Bike to the Future[1] Spring Bike Counts, Winnipeg 2009
July 8, 2009

Executive Summary

In the spring of 2009 Bike to the Future conducted its third annual spring bicycle traffic survey. During the months of March, April, May and June 33 volunteers completed 69 separate bicycle traffic counts during morning or afternoon rush hour. Most counts were done at locations leading into the downtown area, with some counts focusing on the University of Manitoba Fort Garry campus. Each count identified the number of cyclists traveling in each direction and whether they were riding in the street or on the sidewalks. In many cases counts were done at the same locations as in the 2007 and 2008, allowing for some comparisons from year to year. Based on these counts and on comparisons with earlier years the following conclusions were reached:

- An estimated 4,950 cyclists traveled in and out of downtown Winnipeg during weekdays in May and June of this year. This is a fraction of the total Winnipeg bicycle traffic, estimated at 12,000 cyclists per day during May and June.
- Between 2007 and 2008 bicycle traffic increased by an average of 17% but between 2008 and 2009, bicycle traffic decreased by 10%. Over the entire period from 2007 to 2009 bicycle traffic has increased by 12% (based on comparable times and locations).
- Comparisons of morning and afternoon counts at the same locations suggest that afternoon counts are about 28% higher on average than morning counts.
- Sidewalk riding by cyclists is common, especially on bridges and through underpasses, even though it is generally illegal and dangerous to both cyclists and pedestrians. In many locations a majority of cyclists ride on the sidewalk. The extent of sidewalk riding varies greatly, based on the nature of the location and facilities, the volume and speed of traffic, the presence of pedestrians and the time of day.
- Travel by bicycle is strongly influenced by weather, location and the nature of the facilities that are available.
- The majority of cyclists prefer separate multi-use pathways to riding in the street, at least when the path is reasonably direct, as evidenced by the large majority of commuters using the North Pioneer Greenway trail in preference to Gateway or Raleigh.
- Based on a limited number of counts it was found that male cyclists out-numbered female cyclists by about 3:1. This is consistent with data from the 2006 Census of Canada.
- Also based on a limited number of counts, it was found that bicycle helmets are used by about 60% of commuter cyclists, including 80% of cyclists riding in the street and 40% of cyclists riding on the sidewalks. A slightly higher percentage of women (64%) than men (57%) were wear helmets.
- On average, Bike to Work Day counts were 32% higher than the average counts recorded at the same locations in May or June of 2009. However Bike to Work Day counts in 2009 were 10% lower than comparable Bike to Work Day counts in 2008.

Direct counts are a useful way of monitoring the volume of bicycle traffic at key locations over time. Over the past three years Bike to the Future volunteers have started to build up a picture of cycling in

[1] Bike to the Future is an organization advocating for cycling in Winnipeg – see www.biketothefuture.org.

Winnipeg at key locations, but apart from the downtown routes, most bicycle traffic goes uncounted. These counts are most useful when they are done consistently at the same locations and times of day, and depending on the willingness of volunteers, should be continued in future years.

Purpose of Counts

This is the third year of spring bicycle traffic counts carried out at key locations by Bike to the Future volunteers. Our purpose is to document the level of bicycle traffic during rush hour at key locations into and out of downtown Winnipeg and at other locations. We also want to create estimates of the overall level of bicycle traffic and establish baseline and trend data to help see if bicycle use is increasing over time or in response to infrastructure improvements and educational campaigns.

Timing

Three sets of counts were done in 2009 near the beginning of April, May and June. These counts were done on mid-week days, Tuesday, Wednesday or Thursday, because these are considered the most typical for traffic commuting patterns. Most counts were done during the first week of each month, the target time period. The first week of June coincided with the national Commuter Challenge campaign, as it did in the previous two years. (Commuter Challenge encourages people to bike or walk to work.) The counts were intended to cover two hours during the morning or evening rush hour. An extra set of counts was also done as part of Bike to Work Day on Friday, June 19.

Survey Methods

Counts were carried out by volunteers recruited mainly through the Bike to the Future email newsletter. It is assumed that most or all of the volunteers cycle regularly themselves. A tally sheet and survey instructions were provided by email to volunteers. The tally sheet allows volunteers to count cyclists passing a given point within five minute time blocks, identifying those traveling on the street separately from those traveling on the sidewalk. There are separate columns for those traveling “in” or “out” which is defined by the volunteer. In some cases volunteers counted pedestrians as well as cyclists, and in other cases volunteers kept track of the gender of the cyclists and whether they were wearing helmets. However this was optional, depending on the volunteer’s interest and whether or not it was too busy for them to keep track of more than just the number of cyclists. Volunteers were told to count cyclists passing a specific point, and to ignore other cyclists in the area who don’t pass this point. At intersections volunteers counted cyclists on only one street at a point just before or after the intersection. Sometimes volunteers recorded traffic on both streets at an intersection, as two separate counts. In this case some of the cyclists who turned were included in both counts, and other turning cyclists were not counted at all, keeping to the rule that they had to pass a specific point to be counted.

