

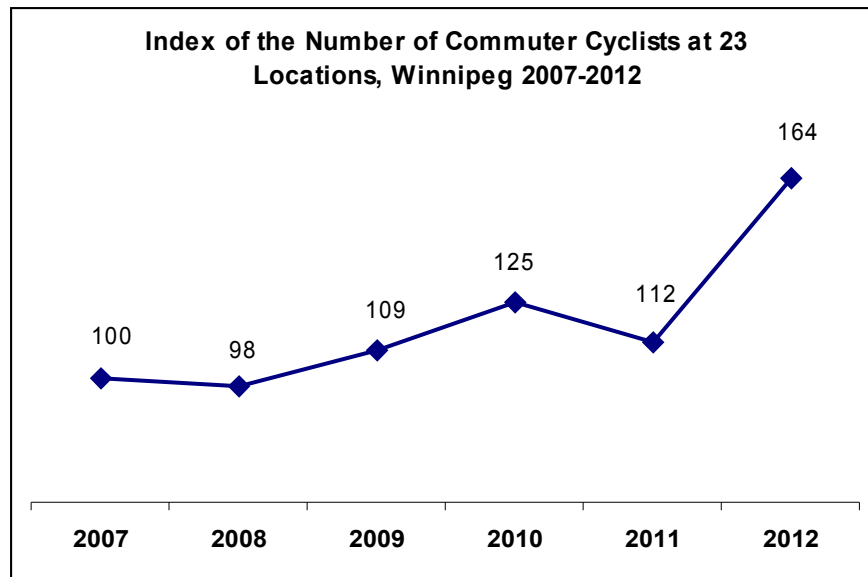
Commuter Cycling in Winnipeg, 2007 - 2012

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. During April, May and June of 2012 we completed 70 counts at 22 locations in Winnipeg. Since 2007 we have completed 381 counts at 70 locations and have created a data base that is increasingly useful for analysis of trends and factors affecting cycling in Winnipeg. Because of the growing data base this report is able to more fully control for factors that affect cycling, including weather, time of year and time of day. Our analysis resulted in these findings:

64% Increase in Commuter Cycling Since 2007

Based on our analysis the number of cyclists **increased by an estimated 47% in 2012**, compared to 2011. The number of commuter cyclists has **increased by an estimated 64% since 2007**.



- The numbers of cyclists are increasing more at locations that have benefited from cycling infrastructure improvements, than at other locations.
- At locations where cyclists feel unsafe and where no improvements have been made, there has been little if any growth in the numbers of cyclists.

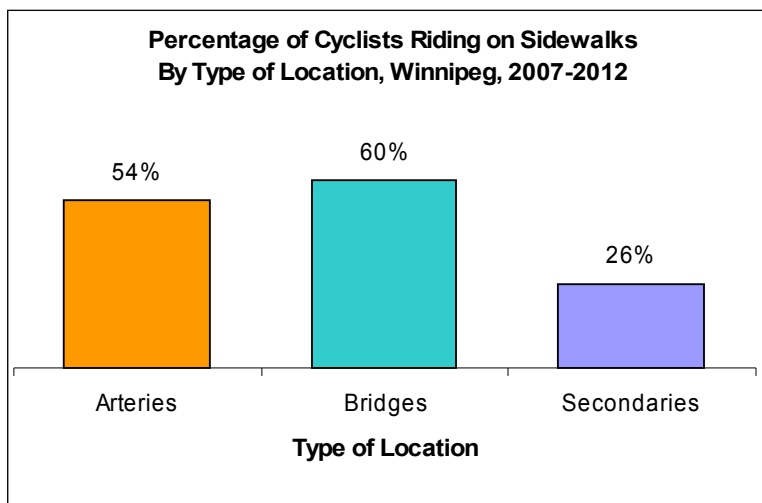
13,000 Daily Commuters in Winnipeg

- Average daily bicycle traffic in and out of downtown Winnipeg during a typical weekday in May or June (24 hours) is estimated at **12,435**.
- Downtown commuter cyclists is estimated at half this number, or **6,217**.

- Given that downtown commuters are about 48% of total number of daily commuter cyclists in the city, the total number of bicycle commuters in Winnipeg is estimated at **13,000**.

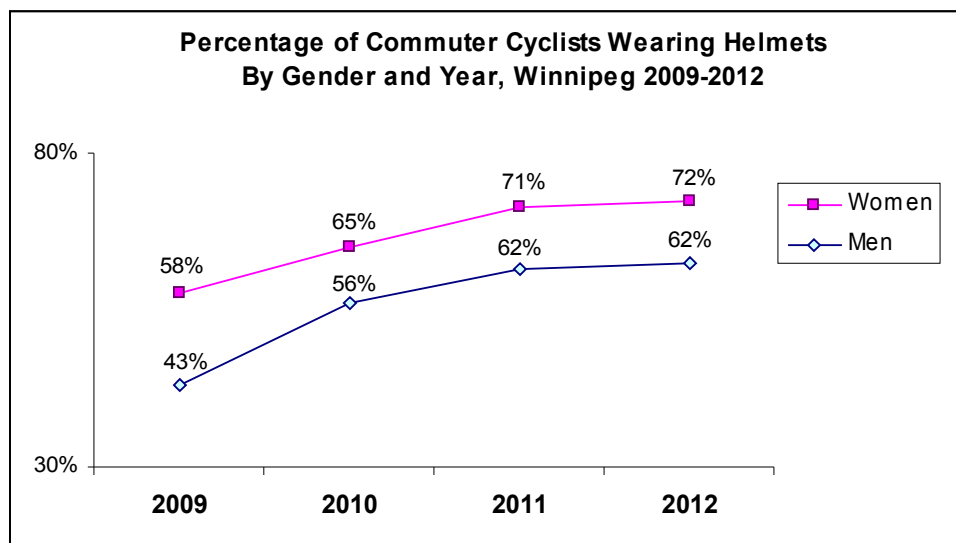
Sidewalk Riding High at Bridges and Underpasses

Although cycling on sidewalks is illegal in Manitoba, 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. At our 2012 counting locations, 52% of cyclists rode on the sidewalk and 48% in the street. This varied greatly according to the type of location. Over the past six years most cyclists traveling on major arteries (54%), or on bridges and underpasses (60%) rode on sidewalks, while on secondary streets only about one quarter (26%) of cyclists rode on sidewalks.



