

Bike Counts on Bloor 2016-2023

Highlighting most recent count on July 26, 2023



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Cover Photograph

Location of count on Bloor at Brunswick Avenue, which was used as a comparison point for the main count on Bloor and Spadina Avenue, western terminus of road construction work, on July 26, 2023. (Photo: Albert Koehl)

Executive summary

Since the city's installation of the 2.4 km Bloor Street pilot bike lane in August 2016 Community Bikeways, and its predecessor, Bells on Bloor, have carried out a range bike counts, using a variety of metrics. These counts, which have been conducted before and after subsequent extensions of the bike lane to Runnymede are set out in this report in reverse chronological order. (A city council-approved extension of the bike lane from Runnymede Road to Aberfoyle Crescent, near Royal York Road, is planned for later this summer.)

Our most recent count was conducted soon after the Bloor Street bike lane was eliminated for the purpose of road reconstruction between Spadina Road and Avenue Road. The result is to force cyclists into a "single file" arrangement where cyclists must "share" the road with much larger, heavier vehicles. The bike lane has essentially been converted into a motor lane – an arrangement that contradicts the Vision Zero approach, which specifies that "human life should be prioritized over all other objectives within all aspects of the transportation system."

Bike counts by date

A. 2023 July 26: 24-hour count, bike lane eliminated for construction



Image 1: Bloor Street West at count location on south side of street, looking west toward Spadina Road at a distance of approximately 10 metres. Eastbound motor traffic and cyclists merge at the intersection, with sometimes perilous encounters. During high traffic times, cyclists are stuck behind cars (breathing their exhaust), which induces some cyclists, including time-constrained food couriers, to ride on the sidewalk, as this moped rider in the background (left) is doing. Others take refuge on the sidewalk to escape the road danger. (Photo: Albert Koehl)

Weather: 23C at midnight; brief, drizzling rain around 4:30am; continuing clear and hot all day reaching 30C, with a <u>heat warning issued</u> by Environment Canada; intermittent rain from 19:00 to 21:00 but continuing hot.

Road traffic adjustments due to construction work

At the time of our count, the traffic adjustments due to road work had been in place for at least one day, stretching along Bloor Street West from Spadina Road (Spadina *Avenue*, south of Bloor) to Bedford Road. The reconfiguration had the result of eliminating the east and westbound bike lanes while maintaining a single general traffic lane in each direction. The eastbound traffic lane essentially replaced the bike lane. Cyclists and motorists were directed by signage to travel "single file," although at least some motorists were observed trying to pass cyclists in the extremely narrow lanes that were created. When the subway closes between approximately 2-6am, there are many TTC replacement buses along this route. Bicycles and non-pedal mobility devices riding on the sidewalk are indicated in parentheses but included in the total. Food courier were included in the total but listed in a separate column to allow an assessment of the number of food couriers, a relatively recent development. The overall count showed almost 5,400 pedal vehicles and other mobility devices, a count that would likely be higher on a day with similar weather conditions if conducted outside of the work/school vacation months of July and August.



Image 2: Community Bikeways volunteer Mark Fernandez in the course of the first hour of the bike count at approximately 12:10am on July 26. Looking east on Bloor toward Madison Avenue, showing a bike lane closed and "single file" signs. (Photo: Albert Koehl)

Time	Bikes (including ones riding on sidewalk)	Other non-pedal (including sidewalk riders)	Hourly total	Running total	Food couriers -already in counts
12 (midnight)	100(21)	19(7)	119	119	9
1:00	47(14)	15(4)	62	181	6
2:00	25 (6)	6(2)	31	212	1
3:00	14(3)	5(0)	19	231	1
4:00	9 (2)	6(2)	15	246	1

5:00	40(8)	4(1)	44	290	0
6:00	101(20)	7(1)	108	398	6
7:00	178(18)	21(3)	199	597	1
8:00	382(36)	27(3)	409	1,006	2
9:00	325(41)	21(3)	346	1,352	5
10:00	212(59)*	33(12)*	245	1,597	17
11:00	205(63)*	31(13)*	236	1,833	50
12:00	234(51)*	19(1)*	253	2,086	44
13:00	225(27)	34(1)	259	2,345	48
14:00	239(18)	33(0)	272	2,617	38
15:00	219(28)	32(0)	251	2,868	24
16:00	398(14)	42(2)	440	3,308	22
17:00	420(12)	37(0)	457	3,765	21
18:00	480(20)	39(0)	519	4,284	52
19:00	393(20)	42(2)	435	4,719	116
20:00	207(12)	23(3)	230	4,949	61
21:00	298(17) - 2hr count	34(5)	332	5,281	108
22:00					
23:00	104(9)	9(1)	113	5,394	23
Totals	4,855 (519)	539 (66)	5,394		656

*A make-shift pedestrian walkway on the north side of the road appeared to have been created by construction crews, but there was no signage indicating this intent. Several volunteers initially counted cyclists in this pathway as sidewalk riders, but given the lack of signage, we asked them to remove these individuals as "sidewalk riders" from their counts. Given this was done after the fact, the numbers marked by the asterisk (as it relates to sidewalk riders) should be treated as an estimate. The sharing of this make-shift pathway did put pedestrians into potential conflict with cyclists.

Totals

- bicycles and e-bikes only = 4,855
- e-scooters and other non-pedal micro mobility devices = 539
- total bicycles and non-pedal micro mobility devices = 5,394
- total number of food couriers = 656
- food couriers as percentage of all riders = 12%
- total sidewalks riders = 585
- percentage of total cyclists/micro mobility device users that are sidewalk riders = 11%
- sidewalk riders when bike lane in place (at Brunswick or previous counts) = 0% to 1%



Image 3: Cyclist heading west toward Spadina Road. There appeared to be a makeshift sidewalk, though not indicated by signage, between these construction cones and a fence that delineated the construction zone. The narrow passage was taken by many westbound cyclists as a way to avoid motor traffic, but this put those cyclists in potential conflict with pedestrians walking east or west. The actual sidewalk was closed. (Photo: Albert Koehl)

We also conducted counts at Brunswick Avenue and Bloor, about 500m to the west of the main count location, as a reference point. (In this case, our count line was just west of Brunswick). Brunswick was selected because it has a contraflow lane connecting Bloor to the Harbord Ave bike lane.

