

PUBLIC WORKS AND TRANSPORTATION  
TRAFFIC & TRANSPORTATION SERVICES

M E M O R A N D U M

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SUBJECT: Results of Short-Cutting Trial Two: Armview/Pryor/Jubilee

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An alternate method for reducing the volume of through traffic using the Armview-Pryor-Jubilee route was installed in the summer of 2000. The traffic signals were switched off and bagged after the rush period in the morning of August 14, 2000. The trial anti-short-cutting measures are varieties of traffic calming measures.

There are "Traffic Calmed Neighbourhood" signs posted facing inbound traffic on Armview Avenue near Quinpool and facing outbound traffic on Jubilee Road just west of Connaught.

The intersection of Armview Avenue at Tupper Grove has been reconfigured as a "Raised Intersection" by addition of an 80mm thick overlay of asphalt with 2m long ramps on Armview and a 4m long ramp on Tupper Grove. "Speed Hump" signs are posted nearby.

Three "Chicanes" have been constructed with asphalt curbs with granular backfill and asphalt topping, one on Pryor Street and two on Jubilee Road. These Chicanes are traffic islands that reduce the width of the motor vehicle-travelled portion of the roadway from the usual 9m width to a minimum of 6m width. With the associated pavement markings this creates a winding path for drivers travelling through the chicane.

Chicanes rely for part of their effect on the "one-lane-bridge" feeling they create when two drivers approach the chicane from opposite directions. Unfortunately for the effectiveness of this installation most motor vehicle traffic travels inbound from Quinpool towards Connaught.

Another part of the effect comes from the requirement for drivers to have to steer a winding path through the chicane even when there is no oncoming traffic. The standard width of the opening for a chicane on a 9-metre roadway would be a single lane at 3.5 metres width. This width is not acceptable for most HRM snowploughs which require a 5-metre wide opening for the plough blade. However a 5-metre width is ambiguous – is it two lanes wide or only one? Therefore a 6-metre, two-lane width had to be used. This could work well on a wider street, four lanes wide

before the chicane were added, because a winding path can be assured, but on a two-lane, 9 metre wide street a 6-metre wide opening leaves a 3-metre wide clear path straight down the centre of the chicane. Observations of drivers' actions show that the most drivers take the straight-line path down the middle of the chicane, with perhaps some minor speed reduction.

The then-existing turn restrictions at the Bloomingdale/Quinpool intersection were retained for this trial because removing them would make comparisons with the first trial more difficult and because the restrictions likely remove a pre-existing short-cutting problem on Bloomingdale and Norwood.

Following is a table showing traffic counts, and a table showing the results of some speed surveys. A discussion of results follows the tables.

**Trial of Traffic Calming Devices - 2000  
Weekday 24 Hour Traffic Count Results**

<b>location</b> (street block)	<b>traffic volume before any tests</b> (Jul-Aug 99)	<b>traffic volume during test</b> [Sep 13-15/00] {Oct 10-13/00} (Nov 20-22/00)	<b>change in daily traffic volume</b> [Sep 13-15/00] {Oct 10-13/00} (Nov 20-22/00)	<b>allowable increase under Short- Cutting Policy</b>	<b>OK?</b>
Armview between Quinpool and Tupper Grove	5,680	[3,660] {3,825} (3,787)	[-2,020] {-1,855} (-1,893)	(n.a.)	[yes] {yes} (yes)
Bloomingdale between Jubilee and Norwood	820	[600] {632} (422)	[-220] {-188} (-398)	250	[yes] {yes} (yes)
Bloomingdale between Norwood and Quinpool	950	[250] {272} (251)	[-700] {-678} (-699)	375	[yes] {yes} (yes)
Beech between Pepperell and Quinpool	1,400	[2,000] {1,867}* (1,366)	[+600] {+467} (-34)	350	[no] {no} (yes)
Norwood between Cambridge and Oxford	2,130	[2,660] {2,086} (1,866)	[+530] {-44} (-264)	400	[no] {yes} (yes)
Norwood between Connaught and Rosebank	1,410	[1,860] {1,543} (1,366)	[+450] {+133} (-44)	350	[no] {yes} (yes)
Norwood between Bloomingdale and Connaught	325	[610] {506} (421)	[+285] {+181} (+96)	175	[no] {yes/no} (yes)
Pepperell between Cambridge and Oxford	1,040	[1,360] {1,087} (968)	[+320] {+47} (-72)	300	[yes/no] {yes} (yes)
Rosebank between Quinpool and Norwood	n.a.	[875] {667} (633)	[+195] {-13} (-47)	230	[no] {yes} (yes)
Fairfield Road	n.a.	[465] {239} (207)	n.a.	n.a.	n.a.
Prince Arthur	n.a.	[653] {643} (542)	n.a.	n.a.	n.a.

