

Commuter Cycling Trends in Winnipeg, 2007 - 2010

Executive Summary

Volunteers from Bike to the Future have been conducting spring counts of bicycle traffic since 2007 in order to provide solid information about the numbers of commuter cyclists in Winnipeg and cycling trends. During March, April, May and June of 2010 we completed 81 counts at 32 locations around Winnipeg, with an emphasis on major commuting routes and choke points. Since 2007 we have completed more than 200 counts and have created a data base that is increasingly useful for analysis of trends and factors affecting cycling in Winnipeg.

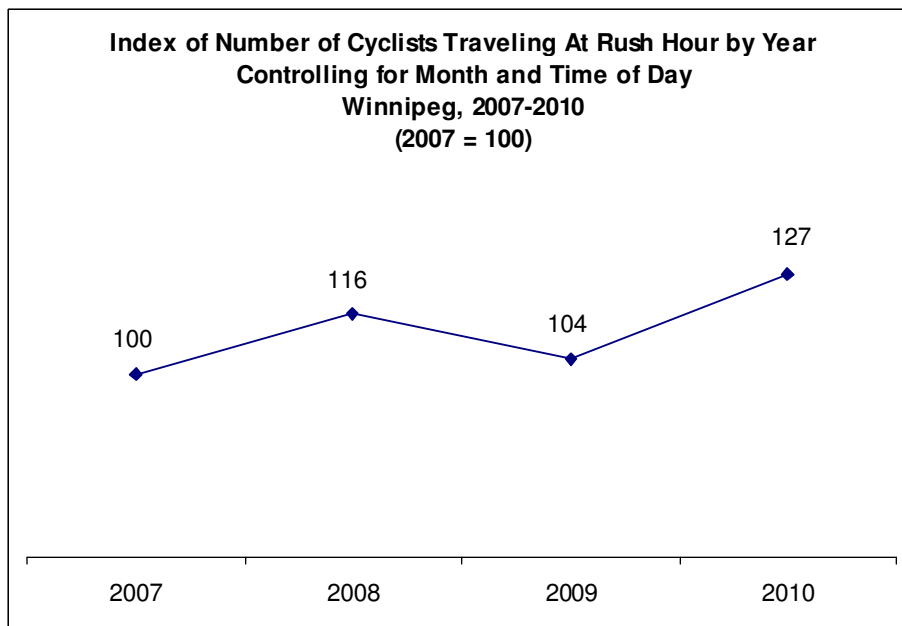
Our analysis resulted in these findings:

Trends from 2007-2010

Based on comparisons of counts done at the same location, month and time of day in different years it was found that:

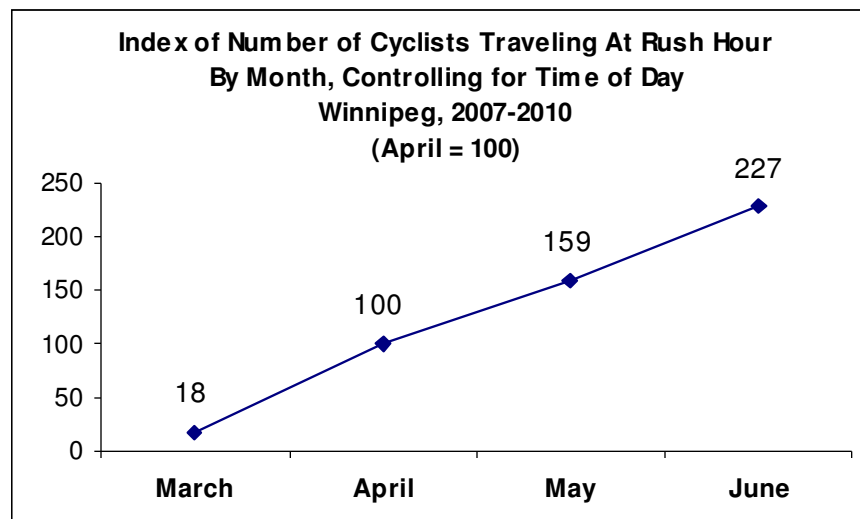
- between 2007 and 2008 commuter cycling numbers **increased** by 16%,
- between 2008 and 2009 the numbers **declined** by 10% and
- between 2009 and 2010 they **increased** again by 22%.

Overall, from 2007-2010 commuter cycling increased by an estimated 27%. The trend is illustrated in the following chart.



Monthly Trends

It was found that cycling numbers increased steadily from March through June. There were 59% more cyclists in May than in April, and 43% more cyclists in June than in May. Cycling numbers in March were 82% lower than in April.

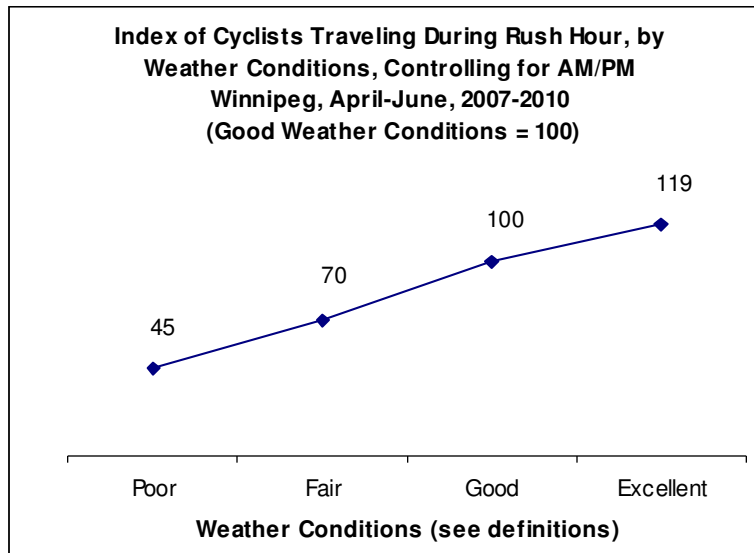


Daily Commuters to and From Downtown Winnipeg

- Based on the counts at a set of locations surrounding the downtown area of Winnipeg, total bicycle traffic in and out of downtown during a typical weekday in May or June (24 hours) is estimated at **11,800**.
- Based on the assumption that individual cyclists are each being counted twice, once in each direction, the number of downtown commuter cyclists is estimated at **5,900**.
- These estimates represent only a fraction of total cycling in the city since they do not include travel within neighbourhoods and in outlying parts of the city.