Time	Bloor at Spadina		Total	Bloor at Brunswick		Total
	Cyclists	Other		Cyclists	Other	
7:30	115(12)	11(0)	126	114(0)	10(0)	124
8:00	152(11)	15(1)	167	175(0)	11(0)	186
8:30	230(25)	12(2)	242	250(0)	11(0)	261

Additional counts for bikes as a percentage of all road traffic (cars, trucks, commercial, pedal, non-pedal)

A. Bloor at Brunswick - 8AM-8:30AM

Total automobiles = 317 Total bikes 175 + "other" = 186 Total road vehicles = 503 **Bikes as % of all road vehicular traffic = 37%**

B. Spadina and Bloor - 5pm to 6pm

Total auto = 767 Total bikes = 457 Total road vehicles = 1,224 **Bikes as % of all road vehicles = 37%**

Observations and analysis

- based on our count during specified rush hour periods, bikes (pedal and non-pedal) make up a substantial percentage of all road traffic, amounting to 37% of all vehicles;
- 2. the road construction work, given the lack of provision for cyclists, beyond "single file" signs, induced many cyclists to take refuge on the sidewalk creating the potential for conflict. This observation is confirmed by the insignificant amount of sidewalk riding in the reference area, and in previous counts comparing areas with and without bike lanes. Given concerns expressed by some City Councillors and city residents about sidewalk riding by food couriers and a proposal by one councillor to licence food couriers on e-bikes the failure to maintain the bike lane induces sidewalk-riding and creates the potential for conflicts between pedestrians and food couriers whose work depends on timely delivery;
- 3. the highest count for couriers was in the 7-8pm hour, during which couriers as a percentage of all riders comprised 27% of the total;
- 4. the percentage of e-scooters, segues, and mopeds (or similar motorbike-like vehicles) remains small (about 10%) relative to regular bicycles and electric bicycles. We realize that e-scooters are officially illegal in the city; and
- 5. based on reference counts at Bloor and Brunswick, the number of riders who were diverting from Bloor onto Harbord or another alternative route was negligible, as suggested by the fact that our reference counts at Bloor and Brunswick were almost identical to our counts at our main counting location at Bloor and Spadina.
- 6. Finally, although the City of Toronto appears reluctant --- but not completely averse --- to close roads during construction work, this need not always be the case. Indeed, road

closures might also protect construction workers who must otherwise breathe in exhaust fumes when working in close proximity to motor traffic. We provide a photo of a case we observed in Montreal on July 25, 2023 where a road was left open for cyclists -- but closed to motorists. We have observed such rare instances over the past several years in Toronto, most recently on Simcoe Street near Front Street.



<u>Image 4</u>: Closing streets as in this example from Avenue Laurier and Rue Berri in Montreal is an option that should be considered as a way not only to protect city residents on bicycles, but to promote and facilitate cycling as a way to reduce greenhouse gas emissions. This option also protects workers on site from tailpipe emissions in the area of their workspace -- and may potentially facilitate faster project completion. In Toronto, a recent example of a street closure was on Simcoe Street near Front Street.

Methodology

Volunteers were assigned one or two hour shifts and provided with count instructions in advance. Volunteers counted all east- and west-bound cyclists that crossed an imaginary line drawn across the road from north to south, approximately 10 metres east of Spadina Avenue. All pedal bicycles and e-bikes were recorded with a pen stroke, or with a check mark in the case of food couriers as suggested by a food pack. In a separate section, the same procedure was followed for non-pedal vehicles, including segways, mopeds, and e-scooters. Volunteers were also instructed to indicate --- by circling the pen stroke or check mark --- all riders who rode on the sidewalk.

Two coordinators were available at all times to answer questions or to attend in person. We used a low-tech approach that allows for the reporting of information quickly and with little set-up. The results, should any questions arise about accuracy, can be easily confirmed by replicating the count on any day of the week, even if only by selecting a random hour to compare to our count results. The count commenced at midnight on Wednesday, July 26 and continued for a full 24-hour period to 11:59pm. Volunteers photographed the count sheet and submitted it to the coordinators of the count, Luis Palacio and Albert Koehl. Volunteers signed their sheets to confirm the accuracy of their counts.

B. 2023, June 6: Bloor bike lane at Royal York - Bike and car count, no bike lane

This count was completed for a national survey being conducted by the national group Vélo Canada Bikes (VCB).¹ The temperature at the time was mild with no rain.

Hours	Bicycles	Pedestrians	Cars	Trucks
7:00-9:00	53	218	2,883	258

C. 2021 Aug 8 – bike counts at four locations, including sidewalk riding

These 12-hour counts (9am to 9pm) were conducted on Bloor Street at Thomas Street (Yorkville), Runnymede Road, Royal York Road, and Islington Avenue. Thirty-five volunteers were assigned to four counting locations along Bloor Street and advised to count cyclists (and other pedal vehicles) in the bike lane, where one exists, or on the road and on the sidewalks. At each location an imaginary line was drawn across the road and each cyclist riding east or west who crossed that line was counted. Cyclists riding on the sidewalk were counted separately. Volunteers signed and dated their tally sheets.

Weather: hot (24C to 27C) with 'real feel' much higher, likely reaching mid 30s. There was some haze, light winds, and a very minor sprinkle of rain in the late afternoon.

*indicates adjusted number. Several counters initially included both people walking bikes and riding bikes on sidewalks. Only the latter is included in the final tally above.

Hour (start)	Bicycles	Sidewalk	
9:00	145	2	
10:00	189	1	
11:00	248	0	
12:00	282	0	
13:00	229	1	
14:00	231	0	
15:00	304	0	

At Thomas Street, Yorkville (Bloor Street East, with bike lane in place)

¹ The weather was 15C with no rain.

