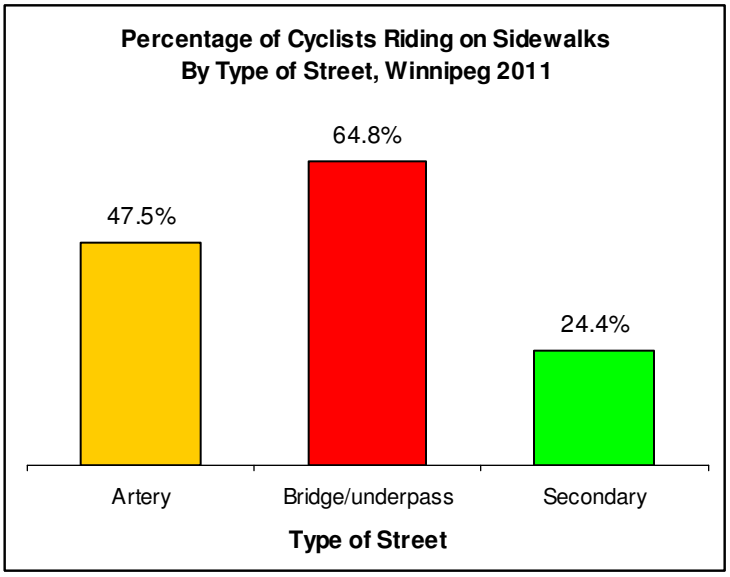
Commuter Cycling in Winnipeg, 2007 - 2011
Executive Summary

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 April, May and June of 2011 we completed 96 counts at 45 locations in Winnipeg. Since 2007 we have completed 312 counts at 86 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:

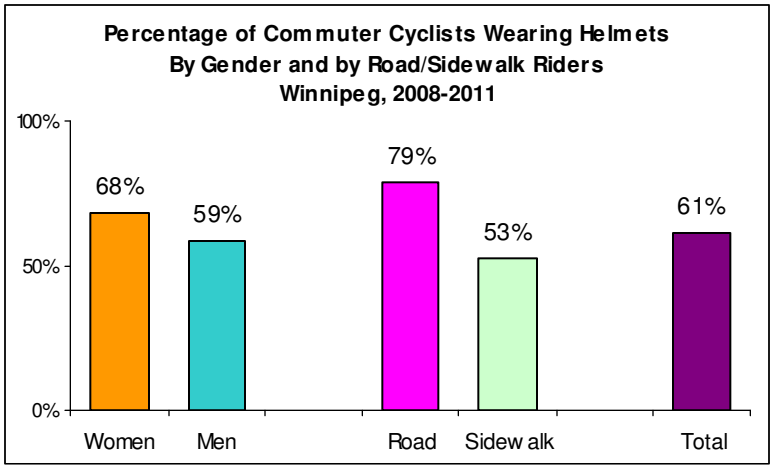
Sidewalk Riding High at Bridges and Underpasses

On average, 53% of cyclists were riding on the sidewalks at the locations where we did our counts. However, the percentages were very different in different types of locations. 65% of cyclists traveling on bridges and through underpasses rode on the sidewalk rather than taking the road. At some locations the percentage was close to 100%.



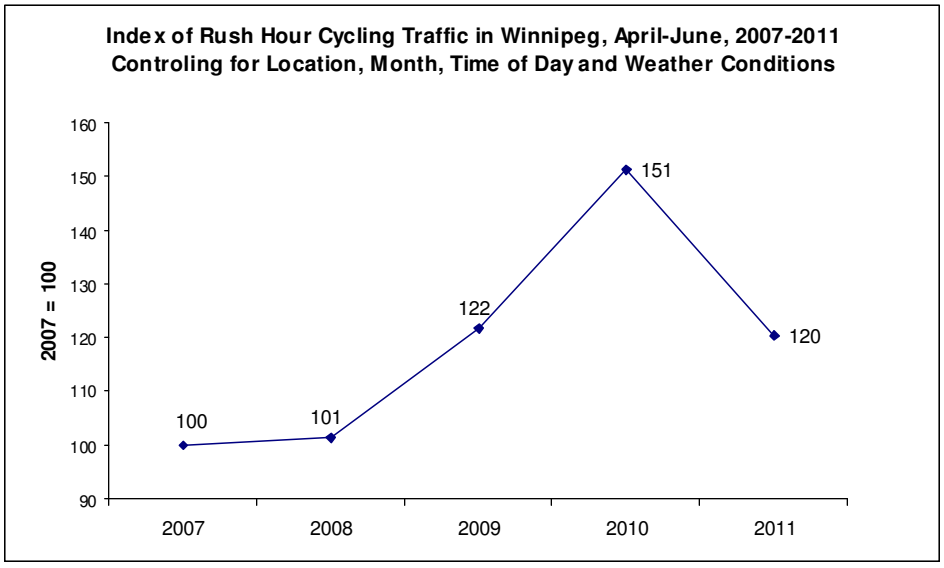
Helmet Use

- Overall about 61% of the cyclists wore helmets.
- About 79% of those riding in the street wore helmets, but only 53% of those riding on the sidewalks wore helmets.
- 68% of women wore helmets compared to 59% of men.