The survey manager responded to questions to clarify methods and locations. In 2009 many of the volunteers had carried out counts in previous years, however there were also many new volunteers, allowing for an increased number of counts and locations, particularly in May 2009. A few volunteers have taken ownership for a particular counting location and have done as many as eight or nine counts at one location over the three years. Results of the counts were sent to the survey manager by email, usually by completing a spreadsheet reporting form that was provided.

Sometimes volunteers delivered the actual tally sheet to the survey manager or faxed it in, and in other cases they reported summary statistics in an email message.

Locations and Counts

In total 35 volunteers carried out 69 separate counts at 36 locations. (See table below.) The counts took place at a number of key "choke points," particularly bridges and underpasses leading into or out of downtown. In addition, some counts took place at outlying locations that are considered important for various reasons. For the first time this year counting was done on the North Pioneer Greenway, and the adjacent streets. Other first time locations include the Disraeli Bridge and Freeway, St. Vital Bridge, Mostyn Rd/Assiniboine Ave, two St. James locations – Portage at Queen, and Bruce at Overdale, as well as new locations around the University of Manitoba campus. The locations were selected based on the following considerations:

1. The location is a "choke point" that cyclists need to pass through on their trip to and from downtown;
2. The location will provide baseline data for an existing or planned bike route, as identified in the City of Winnipeg's Active Transportation Plan and map;
3. The location provides data where a bike route or improved biking facilities have been built recently; and/or
4. The location is one where counts have taken place in the past.

In addition, since this was a volunteer effort being done by cyclists themselves, the choice of locations is in part dictated by the convenience of the location for volunteers, and by their particular interest and knowledge of neighbourhoods where they frequently travel.

The following table lists all the counts received this year by time period, whether the counts were done in the morning or afternoon rush hour, weather conditions and the exact counting time period. Weather conditions were based on records for Winnipeg airport for a mid-point of the counting period (7:00 am fro morning rush hour or 4:00 pm for afternoon rush hour). The counts shown in the table are for a two-hour period. Usually the counts were for exactly two hours, but where the counts were for a shorter period a two hour estimate has been made. When the counting period was longer, only two hours of data were used. The table also shows "Road %," the percentage of cyclists who were riding in the street, as opposed to on the sidewalk.

Some of the factors shown in the table are related to the bike counts. Counts done earlier in the spring are usually lower, presumably because of weather conditions or because seasonal cyclists have not yet started cycling to work. Counts done in the mornings are generally lower than those done in the afternoons at the same location. It can be seen that the percentage cycling in the road fluctuates greatly. This appears to be related to such things as the width of the road, the amount of traffic, the width of the sidewalk, and the number of pedestrians. Locations where the road percentage is shown as "n.a." are places where there is a multi-use path or sidewalk but no road.