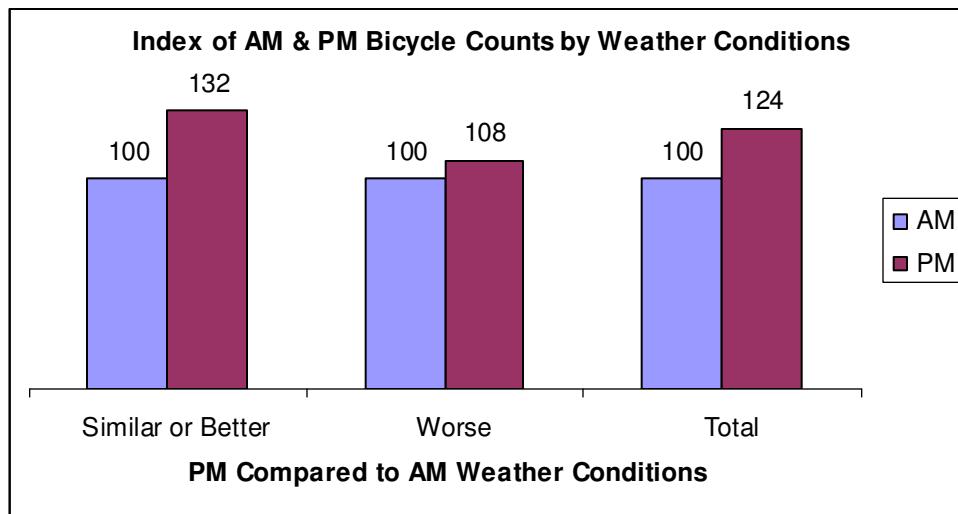
Impact of Weather Conditions

- A scale was created to describe weather conditions from poor to excellent from the standpoint of cycling. This scale allowed us to quantify the impact of weather on numbers of cyclists.
- The number of cyclists riding during poor weather was 45% of the number riding during good weather, while the number of cyclists riding during excellent weather was 19% higher than during good weather.



Morning and Afternoon Counts

On average, afternoon counts were 24% higher than morning counts for a given day and location. Even when controlling for changing weather conditions, afternoon counts were higher as shown in the chart:



Sidewalk and Street Riding

On average, 60% of cyclists were riding on the sidewalks at the locations where we did our counts.

This varied by type of location:

Percentage Riding on Sidewalks by Location

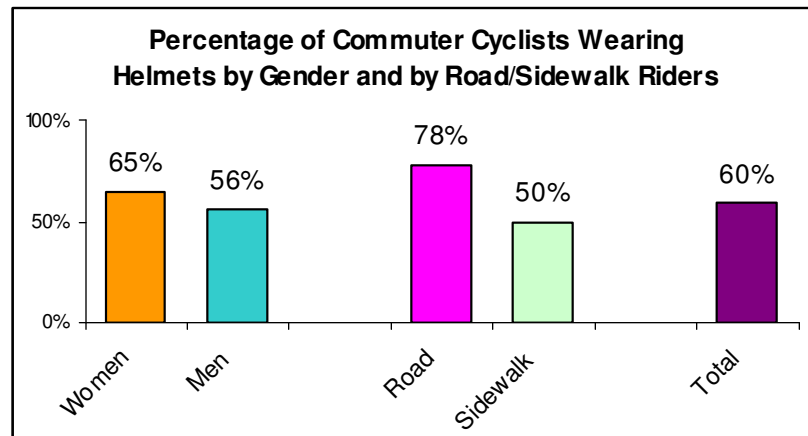
Bridges and underpasses = 65%

Other major arteries = 52%

Secondary streets = 31%

Helmet Use

- 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 78% of those riding in the street wore helmets, but only 50% of those riding on the sidewalks wore helmets.
- A higher percentage of women wore helmets (65%) compared to men (56%).



Commuter Cycling in Winnipeg, 2007-2010

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July 12, 2010

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1. Bicycle Counting in Winnipeg

For the past four years volunteers from Bike to the Future, the Winnipeg organization that promotes bicycling as transportation, have been counting the numbers of cyclists traveling during rush hour at selected locations. These counts have been done on weekdays at the beginning of each month in spring, March, April, May and June. The numbers of counts and locations have increased over the four years, and in 2010 we completed 81 counts at 32 locations. In total, over the four years we have completed 216 counts at 65 locations.

The purpose of these counts is to document the level of bicycle traffic during rush hour at key locations, especially into and out of downtown Winnipeg, but also at other locations. By counting repeatedly at the same locations during different months and years we are able to document trends in commuter cycling in Winnipeg. We are also able to create estimates of the total daily bicycle traffic at these locations. In the longer run these counts provide baseline data that may be helpful when planning and assessing improvements to cycling infrastructure or the impact of educational campaigns aimed at cyclists and motorists. The counts have already proved useful to the City of Winnipeg when road and bridge projects were being planned or proposed, such as the Osborne Bridge rehabilitation project and Pembina Highway renewal.

Locations have been selected with these goals in mind. We have focused on several bicycle commuting “choke points,” such as bridges and underpasses that cyclists are not able to avoid when traveling to or from the downtown area. We have also focused on locations slated for improvements. This year we have put particular emphasis on locations that will be affected by the 35 active transportation projects in Winnipeg funded under the federal government’s infrastructure stimulus program. Our counts were done prior to the beginning of construction of these active transportation projects. In addition to these projects other construction is taking place in Winnipeg this summer, notably the rehabilitation of the Jubilee overpass at Pembina Highway. Our counts at this location took place in early April, prior to the beginning of the construction project. However we also conducted counts in May on Jubilee Ave and these may have been affected by the Jubilee overpass rehabilitation project.

The choice of locations is also based on the availability, interest and convenience of our volunteers. A secondary purpose of the counts is to support the involvement of cyclists in various areas of the city in issues that affect cycling in their neighbourhoods. We see the counting process as one way for people to become involved, and we also value the local knowledge of cycling that these volunteers bring with them.

2. Survey Methods

Volunteers are recruited mainly through the Bike to the Future email newsletter. Many of the volunteers in 2010 also volunteered in previous years. Communications are generally conducted by email. A tally sheet that includes survey instructions is provided by email to each volunteer, along with a spreadsheet that can be used to summarize and report the results. 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” for the road and for each sidewalk. The tally sheets are adapted to various locations as required. Volunteers are given the option of counting pedestrians as well as cyclists, and of keeping track of the gender of the cyclists and whether they were wearing helmets.

The decision to include this information is based on the volunteer's interest and how busy the location is. At some times and locations it is too busy to try to keep track of all of these factors. Counts are generally "screen line" counts – that is counting all cyclists who pass a particular point, whether they are riding on the sidewalks or on the street, or on a bicycle path or trail. In some cases counters have also kept track of traffic on a second cross-street at an intersection – in other words doing two counts at the same time. At two locations where bicycle/foot bridges form a "T" type of intersection, counters have counted three streams of bicycle traffic.

A survey manager coordinates the counting process and locations and provides forms and other information to the volunteer counters. Volunteers usually deliver their counts by email as spreadsheets. They also have the option of scanning and emailing or faxing their tally sheets to the survey manager. The survey manager responds to questions from volunteers to clarify methods and locations, enters and analyzes the data, and follows up with volunteers when there is a need to clarify aspects of their reports.

Volunteers are asked to do their counts for two hours during either morning rush hour (between 6:30 and 9:00 am) or afternoon rush hour (between 3:30 and 6:00 pm), depending on their availability. In some cases volunteers have counted for shorter time periods, and in these cases their results are extrapolated to arrive at two hour estimates.

The targeted days for counting are Tuesday-Thursday during the first week of each month: March, April, May and June. This timing was selected to enable us to look at trends from month to month during the spring, and to look at typical mid-week commuting days. Most counts have been done during these targeted times and days, but a few counts have taken place in mid-month in order to accommodate volunteers' availability.