Trends from 2007-2011

Based on comparisons of counts done at the same location, month and time of day, and under similar weather conditions it was estimated that commuter cycling increased by an estimated 20% between 2007 and 2011. The analysis shows that cycling increased from 2007 through 2010, and then declined in 2011. The estimated trend is illustrated in the following chart.



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 **11,200**.
- Downtown commuter cyclists is estimated at half this number, or **5,600**.
- 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 about **11,000**.

Conclusions

- In spite of recent improvements to bike routes in Winnipeg there are still many major barriers to cycling, in the form of major arteries, bridges and underpasses that lack bicycle lanes or adjacent trails.
- As a result the unsafe and illegal practice of riding on sidewalks continues to be favoured by cyclists.
- The apparent decline in commuter cycling in 2011 may reflect the abnormally late and cool spring in combination with the continued lack of connected cycling facilities that are attractive to cyclists.

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Commuter Cycling in Winnipeg, 2007-2011

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CONTENTS

Appended Tables

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. The numbers of counts and locations have increased over the years, and in 2011 we completed 93 counts at 45 locations. In total, over the four years we have completed 309 counts at 86 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 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. In the past two years we have put particular emphasis on locations that have been affected by the 35 active transportation projects in Winnipeg funded under the federal government's infrastructure stimulus program. 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, this year notably the rehabilitation of the Osborne Bridge which has reduced the bridge to 3 lanes and 1 sidewalk, creating congestion for drivers, cyclists and pedestrians.

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 2011 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 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 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), 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. 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 years, but not in 2011. 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) (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

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 each year from 2008 through 2011. For the purposes of this report, data from Bike to Work Day counts is not included. (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 2011, 309 counts were carried out at 86 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 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 0º Celsius
Fair:	Temperature = 0º to 8º Celsius, or wind of 40 km/hr or more
Good:	Temperature = 9º to 17º Celsius with wind less than 40 km/hr
Excellent:	Temperature ≥ 18º Celsius with wind less than 40 km/hr

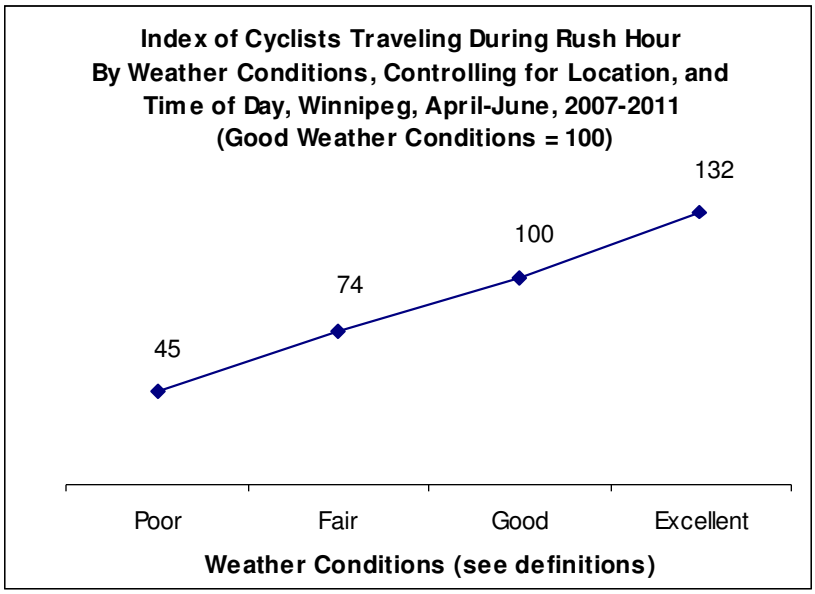
The definitions of the categories were arbitrary, based on one person's sense of how these factors affect cycling. However it was found that these categories resulted in a clear relationship between weather conditions and numbers of cyclists, as shown in the following chart. The chart is the result of 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, 2007-2011

Weather Conditions Compared	Percentage Difference in Number of Cyclists	Cumulative Percentage Difference	Index
Poor	---	---	45
Fair / Poor	+66%	66%	74
Good / Fair	+35%	123%	100
Excellent / Good	+32%	195%	132

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 66% higher during "fair" weather than during "poor" weather, 35% higher during "good" weather than during "fair" weather, and 32% 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 195% higher than during poor weather, or in other words, almost three 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 45 are likely to travel at the same location and time of day during poor weather, 74 during fair weather, and 132 during excellent weather.