Summary of Bicycle Traffic Counts Completed in Winnipeg, Spring 2009

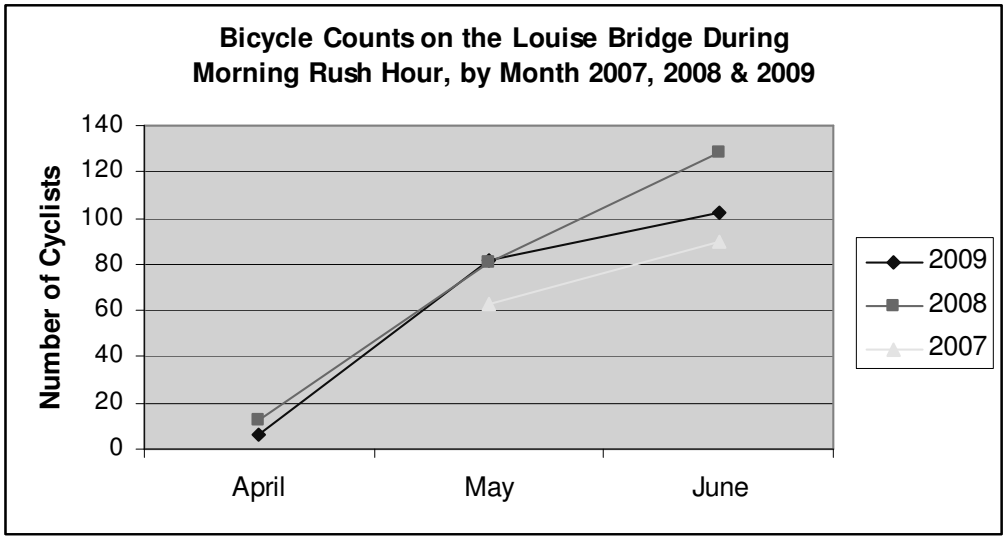
Date	Location	Weather	Start	End	2 hour count or estimate	Road %
APRIL COUNTS - MORNING RUSH HOUR						
Mar-31	Louise Bridge	-6° NE 24	7:00	9:00	6	0.0%
Mar-31	Ellice at Arlington	-6° NE 24	7:00	9:00	1	100.0%
Mar-31	Arlington at Ellice	-6° NE 24	7:00	9:00	2	50.0%
Apr-08	Univ Cres at Markham Rd	-1° partly cloudy, windy	7:25	8:30	17	100.0%
Apr-16	Grierson back lane (path to University)	9° light mist	7:00	8:30	4	100.0%
APRIL COUNTS - AFTERNOON RUSH HOUR						
Mar-31	Ellice at Arlington	-1° light wind, snowing	3:00	5:00	10	70.0%
Mar-31	Arlington at Ellice	-1° light wind, snowing	3:00	5:00	10	30.0%
Apr-02	Sherbrook/Maryland Bridges	0°, melting snow, NW 18	3:30	5:30	19	52.6%
Apr-02	Osborne Bridge	0°, melting snow, NW 18	3:25	5:25	26	65.4%
MAY COUNTS - MORNING RUSH HOUR						
May-04	Main St Bridge	6° clear, S 20	6:30	8:30	250	31.2%
May-05	Jubilee @ Lilac	10° partly cloudy, SE 17	6:40	8:40	82	30.5%
May-05	Argue @ Lilac	10° partly cloudy, SE 17	6:40	8:40	23	100.0%
May-05	Lilac @ Jubilee	10° partly cloudy, SE 17	6:40	8:40	18	100.0%
May-05	Midtown Bridge	10° partly cloudy, SE 17	6:30	8:30	53	62.3%
May-05	Waterfront Drive @ Lombard	10° partly cloudy, SE 17	6:40	8:30	137	54.0%
May-05	Osborne Underpass	10° partly cloudy, SE 17	7:25	8:40	170	31.1%
May-05	River Trail @ Mulvey	10° partly cloudy, SE 17	7:25	8:40	35	n.a.
May-05	Main St @ Higgins	10° partly cloudy, SE 17	7:03	9:00	98	31.6%
May-05	Pembina Underpass	10° partly cloudy, SE 17	6:30	8:30	136	50.7%
May-05	Louise Bridge	10° partly cloudy, SE 17	6:30	8:30	82	4.9%
May-05	Omand's Creek – Foot Bridge	10° partly cloudy, SE 17	6:45	8:45	109	n.a.
May-05	Disraeli Bridge (west end)	10° partly cloudy, SE 17	6:57	8:41	39	55.9%
May-05	Provencher Bridge/ Esplanade Riel	10° partly cloudy, SE 17	7:00	9:00	145	22.1%
May-05	Osborne Bridge	10° partly cloudy, SE 17	6:30	8:30	176	71.0%
May-05	Mostyn St/Assiniboine Ave	10° partly cloudy, SE 17	6:30	8:30	84	100.0%
May-05	St Vital Bridge	10° partly cloudy, SE 17	6:40	8:40	79	59.5%
May-05	North Pioneer Greenway/ Gateway/Raleigh @ Chalmers	10° partly cloudy, SE 17	7:00	9:00	63	12.7%
May-06	Kings Dr @ Freedman (lane)	10° sunny, no wind	7:10	8:30	45	60.0%
May-07	Churchill Parkway (path)	3° light rain WNW 13	6:30	7:30	2	n.a.
MAY COUNTS – AFTERNOON RUSH HOUR						
May-05	Hargrave @ Assiniboine	18° partly cloudy, S 20	3:45	5:45	22	59.1%
May-05	Assiniboine @ Hargrave	18° partly cloudy, S 20	3:45	5:45	184	86.4%
May-05	Osborne Underpass	18° partly cloudy, S 20	3:30	5:30	222	41.0%
May-05	Midtown Bridge	15° overcast, light breeze	4:00	6:00	94	56.4%
May-05	Osborne Bridge	15° overcast, light breeze	3:30	5:30	325	40.6%
May-05	Portage Underpass	15° overcast, light breeze	4:00	6:00	210	10.0%
May-05	North Pioneer Greenway/ Gateway/Raleigh @ Chalmers	15° overcast, light breeze	3:30	5:30	92	4.3%