16:00	239	0*
17:00	210	2*
18:00	237	0
19:00	216	3
20:00	184	3
Total	2,714	12

At Glendonwynne, near Runnymede, with bike lane in place

Hour (start)	Bicycles	Sidewalk
9:00	72	2
10:00	95	0
11:00	84	4*
12:00	111	0
13:00	96	6*
14:00	102	3
15:00	85	3
16:00	67	1
17:00	68	3
18:00	88	5
19:00	52	0
20:00	65	4
Total	985	31

At Royal York Road – no bike lane

Hour (start)	Bicycles	Sidewalk
9:00	24	4
10:00	28	6
11:00	23	3
12:00	30	11
13:00	36	10
14:00	27	25*
15:00	14	4*
16:00	9	5
17:00	6	4
18:00	15	16
19:00	11	3
20:00	8	11
Total	231	102

At Islington Ave – no bike lane

Hour (start)	Bicycles	Sidewalk
9:00	11	1
10:00	17	0
11:00	13	4
12:00	11	10
13:00	9	11*
14:00	17	9
15:00	11	6
16:00	7	4
17:00	10	3
18:00	7	3
19:00	12	8
20:00	8	1
Total	133	60

Conclusions

Sidewalk riding is prevalent in areas with no bike lane. At the Royal York and Islington count locations, 31% of all cyclists were riding on the sidewalk, compared to 3% at Runnymede, and a negligible number at the Yorkville location.

At our count locations **with** bike lanes, the number of cyclists was very high (985 to 2,714) but along areas of Bloor without bike lanes the cycling numbers on the road were low (133 to 231).

The road sections of Bloor *without* a bike lane are generally wider than sections of Bloor with a bike lane. The Royal York and Islington intersections are very wide.

Cars and trucks travelling above the posted speed limit is very common at the Islington and Royal York locations with road environments that are hostile to people on foot and bikes. Noise levels are also very high and unpleasant for people on foot or on bikes, and for patrons of local establishments that offer outdoor dining.

The absence of safe cycling infrastructure is particularly noteworthy in the area around the Bloor - Islington intersection given the dense population concentration, including about 30 large residential towers (apartment and condominium buildings).

There are a large number of new and planned residential towers in the Six Points and Kipling and Islington subway station areas, however residents in these areas do not have access to

connected bikeways that would give them access to recreation areas such as Tom Riley Park and the Humber River.

D. 2020 Aug 19 - bike counts, soon after bike lane installation from Shaw to Runnymede

Hour (start)	Bicycles
3:00 ²	2
4:00	10
5:00	37
6:00	61
7:00	97
8:00	156
9:00	161
10:00	167
11:00	164
12:00	250
13:00	221
14:00	217
15:00	288
16:00	308
17:00	460
18:00	485
Total	4,403

At Dufferin Ave

Table: Bike lane data for Bloor at Dufferin

E. 2019 Sept 30 – bike counts pre-installation, Shaw Street to Runnymede Road

At Brock street

On September 30, 2019, there were a total of **2,184** cyclists counted. At some points during the afternoon rush hour, there was roughly 1 bike for every 4 cars counted. The temperature reached a high of 18 degrees Celsius and it was a cloudy day.

This <u>video count</u> was organized by Kevin Rupasinghe, including some volunteers of Bells on Bloor to assess the results. The volunteers also tallied motor vehicle counts.

² Count began at 3:52am, although the actual number for the entire hour is not anticipated to be very high.

F. 2017 Sept 18 to 22: five-day video count

The Bloor pilot bike lane, and accompanying signage, was installed during the last two weeks of August 2016. The installation followed decades of study, advocacy, and debate. On May 4, 2017, the pilot bike lane was approved by a 38-3 vote at City Council.³ A final decision on whether to approve the bike lane will be made later in 2017.

The pilot bike lane runs between Shaw St. and Avenue Road/Queen's Park. Beyond the bike lane's eastern terminus at Avenue Road, there is no bike lane although there are sharrows (with a dubious safety benefit to cyclists).⁴ West of Shaw Street cyclists are simply integrated into heavy motor vehicle traffic and must contend with the danger of doors from parked cars being opened into their path.

At Brunswick Avenue

For the first time, Bells on Bloor volunteers have provided the city with a 24-hour count over five consecutive days. A video camera was setup on a rooftop along Bloor, overlooking the intersection of Bloor and Brunswick Avenue, between Bathurst Street and Spadina Road. A total of 120 hours of video were reviewed by a team of 20 volunteers to count each cyclist.

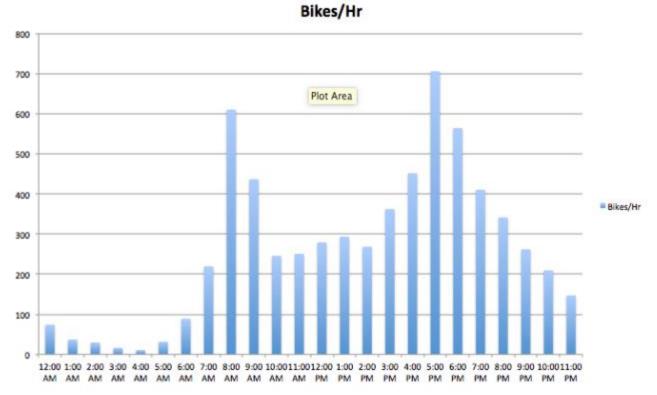
Day of the Week	Monday	Tuesday	Wednesday	Thursday	Friday	Total
Bicycle Count	6,213	6,447	6,696	6,471	5 <i>,</i> 905⁵	31,732

During certain peaks during the week there was an average of over 600 cyclists hourly. At no time during the day between 7am and 11pm does this number dip below an average of 200 bikes/hour (five-day average).

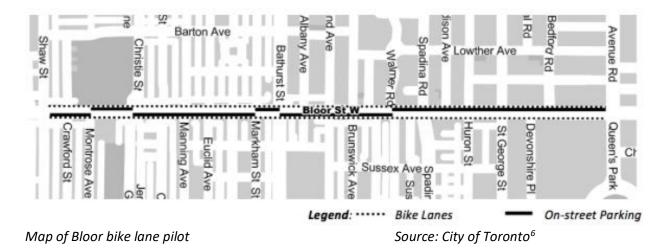
³ *Toronto Star*, <u>"Bloor bike lane pilot approved by City Council"</u>, Ben Spurr, May 4, 2016.

