



REPORT

The 2009 Halifax Cycling Coalition Bicycle Count

Approved by the board: January 12th, 2010



Executive Summary

At the request of the Board, an ad-hoc committee of the Halifax Cycling Coalition (HCC) planned and executed a count of cyclists in the Halifax Regional Municipality (HRM), modeled on counts conducted in other cities and incorporating advice from the Board and HRM planning staff. The count was conducted during the morning and afternoon rush hours of Tuesday, June 9, 2009 by 23 volunteers who collected information about cyclist traffic volume, turning movements, and rule compliance at 12 intersections.

The results of the count show significant commuter bicycle use in the urban core of HRM, with a total of 1453 cyclists counted. Intersection usage ranged from a peak of 119 cyclists/hour at the Barrington and North on-ramp of the MacDonald Bridge, to 3 cyclists/hour at the intersection of Portland and Baker Streets. Over half of the intersections monitored showed an average of one cyclist per 90 seconds, indicating regular use of transportation infrastructure by cyclists. Results also showed high rates of cyclist compliance with the Motor Vehicle Act: 98% of cyclists observed were wearing a helmet and approximately 90% of cyclists complied with the rules of the road. Intersections with cycling infrastructure such as bike lanes were well-travelled, and the dedicated lanes were used by most cyclists, with the exception of the Armdale Roundabout multi-use crosswalk/sidewalk. Intersection avoidance behaviours such as walking or cycling in a crosswalk to avoid traffic were most frequently observed at the Armdale Roundabout and at the approaches to the MacDonald Bridge.

Based on the data collected, we recommend that HCC:

- Publish the report to encourage its use in transportation planning and cycling policy development in HRM.
- Lobby for infrastructure improvements at identified trouble spots to improve safety and encourage active transportation.
- Continue similar data collection in future years to provide multi-year comparisons, using the recommendations contained within this report to improve the efficiency and effectiveness of future data collection and reporting.



Introduction

Background

In November 2008, the board of the Halifax Cycling Coalition identified a lack of data on bicycle traffic in Halifax. An ad-hoc committee was struck to plan a bicycle traffic count for Halifax and on February 12, 2009, the board endorsed the committee's proposed goals:

1. to plan and execute a small pilot count in March 2009.
2. to plan the first HRM bike count to be done in summer 2009.
3. to provide the results to HCC, HRM, and other interested parties.
4. to determine a long term strategy for future bike traffic counts.
5. to become the reliable source of cyclist traffic data for HCC, HRM planners, HRM council, and other interested parties.
6. to have a regular bike traffic count plan in place.
7. to have high standards for quality of bike traffic data.

On April 2, 2009, a small-scale count was completed at several intersections around Halifax, to help refine the count sheets and the logistics of counting cyclists, in preparation for the 2009 count. On June 9, 2009, 23 volunteers put in 45 hours of work collecting data, followed by several dozen hours spent by the committee compiling and analysing the data.

Intersection Selection

A list of intersections was drafted by the committee based on knowledge of HRM cycling habits, targeting intersections thought to be on popular rush-hour cycling routes. Input was solicited from the HCC board and an HRM planner, and a list of target intersections was developed from which volunteers could pick based on interest and convenience. The intersections monitored for morning and/or evening rush-hour count were as follows:

- Almon St. & Agricola St. (Halifax)
- Armdale Roundabout (Halifax)
- Barrington St. & North St. @ MacDonald Bridge (Halifax)
- Bell Rd. & Sackville St. & South Park St. (Halifax)
- Brunswick St. & Duke St. (Halifax)
- Hawthorne St. & Prince Albert Rd. (Dartmouth)
- Jubilee Rd. & Vernon St. (Halifax)
- Portland St. & Woodlawn Rd. & Baker St. (Dartmouth)
- Summer St. & University Ave. (Halifax)
- Victoria Rd. & Albro Lake Rd. (Halifax)
- Willow St. & Windsor St. (Halifax)
- Wyse Rd. @ MacDonald Bridge (Dartmouth)

Count Method

Volunteers, typically in teams of two, monitored and recorded cyclist traffic through particular intersections, recording overall numbers in 15-minute intervals. In addition to the total number of cyclists, volunteers also recorded: turning movements; compliance with helmet laws; compliance with traffic signs and traffic lights; and usage of roadway, bike lanes, sidewalks and crosswalks. Persons counted as cyclists were those on pedal-powered vehicles such as bicycles, tricycles, or recumbents including infants in child seats or trailers, as well as cyclists who dismounted to walk across an intersection but were otherwise riding. Pedestrians walking bicycles but not obviously dismounting for an intersection were not included. Volunteers also recorded repeated behaviours, unusual events, and road and weather conditions.