Summary of Bicycle Traffic Counts Completed in Winnipeg, Spring 2009

Date	Location	Weather	Start	End	2 hour count or estimate	Road %
May-05	Portage @ Queen	15° overcast, light breeze	4:00	6:00	86	39.5%
May-05	Ellice at Arlington	15° overcast, light breeze	3:39	5:00	79	32.1%
May-06	Norwood Bridge	19° cloudy, S 24	3:30	5:30	262	27.5%
May-06	Disraeli @ Main St.	19° cloudy, S 24	3:55	5:55	32	65.6%
May-06	Main St @ Disraeli	19° cloudy, S 24	3:55	5:55	101	22.8%
May-06	Waterfront Dr near Provencher	19° cloudy, S 24	3:30	5:30	169	23.1%
May-06	Slaw Rebchuk Bridge (south end)	19° cloudy, S 24	3:30	5:30	88	47.7%
May-06	Logan @ Salter	19° cloudy, S 24	3:30	5:30	33	24.2%
May-06	Bruce @ Overdale	19° cloudy, S 24	4:15	6:00	74	92.3%
May-07	Omand's Creek – Foot Bridge	3° overcast, NW 20	3:35	5:35	48	n.a.
May-07	Sherbrook/Maryland Bridges	3° overcast, NW 20	3:35	5:35	113	31.0%
May-07	Churchill Parkway between Daly & Cockburn	3° overcast, NW 20	4:25	6:00	13	90.0%
JUNE COUNTS - MORNING RUSH HOUR						
June 2	Louise Bridge	6° clear, N 17	6:30	8:30	102	2.0%
Jun-02	Omand's Creek – Foot Bridge	6° clear, N 17	6:40	8:10	125	0.0%
June 3	Pembina Hwy @ St Maurice School	10° sunny, SW 15	6:38	8:38	149	53.0%
Jun-03	Osborne Underpass	12° sunny, SW 15	7:00	9:00	178	30.9%
Jun-04	Pembina-Jubilee Underpass	7° cloudy, NW 7	6:35	8:30	121	50.9%
JUNE COUNTS - AFTERNOON RUSH HOUR						
June 3	Sherbrook/Maryland Bridges	21° overcast, NW 28	3:35	5:35	393	32.6%
Jun-05	Osborne Bridge	10° sunny, NW 17	3:30	5:30	276	43.5%
Jun-10	Univ Cres @ Thatcher	14° cloudy, NW 24	3:30	5:20	185	48.2%
BIKE TO WORK DAY COUNTS - MORNING RUSH HOUR						
Jun-19	Omand's Creek – Foot Bridge	18° cloudy, SW 6	6:20	8:40	199	0.0%
Jun-19	Sherbrook/Maryland Bridges	18° cloudy, SW 6	7:35	9:05	356	51.7%
Jun-19	Main St. @ Higgins	18° cloudy, SW 6	6:30	8:30	108	38.9%
Jun-19	Main St Bridge	18° cloudy, SW 6	6:30	9:00	289	47.4%
Jun-19	Provencher Bridge/Esplanade Riel	18° cloudy, SW 6	6:30	9:00	215	15.2%
Jun-19	Louise Bridge	18° cloudy, SW 6	6:30	8:30	126	8.7%
Jun-19	Pembina-Jubilee Underpass	18° cloudy, SW 6	6:50	8:55	204	56.1%
Jun-19	Fort Garry Bridges	18° cloudy, SW 6	7:40	9:00	105	1.4%
Jun-19	Osborne Bridge	18° cloudy, SW 6	6:30	8:30	257	73.5%
BIKE TO WORK DAY COUNTS - AFTERNOON RUSH HOUR						
Jun-19	Main St Bridge	17° light rain, NW 24	3:30	5:30	317	43.2%
Jun-19	Provencher Bridge/Esplanade Riel	17° light rain, NW 24	3:30	6:00	226	10.2%
Jun-19	Osborne Bridge	17° light rain, NW 24	3:30	6:00	327	52.6%
Jun-19	Sherbrook/Maryland Bridges	17° light rain, NW 24	3:30	5:30	334	32.3%

Impact of Weather and Time of Year

It is clear from the table that counts from March or April are lower than those from later in the spring, and that counts done on cool or rainy days are lower than those on warm, sunny days. The following figure illustrates the seasonal trend by looking at one location, Louise Bridge, where we have a good record of counts from 2007 through 2009. It can be seen that the counts in all three years follow a similar trend, increasing from a very low level in April and reaching a peak in June. April counts in these two years were about 6% to 10% of June counts at this location.



Estimates of Downtown Commuter Cyclists

It is difficult to translate these counts into estimates of total commuter cyclists in Winnipeg for several reasons. First, not all possible routes are included. Second, some cyclists travel past several of the counting points on their commuting routes. Third, some cyclists travel within smaller geographic areas and may not leave their neighbourhoods. In order to estimate commuter cycling into and out of the downtown area, all the distinct routes in/out of downtown were identified in a **downtown circle** of locations. While it is possible that someone could cross more than one of these routes on their way to work, it is not likely if they are proceeding towards downtown. At the same time, some possible routes are not covered, such as routes along Notre Dame Ave. or the Arlington Bridge.

Estimate of Total Traffic In/Out of Downtown Winnipeg – Spring 2009

Selected Locations ("Downtown Circle")	May Counts		June Counts		May-June Avg		Estimate
	AM	PM	AM	PM	AM	PM	
Slaw Rebchuk Bridge		88				88	88
Louise Bridge	82		102		92		92
Main St @ Higgins	98				98		98
Provencher Bridge/Esplanade Riel	145				145		145
Disraeli Bridge (west end)	39	32			39	32	36
Main St /Norwood Bridges	250	262			250	262	256
Midtown (Donald) Bridge	53	94			53	94	74
Osborne Bridge	176	325		276	176	300	238
River Trail @ Mulvey	35				35		35
Sherbrook/Maryland Bridges		113		393		253	253
Omand Foot Bridge	109	48	125		117	48	83
Portage Ave underpass		210				210	210
St Matthews @ Arlington							70*
Ellice @ Arlington		79				79	79
Sargent @ Arlington							44*
Wellington @ Arlington							47*
Arlington @ Ellice							50*
Mostyn/Assiniboine Ave	84				84		84
Totals							**1,980**
Estimated Total Daily Traffic**							**9,901**
Estimated Cyclists (50% of Total Traffic)							**4,950**

* No counts were done at these locations in 2009. Instead, average counts from previous years were used, updated to reflect average increase/decrease in counts from year to year.