⁴ A group called the Safe Cycling Coalition intervened in a 2008 court case, *William Ashley China v. City of Toronto* arguing that the failure by the city to install bike lanes on Bloor during the "revitalization" of the street violated the provisions of provincial planning laws.

⁵ Includes three-hour extrapolation for power failure – see data chart.



<u>Graph</u>: Five-day average count of bicycles per hour for September 18 to 22, 2017.



The Bloor bike lane is intersected by a contra-flow bike lane at Shaw Street and bike lanes on St. George running through the University of Toronto. As well, there is a contra-flow lane on Montrose, running southbound from Bloor and a bike lane on Grace Street, also running south off Bloor.

⁶ City of Toronto, <u>"Bloor Street bike lanes"</u>, accessed on May 25, 2017.

Even cursory observations following installation of the Bloor bike lane showed that it was heavily used by cyclists. Historically, however, there has been limited data collected to show specific cycling numbers on Bloor or other streets in the city. The lack of data tends to result in an underestimation of cyclist numbers since people riding bikes are often easy to ignore, given that their vehicles are small, noiseless, and pollution-free.

Bike counts are snapshots in time, but each such snapshot gives a better idea of a broader context. The city's available data for the bike lane, released in February 2017, shows smaller increases than those documented in this report, however, this is likely the result of varying weather conditions. The city's counts were apparently recorded in late October and early November 2016.

G. 2017 May 17 – various counts and metrics

This report focuses on the results of our May 17, 2017 weekday bike count and provides comparative data for our wintertime (January 16-30, 2017) count and our weekday count on September 12, 2016, as well as related counts.

The May 17 count was conducted with the assistance of 29 volunteers, each of whom took a shift of one to two hours. Each volunteer was provided with written instructions in advance as set detailed in Appendix A.



<u>Image:</u> Cyclists travelling east on the Bloor bike lane crossing Spadina Avenue during our count on May 17, 2017. (Photo: Albert Koehl)

Four data collection points were used, including Bloor at Spadina Avenue, Harbord at Spadina, Bloor at Shaw Street, and a neighbourhood location at Barton Street and Albany Avenue. The

bicycle count documented cycling numbers at a primary location in the Bloor bike lane just west of its intersection with Spadina. The three additional observation points included Bloor near Robert Street (for the measurement of single-occupant vehicles), Harbord at Spadina, Bloor at Shaw Streets, and at the intersection of a nearby neighbourhood street, Barton Street at Albany Avenue.

May 17, 2017 was a warm, sunny day with light winds and a daytime high reaching 29.7°C.⁷ The low for the day was 11.9°C. The temperatures during the month to that point had generally been below seasonal values, namely 19.1°C. By comparison, the previous count on September 12, 2016 was also warm and sunny with a temperature high of 26.7°C and a low of 10.7°C.⁸ with no wind. There was no rain on either day and light or no wind.

Our count in the bike lane at Spadina recorded a total of 5,515 cyclists --- travelling either eastbound or westbound --- over a 24-hour period beginning at 4am on May 17. The count result was similar not only to the count for September 12, 2016 (also a warm, sunny weekday) but in the distribution of cyclists throughout the day. The May 17 count documented:

- ➢ 5,515 bicycles travelling in the bike lane at Spadina Road over a 24-hour period;
- bicycles comprising 38% of the total vehicle traffic; and
- > 80% of passenger automobiles on Bloor Street in the 6-9am period are single-occupant.

The bike lane on Harbord Street is often proposed as a substitute for the Bloor bike lane, however, a morning 7-10am bike count documented a high number of cyclists on both the Harbord and Bloor bike lanes at their intersection with Spadina. Our count of bikes on the Harbord lane showed:

- the number of cyclists in the 7-10am period ranging from a low of 172 per hour to a high of 513;
- bicycles comprising 39% of all vehicles on the street in the 8-9am period; and
- > a combined total of 2,318 cyclists in the Bloor and Harbord bike lanes between 7-10am.

Shaw and Bloor Streets are among a small number of locations in Toronto where bike lanes intersect, as would be the case in far more locations if the city had a proper cycling network. Our count at this intersection documented:

> a total of 1,487 cyclists passing through the Shaw-Bloor intersection between 7-10am.

Finally, we took one measurement about whether Bloor motorists are diverting to neighbourhood streets. Barton St. runs east-west parallel to Bloor, running from Shaw St. in the east to Brunswick Ave. and then to Huron Street via Lowther Road. Although we have no baseline data, these figures can be compared by the city to its data to measure relevant changes since

⁷ The long-term forecast at the time the count was organized showed an anticipated temperature of about 17C.

⁸ Farmer's Almanac.

bike lane installation, and whether remedial measures are required to prevent infiltration onto local streets.

- 232 automobiles travelled east or westbound on Barton through the intersection with Albany in the 7-8am period;
- the number of automobiles more than doubled to 542 the 8-9am period;
- pedestrian and cyclist traffic (including 160 cyclists) increased in line with the increase in motor traffic from 8-9am; and
- as all forms of traffic in the intersection increased between 7-8am and 8-9am, the percentage of motor vehicles stopping at any point at or near the stop signs in the intersection, dropped from 35% to 16%.

Starting Hour	Bicycle Count	Motor vehicle count	Bikes as % of all vehicles
4:00	12		
5:00	25		
6:00	83		
7:00	202	817	20%
<mark>8:00</mark>	<mark>611</mark>	<mark>822</mark>	<mark>43%</mark>
9:00	399	773	34%
10:00	215		
11:00	193		
12:00	257		
13:00	227		
14:00	258		
15:00	267		
16:00	463		
17:00	482		
18:00	597		
19:00	317		
20:00	321		
21:00	224		
22:00	164		
23:00	134		
24:00	48		
1:00	16		
2:00	No data collected ⁹		
3:00	No data collected		

At Spadina Ave

⁹ Our count ended at 1:43 am on May 18, and did not document cyclists from 2-4am, however, the additional number of cyclists is likely to have been quite small.