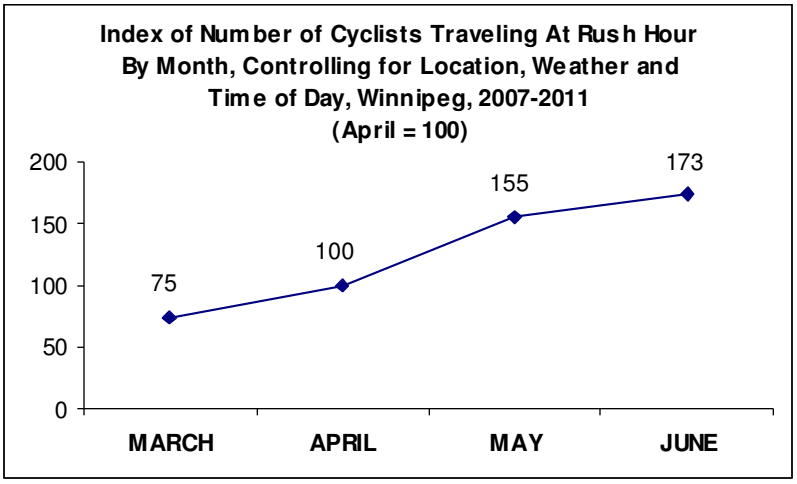
5. Morning and Afternoon Counts

Afternoon rush hour bicycle counts are consistently higher than morning rush hour counts. In most cases where we have data to compare morning and afternoon counts done on the same day and under the same weather conditions, the afternoon counts are higher. Overall, afternoon counts were 20% higher than morning counts, controlling for location and weather conditions. Higher afternoon counts may be the result of several factors, such as the timing of people's work days, a tendency for people to do their discretionary travel (such as shopping or errands), in the afternoons when it is usually warmer, and after school travel by students and their parents.

6. Monthly Trends

We wanted to confirm that the assumption that cycling increases over the course of the spring. In order to do this, comparisons were made between counts made at the same location and time of day under the same weather conditions from month to month. (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 55% higher in May than in April, and 12% higher in June than in May. Cycling numbers in March were 25% lower than in April. These month/month differences result in the index numbers shown in the chart below. The analysis does not take into account possible trends from year to year, which will be discussed below.



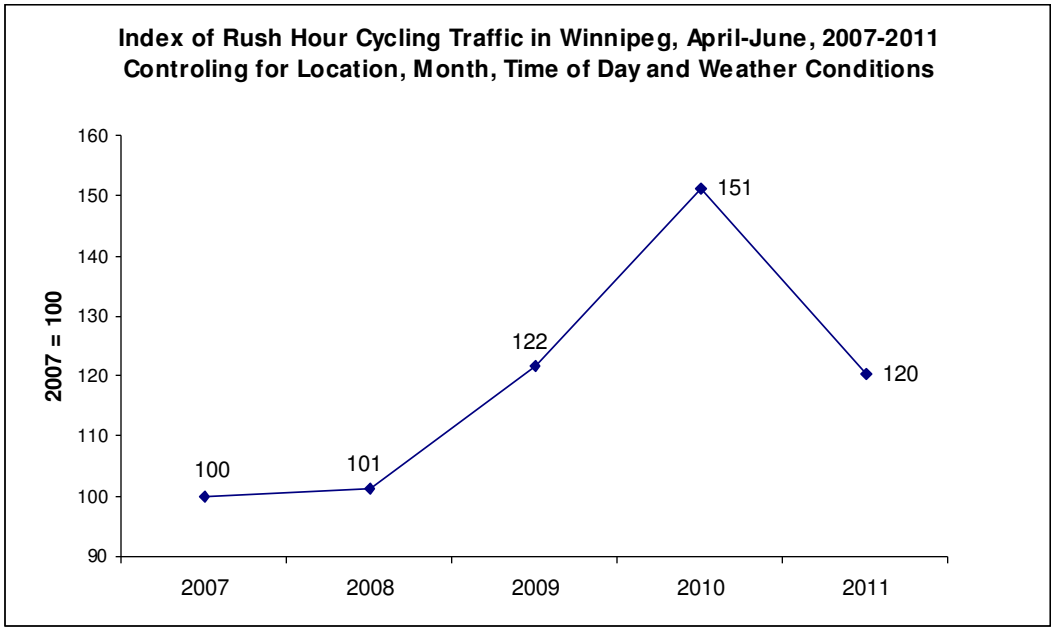
7. Yearly Trends

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. For example, the first line is for comparisons between 2008 and 2007. There were 14 comparable counts done in those two years, where the time of day, the month and the weather conditions were the same. The percentage change for each of these 14 comparisons was calculated and then these percentages were averaged. This showed that the average percentage change was an increase of 1.3%. The cumulative change is calculated by multiplying the year-to-year changes for each successive year.