Helmet Use Increasing

Overall about 64% of the commuter cyclists wore helmets, but the percentage has been increasing steadily, from 52% in 2009 to 67% in 2012. Helmet use has been increasing among both women and men.



Among those riding on the road the percentage wearing helmets has stayed close to 80% for the past four years, but there has been more variability among those riding on sidewalks.

Conclusions

- ❖ After taking into account location, weather conditions, month and time of day it is estimated that **commuter cycling has increased in Winnipeg by 64% over the past five years.** At some locations peak bicycle traffic exceeds 400 per two hours, one cyclist every 15-20 seconds, during rush hour.
- ❖ **The numbers of cyclists are increasing more at locations that have benefited from cycling infrastructure improvements, than at other locations.**
- ❖ **At locations where cyclists feel unsafe and where no improvements have been made, there has been little if any growth in the numbers of cyclists.**
- ❖ During May and June of 2012, **approximately 6,200 cyclists commuted in and out of the downtown area of Winnipeg during weekdays, and a total of about 13,000 cyclists commuted throughout the city on a daily basis.**
- ❖ **More than half of cyclists ride on the sidewalks on busy arteries and at bridges and underpasses.**
- ❖ **64% of commuter cyclists wear helmets, and this percentage has been increasing.**

For further information please contact Jeremy Hull at (204) 477-5981 or hull.jeremy@gmail.com.

Commuter Cycling in Winnipeg, 2007-2012

**Prepared by Jeremy Hull
Bike to the Future
Winnipeg, MB**

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1. Bicycle Counting in Winnipeg

For the past five years Bike to the Future, the Winnipeg organization that promotes bicycling as transportation, has recruited volunteers to count cyclists traveling during rush hour at selected locations. These counts have been done on weekdays at the beginning of each month in spring – mostly in April, May and June. During April, May and June of 2012 we completed 70 counts at 22 locations in Winnipeg. Since 2007 we have completed 381 counts at 70 locations. (See Appendix C for summary data on the 2012 counts.)

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 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. They are also becoming useful in documenting before / after counts at locations where new bicycling infrastructure has been put in place.

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. Our 2010 counts were done prior to the beginning of construction of these active transportation projects while our 2011 counts took place after most of these projects were completed. In addition to these projects other construction takes place each summer. For example, during the 2011 and 2012 construction seasons the rehabilitation of the Osborne Bridge has been taking place, reducing the bridge to 3 lanes and 1 sidewalk, and creating congestion for drivers, cyclists and pedestrians, and starting in July 2012 it is expected that a new separated bike lane will be built on Pembina Highway between Chevrier and Plaza Drive.

The choice of locations is also based on the availability, interest and convenience of our volunteers who are usually bicycle commuters themselves. 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, and from past volunteers. Many of the volunteers in 2012 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. Using the tally volunteers count cyclists passing a given point within five minute time blocks, identifying those traveling on the street separately from those traveling on the sidewalks. 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 "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 separate counts at the same time.

A survey manager coordinates the counting process and locations and provides forms, counting procedures, and other information to the volunteer counters. Volunteers may deliver their counts by email as spreadsheets, as scans of their tally sheets, or as faxes. The survey manager responds to questions from volunteers to clarify methods and locations. With the help of volunteers the survey manager enters the data, and then analyzes the results. The manager follows up with volunteers when there is a need to clarify aspects of their counts.

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). In some cases volunteers have counted for shorter time periods, and in these cases their results are extrapolated to arrive at two hour estimates. In other cases, volunteers have counted for longer than two hours, and in this case the highest two hour count is used.

The targeted days for counting are Tuesday-Thursday during the first week of each month: April, May and June. Counts were also done in March in some previous years, but not in 2012. 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 or estimate
- 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) (if counted)
- Number of men and women, with or without helmets (if counted)
- 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

(Survey forms and instructions are available on request.)

3. Locations and Counts

From 2007 through 2012, 309 counts were carried out at 86 locations in Winnipeg. The number of counts and timing has varied among locations, ranging from only one count to more than 15 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 Osborne Bridge the highest count was 405 while the lowest count was 39. 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).

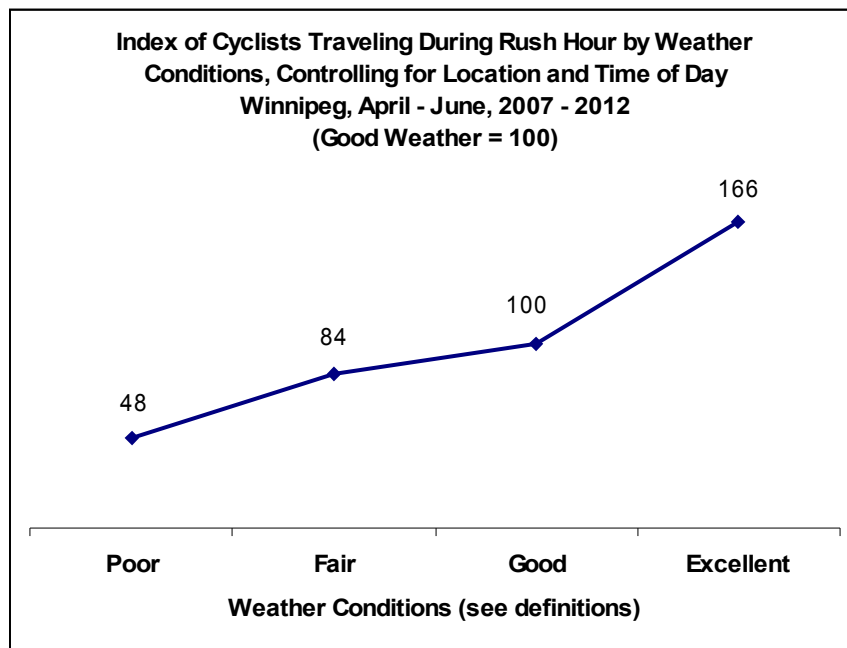
Weather Conditions – Definition of Categories	
Poor:	Rain or Snow, or Temperature less than 0° Celsius
Fair:	Temperature = 0° to 8° Celsius, or wind of 40 km/hr or more
Good:	Temperature = 9° to 17° Celsius with wind less than 40 km/hr
Excellent:	Temperature ≥ 18° Celsius with wind less than 40 km/hr

The definitions of the categories are somewhat arbitrary, however it was found that these categories resulted in a clear relationship between weather conditions and numbers of cyclists, as shown in Table 1 and in the chart below. The table 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.