Most of the data from the individual counts is entered into a data base, including:

- Location
- Date
- Start and end times
- Total count
- Two hour count
- Number traveling "in" or "out" (defined according to local traffic flows)
- Number riding on the road, on the sidewalks or on a bike path
- Pedestrian count (two hour)
- Number of men and women, with or without helmets
- Weather conditions at 7:00 AM (for morning counts) or 4:00 PM (for afternoon counts), including temperature, wind speed, and precipitation, based on official weather data at the Winnipeg airport

In addition to the counts done at the beginning of the month, counts have also been done on Bike to Work Day since its inception in 2008. Bike to Work Day is a one day event that has taken place in late June of 2008, 2009 and 2010. For the purposes of this report, data from Bike to Work Day counts is not included, except for the analysis of morning/afternoon counts. (Bike to Work Day counts are reported separately as part of the reporting for that event.)

(Survey forms and instructions are available on request.)

3. Locations and Counts

From 2007 through 2010, 216 counts were carried out at 65 locations in Winnipeg. (See appended Table A.) The number of counts and timing has varied among locations, ranging from only one count to more than 10 counts at some locations. The number of cyclists counted per two hour rush hour ranged from 1 to more than 400, with the highest counts recorded at Norwood Bridge, Sherbrook-Maryland Bridges and Osborne Bridge. Where several counts were done in different months there was sometimes a wide range between high and low counts. For example, at Fort Garry Bridges the highest count was 188 while the lowest count was 4. These variations appear to be related to several factors, the foremost being weather conditions, followed by time of year and time of day. There have also been variations from year-to-year. All of these factors will be explored below.

4. Impact of Weather Conditions on Numbers of Cyclists

It is clear that weather conditions affect the numbers of people who travel by bicycle on a given day. In order to look at this weather data was incorporated into the data base and a set of weather categories was created based on temperature, precipitation and wind speed (see box).

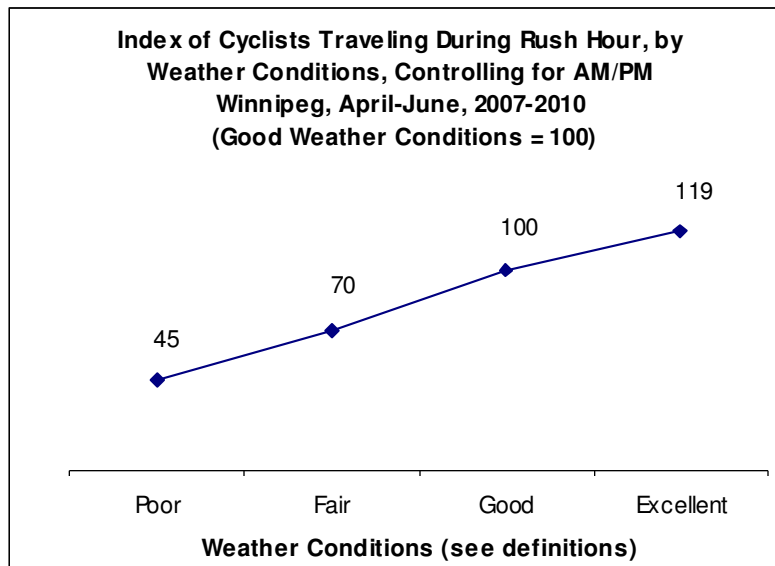
Weather Conditions – Definition of Categories	
Poor:	Rain or Snow, or Temperature less than 0° Celsius
Fair:	Temperature = 0° to 8° Celsius, or wind of 40 km/hr or more
Good:	Temperature = 9° to 17° Celsius with wind less than 40 km/hr
Excellent:	Temperature ≥ 18° Celsius with wind less than 40 km/hr

The definitions of the categories were arbitrary, based on one person’s sense of how these factors affect cycling. However it was found that these categories resulted in a clear relationship between weather conditions and numbers of cyclists, as shown in the following chart. The chart is the result of analysis of numbers of cyclists at a given location and time of day under different weather conditions. An index was created showing the average percentage differences in numbers of cyclists at these locations. (See table below and appendix Table B.)

Calculation of Index: Impact of Weather Conditions on Numbers of Cyclists Based on comparisons for the same location and time of day Winnipeg, 2007-2010			
Weather Conditions Compared	Percentage Difference in Number of Cyclists	Cumulative Percentage Difference	Index
Poor	---	---	45
Fair / Poor	+54%	54%	70
Good / Fair	+43%	120%	100
Excellent / Good	+19%	162%	119

It was found that the number of cyclists increased as weather conditions improved. The number of cyclists was 54% higher during “fair” weather than during “poor” weather, 43% lower during “good” weather than during “fair” weather, and 19% higher during “excellent” weather than during “good” weather. When the ratios are multiplied together it is found that the number of cyclists riding during good weather is 120% higher than during poor weather, and the number of cyclists riding during excellent weather is 162% higher than during poor weather.

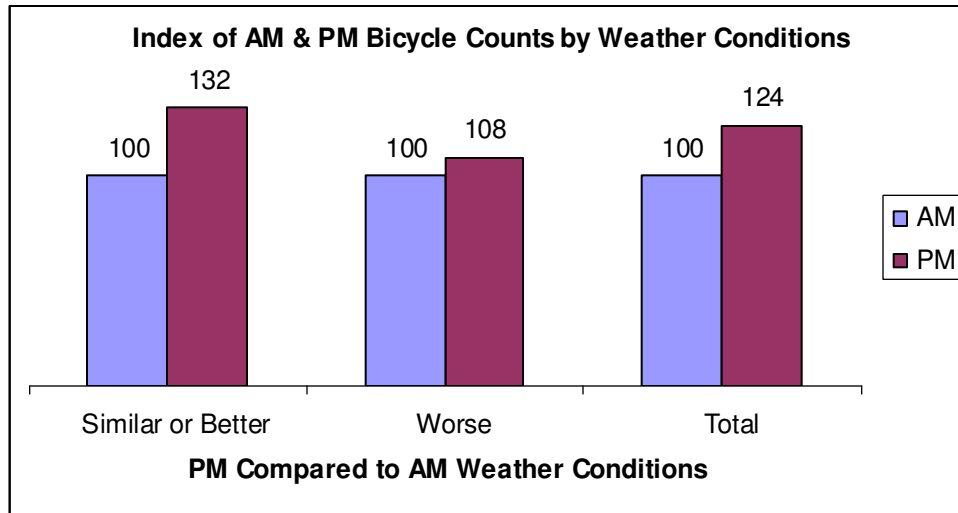
These relationships were converted to an index using good weather as the base and setting it to equal 100. The index could be interpreted in the following way: if 100 cyclists travel at a given location and time of day during good weather, then 45 are likely to travel at the same location and time of day during poor weather, 70 during fair weather, and 119 during excellent weather.