Following advice from other groups who had completed similar bike counts in other cities and reported that Monday and Friday tend to be anomalous traffic days, it was decided that the count would take place on Tuesday, Wednesday, or Thursday and would be postponed in the event of inclement weather. The count took place on Tuesday the 9th of June, 2009 during morning and afternoon commuting times. Individual intersection counts were done over two or more hours between 6:30 – 9:30 a.m. or 3:30 – 6:30 p.m., depending on volunteer availability.

Analysis Method

Due to volunteer availability, individual intersection counts varied from 1.7 to 2.25 hours, and varied in start times by as much as an hour. To eliminate the influence of duration, raw traffic numbers were divided by time, providing a cyclist frequency (cyclists/hour). To reduce the effect of varied start times, a maximum frequency hour was calculated, assuming that despite the hour variation in start times, the duration of the counts would span the peak of the rush hour, and so the maximum frequency of cyclists during the busiest continuous hour would provide a useful basis for comparison between intersections. The data was tabulated and sorted to extract key results, identify patterns, and provide a baseline for future comparison.

Intersection avoidance behaviours such as dismounting and transiting the intersection as a pedestrian, or cycling in pedestrian areas like sidewalks or crosswalks, and other clear avoidance behaviours were reviewed to look for actual or perceived safety concerns or other obstacles to cycling. Violations of the Traffic Act and overall bike traffic volume were considered along with the intersection avoidance behaviour to identify priority intersections for detailed review and possible infrastructure improvement.

Results

Bicycle Traffic Volumes

Over the course of the bicycle count, 1453 cyclists were counted over the morning and evening rush-hours of a single day at 12 intersections in HRM (principally but not exclusively located in peninsular Halifax). Hourly traffic volumes varied greatly by location with the busiest locations recording maximum hourly rates of over 100 cyclists per hour, and the least busy location recording 3 cyclists per hour.

From the calculation of cyclist frequency during the maximum hour, the five busiest intersections each had an average of more than one cyclist per minute during the busiest period; seven counts recorded averages of one cyclist every 60 to 90 seconds; and three intersections were less busy, including Portland Street at Woodlawn Road where cyclists were few and far between. Overall bike traffic during the count (typically two hours) was between 3% and 30% lower than during the busiest hour, as shown in table 1 below.

Rank	Intersection	Max. Hour Frequency (cyclists/hr.)	Frequency (cyclists/hr.)
1	Barrington St & North St. @ MacDonald Bridge (Halifax) p.m.	119	102
2	Wyse Road @ MacDonald Bridge (Dartmouth) a.m.	111	97
3	Bell Rd. & Sackville St. & South Park St. a.m.	89	67
4	Jubilee Rd. & Vernon St. a.m.	76	68
5	Brunswick St. & Duke St. a.m.	65	54
6	Almon St. & Agricola St. p.m.	59	57
7	Willow St. & Windsor St. p.m.	58	49
8	Armdale Roundabout p.m.	58	44
9	Summer St. & University Ave. a.m.	55	42

Rank	Intersection	Max. Hour Frequency (cyclists/hr.)	Frequency (cyclists/hr.)
10	Armdale Roundabout a.m.	50	46
11	Almon St. & Agricola St. a.m.	45	40
12	Hawthorne St. & Prince Albert Rd. a.m.	41	30
13	Willow St. & Windsor St. a.m.	28	22
14	Victoria Rd & Albro Lake Rd p.m.	24	17
15	Portland St. & Woodlawn Rd. & Baker St. a.m.	4	3

Table 1 – Bicycle Traffic Counts – June 2009

Morning vs. afternoon traffic rates were compared at three intersections: the Roundabout, Almon St. & Agricola St., and Winsor St. & Willow St. These counts showed busier bike traffic in the afternoon, although there was wide variation in the scale of that difference. The afternoon counts showed between 16% and 107% higher peak hour cyclist frequency compared with the morning count at the same locations.