Year/Year Comparison	Number of Comparisons	Average Annual Change	Cumulative Change
2008/2007	14	+1.3%	+1.3%
2009/2008	16	+20.3%	+21.9%
2010/2009	17	+24.0%	+51.1%
2011/2010	29	-20.4%	+20.3%

These results suggest that cycling increased slightly between 2007 and 2008, and then increased by more than 20% in each of the next two years, before falling back by 20% in 2011. The overall trend from 2007 through 2011 is a 20% increase in cycling over a four year period. The trend is shown as

an index in the following chart, in which the year 2007 is set to equal 100. All of the comparable counts are listed in Table B in the appendix, and the percentage changes for each comparison plus year-year period averages are shown in appendix Table C. The trend is illustrated in the following graph.



This trend quite a bit different than was estimated in last year's report on bike counts, but in that report there wasn't enough data to attempt to control for weather conditions. Even this year's analysis is based on a limited number of comparisons, and could be affected by the inherent variability of the counts, and traffic or weather patterns that have not been captured in our survey. For example, such factors as a late, cool spring in 2011, or the construction and restricted traffic currently taking place on Osborne bridge have affected bicycle traffic this year. While bicycle counts were generally lower in 2011 than in 2010, in some cases they were much higher. The weather classification system used here is fairly crude and probably misses part of the impact of weather on cycling. Even weather forecasts have an impact. For example, on June 7 and 8 there were warnings in the morning about possible rain and high winds. In the end, the weather wasn't as severe as predicted and was classified as "good" based on actual weather data, but it seems likely that the low counts on those days were partly the result of these forecasts.

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 21 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 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 2011, 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.

Estimates of Total Traffic In/Out of Downtown Winnipeg – May-June
Based on 2011 or most recent previous counts

	May-June Averages		AM/PM
Location	**AM**	**PM**	**Average**
1 Ellice	30	58	44
2 Louise Bridge	115	137	126
3 Main St @ Higgins	89	107	98
4 Midtown Bridge	65	91	78
5 Norwood Bridge	197	216	206
6 Omand - Train Bridge	129	141	135
7 Osborne Bridge	191	211	201
8 Osborne Underpass	165	197	181
9 Portage Underpass	66	210	138
10 Provencher Bridge/Esplanade Riel	126	163	144
11 River Trail @ Mulvey	36	46	41
12 Sargent @ Arlington	40	48	44
13 Sherbrook @ Cumberland	60	21	41
14 Maryland @ Cumberland **	21	60	41
15 Sherbrook/Maryland Bridges	198	402	300
16 Slaw Rebchuk Bridge	49	88	69
17 St Matthews Ave	55	53	54
18 Disraeli Bridge	58	72	65
19 Assiniboine Ave.	112	161	137
20 Arlington St.	50	42	46
21 Wellington Ave.	52	64	58
Total 2 Hour Counts	**1,904**	**2,588**	**2,247**
Estimated Total Daily Traffic*			**11,235**
Estimated Cyclists (50% of Total Traffic)			**5,618**

* 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.

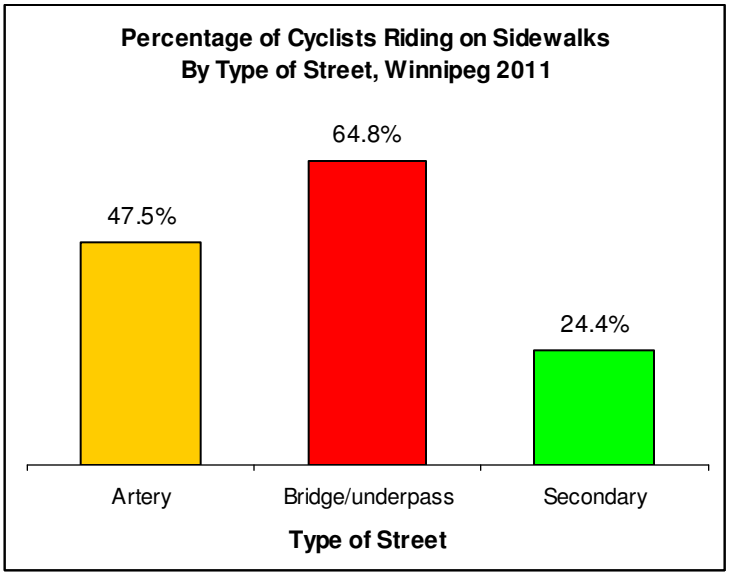
** No counts were done on Maryland. It was assumed that the numbers would be about the same on Maryland as on Sherbrook since these are twin, one-way streets.