5. Morning and Afternoon Counts

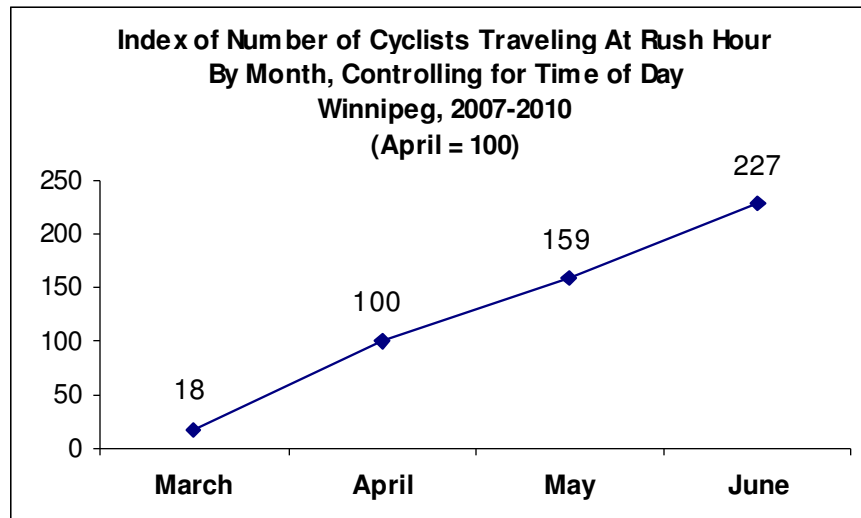
Afternoon rush hour bicycle counts are consistently higher than morning rush hour counts. In almost all cases where we have data to compare morning and afternoon counts done on the same day, the afternoon counts are higher. (See appendix Table C.) Two exceptions to this rule occurred where it rained heavily in the afternoon, although it wasn’t raining in the morning, and where there was a one-way street that favoured morning rush hour directional traffic.

Using data for 24 locations where morning and afternoon counts were done on the same day an index was created that took into account weather conditions, using the weather categories previously described. Where weather conditions were as good or better in the afternoon as in the morning, afternoon counts were 32% higher than morning counts. Where weather conditions were worse in the afternoon, afternoon counts were 8% higher than in the morning. Overall, afternoon counts were 24% higher than morning counts. Again, these percentage differences were converted to an index with morning counts set at 100. (See chart.)



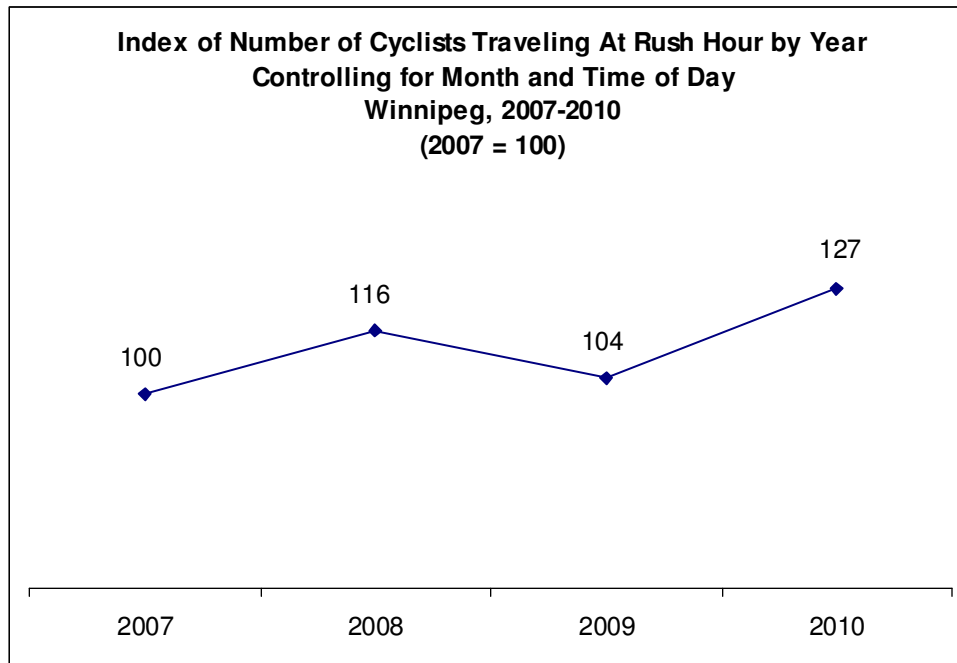
6. Monthly Trends

The rationale for doing counts over several months in the spring was that this strategy would capture the differences in numbers of cyclists from month to month. We wanted to confirm that the assumption of increasing cycling during the spring is correct, and the extent to which it is true. In order to do this, comparisons were made between counts made at the same location and time of day from month to month, during the same year. (See appendix Table D.) The month over month changes were calculated and an index was created, using a similar approach to the one described above for the weather index. April was set as the base month because we have very few counts for March. It was found that cycling numbers were 59% higher in May than in April, and 43% higher in June than in May. Cycling numbers in March were 82% lower than in April. These month / month differences result in the index numbers shown in the chart below. This suggests that there are likely to be 127% more cyclists in June than in April, while the number of cyclists in March is likely to be only 18% of the number cycling in April. It is assumed that much of the difference between months is due to differences in weather conditions, but weather was not incorporated into the month-to-month analysis.



7. Yearly Trends

As noted above, one of the purposes for the bicycle counts was to find out if commuter cycling has been increasing or decreasing in Winnipeg. Some of our counts have been done at the same locations, during the same month and at the same time of day in different years. Comparisons from year to year provide an indication of the overall trend in commuter cycling in Winnipeg.



In order to make year-to-year comparisons counts were matched by location, time of day and month. We had counts allowing us to make 10 direct comparisons between 2007, 12 between 2008 and 2009, and 18 between 2009 and 2010. Comparable counts for each pair of years were totalled and

the percentage changes were calculated. (See appendix Table E.) It was found that between 2007 and 2008 commuter cycling numbers **increased** by 16%, between 2008 and 2009 the numbers **declined** by 10% and between 2009 and 2010 they **increased** again by 22%. Over the whole three years commuter cycling the increase is estimated at 27%. The year-to-year changes were multiplied to arrive at the estimated cumulative change since 2007, and this is shown as an index in the above chart, with 2007 set to equal 100.

8. Estimates of Downtown Commuter Cyclists

It is difficult to translate these counts into estimates of total commuter cyclists in Winnipeg for several reasons. First, it is not possible to cover all routes among our counting locations. 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. On the other hand, our counting locations have been selected in part to include the major routes in and out of downtown Winnipeg.