\* Counter malfunctioned to give only 19 hours of count. 1,867 is estimated by comparing the partial count with the previous full count.

**Before and After Traffic Calming Speeds Comparison**

street	time period with respect to traffic calming devices' installation	24-hour two-way volume	inbound traffic 85th percentile speed	outbound traffic 85th percentile speed	two-way traffic 85th percentile speed
Armview	before	2475	50	48	50
	after(1)	3381	47	49	49
	after(2)	3753	50	50	50
	after(3)	3705	51	49	51
Pryor	before	2794	47	45	47
	after(1)	3515	43	54	44
	after(2)	4144	44	45	45
	after(3)	3528	44	45	44
Jubilee	before	3369	52	53	52
	after(1)	4340	51	53	51
	after(2)	4400	52	53	52
	after(3)	3702	53	54	53
Connaught (s/b only)	1999 Sept 22	3823	55	not applicable	not applicable
	before	7486	54		
	after(1)	6397	54		
	after(2)	6541	54		
	after(3)	6360	54		

Armview speed recorder mounted between Tupper Grove and Armview Terrace, near Armview Terrace.

Pryor speed recorder mounted just north of the speed hump location.

Jubilee speed recorder mounted between Bloomingdale and bridge over the railway.

Connaught speed recorder mounted just south of Norwood.

**Count Dates:**

"before" 2000 Aug 1

"after(1)" 2000 Sept 14

"after(2)" 2000 Oct 11,12

"after(3)" 2000 Nov 21,22

**Armview between Quinpool and Tupper Grove** In 1999 before any short-cutting measures were installed the weekday daily traffic volume on this street was about 5,700 vehicles per day. With the chicanes and raised intersection volumes were about 3,800 vehicles per day. Therefore, the trial is successful in reducing Armview Avenue traffic.

**Bloomingtondale between Jubilee & Norwood** Traffic on this block fell from about 800 vehicles per day to about 500 vehicles per day.

**Bloomingtondale between Norwood and Quinpool** Traffic in this block of Bloomingtondale fell from 950 to about 250 vehicles per day with chicanes, raised intersection, and turns from Quinpool Road restricted.

**Beech Street between Pepperell and Quinpool** Initially traffic in this block of Beech was higher during this trial (2000 vehicles per day) than before any short-cutting measures were installed (1400 vehicles per day) By November, traffic declined to slightly less than in the before-test period. Some Beech Street traffic seen in September and later is school drop-off and pick-up traffic which is legitimate and not due to the short-cutting measures.

**Norwood between Cambridge and Oxford** This block of Norwood shows a decrease of about 250 vehicles per day with the chicanes and raised intersection and turns to Bloomingtondale restricted.

**Norwood between Connaught and Rosebank** This block of Rosebank has an allowable increase of 350 vehicles per day. With turn restrictions installed on Bloomingtondale the measured change in traffic volumes varied between an increase of about 450 vehicles per day and a slight decrease. The increase early in the school year is possibly due to traffic bound for Tupper School, which is legitimate. Since the increase eventually disappeared traffic changes in this block are acceptable.

**Norwood between Bloomingtondale & Connaught** This block of Norwood has an allowable increase of 175 vehicles per day. Before the signals were installed in 1999, the volume was 300 to 350 vehicles per day. With chicanes and the raised intersection in November 2000 there was an increase of 96 vehicles per day, which is acceptable.

**Pepperell between Cambridge and Oxford** This block of Pepperell has a target allowable increase of 300 vehicles per day. Comparing the before-tests counted volume of 1,040 vehicles per day with the September 2000 count of 1,360 shows a small amount above the target. Given that some of this traffic is likely school traffic, and the counts declined in the following months, the volumes on Pepperell are acceptable.

**Summary:** The results of this analysis show Bloomingtondale, Beech, Rosebank, Norwood, and Pepperell are all OK with the chicanes and raised intersection and the turn restrictions on Bloomingtondale in place.

**Public Comments:** While the second trial has been under way there has been less comment received than during the earlier trial. We have on file seven written submissions. Of these, six support reinstatement of the lights over the chicanes. There were three comments that the chicanes were ineffective and three that they were dangerous.