** A Portland study showed that peak rush hour traffic (2 hour counts) is about 20% of total daily traffic – see Mia Birk and Roger Geller, "Bridging the Gaps: How the Quality and Quantity of a Connected Bikeway Network Correlates with Increasing Bicycle Use," July 27, 2005, p. 13, presented at the Transportation Research Board Annual Meeting, January 22, 2006.

Available data for Winnipeg suggests a similar ratio. For example, an October 1990 survey of Fort Garry Bridge counted 232 bicycles between 7:00 AM and 6:00 PM, including 45 during the morning rush hour (15%) and 64 during the afternoon rush hour (27%). The average of morning and afternoon rush hours (54.5) is about 24% of the total count. This percentage somewhat higher than it would be if cyclists had been counted for a full 24 hour period, including the hours from 6:00 PM – 7:00 AM.

For most of the downtown circle locations we have at least one or two counts this year in May and June. April counts are much lower and have been excluded from the calculations of typical spring commuting. In some cases we have morning counts and in other cases we have afternoon counts. Generally, afternoon counts are substantially higher than morning counts as will be shown below, and June counts are usually higher than May counts. In this analysis the May-June morning counts and the May-June afternoon counts were averaged separately, and then the resulting morning and afternoon averages were in turn averaged to arrive at an overall average volume of cyclists for a two-hour peak period. Where no counts were available for 2009, averages from previous years were used, and these were adjusted according to trends in numbers of cyclists from year to year (described elsewhere in this report).

As shown in the table, this results in average peak rush hour traffic of 1,980 cyclists for this set of locations. The total bicycle traffic over the course of a day is estimated at 9,901. Based on the assumption that these cyclists are passing once in each direction, the number of *cyclists* is half of this number, or **4,950 cyclists**. This should not be viewed as an estimate of total commuter cyclists in the city. Data from Bike to Work Day and other surveys shows that commuter cyclists are traveling between all regions of the city, which does not have to include the downtown. For example, a substantial number of cyclists, students and employees, commute to and from the University of Manitoba's Fort Garry campus, and the largest numbers of these students live in the Fort Rouge, Fort Garry and Fort Richmond areas, so that their commuting routes are totally outside of the downtown area. According to the Bike to Work Day data from 2008, only 40% of those registered actually travel between downtown and other parts of the city. This would suggest that in total as many as **12,000 cyclists may commute regularly in Winnipeg during May and June**.

Cycling Trends from 2007 to 2009

Counts done at the same locations and times in 2007, 2008 and 2009 were compared to see what the trend has been over this time period. In order to compare any two counts, they had to take place in the same month and at the same time of day. The following table shows all of the locations where we have comparable counts for the same location, month and time of day in different years. Three different sub-totals are shown in the table. Where there were comparable counts in the years 2007 and 2008 these counts are totalled as sub-total A. Where there were comparable counts in the years 2008 and 2009, these counts were totalled as sub-total B. And where there were comparable counts in the years 2007 and 2009, these were totalled as sub-total C. For each pair of sub-totals, the difference and percentage change were calculated.

These comparisons could be affected by weather conditions on the day of the count. Counts done on a particularly cold or rainy day are likely to be low, while those done on a pleasant, sunny day are likely to be higher. It may also be true that cycling patterns are shifting and that some locations are experiencing more growth in cycling and others less. It is hoped that these individual variations in counts are averaged out to some degree as the number of comparisons increases. In the table below there are nine sets of comparable counts between 2007 and 2008, 10 sets of comparable counts between 2008 and 2009, and 15 sets of comparable counts between 2007 and 2009.

Theese comparisons suggest that cycling increased by 17% between 2007 and 2008, and then decreased by 10% between 2008 and 2009. Overall, the volume of cycling seems to be about 12% higher in 2009 than it was in 2007.

Possible explanations for these results include weather and the economy. Cycling numbers are clearly affected by weather conditions, and 2009 had a particularly late spring, with snow as late May and frost in June. Cycling may have also been affected by gas prices which spiked in 2008 but declined in 2009. Average retail gasoline prices in Winnipeg were about $1.00 per litre in May 2007, about $1.22 per litre in May 2008, and about $1.00 per litre again in May 2009. In addition, the unemployment rate was higher in 2009 than in 2008, reducing the number of people commuting to work. In May 2008 Winnipeg had a labour force of 397,100 and an unemployment rate of 4.3%, while in May 2009 the labour force had dropped to 393,000 and the unemployment rate was 5.0%.