Table 1 Calculation of Index: Impact of Weather Conditions on Numbers of Cyclists Based on comparisons for the same location and time of day Winnipeg, 2007-2011			
Weather Conditions Compared	Percentage Difference in Number of Cyclists	Cumulative Percentage Difference	Index
Poor	---	---	43
Fair / Poor	+75%	75%	76
Good / Fair	+31%	130%	100
Excellent / Good	+68%	287%	166

Based on 91 sets of comparable pairs of counts, it was found that the number of cyclists increased as weather conditions improved. The number of cyclists was 75% higher during “fair” weather than during “poor” weather, 31% higher during “good” weather than during “fair” weather, and 68% higher during “excellent” weather than during “good” weather. When the ratios are multiplied together it is found that the number of cyclists riding during excellent weather is 287% higher than during poor weather, or in other words, almost four times as high.

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 43 are likely to travel at the same location and time of day during poor weather, 76 during fair weather, and 166 during excellent weather.

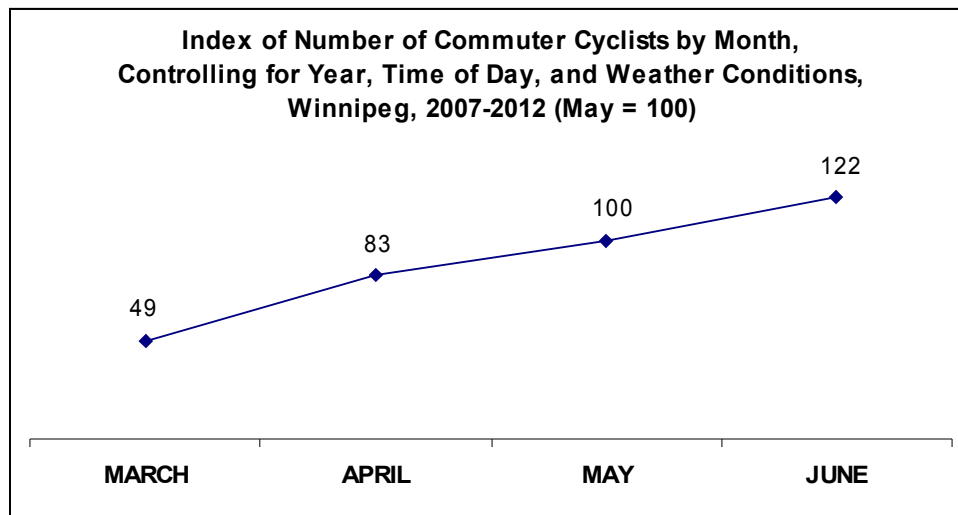


5. Morning and Afternoon Counts

Afternoon rush hour bicycle counts are consistently higher than morning rush hour counts. We have completed 38 pairs of AM and PM counts at the same location on the same day, and in 36 of these pairs the afternoon counts were higher. In addition, the total of the 38 afternoon counts was 35% higher than the total of the morning counts. Normally weather conditions are somewhat better in the afternoon, and no doubt this has an effect on the numbers. In addition, higher afternoon counts may reflect discretionary travel preferences, and the after school activity of students. A number of volunteers commented that there appeared to be fewer commuters in the afternoons, as reflected by how they were dressed. The percentage riding on the sidewalks was also much higher (about 49% higher on average) in the afternoons compared to the mornings. Again this would suggest a larger proportion of more casual cyclists in the afternoons, as opposed to commuter cyclists.

6. Monthly Trends

We wanted to look at cycling trends over the course of the spring. In order to do this, comparisons were made between counts made at the same location, year, time of day and weather conditions from month to month. We were able to make 32 such comparisons, including one April/March comparison, 7 May/April comparisons, and 23 June/May comparisons. 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. May was set as the base month. It was found that cycling numbers were 69% higher in April than in March, 20% higher in May than in April, and 22% higher in June than in May.



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. Because cycling numbers are greatly affected by weather, time of day and time of year all of these factors have been taken into account in developing annual trends. In order to do this counts in different years have been compared but only when they were done at the same location, during the same month and time of day and under the same weather conditions. The results are shown in the table below.

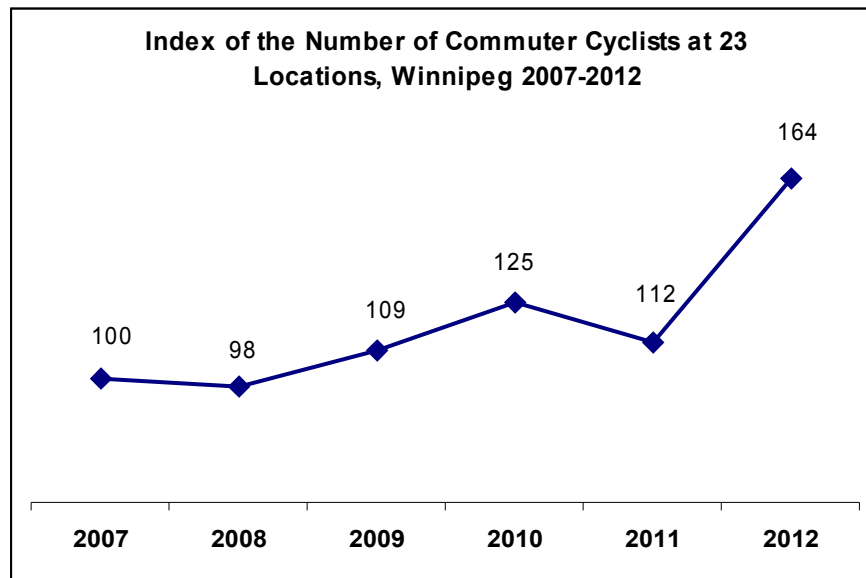
The percentages were calculated first for each location and year. In many years there was more than one comparison per location, and where this happened the percentages were averaged for the location – these are the percentages shown in the table. Where there was a series of year/year comparisons with one or more intermediate comparisons missing the missing figures were estimated. For example, if there was data for 2009 and 2012 (for a given location, weather conditions, month and time of day) the missing numbers for 2010 and 2011 were estimated using the average annual rate of change between 2009 and 2012. The weighted average for all 23 locations was calculated based on the average count for each location and year.