Estimates of Total Traffic In/Out of Downtown Winnipeg – May-June 2010							
Selected Locations ("Downtown Circle" – clockwise starting at Main St & Higgins)	May Counts		June Counts		May-June Averages		AM-PM Average 2 Hr Count
	AM	PM	AM	PM	AM	PM	
Main St @ Higgins (underpass)	109	135	68	84	88	110	99
Louise Bridge	64	79	140	174	102	126	114
Disraeli Bridge (west end) *	48	59	68	85	58	72	65
Provencher Br/Esplanade Riel	177	212	253	303	215	257	236
Norwood Bridge	145	297	318	421	231	359	295
River Trail @ Mulvey *	44	47	62	67	53	57	55
Midtown Bridge	53	94	88	134	70	114	92
Osborne Bridge	215	192	333	397	274	295	284
Mostyn St/Assiniboine Ave *	102	127	147	182	125	154	139
Sherbrook/Maryland Bridges	121	298	123	410	122	354	238
Omand Park - Assin River Bridge	180	209	153	216	166	213	189
Portage Underpass *	84	256	120	366	102	311	207
St Matthews @ Arlington *	49	38	70	54	59	46	53
Ellice @ Arlington *	25	79	48	64	37	71	54
Sargent @ Arlington *	36	44	51	63	43	54	48
Wellington @ Arlington *	43	53	61	76	52	64	58
Arlington @ Ellice *	41	32	58	52	50	42	46
Slaw Rebchuk Bridge	19	107	83	154	51	130	91
Total 2 Hour Counts					1,898	2,830	2,364
Estimated Total Daily Traffic**							11,820
Estimated Cyclists (50% of Total Traffic)							5,910

* No counts were done at these locations in 2010. 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.

With this in mind, a circle of 18 counting locations have been selected that cover most of the ways that cyclists traveling between the downtown area and outlying areas would have to take. (See table.) 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, and those traveling within the downtown area, for example between the Wolseley neighbourhood and the Exchange area, would not travel past any of our counting points.

For most of the downtown circle locations we have at least one or two counts for May and June of this year. As we have shown above, April counts are lower and they have been excluded from the calculations of typical spring commuting. Where there no count for one of the two months, either May or June, in 2010, the missing count was estimated using the average May/June ratio. Where there were no counts for 2010, average year-to-year increases were used to update counts from earlier years. Because there is a large difference between morning and afternoon counts, they have been estimated separately. Where either the morning or afternoon counts were missing the average ratio between AM and PM counts was used to fill in the missing number.

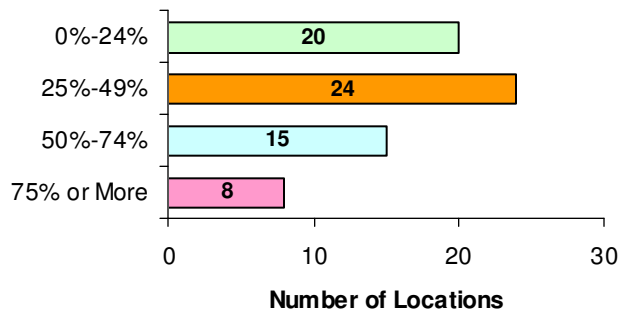
As shown in the table, this results in average morning rush hour traffic of about 1,900 cyclists and average afternoon rush hour traffic of about 2,800 for this set of locations. The total bicycle traffic over the course of a day (24 hours) is estimated at **11,800**. Based on the assumption that these cyclists are passing once in each direction, the number of *cyclists* is half of this number, or **5,900 cyclists** traveling in and out of downtown Winnipeg during weekdays.

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, and their routes do not need 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 Bike to Work Day registration data from 2008, only 40% of those who registered actually travel between downtown and other parts of the city. This would suggest that in total as many as 14,750 cyclists may commute regularly in Winnipeg during May and June.

9. Sidewalk Use

Although cycling on sidewalks is illegal in Winnipeg, except where explicitly permitted, many cyclists do, in fact, ride on the sidewalks, either for convenience or out of fear of riding in the street. (See appendix Table F.) Based on our counts over four years, an average of 60% of cyclists rode on the sidewalk and 40% in the street. The following chart shows the distribution of counting locations by the percentage of sidewalk riders.

**Number of Counting Locations
By Average Sidewalk Riding Percentage
(For Locations that Have Sidewalks)**



The percentage of sidewalk riders varied according to the type of street or location. On bridges and going through underpasses an average of 65% rode on the sidewalks, and on other major arteries an average of cyclists 52% rode on the sidewalks, but on secondary streets, only 31% rode on the sidewalks. (See table below.)

**Average Percentage of Cyclists Riding on the Sidewalk
By Type of Street or Location**

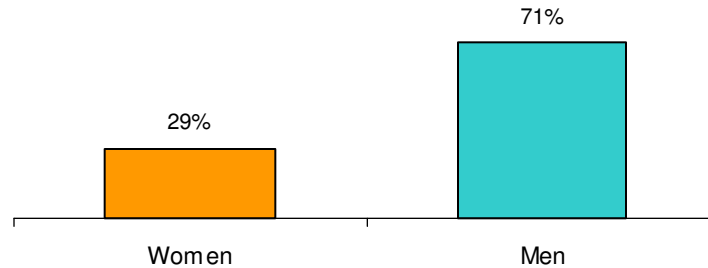
Type of Street or Location	Sidewalk %
Secondary Streets	31%
Major Arteries	52%
Bridges & Underpasses	65%
Total	60%

The behaviour of cyclists seems to depend on the particular location, the amount of traffic and the choices that are available to them. 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 many of them do. 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.

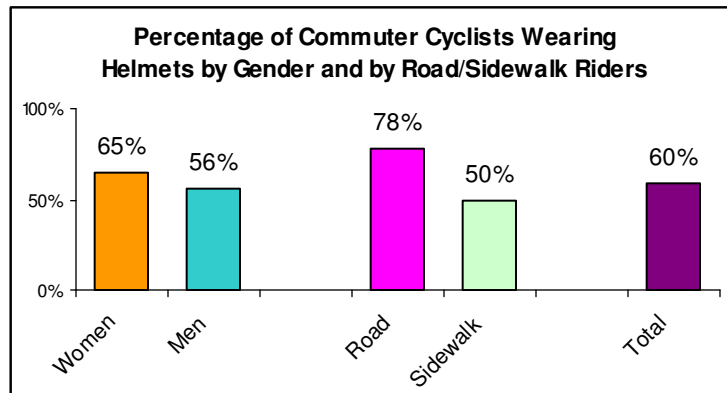
10. Helmet Use and Gender

In some of our counts volunteers kept track of the gender of the cyclists and whether cyclists were wearing bicycle helmets or not. About 29% of the commuter cyclists were identified as female, and 71% were identified as male. These are the same percentages identified in the 2006 Census of Canada in which found that 29% of commuter cyclists in Winnipeg were women and 71% were men.

Commuter Cyclists by Gender



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 78% of those riding in the street wore helmets, but only 50% of those riding on the sidewalks wore helmets. In addition, a higher percentage of women wore helmets (65%) compared to men (56%).



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 may be less likely to be fully equipped.