Cycling Trends in Winnipeg, 2007 – 2009 Based on Comparable Counts

Location	2007	2008	2009	Change Number	Change Percent
May Counts					
Jubilee & Lilac - AM	85		82		
Louise Bridge - AM	63	81	82		
Main St Bridge - AM		267	250		
Main St Bridge - PM	236		262		
Main St Underpass - AM	111		98		
Midtown Bridge - AM	47		53		
Midtown Bridge - PM	51		94		
Omand Bridge - AM	212	116	109		
Osborne Bridge - AM	173	189	176		
Osborne Bridge – PM	256		325		
Osborne Underpass - PM		136	222		
Pembina-Jubilee - AM	105	117	136		
Provencher/Riel - AM	115		145		
Sherbrook-Maryland - PM		285	113		
Waterfront Dr - AM	157		137		
June Counts					
Arlington @ Ellice - PM	49	51			
Ellice @ Arlington - PM	79	58			
Louise Bridge - AM	90	128	102		
Osborne Bridge - PM	309	387	276		
Sherbrook-Maryland - PM	189	360	393		
Comparable Sub-totals					
Sub-total A: 2007& 2008 (9 points of comparison)	1269	1487		218	17.2%
Sub-total B: 2008 & 2009 (10 points of comparison)		2066	1859	-207	-10.0%
Sub-total C: 2007 & 2009 (15 points of comparison)	2199		2470	271	12.3%

Sidewalk Use

Although cycling on sidewalks is generally illegal in Winnipeg, many cyclists do, in fact, ride on the sidewalks, either for convenience or because of fear of riding in the street. Our counting locations are often at "choke points" with higher volumes of car traffic, where cyclists have to go over a bridge or through an underpass, and where there isn't an option to take another, quieter street. This may influence many cyclists to ride on the sidewalks. We found a great deal of variability in the percentage of cyclists on the sidewalks at various locations, as shown in the following table.

Average Percentage of Cyclists Riding on Sidewalks
Showing Level of Sidewalk Use and Locations

Level of Sidewalk Use	Locations
Very High: 80-100%	Fort Garry Bridges Louise Bridge Portage Underpass Main St @ Disraeli Provencher Bridge/Esplanade Riel
High: 60-80%	Logan @ Salter Chancellor Matheson Rd Main St Underpass Jubilee @ Lilac Arlington @ Wellington Osborne Underpass Sherbrook/Maryland Bridges Portage @ Queen Main St Bridge
Moderate-High: 40-60%	Arlington @ Ellice Norwood Bridge Slaw Rebchuk Bridge Pembina Hwy @ St Maurice School Waterfront Dr near Provencher Ellice @ Arlington Disraeli Bridges (west end of bridges) Pembina-Jubilee underpass Hargrave @ Assiniboine University Crescent Midtown Bridge St Vital Bridge Osborne Bridge Kings Dr @ Freedman
Low: 20-40%	Disraeli @ Main St. Wellington @ Arlington Erin @ Ellice Balmoral @ Ellice Ellice @ Clifton St Matthews @ Banning Ellice @ U of Wpg Banning @ St Matthews
Very Low: 0-20%	Assiniboine @ Hargrave Churchill Parkway between Daly & Cockburn Wall @ Ellice Bruce @ Overdale Spence @ Ellice Waterfront Drive @ Lombard Argue @ Lilac Burnell @ St Matthews Clifton @ Ellice Home @ Ellice Lilac @ Jubilee Univ Cres at Markham Rd

It appears that sidewalk use is related to such things as the volume of car traffic, the width of the road, and the width of the sidewalks. For example, Louise Bridge is very narrow, has a high volume of traffic, and very few cyclists take the road. Another example is Provencher Bridge/Esplanade Riel, where the main bridge has a parallel pedestrian/cyclist bridge (Esplanade Riel). In this case cyclists can legally ride on the multi-use bridge and avoid traffic, and they do for the most part (in spite of a bit of inconvenience getting on and off Esplanade Riel). On the other hand, cyclists are much more willing to ride in the street on quieter side streets, such as Lilac or Home, or where there are bike lanes, such as Hargrave.

It is interesting to compare two relatively wide bridges with high traffic volumes: the Sherbrook-Maryland twin bridges and the Osborne bridge. Both have fairly wide sidewalks. Sherbrook-Maryland has three lanes of traffic in each direction with a "shy-lane" in each direction, often treated by cyclists as a bike lane. Osborne bridge has three lanes for southbound traffic, and two for northbound traffic, with a northbound shy-lane. While on average 61% of cyclists take the sidewalk across Sherbrook-Maryland, 41% take the sidewalk on Osborne. One possible explanation is that there are high volumes of pedestrians crossing Osborne on the sidewalks, making it more difficult for cyclists to ride on the sidewalks there. In fact, this is one location where conflicts between cyclists and pedestrians have been reported in the news and where police have issued tickets to cyclists on the sidewalks on occasion.