Total	<mark>5,515</mark>		

<u>**Table**</u>: Bicycle (and motor vehicle) count at Bloor and Spadina, May 17, 2017

Bicycle traffic on Bloor is highest from 8 to 9am. During this time, bicycles constitute 43% of all vehicle traffic. It is worth noting that during rush hour on Bloor St. far more people are moved east and west by a mode of traffic that isn't visible at all – the TTC subway where over 20,000 passengers will pass through the intersection at Spadina during the 8-9am rush hour.¹⁰ In addition, huge numbers of pedestrians walk through the intersection.

Similar to automobile traffic, bicycle traffic is overwhelmingly eastbound in the morning and westbound in the afternoon consistent with rush hour in-bound and out-bound traffic patterns.¹¹

Harbord bike lane (running parallel to Bloor bike lane) at Spadina Avenue

Bike and car count

The highest number of bikes on the Harbord bike lane was 513, recorded during the 8-9am morning rush hour -- during which time bicycles accounted for 39% of all vehicular traffic. On Bloor, during the same hour bicycles made up virtually the same percentage of all vehicles at 38%. In each case, the bike lane uses only from one quarter to one third of the road width.

Hour (start)	Bicycles	Cars	Bikes as % of all vehicles
7:00	173	667	21%
8:00	513	816	38.6%
9:00	420		
Total (bikes 7-10am)	1,106		

Table: Bike count in Harbord bike lane at Spadina, May 17, 2017

¹⁰ *Toronto Star*: "Putting Scarborough subway claims to the test", June 16, 2016, Jennifer Pagliaro and Benn Spur; online at: ¹¹ For example, between 7 and 8am, 81.2% of bicycle traffic on Bloor was eastbound, or heading downtown; while from 5 to 6pm, the pattern had reversed albeit, at 63% westbound, not yet equal to inbound morning patterns. Eastbound and westbound data was not collected for each hour. This data is available from the authors.



Image: Harbord St. bike lane at counting location during morning rush hour, west of intersection with Spadina. Bus merges into bike lane for passenger pick up. May 2017. (Photo: Albert Koehl)

Combined numbers – Bloor and Harbord bike lanes

There was similar, and heavy usage of the bike lanes on Bloor and Harbord during the peak morning cycling hours, ranging from 173 to 513 cyclists on the Harbord lane and between 202 and 611 cyclists on the Bloor bike lane.

During the peak 8-9am cycling hour, there was a combined total of 1,124 bicycles (513 + 611) on the Bloor and Harbord bike lanes at Spadina, with the far greater number travelling eastbound.

Street	7:00	8:00	9:00	Total
Bloor	202	611	399	1,212
Harbord	173	513	420	1,106
Totals	375 (7-8am)	1,124 (8-9am)	819 (9-10am)	2,318

Table: Combined bicycle counts on the Bloor and Harbord bike lanes, May 17, 2017

Bloor St., eastbound single-occupant motor vehicle count

One new count conducted on May 17, 2017 was of single-occupant (eastbound-only) vehicles on Bloor St. The location, one block west of Spadina, was chosen for ease of street-level observation.

We separated out vehicles that were clearly of a commercial nature, including cargo trucks and taxis. The documented result was that during the 7-10am period an average of 80% of passenger vehicles had only one occupant, namely the driver.

Hour (start)	Total eastbound	Single	Multi-occupant	% of single
	passenger vehicles	occupant		occupant
6:00	350	300	50	86%
7:00	479	375	104	78%
8:00	343 ¹²	261	82	76%

Table: Eastbound single-occupant passenger vehicles on Bloor St., May 17, 2017

Bloor and Shaw Street intersection – Bloor bike lane and Shaw contra-flow lane

The objective of the count at Bloor and Shaw St. was simply to document the volume of cyclists at one of the small number of intersections in Toronto where bike lanes intersect – a street configuration that would be common if Toronto had a complete cycling network.¹³

Hour (start)	Eastbound or westbound on Bloor	Northbound and southbound on Shaw	Total
7am	158	81	239
8am	455	283	743
9am	308	197	505
Total passing through intersection	921	561	1,487

Table: Bicycle count at Bloor and Shaw intersection, May 17, 2017

Barton St. at Albany Ave. (neighbourhood count)

Traffic counts

It has been suggested that motorists are diverting from Bloor to alternative east-west routes such as Harbord, Dupont, and Barton-Lowther Streets. The City of Toronto reported in its February

¹² We exclude commercial vehicles including commercial vehicles like cargo trucks and taxis. From 6-7am, there were also 9 trucks, 3 buses, and 3 motorcycles. From 7-8am, there were 19 commercial vehicles, of which 8 were single occupant; there were 8 motorcycles, and 28 taxis of which 17 were occupied by only the driver. From 8-9am, there were 15 taxis, 12 of which had only the driver. There were 40 trucks of which 19 had a single occupant.

¹³ A comparison of cycling numbers during the 7-10am period in the Bloor bike lane at Spadina (1,212 cyclists) to those in the bike lane at Shaw (921 cyclists), suggests that a significant number of the cyclists in the Bloor bike lane at Spadina entered east of Shaw St. This is plausible given the high number of cyclists in neighbourhoods like the Christie Pits area, Seaton Village, and the Annex.

2017 update that the daily volume of automobiles on Bloor had dropped from 24,000 to 20,000. The report concluded, however, that these motorists were not diverting to Dupont or Harbord. No measurement was provided for the parallel side-streets of Barton-Lowther.

The May 17, 2017 count showed a significant amount of car traffic on Barton St. at its intersection with Albany. Our count can be used by the City to determine if traffic restrictions are needed to restrict access to Barton from non-residents.

Hour	Eastbound	Westbound	Total	Bikes	Pedestrians	Total traffic – autos,
(start)	Cars	Cars				bikes, pedestrians
7:00	168	64	232	69	181	482
8:00	460	82	542	160	239	941

Table: Automobile, pedestrian and cyclist count at Barton and Albany, May 17, 2017

The motor vehicle count on Barton is more than half that of the count at Bloor and Spadina, however, at least some of the eastbound vehicles on Barton can enter Bloor at Brunswick and Walmer Roads and therefore might also have been counted at Bloor and Spadina.