As shown in the table, average morning rush hour traffic was about 1,900 cyclists and average afternoon rush hour traffic was about 2,600 for this set of locations. The total bicycle traffic over the course of a day (24 hours) is estimated at **11,200**. Based on the assumption that these cyclists are passing once in each direction, the number of *cyclists* is half of this number, or **5,600 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[1] 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 more than 11,000 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 2011 counting locations, 53% of cyclists rode on the sidewalk and 47% in the street. However, the percentage of sidewalk riders varied according to the type of street or location. 65% of cyclists traveling on bridges or through underpasses, 48% of those on major arteries rode on the sidewalks, while on secondary streets, only 25% rode on the sidewalks. (See figure 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.

In order to look at trends in sidewalk riding several specific locations were identified where there was data for several years. These were grouped according to type of street and average percentages were calculated for each location and year, and for each type of street. This does not show a clear trend. While average sidewalk percentages seem to have declined for those on secondary streets, this is largely because of the inclusion of different locations in 2010 and 2011 compared to earlier years. (See table below.) There is no indication of a reduction in the percentage riding sidewalks on artererial streets or bridges and underpasses.

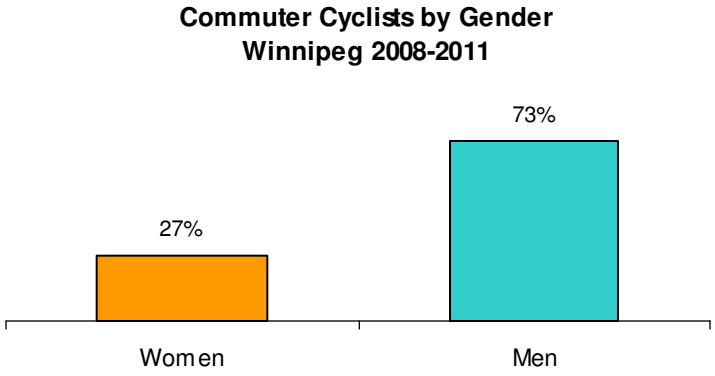
Average Percentage of Cyclists Riding on Sidewalks vs Roads, Selected Locations, By Type of Road and Year

Location	2007	2008	2009	2010	2011
Arterial Streets					
Arlington @ Ellice	29%	57%	40%	33%	37%
Main @ Higgins	77%		68%	69%	55%
Jubilee @ Lilac	57%		70%	65%	72%
Average	**54%**	**57%**	**59%**	**56%**	**55%**
Bridges and Underpasses					
Louise Br	92%	96%	98%	96%	97%
Midtown Br	55%		41%	42%	52%
Osborne Br	48%	47%	45%	63%	63%
Osborne Under		62%	66%	63%	50%
Pemb Under	39%	44%	49%	56%	72%
Provencher	33%		35%	38%	42%
Sherbrook-Maylnd	57%	67%	63%	65%	65%
Average	**54%**	**63%**	**57%**	**61%**	**63%**
Secondary Streets					
Ellice @ Arlington	45%	55%	33%	28%	45%
Grosvenor @ Harrow				29%	16%
Harrow @ Grosvenor				14%	12%
Nassau @ Stradbrook				27%	19%
University Cr @ Thatcher		39%	34%		24%
Waterfront Dr	48%		52%		
Average	**47%**	**47%**	**40%**	**25%**	**23%**

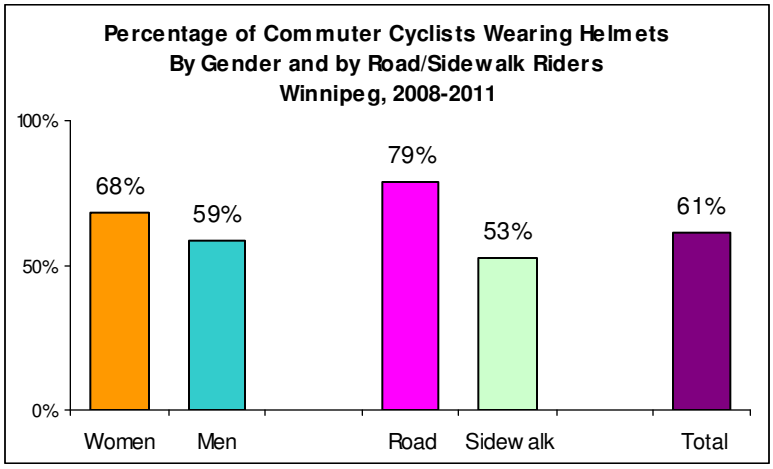
The behaviour of cyclists seems to depend on the particular location, the amount of traffic and the choices that are available to them. For example, Louise Bridge is very narrow, has a high volume of traffic, and very few cyclists take the road. Another example is Provencher Bridge/Esplanade Riel, where 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 quieter side streets, such as Nassau or Ellice, or where there are bike lanes, such as Hargrave. It may also be noted that Grosvenor, Harrow and Nassau all had improvements made in 2010 to make them more attractive for cycling, and that the percentages on the sidewalks has declined on all of these streets.