Numbers of pedestrians were counted in 37 of the counts done in 2008 and 2009 and the number of pedestrians per cyclist was computed for these counts. The average number of pedestrians per cyclist was then computed for different levels of sidewalk use by cyclists. As shown in the following table, where less than 60% of cyclists were riding on the sidewalk, the average number of pedestrians per cyclist was about 5, but where more than 60% of cyclists were riding on the sidewalk, the average number of pedestrians per cyclist was closer to 1. It appears that when the sidewalks are full of pedestrians, more cyclists will choose to ride in the street.

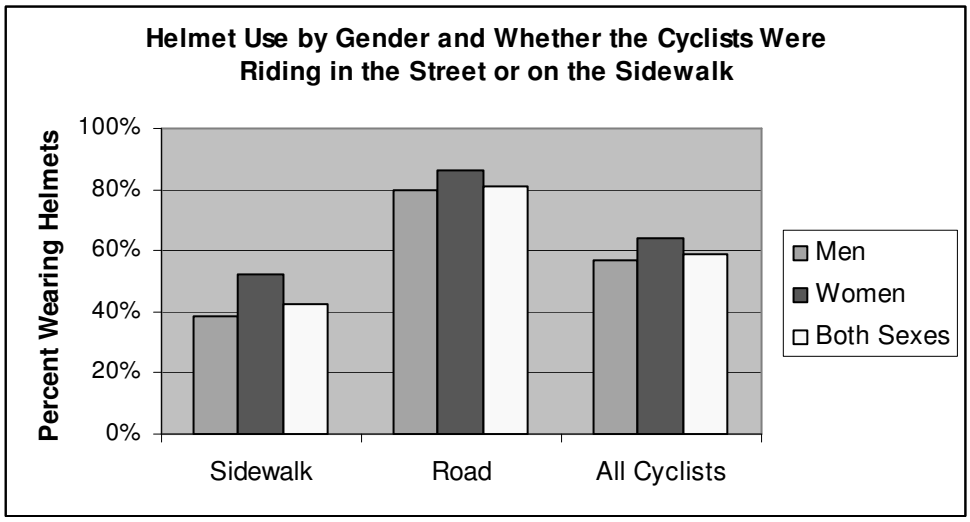
Percentage of Cyclists on Sidewalks and Average Numbers of Pedestrians/Cyclist Winnipeg, 2008 & 2009

Percentage of Sidewalk Riders	Pedestrians/Cyclist
0 – 39%	4.8
40 – 59%	5.0
60 – 100%	1.3

Helmet Use and Gender

In six of our counts (Main St. underpass, Main St. at Disraeli, Disraeli at Main St., Main St. Bridge and Pembina Highway at St. Maurice School) volunteers kept track of the gender of the cyclists and in these six counts they also kept track of whether the cyclists were wearing bicycle helmets or not. About 74% of cyclists were identified as male, and 26% as female, a ratio of almost 3:1. This is similar to data from the 2006 Census of Canada in which 71% of commuter cyclists in Winnipeg were identified as male and 29% as female.

Overall about 60% of the cyclists wore helmets, but this varied both by gender and by whether they were riding on the sidewalk or in the street. About 80% of those riding in the street wore helmets, but only 40% of those riding on the sidewalks wore helmets. In addition, a higher percentage of women wore helmets compared to men, especially among those riding on the sidewalk where 52% of women and only 38% of men wore helmets. In total, 64% of women and 57% of men wore helmets.



The higher rate of helmet use in the street may reflect a general perception that riding in the street is more dangerous than riding on the sidewalk and that helmets are less necessary when riding on the sidewalk (although research does not support this view). Or it may reflect the tendencies of different types of cyclists – regular commuter cyclists may be more likely to ride in the street and may also be more likely to have and use all the equipment needed for cycling on a regular basis, while more casual cyclists may be more likely to ride on the sidewalks and less likely to be fully equipped.

Morning and Afternoon Counts

Bicycle traffic counts have been consistently higher during afternoon rush hour than during morning rush hour. In the following table, all of the locations are shown where both a morning and an afternoon rush hour count was carried out within the some month and year. In total, 23 comparisons were possible, and of these 20 showed higher counts in the afternoon, often dramatically higher. When the totals of all the morning and all the afternoon counts were compared it was found that afternoon counts are 28% higher than morning counts, on average. One possible explanation for this is that cyclists prefer traveling in the afternoon when it is likely to be warmer and that the counts are capturing a certain amount of discretionary or non-work travel, such as people running errands, or those choosing to travel for work at that time of day. Another possible explanation is that students have finished their school day by this time and are biking to whatever late afternoon activities they may have (store, sports, visiting friends).