Compliance with Traffic Rules

Excellent compliance with helmet rules was observed, with 98% of cyclists complying and little variation by location or between morning and afternoon counts. Compliance with road signs and traffic lights was 94%, with almost three-quarters of the infractions taking place at four intersections: Jubilee Rd. & Vernon St.; the Roundabout; Summer St. & University Ave.; and Victoria Rd. & Albro Lake Rd. Most cyclists respected pedestrian areas, with 96% of cyclists staying out of pedestrian only areas. Of the 4% who did ride in pedestrian areas, more than half were at two intersections, Bell Rd & Sackville St. and Jubilee Rd & Vernon St.

Use of Bike Lanes and Paths

The locations with bike paths or lanes were ranked 1st, 2nd, 3rd, 5th, and 8th busiest intersections. There were no marked bike lanes within any of the intersections themselves; however, where a bike lane was present up to the intersection; ended in the approach near to the intersection; or started within a short distance of the exit from the intersection, for the purposes of this count these were counted as bike lanes at intersections. Two of the intersections included on-road bike lanes: Bell Rd. & Sackville St. & South Park St (South Park St. Northbound/Southbound, Bell Rd. Northbound); and Brunswick St. & Duke

St. (Brunswick St. Northbound/Southbound.) The Armdale Roundabout includes a multi-use trail as the crosswalk/sidewalk around the rotary (Halifax Regional Municipality Bicycle Routes & Trails Map, HRM Bikeways Advisory Committee, 2009), and two count locations included a terminus of the MacDonald Bridge bike path as part of the intersection being counted. On the bridge, where use of the bike path is mandatory, all cyclists travelling over the bridge were seen to use the path. At both intersections with on-road bike lanes, more than 90% of cyclists travelling in a direction with a bike lane available used it, while only 40% of cyclists used the “multi-use trail” crosswalk/sidewalk around the Armdale Roundabout.

Intersection Avoidance

Cyclist behaviour that might be interpreted as deliberately avoiding cycling through an intersection along the expected path was recorded. This behaviour was noted for 17% of the cyclists counted, but was intersection dependent, ranging from 4% at Brunswick St. & Duke St. to 34% at the Dartmouth end of the MacDonald Bridge. These intersection avoidance behaviours included cycling in pedestrian only areas in the approach or exit (as also counted in Compliance with Traffic Rules above,) or dismounting and walking the bicycle on the sidewalk or in the crosswalk (not an infraction of the traffic rules,) as well as miscellaneous unusual routes through intersections that would reasonably fit this definition (e.g. climbing a fence to get on or off the MacDonald bridge bike path.)

Analysis

Bicycle Traffic Volumes

The results of the June 2009 traffic count, the most extensive bike count to date in HRM, show that there is significant commuter bicycle use in peninsular Halifax and over the MacDonald Bridge to and from Dartmouth, with many intersections averaging one or more cyclists per minute during weekday commuting hours. This is a number that demonstrates regular road usage by cyclists rather than sporadic exceptions. This count has identified a number of busy bike traffic intersections in HRM as ranked in table 1, providing a useful reference for planning, debate, and policy development relating to bicycle commuter traffic in HRM. Although the locations were spread around Dartmouth and peninsular Halifax, no overall traffic volume number can be determined from this count. Cyclists who made the unlimited number of route choices that would have avoided the count locations or those who were riding in parts of HRM where there were no count locations, were not counted, while cyclists who passed through more than one count location on their trip were double counted. The results in Halifax bore out the trend reported by other cities (Association of Pedestrian and Bicycle Professionals seminar July 15, 2009) whereby afternoon rush hour bike traffic is busier, suggesting the morning commute is spread out over more hours than the afternoon. In the summer months when this count was conducted, fewer post-secondary students were present in the city than the 50,000 that make Halifax their home during the academic year, and the absence of this large portion of the city's population has not been accounted for in this analysis. Also not accounted for in this count is recreational and off-peak cycling which occurs at different times and/or locations.

As was expected from research into bike counts done in other cities, no reliable way was identified to extrapolate from the intersections where traffic was counted to an overall bike traffic number in HRM or even bike traffic in peninsular Halifax. Instead, a baseline has been set for bike traffic that will allow future comparison using some of these intersections as indicators of trends in the city as well as monitoring the impact of improvements or other changes at particular locations.