Table 2
Estimated Year/Year Percentage Change in Number of Commuter Cyclists
At 23 Locations, Winnipeg, 2007-2012

Location	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Arlington @ Ellice	4.1%			-9.5%	
Assiniboine Ave @ Hargrave			18.2%	18.2%	140.1%
Assiniboine Park Footbridge					145.0%
Bruce @ Overdale				-72.7%	
Dakota @ Bishop Grandin				-56.4%	
Ellice @ Arlington	-26.6%		300.0%	154.0%	
Fort Garry Bridges		151.2%	60.2%		
Grosvenor @ Harrow				10.7%	154.5%
Harrow @ Grosvenor				-58.3%	136.5%
Jubilee @ Lilac				-40.8%	
Louise Bridge	17.5%	33.3%	35.8%	-5.6%	100.4%
Main St @ Higgins	-5.4%	-5.4%	-5.4%	-5.4%	0.2%
Midtown Bridge	25.3%	25.3%	34.8%	-28.3%	
Norwood Bridge			9.2%	-19.4%	20.3%
Omand Creek Train Bridge	-33.3%	1.9%	33.5%	-12.1%	100.1%
Osborne Bridge	3.7%	0.3%	2.1%	-22.1%	
Osborne Underpass			-3.4%	3.0%	-9.8%
Pembina @ St Maurice School				-73.6%	
Pembina-Jubilee Underpass	-9.7%		-1.0%	-28.5%	50.9%
Provencher Bridge & Esplanade Riel	12.3%	11.5%	10.2%	-16.2%	38.6%
Sherbrook-Maryland Bridges	9.3%	7.9%	6.3%	12.8%	5.8%
Slaw Rebchuk Bridge		-1.3%	-1.3%	-1.3%	-18.4%
University Crescent		81.4%	217.3%	33.8%	39.7%
Weighted Average	-2.4%	11.6%	14.5%	-10.3%	47.0%

Note: negative changes are shaded.

As the table shows, the trends have been quite variable from location to location and from year to year. In most years the number of cyclists has been increasing with the exception of 2008-2009 and especially 2010-2011. The greatest increase has been in 2012, when the number of cyclists increased by an estimated 47% over 2011. These annual percentage changes have been shown as an index in the following chart, where 2007 is set to equal 100. The cumulative impact of the annual changes is that the number of cyclists is estimated to be 64% higher in 2012 than it was in 2007.



Some of the locations have been consistently increasing or decreasing in spite of year/year trends. For example, the number of cyclists counted on University Crescent has increased rapidly every year, while the number of cyclists on Slaw Rebchuk Bridge has decreased every year. It seems likely that each location is affected by specific circumstances. The Assiniboine bikeway, a separated bike lane, has become very popular with cyclists since it was built two years ago. On the other hand counts on the Osborne underpass have been decreasing, and this may reflect improvements to the River Trail (Churchill Parkway) that appears to offer an attractive alternative route. While no year-year trends are available for the River Trail, counts done this year at that location have been substantial, as high 300 cyclists in two hours, which is higher than has been recorded at the Osborne underpass. Another example of the effect of local circumstances is Osborne Bridge which was increasing slowly until last year when the bridge rehabilitation project began there. It can also be seen that the numbers of cyclists at two of the key north end connections – Slaw Rebchuk Bridge and the Main St. underpass – are decreasing. On the other hand, the counts at Louise Bridge have been increasing, especially in 2012, and these may have been affected by the Disraeli Bridges project if cyclists are using Louise Bridge as an alternative route.

Table 3 shows the cumulative changes for various over the 2007-2012 period. These provide a sense of which locations have been increasing and which have been decreasing, and at what rates. (Charts illustrating the trends for selected locations are provided in Appendix D.)

Table 3
Cumulative Change in the Number of Cyclists at 23 Locations in Winnipeg, 2007-2012

Location	Overall Percentage Change*	Time Period (From – To)	Average Annual Percentage Change
A. Increasing			
Assiniboine Park Footbridge	145%	2011 - 2012	145%
Fort Garry Bridges	302%	2008 - 2010	101%
University Crescent	975%	2008 - 2012	81%
Ellice @ Arlington	646%	2007 - 2011	65%
Assiniboine Ave @ Hargrave	236%	2009 - 2012	50%
Grosvenor @ Harrow	182%	2010 - 2012	41%
Louise Bridge	303%	2007 - 2012	32%
Midtown Bridge	52%	2007 - 2011	11%
Provencher Bridge/Esplanade Riel	60%	2007 - 2012	10%
Omand Creek train bridge	60%	2007 - 2012	10%
Sherbrook-Maryland Bridges	50%	2007 - 2012	8%
Norwood Bridge	6%	2009 - 2012	2%
B. Decreasing			
Harrow @ Grosvenor	-1%	2010 - 2012	-1%
Pembina-Jubilee Underpass	-4%	2007 - 2012	-1%
Arlington @ Ellice	-6%	2007 - 2012	-1%
Osborne Underpass	-10%	2010 - 2012	-4%
Main St @ Higgins	-20%	2007 - 2012	-4%
Osborne Bridge	-17%	2007 - 2011	-5%
Slaw Rebchuk Bridge	-22%	2008 - 2012	-6%
Jubilee @ Lilac	-41%	2010 - 2011	-41%
Dakota @ Bishop Grandin	-56%	2010 - 2011	-56%
Bruce @ Overdale	-73%	2010 - 2011	-73%
Pembina @ St Maurice School	-74%	2010 - 2011	-74%
Total (Weighted Average)	64%	2007 - 2012	10%

8. Estimates of Downtown Commuter Cyclists

It is difficult to translate the bicycle counts at a set of specific locations 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.