Acknowledgements

I would like to thank the following dedicated volunteers who contributed to the 2010 bicycle counts as well as those who have volunteered in previous years. 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. The following volunteers helped with bicycle counts in 2010 (including Bike to Work Day counts):

Kernal Aasland, Greg Adrian, Ken Berg, M. Sami Celal, Kevin Champagne, Mark Cohoe, Brion Dolenko, Laura Donatelli, Fanny Drouet, Dave Elmore, Brad Enns, Barrett Ens, Charles Feaver, Jeremy Hull, Linda Hull, Shannon Keys, Sophie Knowles, Florian Lassnig, Greg Loeb, Ted Mann, Greg Martin, Lindsey McBain, Gord McGonigal, Beth McKechnie, Bill Newman, Mackenzie Page, Danielle Payne, Holly Poklitar, Ken Preston, Bill Reid, Dale Sandmoen, Lisa Scharf, Jan Schmalenberg, Gareth Simons, Mike Sonnasinh, Lea Stogdale, Tina Tenbergen, Katherine Thompson, Mike Tutthill, David Wieser, John Wilmot, Philip Wolfart

-- Jeremy Hull, Survey Manager

Appendices

**Table A: Spring Bicycle Counts in Winnipeg, 2007-2010
By Location, Month and Time of Day**

**Table B: Average Two Hour Counts* by Time of Day, Location and
Weather Conditions**

**Table C: Morning and Afternoon Counts on the same Day and Location, by
Weather Conditions**

Table D: Monthly Trends by Year, Time of Day and Location

**Table E: Year-to-Year Counts* for Comparable Locations, Month and
Time of Day**

Table F: Average Percentage of Cyclists Riding on Sidewalks by Location

Charts of Count History for Selected Locations

Table A:
Spring Bicycle Counts in Winnipeg, 2007-2010
By Location, Month and Time of Day
Two-Hour Rush Hour Counts* or Estimates

Location		2007			2008				2009			2010			
		Ap	My	Jn	Mr	Ap	My	Jn	Ap	My	Jn	Mr	Ap	My	Jn
Argue @ Lilac	AM								23						
Arlington @ various	AM			46					2						
Arlington @ various	PM			54		31	51		10						
Assin Park Footbridge	PM												98		150
Assin @ Hargrave	PM								184						
Balmoral @ Ellice	AM						33								
Banning @ St Matthews	PM						18								
Bruce @ Overdale	PM								74				59		
Burnell @ St Matthews	PM						10								
Chancellor Matheson	AM					21									
Churchill Parkway	AM								2						
Churchill Parkway	PM								11						
Clifton @ Ellice	AM						10								
Dakota @ Bishop Grnd	PM												39	21	
Disraeli @ Main St.	PM								32						
Disraeli Bridge (west)	AM								39						
Ellice @ various	AM			42			44		1					25	
Ellice @ various	PM			79			58		10	79					
Elm Park Bridge (BDI)	AM													31	
Erin @ Ellice	AM						6								
Fort Garry Bridges	AM						72						39		
Fort Garry Bridges	PM			129		23						4	92	77	188
Grierson lane (Univ)	AM								4						
Grosvenor @ Harrow	PM												44	28	56
Hargrave @ Assin	PM								22						

**Table A:
Spring Bicycle Counts in Winnipeg, 2007-2010
By Location, Month and Time of Day
Two-Hour Rush Hour Counts* or Estimates**

Location		2007			2008				2009			2010			
		Ap	My	Jn	Mr	Ap	My	Jn	Ap	My	Jn	Mr	Ap	My	Jn
Harrow @ Grosvenor	PM												36		
Home @ Ellice	PM						17								
Jubilee @ Lilac	AM		86						82					35	
Jubilee @ Lilac	PM												84		
Kings Dr @ Freedman	AM								38						
Lilac @ Jubilee	AM		43						18					13	
Lilac @ Jubilee	PM												17		
Logan @ Salter	AM			13											
Logan @ Salter	PM								33						
Louise Bridge	AM		63	90	13	81	128	6	82	102		62	64	140	
Main St @ Disraeli	PM								101						
Main St @ Peguis Trail	PM												59		
Main St Bridge	AM					267			250						
Main St Bridge	PM		230												
Main St Underpass	AM		111	53					101					109	
Midtown Bridge	AM	8	47	69					53				38		
Midtown Bridge	PM		55						94						
Mostyn St/Assiniboine	AM								84						
Nassau @ Stradbrook	PM													60	148
Norwood Bridge	AM												174	145	318
Norwood Bridge	PM								262				208	297	421
NPG @ various	AM								63				40	42	
NPG @ various	PM								92						
Omand – Assin R Bridge	AM		174			116			109	125			93	180	
Omand – Assin R Bridge	PM								48				95	209	216
Osborne Bridge	AM	39	173	262		189			176						
Osborne Bridge	PM		256	309			387	26	325	276		297	192	397	

**Table A:
Spring Bicycle Counts in Winnipeg, 2007-2010
By Location, Month and Time of Day
Two-Hour Rush Hour Counts* or Estimates**

Location		2007			2008				2009			2010			
		Ap	My	Jn	Mr	Ap	My	Jn	Ap	My	Jn	Mr	Ap	My	Jn
Osborne Underpass	AM								172	178			108	102	188
Osborne Underpass	PM					136			222						
Parker Ave West	PM												37	25	50
Pembina @ St Maurice	AM										149				
Pembina @ Manahan	PM												76		
Pemb-Jubilee underpass	AM		130			117			136	121			82		
Pemb-Jubilee underpass	PM												106		
Portage @ Queen	PM								86						
Portage underpass	AM		66												
Portage underpass	PM								210						
Provencher Br & Espl	AM		115						145						
Provencher Br & Espl	PM														303
Raglan Road	AM	67		77											
River Trail @ Mulvey	AM								36						
River Trail @ Mulvey	PM					46									
Riverside @ Jubilee	AM													40	
Sargent @ Arlington	AM			40											
Sherbrook @ Cumberland	AM													25	
Sherbrook @ Cumberland	PM													21	
Sherbrook/Maryland Br	AM		214				121								
Sherbrook/Maryland Br	PM		268	189	22	285	360	19	113	393			298	410	
Slaw Rebchuk Bridge	AM			65		51								19	
Slaw Rebchuk Bridge	PM								88						
Somerville-Seel	PM												8	9	15
Spence @ Ellice	AM						27								
St Matthews @ various	AM			55											
St Matthews @ various	PM			72			53								

**Table A:
Spring Bicycle Counts in Winnipeg, 2007-2010
By Location, Month and Time of Day
Two-Hour Rush Hour Counts* or Estimates**

Location		2007			2008				2009			2010			
		Ap	My	Jn	Mr	Ap	My	Jn	Ap	My	Jn	Mr	Ap	My	Jn
St Vital Bridge	AM								79						
Stradbrook@ Nassau	PM													25	
Univ Cres at various	AM				13	23	76	121	18				81		167
Univ Cres at various	PM				8	29					136		82		
Wall @ Ellice	AM							12							
Waterfront @ Provencher	AM		168							137					
Waterfront @ Provencher	PM									136					
Wellington @ Arlington	PM							52							
Wellington @ Borebank	AM		103												
Waverley @ Taylor	AM													39	
Waverley @ Taylor	PM													155	
Total number of counts *		3	17	20	3	4	13	19	9	39	8	1	34	29	17
Annual Total		40			39				56			81			

* Some monthly counts are averages of two or more counts.

