removal of the six-month trial and the polling of the broader community so that a clear distinction between the measures used for the trial and what is being proposed for the longer term can be made.

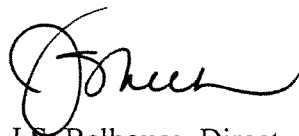
4.0 CONCLUSION

The six-month trial indicated that there was:

- Modest speed reductions resulted on Eton and Oxford where the narrowings were applied.
- Marginal increase in speed resulted on Penzance where yield signs were used in association with the narrowings. Speeding remains a significant issue on Penzance with the average daily speed being 20 km/h above the posted speed of 50 km/h.
- The overall neighbourhood traffic volume was stable.
- The overall neighbourhood traffic patterns remained similar.
- Little through traffic was squeezed out of the neighbourhood.
- West of Gilmore, slightly lower overall traffic volume north of Oxford resulted with some diversion of traffic to other streets from Eton and Oxford.
- East of Gilmore, slightly higher overall traffic volume, but no diversion away from Eton and Oxford.
- No change in before and after accident rates occurred.

The results of the six-month trial of street narrowings indicate that while there was limited impact from traffic diverting from Eton and Oxford to other parallel streets in Burnaby Heights while there was some modest benefit in terms in modest speed reductions achieved on both Eton and Oxford.

The next steps in the process are recommended to involve the polling of the broader community and consideration being given to the use of traffic circles as a potential element of the final traffic calming plan for the area. Staff intend to prepare draft neighbourhood consultation material for the review and consideration of the September meeting of the Traffic and Transportation Committee (Transportation and Transit Division) prior to returning to the broader community early in October of 2002. Once this broader community input is summarized, a staff recommendation will be formulated for the consideration of Council based on both the results of the six-month trial of street narrowings and the community input received.



J.S. Belhouse, Director
PLANNING AND BUILDING

Attachment

cc: City Manager
Director Engineering
Director Finance

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RESIDENTIAL STREET STANDARDS INFORMATION SHEET

BURNABY HEIGHTS TRAFFIC CALMING PLAN

Narrow or Wide?

There are three residential street standards within the City of Burnaby. The first is a temporary or “**interim**” **street standard**. As shown on the next page, this standard may have ditches, no curbs, no sidewalks or no street trees and the two-lane asphalt road surface is only about 6 m or about 20' wide. Beyond the asphalt curbs there is a gravel parking lane on either side of the street. Every east-west street within Burnaby Heights north of Albert, with the exception of Edinburgh, has at least one block of “interim” standard street.

As also shown in the figure on the next page, there are two “finished” street standards. The first is the “**local**” **residential street standard** at 8.5 m or 28' in width which allows for one lane of parking on either side and one alternating travel lane in between. Most of Cambridge, Dundas, McGill and all of Edinburgh have been reconstructed to this “local” street standard.

The second “finished” standard is the “**local collector**” **street standard** at 11 m or 36' in width. This standard allows for parking on either side of the street and one full-time travel lane in either direction. Albert has been reconstructed to this standard between Boundary and Alpha.




Having a street reconstructed to a finished standard is a resident-initiated process. If their petition to the City is successful (i.e. receives the support of 2/3 of the property owners), the cost of the improvements are shared between the City and the residents of that block.

Eton, Oxford and Penzance are all currently designated as “local collectors” and this designation is meant to carry local traffic in and out of the neighbourhood. However, Eton and Oxford currently are also carrying traffic between Penzance and the Skeena Tunnel. This longer distance traffic should be using Hastings, a “primary arterial”. Speed was also noted as an issue of concern on sections of Eton, Oxford and Penzance.

Moreover, Council has received a number of Local Improvement petitions from various blocks along Eton and Oxford requesting their blocks be reconstructed at the narrower “local” street standard. During the late 1970's and early 1980's every block of Eton and Oxford from Boundary to Willingdon made an effort to initiate the LIP process to have their block reconstructed. However, these and every subsequent effort have all run into the issue of the “local collector” designation requiring the 11 m or 36' width. As a result none have been reconstructed with the exception of the 4400 block of Oxford. Council has been asked to consider re-classifying Eton and Oxford to a “local” street standard so they could also be reconstructed to a narrower width (8.5 m or 28').

It is important to note the 4400 block of Oxford was reconstructed to a narrow width of 8.5 m (or 28') in the late 1990's and carries similar traffic volumes to the rest of Oxford and Eton, only at lower speeds.

City of Burnaby Residential Street Standards

	"INTERIM" STANDARD	FINISHED STANDARDS	
		"Local" Residential Street	"Local Collector" Street
			
Layout	~6 m (20'0") wide <ul style="list-style-type: none"> • two gravel parking lanes; and • two travel lanes (eg. Eton and Oxford) 	8.5 m (28'0") wide <ul style="list-style-type: none"> • two parking lanes; and • one travel lane (eg. Cambridge) 	11 m (36'0") wide <ul style="list-style-type: none"> • two parking lanes; and • two travel lanes (eg. Albert)
Function		Direct access to individual residential properties.	Access to and from a residential area.
Traffic Service		<ul style="list-style-type: none"> • carries traffic with a start or finish along the street • buses are sometimes permitted • large trucks are not permitted 	<ul style="list-style-type: none"> • carries traffic between the local area and the Major Collector streets • buses sometimes permitted • large trucks are not permitted
Land Access		Driveways permitted to all properties wider than 12 m	
Traffic Volumes		Less than 3,000 vehicles per day.	1,000 - 5,000 vehicles per day
Parking		On-street parking permitted at all times.	

The road network in Burnaby is based on a hierarchy of streets - each with a different function. This "network" includes local streets, collector streets, arterial streets and freeways. Currently Albert, Eton, Oxford, Penzance, Boundary, Gilmore and Willingdon are all designated as Local Collector streets north of Hastings.