With this in mind, a circle of 20 counting locations around the downtown perimeter 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 4 below.) 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.

For most of the downtown perimeter locations shown in the table 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 2012, counts from the most recent previous year have been used. 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.

Table 4
Estimates of Total Traffic In/Out of Downtown Winnipeg – May-June
Based on 2012 or most recent previous counts

Location	May-June Averages		AM/PM Average
	AM	PM	
1 Arlington St.	18	24	21
2 Disraeli Bridge	39	53	46
3 Ellice Ave	30	40	35
4 Louise Bridge	157	212	184
5 Main St @ Higgins	107	174	141
6 Maryland @ Cumberland **	55	41	48
7 Midtown Bridge	107	174	141
8 Norwood Bridge	65	87	76
9 Osborne Bridge	158	211	184
10 Omand - Train Bridge	172	261	216
11 Portage Underpass	66	210	138
12 Provencher Bridge/Esplanade Riel	222	329	275
13 River Trail @ Main St	175	207	191
14 Sargent @ Arlington	40	54	47
15 Sherbrook @ Cumberland	41	55	48
16 Sherbrook/Maryland Bridges	122	354	238
17 Slaw Rebchuk Bridge	62	83	72
18 St Matthews Ave	55	53	54
19 Stradbroke East of Donald	90	122	106
20 Wellington Ave.	52	64	58
Total 2 Hour Counts	2,010	2,964	2,487
Estimated Total Daily Traffic*			12,435
Estimated Cyclists			
(50% of Total Traffic)			6,217

* 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.

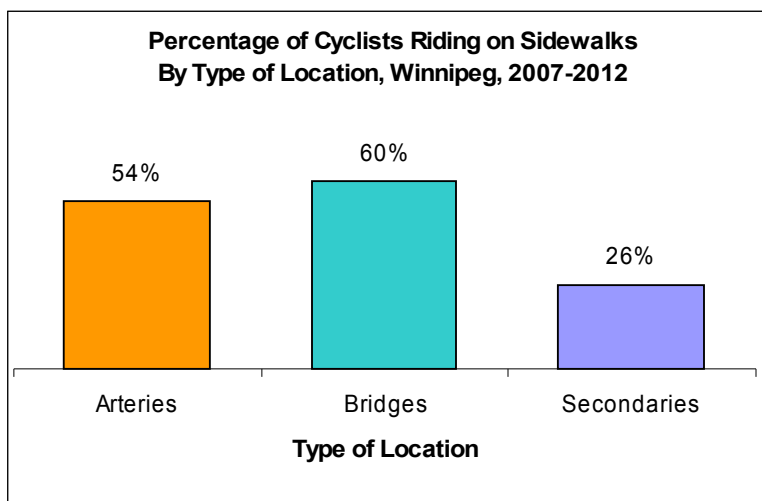
** No counts were done on Maryland @ Cumberland. It was assumed that the numbers would be about the same on Maryland as on Sherbrook since these are twin, one-way streets.

As shown in the table, average morning rush hour traffic is estimated at 2,010 cyclists and average afternoon rush hour traffic was about 2,964 for this set of locations. The total bicycle traffic over the course of a day (24 hours) is estimated at **12,435**. Based on the assumption that these cyclists are passing once in each direction, the number of *cyclists* is half of this number, or **6,217 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 Day¹ and other surveys shows that commuter cyclists are traveling between all regions of the city, and their routes do not always go through the downtown area. 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 2009, only 48% of those who registered actually were traveling to or from the downtown area of the city. This would suggest that in total about **13,000 cyclists** commute regularly in Winnipeg during May and June.

9. Sidewalk Use

Although cycling on sidewalks is illegal in Manitoba, 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. At our 2012 counting locations, 52% of cyclists rode on the sidewalk and 48% in the street (excluding those on multi-use paths or segregated bike paths). However, the percentage of sidewalk riders varied according to the type of street or location. In 2012, 59% of cyclists traveling on bridges or through underpasses used the sidewalks, while 38% of those on major arteries and 34% of those on secondary streets rode on the sidewalks. Over the past six years, 2007-2012, most cyclists traveling on major arteries (54%), or on bridges and underpasses (60%) rode on sidewalks, while on secondary streets only about one quarter (26%) of cyclists rode on sidewalks. (See chart below.)

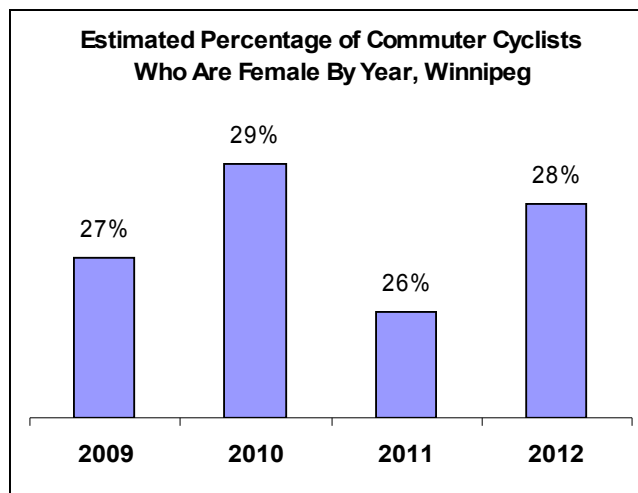


¹ According to Bike to Work Day registration data, in 2008 40% of cyclists worked in the downtown area. In 2009, 48% of cyclists traveled between the downtown and other areas of the city. Reports based on Bike to Work Day registration data in 2008 and 2009 are available from Jeremy Hull on request.