Table B
Average Two Hour Counts* by Time of Day, Location and Weather Conditions, April-June,
Winnipeg 2007-2010 (For locations with comparable AM or PM counts)

AM/PM	Location	Weather Conditions (see definitions)			
		Poor	Fair	Good	Excellent
AM	Arlington @ Ellice	2.0	32.5		
	Ellice @ Arlington	1.0	33.5		
	Fort Garry Bridges	72.0	39.0	117.0	105.0
	Jubilee @ Lilac	35.5		82.0	
	Lilac @ Jubilee	12.5	43.0	18.0	
	Louise Bridge	36.3	84.0	123.5	126.0
	Main St Bridge	267.0	250.0	403.0	289.0
	Main St Underpass	81.2	111.0	153.3	
	Midtown Bridge	28.1	70.0	56.0	
	Norwood Bridge	103.0	257.0	318.0	
	NPG @ Munroe	40.0	42.0		
	Omand – Assin River Bridge	93.0	138.4	177.0	199.4
	Osborne Bridge	39.0	188.9	221.5	257.0
	Osborne Underpass	107.8	95.0	181.6	
	Pembina-Jubilee Underpass	82.0	122.5	173.0	203.5
	Provencher Bridge/Esplanade Riel			169.7	215.2
	Raglan Road		66.7	77.0	
	Sherbrook/Maryland Bridges	121.0	214.0	297.0	356.0
	Slaw Rebchuk Bridge		58.0	60.8	
	University Cres @ Markham	74.0	83.7		
University Cres @ Thatcher	17.9	98.5			
Waterfront Dr near Provencher		168.0	137.5		
PM	Arlington @ Ellice	10.0		50.0	
	Assin Park Footbridge		98.3		150.0
	Bruce @ Overdale			58.7	74.3
	Dakota @ Bishop Grandin	21.0	39.0		
	Ellice @ Arlington	10.0		68.5	78.5
	Fort Garry Bridges	4.4	77.0	83.7	188.0
	Grosvenor @ Harrow	28.0	44.0	56.0	
	Main St @ Peguis Trail		55.0	62.0	
	Main St Bridge	317.0		230.0	
	Midtown Bridge	55.0			94.0
	Nassau @ Stradbrook		60.0		148.0
	Norwood Bridge		208.0	297.0	341.5
	Omand – Assin River Bridge		48.0	95.0	212.5
	Osborne Bridge	176.5	192.0	284.5	376.5
	Osborne Underpass		136.0		222.0
	Parker Ave West		25.0	36.6	50.0
	Provencher Bridge/Esplanade Riel	226.4		303.0	
	Sherbrook/Maryland Bridges	141.0	113.0	283.7	376.5
	Somerville-Seel		8.5		15.0
	University Cres @ Thatcher	8.0	29.0	136.4	

* Note: Some counts are averages of two or more counts for a given location, time of day and weather condition rating.

Table B Summary
Totals for Comparable Locations and Time of Day

Selected Sub-totals Where Data Exists for Consistent Locations and Time of Day	Weather Conditions				Ratio
	Poor	Fair	Good	Excellent	
Comparable Locations: Poor & Fair	1,556.6	2,397.0			1.54
Comparable Locations: Fair & Good		2,696.5	3,848.9		1.43
Comparable Locations: Good & Excellent			2,889.3	3,448.9	1.19
Index (Good = 100)	45	70	100	119	

Table C
Spring Bicycle Counts, Winnipeg, 2007-2010
Morning and Afternoon Counts on the same Day and Location, by Weather Conditions

Year	Date	AM/PM	Location	Weather Conditions	2 HR count	PM/AM
2007	Apr 30	AM	Midtown Bridge	Good	47	
2007	Apr 30	PM	Midtown Bridge	Poor	55	1.17
2007	May 1	AM	Sherbrook/Maryland Bridges	Fair	214	
2007	May 1	PM	Sherbrook/Maryland Bridges	Good	268	1.25
2007	June 4	AM	Arlington @ St. Matthews	Good	48	
2007	June 4	PM	Arlington @ St. Matthews	Good	58	1.21
2007	June 5	AM	Ellice @ Arlington	Fair	42	
2007	June 5	PM	Ellice @ Arlington	Good	79	1.88
2007	June 5	AM	Arlington @ Ellice	Fair	44	
2007	June 5	PM	Arlington @ Ellice	Good	49	1.11
2007	June 4	AM	St Matthews @ Arlington	Good	55	
2007	June 4	PM	St Matthews @ Arlington	Good	72	1.31
2009	March 31	AM	Arlington @ Ellice	Poor	2	
2009	March 31	PM	Arlington @ Ellice	Poor	10	5.00
2009	March 31	AM	Ellice @ Arlington	Poor	1	
2009	March 31	PM	Ellice @ Arlington	Poor	10	10.00
2009	May 5	AM	Osborne Underpass	Good	172	
2009	May 5	PM	Osborne Underpass	Excellent	222	1.29
2009	May 5	AM	NPG @ Chalmers	Good	63	
2009	May 5	PM	NPG @ Chalmers	Excellent	92	1.46
2009	May 5	AM	Osborne Bridge	Good	176	
2009	May 5	PM	Osborne Bridge	Excellent	325	1.85
2009	May 5	AM	Midtown Bridge	Good	53	
2009	May 5	PM	Midtown Bridge	Excellent	94	1.77
2009	June 19	AM	Main St Bridge	Excellent	289	
2009	June 19	PM	Main St Bridge	Poor	317	1.10
2009	June 19	AM	Osborne Bridge	Excellent	257	
2009	June 19	PM	Osborne Bridge	Poor	327	1.27
2009	June 19	AM	Provencher Br/Esplanade Riel	Excellent	215	
2009	June 19	PM	Provencher Br/Esplanade Riel	Poor	226	1.05

Table C
Spring Bicycle Counts, Winnipeg, 2007-2010
Morning and Afternoon Counts on the same Day and Location, by Weather Conditions

Year	Date	AM/PM	Location	Weather Conditions	2 HR count	PM/AM
2009	June 19	AM	Sherbrook/Maryland Bridges	Excellent	356	
2009	June 19	PM	Sherbrook/Maryland Bridges	Poor	334	0.94
2010	March 29	AM	University Cres @ Markham	Fair	56	
2010	March 29	PM	University Cres @ Markham	Good	82	1.46
2010	April 7	AM	Pembina-Jubilee Underpass	Poor	82	
2010	April 7	PM	Pembina-Jubilee Underpass	Fair	106	1.29
2010	April 7	AM	Norwood Bridge	Poor	174	
2010	April 7	PM	Norwood Bridge	Fair	208	1.20
2010	April 6	AM	Omand – Assin River Bridge	Poor	93	
2010	April 6	PM	Omand – Assin River Bridge	Good	95	1.02
2010	May 12	AM	Norwood Bridge	Fair	257	
2010	May 12	PM	Norwood Bridge	Good	297	1.16
2010	May 18	AM	Omand – Assin River Bridge	Good	180	
2010	May 18	PM	Omand – Assin River Bridge	Excellent	209	1.16
2010	May 5	AM	Sherbrook @ Cumberland	Poor	25	
2010	May 5	PM	Sherbrook @ Cumberland	Fair	21	0.84
2010	June 2	AM	Norwood Bridge	Good	318	
2010	June 2	PM	Norwood Bridge	Excellent	421	1.32
Total		AM			3,219	
		PM			3,977	1.24
Afternoon Weather Similar to or Better than Morning						
		AM			2,055	
		PM			2,718	1.32
Afternoon Weather Worse than Morning						
		AM			1,164	
		PM			1,259	1.08