Infrastructure and Compliance

Intersections where existing bike infrastructure is in place have high bicycle traffic volumes; four of the five busiest intersections counted include bike lanes or bike paths. Three distinct types of infrastructure were included in the count: on-street bike lanes; the separate bike path on the MacDonald Bridge; and the multi-use crosswalk/sidewalk around the Armdale Roundabout. As this is a baseline count, it is not possible to determine whether intersection traffic is high because of the infrastructure or whether the infrastructure was located there to respond to existing traffic volumes.

Both locations with on-street bicycle lanes had high usage rates, with over 90% of cyclists using the available lanes. However, the multi-use crosswalk/sidewalk around the Armdale Roundabout was used by only 40% of cyclists, suggesting some impediment to use despite the hazards of the Roundabout highlighted by the vehicle/cyclist accident observed during the count where a motorist failed to yield to a cyclist, causing a serious accident attended by police and ambulance. In the case of the MacDonald Bridge bike path, use is mandatory and enforced for cyclists crossing the bridge and so while the data tells us that many cyclists cross the bridge, it tells us nothing about whether they would use the road or the pedestrian path if permitted. The traffic counts at either end of the bridge showed that cyclists had great difficulty in connecting with roads in a safe, legal, and practical way. Many varied and unusual choices for connecting with roads at the Halifax end of the bridge were observed, while there is no clearly indicated, safe, and legal way to transition between bike path and road at the Dartmouth end of the bridge.

Compliance with traffic rules by cyclists was high, implying location-specific problems with the few intersections with lower rates of compliance, but the causes and corrections are not researched or analyzed in this report.

There are many types of infrastructure that might address the problems highlighted above, including lanes, advance waiting areas, improved signage, or bike specific signals. More detailed study of the particular intersections would be needed to determine the most appropriate solutions, but given the significant variation between compliance at monitored intersections, it is likely that real or perceived safety concerns influence cyclists' decisions. Based on the data collected, those intersections most in need of detailed study for infrastructure needs are:

- Armdale Roundabout
- Bell Rd. & Sackville St. & South Park St.
- Jubilee Rd. & Vernon St.
- North St. @ MacDonald Bridge
- Summer St. & University Ave.

- Victoria Rd. & Albro Lake Rd.
- Wyse Rd. @ MacDonald Bridge

It is reasonable to assume that some or all of the roads connecting to these intersections would also benefit from detailed study.

Methodology Review

The current methodology was successful in gathering a large amount of data. Of particular use was volume and compliance information, however, directional data was not used at this time. Since some volunteers at busier intersections found the data sheets challenging, future counts should consider not collecting directional data. As recommended by the APBP (Association of Pedestrian and Bicycle Professionals), data collected in 2009 can serve as a baseline comparison for more narrowly focused counts in the future. With a baseline in place, a more limited number of intersections can be used for future extrapolation.

Some suggested improvements to the data sheets include: identifying the best observation point at the intersection, including a field on the data sheet to clearly record the start and end times, and including a totals column so that volunteers can tally the total count at their intersection. Furthermore, some intersections were too complex to be accurately captured on a single sheet; the sheets for the on-ramps to the MacDonald Bridge and the Armdale Roundabout need clarification. Finally, some volunteers suggested expanding the data collection to include age estimates and gender of cyclists, and non-peak/night time/weekend data collection. Careful consideration should be given to the value of any additional data and the practicality of collecting it before adding additional data types to future counts.

Volunteer instruction sheets were reported to be very useful as they provided a consistent reference when the volunteer was unsure of how to record a cyclist's direction or behaviour. Suggested improvements include a training session prior to the count to ensure that instructions are clearly understood, and a reminder that volunteers should dress warmly for morning, even in summer. Future instructions should also clarify how to count child seats and trailers, electric bikes, tandem cyclists, buses carrying bikes on their racks, and particular traffic violations, such as failure to properly signal a turn and rolling stops at stop signs.

Conclusions

There is significant bicycle commuting in HRM with bicycle traffic volumes in excess of 100 cyclists per hour at several locations. The June 2009 bicycle traffic count ranks 12 intersections according to their bicycle traffic volumes during weekday commuting hours. Most bicycle lanes and paths in the count are well used, as are other intersections where no lanes or other bicycle infrastructure exists.