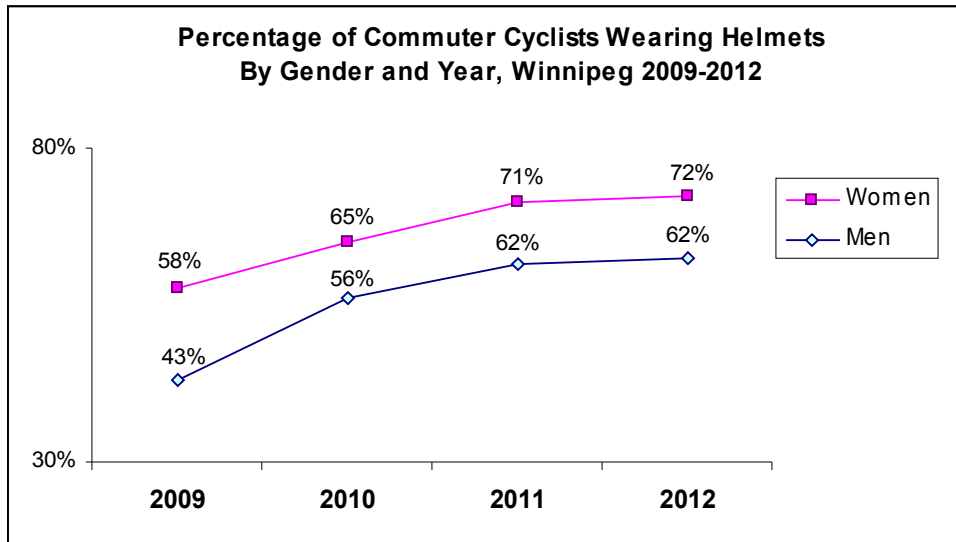
The behaviour of cyclists seems to depend on the particular location, the amount of traffic and the choices that are available to them. For example, Louise Bridge is very narrow, has a high volume of traffic, and very few cyclists take the road. Another example is Provencher Bridge/Esplanade Riel, where 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. While the esplanade is not considered a “sidewalk” for these calculations, it takes the place of a sidewalk on the south side of Provencher Bridge, thereby reducing the number who might ride on an eastbound sidewalk if there was one. On the other hand, cyclists are much more willing to ride in the street on secondary streets, such as Nassau or Ellice, or where there are bike lanes, such as Hargrave.

10. Helmet Use and Gender

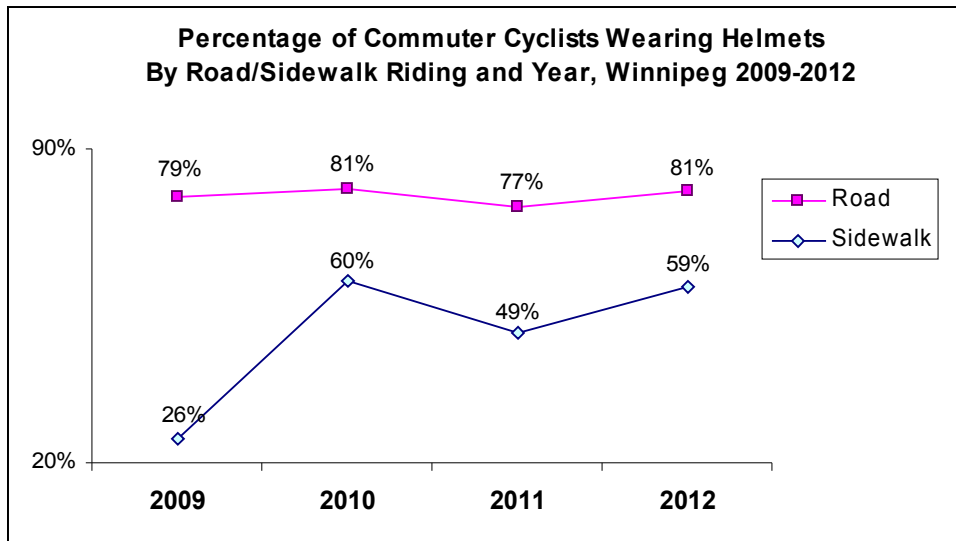
Starting in 2009 some of our volunteers have kept track of the gender of the cyclists and whether cyclists were wearing bicycle helmets or not. Over this period an average of 28% of the commuter cyclists were identified as female, and 72% were identified as male. These are similar to the percentages identified in the 2006 Census of Canada in which found that 29% of commuter cyclists in Winnipeg were women and 71% were men. The percentage of female cyclists has varied somewhat from year to year, as shown below.



Overall about 64% of the cyclists wore helmets, but the percentage has been increasing steadily, from 52% in 2009 to 67% in 2012. Helmet use has been increasing among both women and men, as shown in the following figure.



Cyclists who are riding in the road are more likely to wear helmets than those riding on the sidewalks. Among those riding on the road the percentage wearing helmets has stayed close to 80% for the past four years, but there has been more variability among those riding on sidewalks. It appears that in the years when the overall numbers of cyclists are higher (2010 and 2012) two related things are happening – a higher percentage of bicycle commuters are women, and this results in a higher overall percentage wear 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 cycling equipment and accessories, including helmets, while more casual cyclists may be more likely to ride on the sidewalks and may be less likely to be fully equipped.

11. Conclusions

Six years of bicycle counts in Winnipeg have provided for increasingly detailed and sophisticated analysis of trends. The analysis has shown that three important factors affect cycling behaviour: weather, time of year, and time of day.

More specifically, these findings show that commuter bicycle traffic is somewhat variable from year to year, but is generally increasing in Winnipeg. **It is estimated that the number of commuter cyclists has increased by 64% since 2007 and by 47% in 2012 alone.**

The numbers of cyclists are increasing more at locations that have benefited from cycling infrastructure improvements, than at other locations. The locations with the greatest increases include:

- University Crescent (at Thatcher Drive)
- Assiniboine Ave. (at Hargrave)
- Stradbrook Ave. (at Nassau)
- Nassau St. (at Stradbrook)
- Grosvenor Ave. (at Harrow)

The numbers of cyclists are also high and increasing on multi-use paths and bridges that are separated from motor traffic, including:

- Esplanade Riel/Provencher Bridge
- Assiniboine Park Foot Bridge
- Omand Creek Train Bridge
- River Trail at Main St.