10. Helmet Use and Gender

Helmet use is not required by law in Manitoba when riding a bicycle, but is widely believed to reduce injuries when cyclists fall or crash. Since 2008 some of our volunteers have kept track of the gender of the cyclists and whether cyclists were wearing bicycle helmets or not. About 27% of the commuter cyclists were identified as female, and 73% 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.



Overall about 61% 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 79% of those riding in the street wore helmets, but only 53% of those riding on the sidewalks wore helmets. In addition, a higher percentage of women wore helmets (68%) compared to men (59%).



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

These findings show that bicycle traffic is increasing in Winnipeg but that, in spite of recent improvements to many bike routes in Winnipeg there are major barriers to cycling, in the form of arteries, bridges and underpasses that lack separate bicycle lanes. As a result many cyclists do not feel safe at these locations and either ride illegally on sidewalks, or are discouraged from cycling altogether.

Five years of bicycle counts in Winnipeg have provided a data base that provides 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. Controlling for these factors, the analysis presented above suggests that commuter bicycle traffic has increased by 20% over a four year period.

It is estimated that during May and June, approximately 5600 cyclists commute in and out of the downtown area of Winnipeg during weekdays, and that a total of 11,000 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.

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 being done on a regular basis is the Census of Canada which has identified the number of people commuting by bicycle, once every five years. The Census is not designed to 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 2011 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 2011 (including Bike to Work Day counts):

Greg Adrian, Sarah Bartel, Laura Belanger, Tibor Bodi, Karla Braun, Geoff Brewster, Kevin Champagne, Mark Cohoe, Margaret Day, Glenn Dela Cruz, Brion Dolenko, Laura Donatelli, Fanny Drouet, Katarzyna Dyszy, Dave Elmore, Andrea Kroeker, Lizanne Lanthier, Chantal Mierau, Bill Newman, Krista Robinson, Brett Ryall, Sierra Sawatzky, Sandra Schettler, Jonathan Stewart, Matt Stuart-Edwards, Mani Tougas, Frances Eyde, Charles Feaver, Cara Fisher, Curt Hull, Greg Martin, Beth McKechnie, Stephen Needham, Jim Parker, Bev Peters, Holly Poklitar, Ken Preston, Denis

Sabourin, Neil Sander, Charlene Stacey, Jonathan Stewart, Lea Stogdale, Tina Tenbergen, Katherine Thompson, Kerri Twigg, Patrick Valderama, Philip Wolfart,

Report prepared by Jeremy Hull for the Bike to Work Day Winnipeg Steering Committee.

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

Appendices

Table A: Spring Bicycle Counts in Winnipeg, 2007-2011 by Location, Year, Month and Time of Day - Two-Hour Rush Hour Counts or Estimates

Table B: Two Hour Counts with the Same Location, Month, Time of Day and Weather Conditions by Year, Winnipeg, 2007-2011

Table C: Year/Year Changes in Counts with the Same Location, Month, Time of Day and Weather Conditions, Winnipeg, 2007-2011

Table A:
Spring Bicycle Counts in Winnipeg, 2007-2011
By Location, Year, Month and Time of Day - Two-Hour Rush Hour Counts or Estimates

		2007			2008				2009			2010				2011		
Location		**Ap**	**My**	**Jn**	**Mr**	**Ap**	**My**	**Jn**	**Ap**	**My**	**Jn**	**Mr**	**Ap**	**My**	**Jn**	**Ap**	**My**	**Jn**
Argue @ Lilac	am									23								
Arlington @ various	am			46					2								16	19	17
	pm			54			31	51	10										
Arlington Bridge	am																	22	
	pm																21		
Assin Park Footbridge	pm												98		150		55		
Assiniboine @ Hargrave	am																		
	pm									184							97	161	
Assiniboine @ Osborne	am									84							60	112	
	pm																		
Balmoral @ Ellice	am							33											
Banning @ St Matthews	pm							18											
Bishop Grandin Greenway @ Dakota	pm																15	31	
Bruce @ Overdale	pm									74			59						
Burnell @ St Matthews	pm							10											
Chancellor Matheson Rd	am						21												
Churchill Parkway	am									2									
	pm									11									
Clifton @ Ellice	am							10											
Dakota @ Bishop Grand.	pm												39	21			17	66	53
Disraeli @ Main St.	pm									32									
Disraeli Bridge (west end)	am									39									
Ellice @ various	am			42				44	1					25			16	27	32
	pm			79				58	10	79									
Elm Park Bridge (BDI)	am													31					
Erin @ Ellice	am							6											
Fort Garry Bridges	am							72					39					79	72
	pm			129		23						4	92	77	188				
Grierson back lane (by Univ)	am								4										
Grosvenor @ Harrow	am																	30	17
	pm												44	28	56		12	31	77
Hargrave @ Assiniboine	pm									22									
Harrow @ Grosvenor	am																	39	24
	pm												36				15	32	85
Home @ Ellice	pm							17											