Table D
Spring Bicycle Counts, Winnipeg, 2007-2010
Monthly Trends by Year, Time of Day and Location
Two Hour Rush Hour Counts* or Estimates

Year	Time of Day and Location	March	April	May	June
2007	AM Rush Hour				
	Louise Bridge			63	90
	Main St Underpass			111	53
	Midtown Bridge		8	47	69
	Osborne Bridge		39	173	262
	Raglan Road		67		77
	PM Rush Hour				
Osborne Bridge			256	309	
Sherbrook/Maryland Bridges			268	189	
2008	AM Rush Hour				
	Louise Bridge		13	81	128
	Univ Cres at various	13	23	76	121
	PM Rush Hour				
	Arlington @ various			31	51
Sherbrook/Maryland Bridges	22		285	360	
Univ Cres at various	8	29			
2009	AM Rush Hour				
	Louise Bridge		6	82	102
	Omand – Assin River Bridge			109	125
	Osborne Underpass			172	178
	Pembina-Jubilee Underpass			136	121
	PM Rush Hour				
	Ellice @ various		10	79	
Osborne Bridge		26	325	276	
Sherbrook/Maryland Bridges		19	113	393	
2010	AM Rush Hour				
	Louise Bridge		62	64	140
	Norwood Bridge		174	145	318
	Omand – Assin River Bridge		93	180	
	Osborne Underpass		108	102	188
	Univ Cres at various		81		167
	PM Rush Hour				
	Assin Park Footbridge		98		150
	Dakota @ Bishop Grandin		39	21	
	Fort Garry Bridges	4	92	77	188
	Grosvenor @ Harrow		44	28	56
	Nassau @ Stradbrook			60	148
	Norwood Bridge		208	297	421
	Omand – Assin River Bridge		95	209	216
	Osborne Bridge		297	192	397
Parker Ave West		37	25	50	
Sherbrook/Maryland Bridges			298	410	
Somerville-Seel		8	9	15	

* Note: Some counts are averages of two or more counts for a given location, time of day and month.

Table D Summary
Month to Month Count Totals for Comparable Locations, Years and Time of Day

Selected Sub-totals Where Data Exists for Consistent Locations and Time of Day	March	April	May	June	Month/ Month
March & April sub-totals	26	143			5.56
April & May sub-totals		1,499	2,386		1.59
May and June sub-totals			3,895	5,567	1.43
Index (2007=100)	18	100	159	227	

Table E
Year-to-Year Counts* for Comparable Locations, Months and Time of Day

Month, Location & Time of Day	2007	2008	2009	2010
April				
Louise Bridge – AM		13	6	62
Osborne Bridge – PM			26	297
University Crescent - AM		23	18	87
May				
Jubilee & Lilac - AM	86		82	35
Lilac @ Jubilee - AM	43		18	13
Louise Bridge - AM	63	81	82	64
Main St/Norwood Bridges - AM		267	250	145
Main St/Norwood Bridges - PM	230		262	297
Main St Underpass - AM	111		101	109
Omand - Train Bridge - AM	174	116	109	180
Omand - Train Bridge - PM			48	109
Osborne Bridge – AM	173	189	176	
Osborne Bridge – PM	256		325	192
Osborne Underpass – PM		136	222	
Osborne Underpass – AM			172	102
Pembina-Jubilee – AM	130	117	136	
Sherbrook-Maryland – PM	268	285	113	298
June				
Arlington @ Ellice – PM	49	51		
Ellice @ Arlington – PM	79	58		
Louise Bridge – AM	90	128	102	140
Osborne Bridge – PM	309	387	276	405
Osborne Underpass – AM			178	188
Sherbrook-Maryland – PM	189	360	393	410

* Note: Some counts are averages of two or more counts for a given location, time of day and month.

** Average annual rate of change is based on earliest and latest years only.

Table E Summary
Year-to-Year Count Totals for Comparable Locations, Months and Time of Day

Comparable Sub-totals	2007	2008	2009	2010	Year / Year
2007 & 2008 sub-totals	1524	1772			1.16
2008 & 2009 sub-totals		2102	1883		.90
2009 & 2010 sub-totals			2561	3127	1.22
Index	100	116	104	127	

Table F
Average Percentage of Cyclists Riding on Sidewalks by Location

75% - 100%	
Fort Garry Bridges	95.7%
Louise Bridge	94.9%
Main St @ Peguis Trail	89.8%
Waverley @ Taylor	88.2%
Portage Underpass	79.9%
Main St @ Disraeli	77.2%
Logan @ Salter	75.8%
Chancellor Matheson Rd	75.0%

50% - 74%	
Provencher Bridge/Esplanade Riel	74.7%
Norwood Bridge	73.4%
Main St Underpass	72.5%
Arlington @ Wellington	67.7%
Jubilee @ Lilac	66.6%
Slaw Rebchuk Bridge	63.9%
Osborne Underpass	63.7%
Sherbrook-Maryland Bridges	63.2%
Main St Bridge	62.8%
Sherbrook/Maryland Bridges	61.4%
Portage @ Queen	60.5%
Sherbrook @ Cumberland	60.1%
Dakota @ Bishop Grandin	57.9%
Jubilee at Lilac/Riverside	56.6%
Pembina Hwy @ Manahan	53.7%

25% - 49%	
Midtown Bridge	49.0%
Pembina-Jubilee Underpass	48.5%
Osborne Bridge	48.4%
Pembina Hwy (St Maurice School)	47.0%
Sargent @ Arlington	45.0%
Raglan Road	44.6%
Disraeli Bridge (west end)	44.1%
Hargrave @ Assiniboine	40.9%
St Vital Bridge	40.5%

25% - 49% (continued)	
Ellice @ Clifton	39.3%
Ellice @ Arlington	38.8%
University Cres @ Thatcher	38.4%
Disraeli @ Main St.	37.5%
Wellington @ Arlington	36.5%
Waterfront Dr near Provencher	35.5%
Erin @ Ellice	33.3%
University Cres @ crosswalk	30.5%
Balmoral @ Ellice	30.3%
Grosvenor @ Harrow	29.5%
Arlington @ St. Matthews	28.8%
Arlington @ Ellice	28.4%
University Cres @ Markham	27.9%
Nassau @ Stradbrook	27.4%

0% - 24%	
St Matthews @ Banning	22.6%
Ellice @ Spence	22.5%
Banning @ St Matthews	22.2%
St Matthews @ Arlington	20.2%
Stradbrook@ Nassau	20.0%
Harrow @ Grosvenor	14.0%
Assiniboine @ Hargrave	13.6%
Lilac @ Jubilee	9.8%
Wall @ Ellice	8.3%
Spence @ Ellice	7.4%
Bruce @ Overdale	5.0%
Burnell @ St Matthews	0.0%
Churchill Parkway (Daly-Cockburn)	0.0%
Clifton @ Ellice	0.0%
Home @ Ellice	0.0%
Mostyn St/Assiniboine Ave	0.0%
Parker Ave West	0.0%
Riverside @ Jubilee	0.0%
Somerville-Seel	0.0%
Wellington Cres @ Borebank	0.0%