At locations where cyclists feel unsafe and where no improvements have been made, there has been little if any growth in the numbers of cyclists. Examples include:

- Osborne Underpass
- Slaw Rebchuk Bridge
- Main Street at Higgins
- Pembina-Jubilee Underpass

It is estimated that during May and June, **approximately 6,200 cyclists commute in and out of the downtown area of Winnipeg during weekdays, and that a total of about 13,000 cyclists commute throughout the city on a daily basis.** This does not include cycling done on recreational trails, or cycling that takes place within various neighbourhoods in Winnipeg that don't involve traveling on commuter routes. In addition these counts focus on mid-week commuting routes and do not capture weekend commuting patterns.

The findings also reinforce the idea that not all cyclists are the same in terms of their degree of comfort and cycling behaviours. Some cyclists tend to ride in the street rather than on the sidewalk, and tend to wear helmets, while other cyclists ride on the sidewalk because of safety concerns or lack

of confidence or equipment. Women are more likely to wear helmets than men, and the percentage of women cyclists seems to increase in years when there is an overall increase in cycling.

A sample survey methodology would be needed to more accurately estimate the total number of cyclists, and the bicycle share of traffic in Winnipeg. The only such survey done on a regular basis was the Census of Canada which identified the number of people commuting to work by mode of transportation in 2001 and 2006, however this question was not asked in the 2011 census. In any case, the Census did not identify year to year trends, seasonal transportation patterns, or bicycle travel for purposes other than to go to work. This means that, in spite of the bicycle counts reported here, **there is a continuing lack of basic data on the numbers and other characteristics of cyclists in Winnipeg, and throughout Manitoba.** Such information is needed by governments and others in order to identify trends and develop policies related to active transportation.

Acknowledgements

I would like to thank the following dedicated volunteers who contributed to the 2012 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 2012 (including both our regular Bike to the Future spring bike counts reported here, and the Bike to Work Day counts reported separately – see the BTWD 2012 report):

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Report prepared by Jeremy Hull for the Bike to the Future.

If there are questions or comments, or if anyone wants additional information about these counts please contact me at: hull.jeremy@gmail.com.

**Appendix A:
Peak Two Hour Bicycle Traffic Counts or Estimates by Location and Direction of Travel
(highest counts recorded, 2007 – 2012)**

Location	“IN” (towards down town)	“OUT” (away from down town)
Arlington @ Ellice	39	32
Assin Ave @ Hargrave	174	229
Assin Park Footbridge	65	84
Bishop Grandin Greenway @ Dakota	26	39
Bruce @ Overdale	37	38
Cumberland/Wellington	30	n.a.
Dakota @ Bishop Grandin	43	64
Ellice @ Arlington	39	41
Fort Garry Bridges	70	129
Grosvenor @ Harrow	35	55
Harrow @ Grosvenor	30	74
Jubilee @ Lilac	49	40
Lilac @ Jubilee	31	12
Louise Bridge	154	n.a.
Main St @ Higgins	97	141
Main St Bridge	182	190
Midtown Bridge	75	116
Nassau @ Stradbrook	60	111
Norwood Bridge	234	248
Northern Pioneer Greenway Trail / Gateway / Raleigh @ Chalmers Ave	46	63
Omand Creek train bridge	110	213
Osborne Bridge	223	277
Osborne Underpass	162	133
Pembina @ St Maurice School	87	74
Pembina-Jubilee Underpass	103	131
Provencher Bridge/Esplanade Riel	220	245
River Trail @ Main St	151	168
Sherbrook @ Cumberland	n.a.	62
Sherbrook-Maryland Bridges	224	317
Slaw Rebchuk Bridge	53	55
St Matthews @ Arlington	35	37
Stradbrook @ Nassau	94	53
University Crescent*	191	112
Waterfront Drive @ Lombard	112	168
Waterfront Drive near Provencher	153	97
Waverley @ Taylor	60	91

* On University Crescent “In” means towards the University, “Out” means away from the University.

n.a. – Not applicable (one way street or no appropriate AM/PM count).

**Appendix B:
Locations with the Highest Cyclist Counts in Winnipeg in 2012
(All of these counts occurred in June, 2012)**

Location	Highest 2 Hour Count in 2012
Sherbrook-Maryland Bridges	469
Assiniboine Ave @ Hargrave	403
Norwood Bridge	385
Provencher Bridge/Esplanade Riel	336
Omand Creek train bridge	295
University Crescent	259
Main St @ Higgins	238
Pembina-Jubilee Underpass	208
River Trail @ Main St	207