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Jubilee @ Lilac	am		86							82				35		27		
	pm												84			50		
Kings Dr @ Freedman	am									38								
Lilac @ Jubilee	am		43							18				13				
	pm												17					
Logan @ Arlington	am															9		
Logan @ Salter	am			13														
	pm									33								
Louise Bridge	am		63	90		13	81	128	6	82	102		62	64	140	26	91	138
Main St @ Broadway	am															57		
Main St @ Disraeli	pm									101								
Main St @ Peguis Trail	pm												59			9		
Main St Bridge	am						267			250								
	pm		230															
Main St @ Higgins	am		111	53						101				109		48	89	
Midtown Bridge	am	8	47	69						53			38			16	55	74
	pm		55							94								
Munroe @ Gateway	pm																	13
Nassau @ Stradbrook	am																74	45
	pm													60	148	34	70	
Norwood Bridge	am												174	145	318	82	190	203
	pm									262			208	297	421	104	150	281
NPG @ various	am									63			40	42				
	pm									92								63
Omand Cr - Train Bridge	am		174				116			109	125		93	180		27		
	pm									48			95	209	216	53	188	94
Osborne Bridge	am	39	173	262			189			176						70	134	
	pm		256	309				387	26	325	276		297	192	397	132	174	247
Osborne Underpass	am									172	178		108	102	188	68	178	151
	pm						136			222						58	184	209
Parker Ave West	pm												37	25	50			
Pembina Hwy (St Maurice School)	am										149					20		
	pm												76					
Pembina-Jubilee Underpass	am		130				117			136	121		82			36		
	pm												106			54	115	204
Portage @ Queen	pm									86								
Portage Underpass	am		66															
	pm									210								
Provencher Br/ Esplanade Riel	am		115							145						69	106	146
	pm														303		151	174
Raglan Road	am	67		77														

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Location		**Ap**	**My**	**Jn**	**Mr**	**Ap**	**My**	**Jn**	**Ap**	**My**	**Jn**	**Mr**	**Ap**	**My**	**Jn**	**Ap**	**My**	**Jn**
River Trail @ Mulvey	am									36								
	pm						46											
Riverside @ Jubilee	am													40				
Sargent @ Arlington	am			40														
Sherbrook @ Cumberland	am													25			60	
	pm													21				
Sherbrook/ Maryland Br	am		214					121										
	pm		268	189	22		285	360	19	113	393			298	410	125	331	472
Slaw Rebchuk Bridge	am			65			51							19			49	
	pm									88						31		
Somerville-Seel (path)	pm												8	9	15			
Spence @ Ellice	am							27										
St Matthews @ various	am			55														
	pm			72				53										
St Vital Bridge	am									79								
Stradbrook @ Nassau	pm													25		6	32	
University Cr at various	am				13	23	76	121	18				81	124	167			
	pm				8	29					136		82			62	132	197
Wall @ Ellice	am							12										
Waterfront @ Lombard	am																112	
	pm																185	280
Waterfront Dr @ Provencher	am		168							137								
	pm									136								
Wellington @ Arlington	pm						52											
Wellington Cr @ Borebank	am		103															
Waverley @ Taylor	am													39				
	pm													155				

Some counts are averages of two or more counts.

Table B:
Two Hour Counts with the Same Location, Month, Time of Day and Weather Conditions
By Year, Winnipeg, 2007-2011