Motorists' compliance with stop signs

Our count at Barton and Albany included a count of all motorists who stop at least somewhere in the vicinity of the stop signs located at each of the four corners. Since this location has significant pedestrian traffic, the stop sign can be considered an important safety feature. In fact, there is a popular parkette on the northeast corner of Barton and Albany in front of a school.

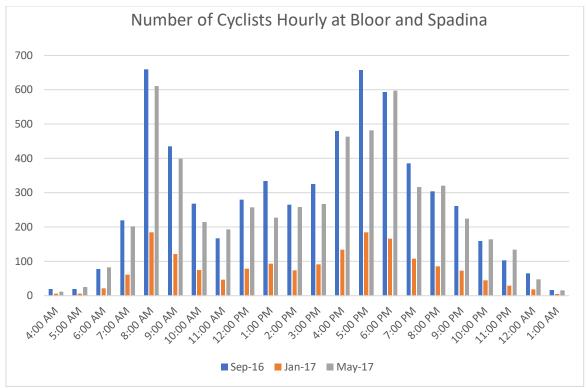
Our count determined that only a small percentage of motorists came to a full stop at or near stop signs at the intersection.

Hour (start)	Eastbound cars that stop at/near stop sign	Westbound cars that come to full stop at/near stop sign	• • •
7:00	47/121	13/52	34.6%
8:00	63/392	12/70	16%

Table: Percent of motorists who stop at neighbourhood stop sign (Barton and Albany), May 17, 2017

Interestingly, as the volume of traffic --- automobiles, bicycles, and pedestrians --- increased from the 7-8am period to the 8-9am period, the percentage of automobiles that stopped at the intersection dropped by more than half to a mere 16% in the later hour.

Data analysis



Graph: Showing counts in September 2016, January 2017, and May 2017.

Bloor bike lane at Spadina

The high number of cyclists (5,515) documented on Bloor on May 17, 2017 will not surprise anyone who has observed the morning rush hour since installation of the Bloor bike lane. This count buttresses the earlier count of September 12, 2016 and suggests that on a warm, sunny day 5,000 to 6,000+ cyclists may well be the new normal.

The similarly high number of cyclists documented on May 17 in the Harbord bike lane at Spadina suggests that Harbord is properly considered part of a cycling *network*, as opposed to a *substitute* for Bloor. During the highest cycling volume between 8-9am, the Bloor and Harbord bike lanes (at Spadina) had a combined total of 1,124 cyclists; and between 7-10am, a combined total of 2,318 cyclists.

In August 2015, prior to the installation of the Bloor bike lane, the city documented 3,409 cyclists on Bloor at Spadina. The 5,515 cyclists counted in the Bloor bike lane on May 17and the 6,099 cyclists counted on September 12, 2016 entail an increase of 2,000-2,500 cyclists per day.

The increase in cycling numbers subsequent to the installation of the Bloor bike lane is consistent with observations made on other new bike lanes. For example, after installation of the Richmond/Adelaide east-west bike lanes, the number of cyclists almost tripled, as measured for an eight-hour period.¹⁴

¹⁴ City of Toronto, Fact Sheet, "Extension of Richmond-Adelaide Cycle Tracks;" online.

Bloor at Robert – single-occupant vehicles

The high percentage of single-occupant motor vehicles on Bloor St. in the morning rush hour suggests, yet again, that the City of Toronto is making poor use of precious road space. Exhortations to car-pool have traditionally fallen on deaf ears, although the decrease in car volume reported by the city for Bloor St. post-bike lane installation suggests that there may have been some mode-switch to transit and cycling, and perhaps car-pooling.

The common argument by bike lane opponents that such lanes are inefficient because of lower winter cycling volumes is undermined by the fact that most cars on the road are mostly empty 365 days per year.

Harbord bike lane at Spadina

The Harbord bike lane is often proposed as a substitute for a bike lane on Bloor. The relatively equal, and significant, cycling volumes on both Harbord and Bloor Streets, however, suggests that both streets are parts of a proper cycling network.

Harbord has various distinct disadvantages to Bloor as an east-west cycling route, including the fact that TTC buses must pull across the bike lane on Harbord to pick up and drop off passengers. As well, Harbord ends at Ossington Ave. on its western side and at Queen's Park on its eastern side, where it turns south. The gap between Harbord and Wellesley has now --- almost four decades after it was recommended --- been closed but this is of no value to cyclists who end up travelling south when their destination is in a northern direction.

As long ago as 1983, it has been clear that cyclists will continue to use Bloor regardless of the existence of the bike lane on Harbord. The removal of the bike lane on Bloor would only mean that cyclists will again be exposed to the myriad hazards of parked and moving cars.

Bloor bike lane and Shaw contra-flow lane

Toronto does not yet have a cycling *network*. One feature of a network would be east-west and north-south connections that allow cyclists to get safely from one point in the city to another. One of the exceptions to the small number of intersecting bike lanes is the intersection of Bloor and Shaw, where the Shaw contra-flow lane crosses the Bloor bike lane.

Our count documented 1,487 cyclists passing through this intersection during the 7-10am period. The significant bicycle traffic through this intersection shows that when more complete cycling infrastructure is in place it will be well used by cyclists.

Barton at Albany

Our data collected at this location shows a high traffic volume between 8-9am. This count can be used by the city to assess whether motor traffic access to neighbourhood streets needs to be restricted.

Debates about cycling infrastructure like bike lanes typically descend into angry finger-pointing about the conduct of cyclists, including, for example, their failure to stop at stop signs. Our observation that a mere 16% of motorists stopped at or near the stop sign suggests that motorists' conduct does not merit any obvious claim to the high moral ground.

Conclusions

The significant increase in cycling numbers on Bloor again shows that when the City of Toronto installs bike lanes in Toronto's central area, they will be well used by cyclists. The impressive popularity of the Bloor bike lane is despite its obvious shortcoming that it simply ends at Avenue Rd. on the east and Shaw St. on the west leaving cyclists to fend for themselves in heavy motor traffic. In essence, the pilot is a stub. Notwithstanding this limitation, cyclist numbers have risen substantially along the Bloor pilot bike lane providing a strong case for its extension east and west along Bloor St. and Danforth Ave.