**Appendix C:
2012 Bike to the Future Spring Bike Counts Showing Month, Time of Day, and Weather Conditions**

Location	Month	AM/PM	Weather	2 HR count or estimate*	In	Out	Road	Sidewalk	Trail or Bike Lane	Total w Helmets	Total w/o Helmets	Pedestrians (2 hrs)
Assin Ave @ Hargrave	4	AM	poor	195	111	60	10	0	161			
Assin Ave @ Hargrave	5	AM	fair	198	105	83	10	9	179			
Assin Ave @ Hargrave	5	PM	excellent	304	170	173	0	30	313	212	116	
Assin Ave @ Hargrave	6	PM	excellent	403	174	229	2	14	387	270	133	
Assin Park Footbridge	4	PM	good	134	42	70			112	81	31	
Assin Park Footbridge	5	AM	good	104	62	42			104	97	7	
Bishop Grandin Greenway @ Dakota	5	PM	excellent	35	14	21			35	21	14	
Bishop Grandin Greenway @ Dakota	6	PM	excellent	65	26	39			65	34	31	
Cumberland/Wellington	4	AM	good	40	30	10	12	28				154
Cumberland/Wellington	6	AM	good	29	29	0						
Dakota @ Bishop Grandin	5	PM	excellent	72	29	43	15	57		38	34	
Dakota @ Bishop Grandin	6	PM	excellent	107	43	64	21	86		49	58	
Grosvenor @ Harrow	4	AM	good	48	21	27	39	9		33	15	46
Grosvenor @ Harrow	5	AM	excellent	59	26	40	56	10		46	20	
Grosvenor @ Harrow	6	PM	excellent	84	31	69	88	12		74	26	
Harrow @ Grosvenor	4	AM	good	51	17	34	45	6		35	16	30
Harrow @ Grosvenor	5	AM	excellent	79	20	69	83	6		65	24	
Harrow @ Grosvenor	6	PM	excellent	113	38	92	121	9		103	27	
Louise Bridge	4	AM	poor	90	76	14	6	84		63	27	22
Louise Bridge	5	AM	fair	127	105	22	4	123		94	33	
Louise Bridge	6	AM	good	187	154	33	4	183		135	52	12
Main St @ Higgins	4	AM	poor	52	41	11	25	27		21	31	2
Main St @ Higgins	4	AM	fair	52	40	13	28	25		27	26	0
Main St @ Higgins	5	AM	fair	82	67	25	28	64		37	55	161
Main St @ Higgins	6	AM	good	132	104	51	67	88		77	78	125
Main St @ Higgins	6	PM	excellent	238	85	123	47	161		65	143	241
Midtown Bridge	6	PM	excellent	139	23	116	84	55		76	63	218
Norwood Bridge	5	AM	fair	257	219	81	91	209		471	238	248
Norwood Bridge	5	PM	excellent	341	141	268	117	292				430
Norwood Bridge	5	PM	good	263	84	179	76	25	162	181	82	
Norwood Bridge	6	AM	good	340	293	115	123	285		579	280	264
Norwood Bridge	6	PM	excellent	385	141	310	129	322				362
Omand Creek train bridge	4	AM	poor	129	84	45			129	104	25	41
Omand Creek train bridge	5	AM	fair	125	88	37			125	100	25	34
Omand Creek train bridge	5	PM	excellent	226	68	158			226	174	52	99
Omand Creek train bridge	6	AM	excellent	295	82	213			295	200	95	92
Osborne Underpass	4	AM	fair	86	53	33	52	34		58	28	

**Appendix C:
2012 Bike to the Future Spring Bike Counts Showing Month, Time of Day, and Weather Conditions**

Location	Month	AM/PM	Weather	2 HR count or estimate*	In	Out	Road	Sidewalk	Trail or Bike Lane	Total w Helmets	Total w/o Helmets	Pedestrians (2 hrs)
Osborne Underpass	5	AM	good	133	90	43	62	71		92	41	
Osborne Underpass	5	PM	excellent	174	54	91	85	60		77	61	209
Osborne Underpass	6	PM	excellent	176	68	108	101	75		104	75	154
Pembina @ St Maurice School	5	AM	fair	96	42	30	53	19		54	18	
Pembina @ St Maurice School	6	PM	excellent	155	81	74	99	56		105	47	
Pembina-Jubilee Underpass	4	PM	good	136	67	69	64	72		81	42	54
Pembina-Jubilee Underpass	5	AM	good	132	77	22	44	55		69	25	9
Pembina-Jubilee Underpass	5	AM	excellent	192	82	110	82	110		116	73	68
Pembina-Jubilee Underpass	6	PM	excellent	208	77	131	88	120		146	62	68
Provencher Bridge/Esplanade Riel	4	AM	poor	116	63	24	16	22	49	45	32	
Provencher Bridge/Esplanade Riel	4	PM	good	238	98	140	17	63	158			315
Provencher Bridge/Esplanade Riel	5	AM	good	194	77	28	12	26	67	65	39	
Provencher Bridge/Esplanade Riel	5	PM	excellent	322	220	102	35	99	188			246
Provencher Bridge/Esplanade Riel	6	AM	excellent	249	133	54	31	44	112	116	66	
Provencher Bridge/Esplanade Riel	6	PM	excellent	336	72	194	24	60	182			
River Trail @ Main St	6	AM	good	175	151	24			175	149	26	12
River Trail @ Main St	6	AM	excellent	207	39	168			207	171	36	6
Sherbrook @ Cumberland	4	AM	good	30	9	21	11	19				184
Sherbrook @ Cumberland	6	AM	good	66	4	62	57	9				
Sherbrook-Maryland Bridges	4	AM	good	280	88	192	101	179		201	79	202
Sherbrook-Maryland Bridges	5	AM	fair	381	280	143	243	180		380	43	
Sherbrook-Maryland Bridges	5	PM	excellent	459	152	307	161	298				307
Sherbrook-Maryland Bridges	6	PM	excellent	469	152	317	199	270				233
Slaw Rebchuk Bridge	4	AM	poor	47	31	16	15	32		20	27	
Slaw Rebchuk Bridge	5	AM	fair	40	27	13	16	24		19	21	53
Slaw Rebchuk Bridge	6	AM	good	83	53	30	31	52		32	51	53
Stradbrook @ Nassau	5	AM	fair	89	29	38	58	9		37	25	97
Stradbrook @ Nassau	5	PM	excellent	147	86	49	117	18		75	44	58
University Crescent	4	AM	fair	141	79	3	44	38		52	30	
University Crescent	4	AM	good	156	136	20	102	54		96	60	
University Crescent	5	AM	good	149	126	23	23	126				
University Crescent	5	PM	good	211	154	57	150	61		142	69	
University Crescent	6	PM	excellent	259	191	68	185	74		174	85	

* Where counts were done for more than 2 hours, the highest two hour period is used. Where counts were done for less than two hours, the two hour counts are estimated. Other counts shown for In/Out, Road/Sidewalk, etc. are actual counts, not estimates. Pedestrian counts are for two hours actual or estimated counts.

Appendix D: Charts Showing Commuter Cyclist Trends at Selected Locations By Month, Time of Day and Year

(where no marker appears on a trend line, there was no count that year)

- Assiniboine Ave @ Hargrave
- Grosvenor Ave @ Harrow
- Louise Bridge
- Main St @ Higgins
- Norwood Bridge
- Omand Creek Train Bridge
- Osborne Bridge
- Osborne Underpass
- Pembina-Jubilee Underpass
- Provencher Bridge/Esplanade Riel
- Sherbrook-Maryland Bridges
- Stradbrook @ Nassau
- University Crescent