The data collected shows significant intersection avoidance behaviour by cyclists which is highly variable by location, suggesting safety or other practical problems at particular intersections.

The count demonstrates good cyclist compliance with most traffic laws, but identifies a few intersections where lower compliance rates call for more in-depth analysis of causes and possible solutions.

The June 2009 bicycle traffic count establishes a baseline that can be used both for long term trending and for measuring the impact of future changes in infrastructure.

Recommendations

This report should be published by the Halifax Cycling Coalition to stimulate public discourse on bicycle commuting in HRM and to inform city policy on cycling infrastructure and road usage. The Halifax Cycling Coalition should continue with bicycle traffic counts, but with increased emphasis on timely analysis and dissemination of results, both to provide relevant feedback to interested parties and as a courtesy to the volunteers who collected the data.

Future counts should focus on a smaller number of intersections and extrapolate overall trends from the 2009 baseline. This streamlined data collection could then allow expansion of scope for future counts if appropriate.

Based on traffic volume, high incidence of intersection avoidance and traffic rule infractions, the following intersections need further study and improvements:

- Armdale Roundabout
- Bell Rd. & Sackville St. & South Park St.
- Jubilee Rd. & Vernon St.
- North St. @ MacDonald Bridge
- Summer St. & University Ave.
- Victoria Rd. & Albro Lake Rd.
- Wyse Rd. @ MacDonald Bridge

The Halifax Cycling Coalition should lobby for further study and improvements of these seven intersections and assist the city in that process.

Feedback

The Halifax Cycling Coalition would like to hear from you. If you have comments or suggestions on the collection or analysis of bicycle count data in HRM, please forward them via email to: contact@cyclehalifax.ca

Appendix

Appendix A – Summary data sheets – June 2009

Bike traffic survey Tuesday June 9, 2009

Cyclists transiting intersection	a.m.						p.m.						a.m.		p.m.	
Intersection	# counted	start time	count duration (hrs.)	cyclists/hr.	peak hour (cyclists/hr.)	peak hour	# counted	start time	count duration (hrs.)	cyclists/hr.	peak hour (cyclists/hr.)	peak hour	Volunteers	Man hours	Volunteers	Man hours
Victoria Rd and Albro Lake Rd							34	4:00	2	17.0	24	4:30-5:30		0	2	4
Brunswick and Duke	108	7:15	2	54.0	65	7:45-8:45							2	4		0
Bell/Sackville	134	6:45	2	67.0	89	7:45-8:45							2	4		0
Wyse Rd. @ MacDonald Bridge - L	194	7:00	2	97.0	111	7:15-8:15							2	4		0
Barrington @ North @ MacDonald Bridge - Halifax							204	4:00	2	102.0	119	4:00 - 5:00		0	1	2
Almon St. & Agricola St.	79	6:45	2	39.5	45	7:45 - 8:45	113	4:15	2	56.5	59	5:15-6:15	2	4	1	2
Summer St. & University Ave.	84	6:30	2	42.0	55	7:30 - 8:30							2	4		0
Rotary	80	6:40	2	45.7	50	7:00 - 8:00	99	4:00	2	44.0	58	5:00-6:00	1	1.75	1	2.25
Portland St. @ Woodlawn Rd. & B	6	7:30	2	3.0	4	7:30 - 8:30							1	2		0
Willow St. @ Windsor St.	43	6:30	2	21.5	28	7:30 - 8:30	81	3:50	1.7	48.8	58	4:30 - 5:30	2	4	1	1.66
Hawthorne St. @ Prince Albert	59	7:30	2	29.5	41	7:30 - 8:30							1	2		0
Jubilee Rd. @ Vernon St.	135	7:30	2	67.5	76	8:30-9:30							2	4		0
sub-total	922		19.75				531		9.91				17	33.75	6	11.91
Total (a.m. & p.m.)	1453		29.66										23	45.66		