Appendix A - Methodology

Each of the 29 volunteers was given a specific set of written instructions relating to their task in advance of their work. Each volunteer was equipped with a counting sheet on which one mark or notation was made for each vehicle.

Bloor bike lane at Spadina

Each volunteer was instructed to count each bicycle passing a fixed point on Bloor St., namely a bus stop pole on the south side. Each bicycle going eastbound or westbound past the bus stop (a few metres west of Spadina) was counted. Bicycles on the sidewalk were not counted. Electric bikes in the bike lane were counted if they had a set of pedals.

This count took place from inside the Second Cup coffee shop on the southwest corner. The coffee shop provides a good vantage point from a second-floor location overlooking the street. During times when the coffee was not yet open (4-7am) or after it closed the volunteer worked from the street, and from the Tim Hortons across the road in the hours from midnight to 2am.

Motor vehicles passing the noted point, were counted in the same manner.

Bloor bike lane near Robert St.

For the count of single occupant vehicles, volunteers counted all motor vehicles but separated passenger vehicles from vehicles that were clearly of a commercial nature like freight trucks. Taxis were also excluded. Each class of vehicle was divided into single and multi-occupant

categories. An observation point several metres west of Robert St., in front of the Trinity-St. Paul Centre for Faith was chosen given the ease of observation it provided.

Bloor bike lane at Shaw St.

The volunteers at this location were instructed to count all eastbound and westbound bikes along with all northbound and southbound bikes. Bikes making a turn from one road to another were counted only once.

Harbord bike lane at Spadina

The volunteers at this location were instructed to count all the eastbound and westbound bikes which are crossing into or from Spadina Rd. Bicycles on the sidewalk were not counted. This count took place at the southwest corner of the intersection close to the TTC bus stop.

Barton St. at Albany St.

The volunteer at this location was instructed to count all vehicles travelling east and westbound. Albany Ave. is one-way northbound on the south side of Barton, and one-way southbound north of Barton. The volunteer distinguished eastbound from westbound vehicles. In addition to counting all cars, the volunteer also counted cyclists and pedestrians travelling through this intersection. The volunteer documented all motor vehicles that failed to come to a complete stop at any point in the intersection, whether before or near the stop sign.



Image: Barton St. looking east at intersection with Albany Ave.-- St. Albans Square is in background; note narrow pedestrian sidewalk on SE corner, May 2017. (Photo: Albert Koehl)

H. 2017 Jan 16 to 30: at Spadina - wintertime counts

Rush hour bicycle counts

In January 2017, a morning rush hour count of bicycles in the bike lane on Bloor at Spadina was conducted using the same methodology as the September and May counts. In this case, bicycles were counted during each weekday rush hour period for 8-9am, and then extrapolated using data from September 12, 2017, to calculate day-time totals.

Hour	Mon, Jan 16	Wed, Jan 18	Fri, Jan 20	Mon, Jan 23	Wed, Jan 25	Fri, Jan 27
8:00-9:00	182	167	174	191	207	169
17:00-18:00					205	

Table: Winter weekday rush hour counts, Jan. 16-30, 2017

The September 12, 2016 count had shown that the morning 8-9am rush hour accounted for about 11% of the 6,100 cyclists in the bike lane recorded over a consecutive 24-hour period. We carried out one evening count on January 25 from 5-6pm to confirm that the hourly breakdowns of cycling numbers held approximately true for the winter.

The number of bicycles in the 8-9am period ranged from a low of 167 to a high of 207. The average number of cyclists for the weekday period of January 2017, based on our extrapolation, was just over 1,700 cyclists per day.

January was a relatively warm month based on historical winter temperatures. The average daytime high for Toronto in January is -1^{0} Celsius. However, January 2017 was similar in temperature to the previous January (2016) and consistent with the rising temperature trends brought by climate change.

During the hours of the count, temperatures ranged between 0° C and $+3^{\circ}$ C, with consistently overcast skies. The bike lane was clear of snow or ice on every day of our counts.

Hour	Sept. 12 actual	
(start)	bicycle count	Winter Extrapolation
4:00	20	6
5:00	20	6
6:00	78	22
7:00	220	62
<mark>8:00</mark>	<mark>660</mark>	<mark>185*</mark>
9:00	435	122
10:00	268	75
11:00	167	47

12.00	280	70
12:00	280	78
13:00	334	94
14:00	265	74
15:00	325	91
16:00	480	135
17:00	658	184
18:00	594	167
19:00	386	108
20:00	304	85
21:00	261	73
22:00	159	45
23:00	103	29
24:00	65	18
1:00	17	5
2:00	No Count	N/A
3:00	No Count	N/A
		Ave. (extrapolated) daily figure
Total	6,099	<mark>for Jan 16-30, 2017 = 1,710</mark>

<u>**Table**</u>: Winter counts based on extrapolation, Jan. 16-30, 2017 *denotes the average figure derived from the six counts conducted from Jan. 16-30

Bicycles as percentage of all vehicles

As in our September counts, we recorded motor vehicles during the 8-9am rush hour period on Bloor at Spadina. This count showed that even in this winter period bicycles accounted for no less than 16% of all vehicles on Bloor St.

	Bicycles	Automobiles	Bikes as proportion of all vehicles
Jan 18 (8-9am)	167	870	16%
Jan 25 (8-9am)	207	872	19%

Table: Bicycles as percentage of all vehicles from 8-9am, January 18 and 25, 2017

I. 2016 Sept 12, Wednesday

At Spadina

A total of 6,099 cyclists was documented in the Bloor bike lane at Spadina.

Time		Motor	vehicle	Bikes as percent of all
(start time)	Bicycle Count	count		vehicles

4.00	20		
4:00	20		
5:00	20		
6:00	78		
7:00	220		
8:00	660	1,100	37.5%
9:00	435		
10:00	268		
11:00	167		
12:00	280		
13:00	334		
14:00	265		
15:00	325		
16:00	480		
17:00	658		
18:00	594		
19:00	386		
20:00	304		
21:00	261		
22:00	159		
23:00	103		
24:00	65		
1:00	17		
2:00	No Count		
3:00 AM	No Count		
Total	6,099		

Table: Bicycle (and motor vehicle) count at Bloor and Spadina, September 12, 2016

The highest cycling numbers were recorded from 8-9am. Bicycles comprised 37.5% of all vehicles on Bloor during this hour, although the bike lane occupies less than this percentage of the roadway.