				Year				
Month	**AM/PM**	**Weather**	**Location**	**2007**	**2008**	**2009**	**2010**	**2011**
April	AM	Poor	Louise Bridge		**13**	*28*	**62**	**26**
April	AM	Poor	Midtown Bridge	**8**	*13*	*23*	**38**	**16**
April	AM	Poor	Norwood Bridge				**174**	**82**
April	AM	Poor	Omand Cr Train Bridge				**93**	**27**
April	AM	Poor	Osborne Bridge	**39**	*45*	*52*	*60*	**70**
April	AM	Poor	Osborne Underpass				**91**	**68**
April	AM	Poor	Pembina-Jubilee Underpass				**82**	**36**
April	PM	Fair	Dakota @ Bishop Grandin				**39**	**17**
April	PM	Fair	University Crescent		**29**	*37*	*48*	**62**
April	PM	Good	Bruce @ Overdale				**59**	**16**
April	PM	Good	Fort Garry Bridges		**23**	*47*	**99**	
April	PM	Good	Harrow @ Grosvenor				**36**	**15**
April	PM	Good	Jubilee @ Lilac				**84**	**50**
April	PM	Good	Pembina @ St Maurice Sch				**76**	**20**
May	AM	Fair	Arlington @ Ellice				**21**	**19**
May	AM	Fair	Ellice @ Arlington				**25**	**27**
May	AM	Fair	Louise Bridge	**63**	**81**	*84*	*88*	**91**
May	AM	Fair	Main St @ Higgins	**111**	*105*	*99*	*94*	**89**
May	AM	Fair	Omand Cr Train Bridge	**174**	**116**			
May	AM	Fair	Osborne Underpass				**95**	**178**
May	AM	Fair	Pembina-Jubilee Underpass	**130**	**117**			
May	AM	Fair	Waterfront @ Lombard	**168**	*152*	*137*	*124*	**112**
May	AM	Good	Omand Cr Train Bridge			**109**	**180**	
May	PM	Poor	Grosvenor @ Harrow				**28**	**31**
May	PM	Good	Sherbrook/Maryland Br	**268**	**285**	*291*	**298**	**331**
June	AM	Fair	Louise Bridge	**90**	*96*	**102**	*120*	**138**
June	AM	Fair	Midtown Bridge	**70**	*71*	*72*	*73*	**74**
June	AM	Good	Arlington @ Ellice	**48**	*37*	*29*	*22*	**17**
June	AM	Good	Louise Bridge		**128**	*134*	**140**	
June	AM	Good	Norwood Bridge				**318**	**203**
June	AM	Good	Osborne Underpass			**178**	**188**	**151**
June	PM	Good	Arlington @ Ellice	**49**	**51**			
June	PM	Good	Ellice @ Arlington	**79**	**58**			
June	PM	Good	Osborne Bridge	**309**	*292*	**276**		
June	PM	Good	Provencher Br & Esplanade				**303**	**174**
June	PM	ExceInt	Osborne Bridge		**387**	*392*	**397**	
June	PM	ExceInt	Sherbrook/Maryland Br		**360**	**393**	**410**	**472**

Note: Numbers in italics are counts that have been interpolated based on average annual rate of change. Numbers in bold font are actual counts.

Table C:
Year/Year Changes in Counts with the Same Location, Month, Time of Day And Weather Conditions, Winnipeg, 2007-2011

				Year/Year Change (%)			
Month	**AM/PM**	**Weather**	**Location**	**2008/ 2007**	**2009/ 2008**	**2010/ 2009**	**2011/ 2010**
April	AM	Poor	Louise Bridge		118.4	118.4	-58.1
April	AM	Poor	Midtown Bridge	68.1	68.1	68.1	-57.9
April	AM	Poor	Norwood Bridge				-53.1
April	AM	Poor	Omand Cr Train Bridge				-71.0
April	AM	Poor	Osborne Bridge	15.7	15.7	15.7	15.7
April	AM	Poor	Osborne Underpass				-25.0
April	AM	Poor	Pembina-Jubilee Underpass				-56.1
April	PM	Fair	Dakota @ Bishop Grandin				-56.4
April	PM	Fair	University Crescent		28.5	28.5	28.5
April	PM	Good	Bruce @ Overdale				-72.7
April	PM	Good	Fort Garry Bridges		108.7	108.7	
April	PM	Good	Harrow @ Grosvenor				-58.3
April	PM	Good	Jubilee @ Lilac				-40.8
April	PM	Good	Pembina @ St Maurice Sch				-73.6
May	AM	Fair	Arlington @ Ellice				-9.5
May	AM	Fair	Ellice @ Arlington				8.0
May	AM	Fair	Louise Bridge	28.6	4.0	4.0	4.0
May	AM	Fair	Main St @ Higgins	-5.4	-5.4	-5.4	-5.4
May	AM	Fair	Omand Cr Train Bridge	-33.3			
May	AM	Fair	Osborne Underpass				87.5
May	AM	Fair	Pembina-Jubilee Underpass	-9.7			
May	AM	Fair	Waterfront @ Lombard	-9.6	-9.6	-9.6	-9.6
May	AM	Good	Omand Cr Train Bridge			65.1	
May	PM	Poor	Grosvenor @ Harrow				10.7
May	PM	Good	Sherbrook/Maryland Br	6.3	2.3	2.3	11.1
June	AM	Fair	Louise Bridge	6.5	6.5	17.6	15.0
June	AM	Fair	Midtown Bridge	1.4	1.4	1.4	1.4
June	AM	Good	Arlington @ Ellice	-22.7	-22.7	-22.7	-22.7
June	AM	Good	Louise Bridge		4.6	4.6	
June	AM	Good	Norwood Bridge				-36.2
June	AM	Good	Osborne Underpass			5.6	-19.7
June	PM	Good	Arlington @ Ellice	4.1%			
June	PM	Good	Ellice @ Arlington	-26.6%			
June	PM	Good	Osborne Bridge	-5.5%	-5.5%		
June	PM	Good	Provencher Br & Esplanade				-42.6%
June	PM	Excellent	Osborne Bridge		1.3	1.3	
June	PM	Excellent	Sherbrook/Maryland Br		9.2	4.3	15.1
Average Change				**1.3**	**20.3**	**24.0**	**-20.4**
Count (number of comparisons)				14	16	17	28