Observance of traffic rules	a.m.			p.m.		
Intersection	No helmet	Ignoring signs & lights	Riding on sidewalk/ crosswalk	No helmet	Ignoring signs & lights	Riding on sidewalk/ crosswalk
Victoria Rd and Albro Lake Rd	#DIV/0!	#DIV/0!	#DIV/0!	9%	26%	26%
Brunswick and Duke	2%	3%	3%	#DIV/0!	#DIV/0!	#DIV/0!
Bell/Sackville	2%	1%	13%	#DIV/0!	#DIV/0!	#DIV/0!
Wyse Rd. @ MacDonald Bridge - L	1%	3%	#VALUE!	#DIV/0!	#DIV/0!	#DIV/0!
Barrington @ North @ MacDonal	#DIV/0!	#DIV/0!	#DIV/0!	1%	#VALUE!	#VALUE!
Almon St. & Agricola St.	1%	4%	0%	2%	3%	2%
Summer St. & University Ave.	0%	11%	0%	#DIV/0!	#DIV/0!	#DIV/0!
*Rotary	3%	11%	0%	2%	2%	0%
Portland St. @ Woodlawn Rd. & B	0%	0%	50%	#DIV/0!	#DIV/0!	#DIV/0!
Willow St. @ Windsor St.	2%	12%	12%	2%	0%	4%
Hawthorne St. @ Prince Albert	No data	No data	No data			
Jubilee Rd. @ Vernon St.	2%	26%	8%			
sub-total	1%	8%	4%	2%	3%	3%
Total a.m. & p.m.	2%	6%	4%			

*Rotary crosswalk not included, as sidewalk/crosswalk around the rotary is a multi-use trail.

Cyclists' path of travel

Intersection	Cycle lane available?	Bike lane or path used when avail.				Intended path followed through intersection				Avoiding intersection (e.g. walking bike across intersection)			
		a.m.		p.m.		a.m.		p.m.		a.m.		p.m.	
Victoria Rd and Albro Lake Rd	No	N/A	N/A	N/A	N/A	N/A	N/A	25	74%	N/A	N/A	0	0%
Brunswick and Duke	Yes	76	93%			98	91%			4	4%		
Bell/Sackville	Yes	88	93%			108	81%			20	15%		
Wyse Rd. @ MacDonald Bridge - I	Yes (use mandatory)	183	100%			no data				66	34%		
Barrington @ North @ MacDonal	Yes (use mandatory)			77	100%			no data				30	15%
Almon St. & Agricola St.	No	N/A	N/A	N/A	N/A	65	82%	93	82%	14	18%	20	18%
Summer St. & University Ave.	No	N/A	N/A	N/A	N/A	69	82%			11	13%		
Rotary	*Yes	22	28%	50	51%	65	81%	82	83%	22	28%	17	17%
Portland St. @ Woodlawn Rd. & B	No	N/A	N/A	N/A	N/A	4	67%			2	33%		
Willow St. @ Windsor St.	No	N/A	N/A	N/A	N/A	38	88%	50	62%	5	12%	12	15%
Hawthorne St. @ Prince Albert	No data	No data	No data			No data	No data			No data	No data		
Jubilee Rd. @ Vernon St.	No	N/A	N/A	N/A	N/A	111	82%			22	16%		
sub-total		369	72%	127	42%	558	61%	250	47%	166	18%	79	15%
Total a.m. & p.m.		496	61%			808	56%			245	17%		

*Cycling around rotary on multi-use crosswalk/sidewalks or road counted as intended route.

Notes:

Victoria Rd and Albro Lake Rd	Local kids use small street North of and parallel to Victoria rd. and cut through gas station.
Brunswick and Duke	Sidewalk riding - mainly on East sidewalk of Brunswick St.
Bell/Sackville	Most cyclists turning left from Bell to Sackville did so on the right side of the left turn lane.
Wyse Rd. @ MacDonald Bridge - I	Danger - repeated confusion, unusual behaviour, where bike lane ends with no clear way to continue onto road. See sheet
Barrington @ North @ MacDonal	Various sanctioned and non-sanctioned ways to continue Westbound after leaving bridge, despite railing. See sheet.
Almon St. & Agricola St.	Sidewalk riding - mainly to get to the bank.
Summer St. & University Ave.	Stop sign on Summer St. not obeyed by all.
Rotary	Serious bike accident observed during a.m. count at Rotary. Police and ambulance attended. Cyclist was cut off, hit curb. Construction 1 lane of Herring C. to Quinpool
Portland St. @ Woodlawn Rd. & B	Not enough cyclists to draw any conclusions.
Willow St. @ Windsor St.	
Hawthorne St. @ Prince Albert	
Jubilee Rd. @ Vernon St.	Sidewalk usage inceased significantly after 9:00 when construction started on Jubilee. Many did not do full stop.