J. 2015 August - City of Toronto data for Bloor St. pilot area -- prior to and after bike lane installation15

In August 2015, prior to installation of the bike lane the City of Toronto documented 3,409 cyclists on Bloor at Spadina during a 24-hour period. This provides a good reference point for our counts of September 2016 and May 2017.¹⁶

 ¹⁵ City of Toronto, General Manager, Transportation Services, May 3, 2016, <u>"Supplementary Report, Information Only"</u>, Bloor Street Bike Lane Pilot Project – Performance Evaluation and Additional Information (PW 12.1); online.
¹⁶ <u>City of Toronto, Update Bloor bike lane pilot project</u>, February 24, 2017, p. 20; online.

Location	Bike count (24 hr. volume)	Motor vehicle (24-hr volume)
Bloor at Spadina	3,409	19,828
Bloor at Bathurst	3,571	18,521

Table: Pre-bike lane data for Bloor at Spadina from City of Toronto, August 2015

In February 2017, the city released new data showing that cycling on Bloor had increased from approximately 3,300 cyclists per day to 4,500, entailing a 36% increase.¹⁷ By comparison, in 2014 the City reported that Harbord had between 3,500 and 3,900 cyclists per day.¹⁸ This suggests that there were virtually as many cyclists on Bloor Street --- without a bike lane --- as on Harbord Street with a bike lane. (Since the time of the report, however, improvements have been made to the Harbord bike lane.)

The recent city counts for the Bloor pilot bike lane, using video monitoring technology, were conducted at Clinton, Walmer, and Bedford Streets, as well as beyond the bike lane at the intersection with Bay St. We understand the counts took place in late October and early November, covering a three-day weekday period. No specific dates or weather conditions have been published.

The city also conducted bicycle counts on Harbord and Dupont St. to determine how much of the new bicycle traffic on Bloor St. had migrated from other streets.¹⁹ Dupont St. is a relatively wide, fast-moving east-west 'arterial' with no cycling infrastructure. The city reported that 25% of the increase in cycling on Bloor was from new cyclists, and not from Dupont or Harbord.

K. Historical cycling data for Bloor and Harbord Streets (1979-83)

There is limited historical data for cycling numbers on Bloor and Harbord, although the available numbers show high cycling levels since the 1970s, following the so-called cycling revival of 1971.

A bikeway study in the late 1970s by consultant Barton-Ashman for the City of Toronto, recommended a bike 'route' for Harbord, while rejecting Bloor St. even though it scored highest on most cycling measures, including the number of cyclists, the cycling growth potential, and the number of cycling collisions.²⁰

The route later implemented on Harbord, based on the consultant's recommendation, was not a bike lane but included such measures as a wider curb lane, signage, and some pavement markings. Soon after the installation of the Harbord bike route, the City found that cyclists still preferred Bloor St.

¹⁷ City of Toronto, <u>Update Bloor bike lane pilot project</u>, February 24, 2017, p. 20; online.

¹⁸ City of Toronto, Manager, Transportation Services: "Staff report for action on Harbord-Hoskin Bicycle Lane Upgrades", April 22, 2014, p. 1.

¹⁹ *Ibid,* p. 20.

²⁰ Barton-Aschman Canada Limited in association with Peat Marwick and Partners: "Planning for Urban Cycling", prepared for City of Toronto, 1979.

Measurements on Bloor St. between 1979 and 1983 --- based on the "8-hour maximum cycling volume"²¹ --- showed an increase in cycling levels from 768 to 1,437. The 1983 Bloor cycling volume was far greater than both the 986 cyclists for the 8-hour maximum volume on the Harbord bike route and also higher than the 8-hour maximum on the College/Carlton route.²² ²³

Date of Survey	Max 8-hr bike volume Bloor St	Max 8-hr bike volume Harbord St.	Min 8-hr bike volume Bloor St.	Min 8-hr bike volume Harbord St.
Aug., 1978	768	495	605	302
Aug., 1981	1,161	483	527	377
Sept., 1983	1,437	986	534	567

<u>**Table**</u>: City of Toronto bicycle counts, comparing Bloor to Harbord, adapted from October 11, 1983 letter from Works Commissioner²⁴

Based on these numbers, Works Commissioner Ray Bremner concluded:

The most recent bicycle surveys indicate as previously noted in my report of September 27, 1982 that Bloor Street is still the preferred route for the majority of east-west bicyclists travelling in the central area of the City.²⁵

Interestingly, Bremner simply recommended elimination of the Harbord-Hoskin-Wellesley bike route instead of recommending that Bloor St. be made safe for cyclists.

²¹ What is an "8-hour maximum cycling volume"? This is a measure of cycling volumes during the peak traffic periods of the day. It is also used to measure motor traffic. It is not a consecutive eight hour count. We understand the eight hour count would include the morning (6-9am) and afternoon 3:30-6:30pm) rush hours and the two hours at mid-day. This count would therefore only represent a portion of the total bicycle volume for a 24-hour period.

²² 1,037 cyclists were recorded on the College-Carlton bike route.

²³ City of Toronto, Letter, City Services Committee Commissioner Raymond Bremner, October 11, 1983, "Harbord Street/Wellesley Street Bicycle Route. (Ward 6)", p. 2-3. The measurements were taken on Bloor, Harbord, and College-Carlton between Spadina and Church Streets. The report noted that the highest volumes of bicycles were recorded on each street just east of St. George Street.

²⁴ City of Toronto, Letter, City Services Committee, October 11, 1983, "Harbord Street/Wellesley Street Bicycle Route. (Ward 6)" [Copy available from authors.]

²⁵ City of Toronto, Letter, City Services Committee, Commissioner Ray Bremner, October 11, 1983, "Harbord Street/Wellesley Street Bicycle Route. (Ward 6)", p 3.