Comparison of Morning and Afternoon Counts
Completed for the same Year, Month and Location

Year	Month	Location	AM	PM	Difference	Percent
2007	JUNE	Arlington @ Ellice	44	49	5	11.4%
2007	JUNE	Arlington @ St. Matthews	48	58	10	20.8%
2007	JUNE	Ellice @ Arlington	42	79	37	88.1%
2007	JUNE	Osborne Bridge	262	309	47	17.9%
2007	JUNE	St Matthews @ Arlington	55	72	17	30.9%
2007	MAY	Midtown Bridge	47	51	4	8.5%
2007	MAY	Osborne Bridge	173	256	83	48.0%
2008	APRIL	University Cres @ Thatcher	23	29	7	28.9%
2008	JUNE	Sherbrook/Maryland Bridges	121	360	239	197.5%
2008	MARCH	University Cres @ Thatcher	13	8	-5	-40.0%
2009	APRIL	Arlington @ Ellice	2	10	8	400.0%
2009	APRIL	Ellice @ Arlington	1	10	8	400.0%
2009	BTWD	Main St Bridge	289	317	28	9.7%
2009	BTWD	Provencher Bridge/Esplanade Riel	215	226	11	5.2%
2009	BTWD	Osborne Bridge	257	327	70	27.2%
2009	BTWD	Sherbrook/Maryland Bridges	356	334	-22	-6.2%
2009	MAY	Main St Bridge	250	262	12	4.8%
2009	MAY	Midtown Bridge	53	94	41	77.4%
2009	MAY	NPG/Gateway/Raleigh @ Chalmers	63	92	29	46.0%
2009	MAY	Omand Bridge	109	48	-61	-56.0%
2009	MAY	Osborne Underpass	170	222	52	30.6%
2009	MAY	Osborne Bridge	176	325	149	84.7%
2009	MAY	Waterfront Drive near Provencher	137	169	32	22.9%
Total for 23 AM/PM pairs			**2906**	**3707**	**801**	**27.6%**

North Pioneer Greenway Counts

This year counts were carried out at the North Pioneer Greenway multi-use trail, and on the parallel streets of Gateway and Raleigh. Because this is a new trail intended in part to serve commuter cyclists, as well as recreational users, we wanted to know how much bicycle and pedestrian traffic it sees. In addition, some people have complained that the trail may not be ideal for commuter cyclists because of conflict with pedestrians or because of the design of the path itself. Our counts were carried out at the south end of the trail, at Chalmers and were done both in the morning and afternoon by two volunteers so that all three routes could be counted (North Pioneer Greenway, Gateway, and Raleigh).

In total, 63 cyclists were counted during the morning rush hour and 92 during the afternoon rush hour. Of these, the great majority were on the trail: 87% in the morning and 96% in the afternoon. There were not quite as many pedestrians as cyclists – 52 in the morning and 58 in the afternoon. In the morning 77% of the pedestrians took the trail with the remainder on the sidewalks on Gateway or Raleigh, and in the afternoon 97% took the trail. Therefore it appears that, at least during rush hour,

cyclists prefer to take the trail, and that conflict with pedestrians at these times is not great because of fairly low numbers of both pedestrians and cyclists.

Bike to Work Day Counting

Morning rush hour counts were carried out at eight locations on Bike to Work Day in 2009. This was less than during Bike to Work Day (BTWD) in 2008, but in 2009 counts also took place at four locations in the afternoon, which had not happened in 2008. A comparison of BTWD counts in 2008 and 2009 shows that counts were down at most locations this year, and that overall there was a 10% reduction in bicycle traffic between BTWD 2008 and BTWD 2009. (See table below.)

Bike to Work Day Comparisons: 2008 & 2009
Two hour morning rush hour counts

Location	2008	2009	Change	Percent
Louise Bridge	144	126	-18	-12.5%
Esplanade Riel/Provencher Bridge	249	215	-34	-13.6%
Osborne Bridge	275	257	-18	-6.5%
Pembina-Jubilee Underpass	210	204	-6	-3.1%
Fort Garry Bridges	117	105	-12	-10.3%
Sherbrook/Maryland Bridges	297	356	59	19.9%
Omand Foot Bridge	242	199	-43	-17.6%
Main @ Higgins	206	108	-98	-47.6%
Total (excluding Main & Higgins)	**1740**	**1570**	**-170**	**-9.8%**

On the other hand, the counts on BTWD 2009 were substantially higher than the other counts done in May and June of 2009. As the following table shows, at the seven counting locations BTWD counts were 32% higher than the average counts from May and June.

Bike to Work Day Impact on Cycling Numbers

Location	May/09	June/09	Average	BTWD 2009	Difference	Percent Change
Louise Bridge (AM)	82	102	92	126	34	37.0%
Esplanade Riel (AM)	145		145	215	70	48.4%
Main St & Higgins (AM)	98		98	108	10	10.2%
Main St Bridge (AM)	250		250	289	39	15.6%
Osborne Bridge (AM)	176		176	257	81	46.0%
Pembina-Jubilee underpass (AM)	136	121	129	204	75	58.4%
Omand Train Bridge (AM)	109	125	117	199	82	70.2%
Sherbrook/Maryland Bridges (PM)	113	393	253	334	81	32.0%
Total			**1560**	**2059**	**499**	**32.0%**

Acknowledgements

I would like to thank the following dedicated volunteers who contributed to the 2009 bicycle counts. Collectively we have been able to build baseline data and increase our knowledge about cycling patterns in Winnipeg, and this should prove useful in assessing the improvements that may take place in the coming years.

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-- Jeremy Hull, Survey Manager