Northern Territory Government

DEPARTMENT OF
LANDS AND PLANNING

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Greater Darwin Cycle Survey February 2012

A snapshot of cycle path usage in the Greater Darwin Region

At a glance

This cycle survey report summarises the results of a cycle path survey undertaken by the Department of Lands and Planning between February 2 and February 17 2012. The survey was undertaken as a follow up to four previous cycle path surveys undertaken in February 2009, July 2010, February 2011 and July 2011.

The survey consisted of a three hour count at 12 selected sites of the Greater Darwin cycle path network. Five sites were previously surveyed in 2009, 2010 and 2011. Three new sites were added in July 2011 and then a further four new sites in 2012. The survey was conducted on Monday to Friday from February 2 – February 17 2012, during the wet season. The 2009 and February 2011 surveys were also conducted during the wet season, while the 2010 and July 2011 surveys were undertaken during the dry season

Comparisons between 2012, 2011, 2010 and 2009 data revealed the following:

- A total of 865 cyclists were counted in the 2012 wet season survey;
- The total cyclists recorded for the five comparable sites were 374. This was 14.4% greater than 2009, 0.8% less than 2010 and 16.3% less than the peak in the 2011 wet season survey. However it was a 2% increase from July 2011 dry season;
- All five comparable sites recorded more off road cyclists than on road cyclists;
- The total cyclists recorded for the 8 comparable sites in this survey were 681. This was 2.9% greater then 2011 dry season;
- All eight comparable sites recorded more off road then on road cyclists
- Site 8 (Rapid Creek Bridge) recorded the most cyclists (168); and
- The average peak time over all twelve sites was at 7:15am. On average, high numbers were recorded from 6:45am to 7:45am.

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1 Introduction

The Greater Darwin Cycle Survey 2012 (Wet Season) provides a snapshot of cycle path usage at twelve sites on the Greater Darwin arterial cycle path network. The purpose of the survey is to provide evidence of cycle path usage and assist in the ongoing planning and management of the cycle path network. Five of the eight sites were the same as surveys conducted in 2009, 2010 and 2011 (wet season) and eight of the twelve sites were the same as 2011 (dry season). Four new sites have been added to this survey as recommended in the 2011 (dry season) report. These are located at the new Howard Springs cycle path on Tulagi Rd, the opposite end of the Howard Springs cycle path at Whitewood Road, the corner of McMinn St/Stuart Hwy and the corner of McMinn St/ Bennett St.

This survey was conducted from 2nd February to 17th of February 2012. The count was undertaking during the school term (which may increase the count numbers in comparison with July counts undertaken in the school holidays). The survey was conducted during the wet season and the weather during this period was mostly fine and sunny on all count days (approx 34 degrees Celsius) with no rain present on any of the count days.

1.1 Background

The Greater Darwin Region has an extensive arterial cycle path network and anecdotal evidence indicates that the paths are well used and that usage is increasing. However, very limited data is available on cycle path usage in the region.

During the wet season in February 2009, the Department of Lands and Planning (DLP) undertook a snapshot survey of six key routes on the network. The survey focussed mainly on the arterial cycle path network managed by DLP. However, it also included the Dick Ward Drive cycle path which is managed by the Darwin City Council as this path is a key commuter cyclist route with links to the arterial cycle path network.

In July 2010, the snapshot survey was repeated to indicate dry season cycle path usage. There was an overall increase of 11% in cyclist numbers between the February 2009 and July 2010 surveys.

A follow up survey was conducted during the wet season in February 2011. Overall, there was a 36% increase in cyclists from 2009 to 2011. This consisted of an 18% increase in 2010 and a 15% increase in 2011.

The 2011 dry season survey showed the change in cycle path usage between the dry season and the 2009 wet season, 2010 dry season and 2011 wet season. The comparison between the 2011 and 2010 dry seasons was of particular interest as this is the first time dry season data had been compared. The results of both dry seasons where very similar, with data showing a slight drop of overall riders from 377 in 2010 to 366 in 2011. The 2011 dry had a 16% drop in cycle numbers since the 2011 wet survey, which may indicated that weather conditions have limited impact in cycling participation.

This survey was undertaking during the school term. The results showed that the data from this survey and the 2011 dry season were very similar with a 2% increase in overall cycle numbers over 8 comparable sites.

The results establish a basis for more extensive data collection and assist with planning, developing and managing the network.

1.2 Weather Conditions

Weather conditions during the 2012 wet season survey were fine and sunny or fine and overcast on all count days. The weather conditions of each day of the survey are described below in Table 1.

Table 1. Weather Conditions

Date	Site	Weather
Thursday 2/2/12	9 (Tulagi Road-new Howard Springs Path)	Fine/Overcast
Friday 3/2/12	7 (Yarrawonga, Thorngate Rd, Stuart Hwy)	Fine/Overcast
Monday 6/2/12	1 (Bagot rd, Totem Rd)	Fine/Sunny
Tuesday 7/2/12	6 (Bagot Rd, Fitzer Rd)	Fine/Overcast
Wednesday 8/2/12	3 (Bagot Rd, Stuart Hwy)	Fine/Sunny
Thursday 9/2/12	2 (Dickward Dr, Totem Rd)	Fine/Overcast
Friday 10/2/12	8 (Rapid creek Bridge)	Fine/Sunny
Monday 13/2/12	5 (Mcmillians Rd, Vanderlin Drive)	Fine/Sunny
Tuesday 14/2/12	4 (Stuart Hwy, Amy Johnson)	Fine/Sunny
Wednesday 15/2/12	10 (Mcminn St, Stuart hwy)	Fine/Sunny
Thursday 16/2/12	11 (Mcminn St, Bennett St)	Fine/Sunny
Friday 17/2/12	12 (Whitewood Rd- new Howard Springs Path)	Fine/Sunny

2 Methodology

The 2012 wet season survey was conducted using the same methodology as the 2009, 2010, 2011 wet season and 2011 dry season surveys.

2.1 Site Selection

A total of twelve sites were selected (see figures 1 and 2 for locations). Five of these sites were the same as the 2009 and 2010 surveys. While eight of the sites (five previous sites included) were the same as the 2011 dry and wet season surveys. The four new sites were located at the Tulagi Road new Howard Springs cycle path (site 9 – see figure 2), the other end of the cycle path at Whitewood Rd (Site 12 – see figure 2), corner of McMinn St; Stuart Hwy (site 10 - see figure 1) and the corner of McMinn St; Bennett St (site 11 – see figure 1).

Figure 1. Location of Darwin survey sites

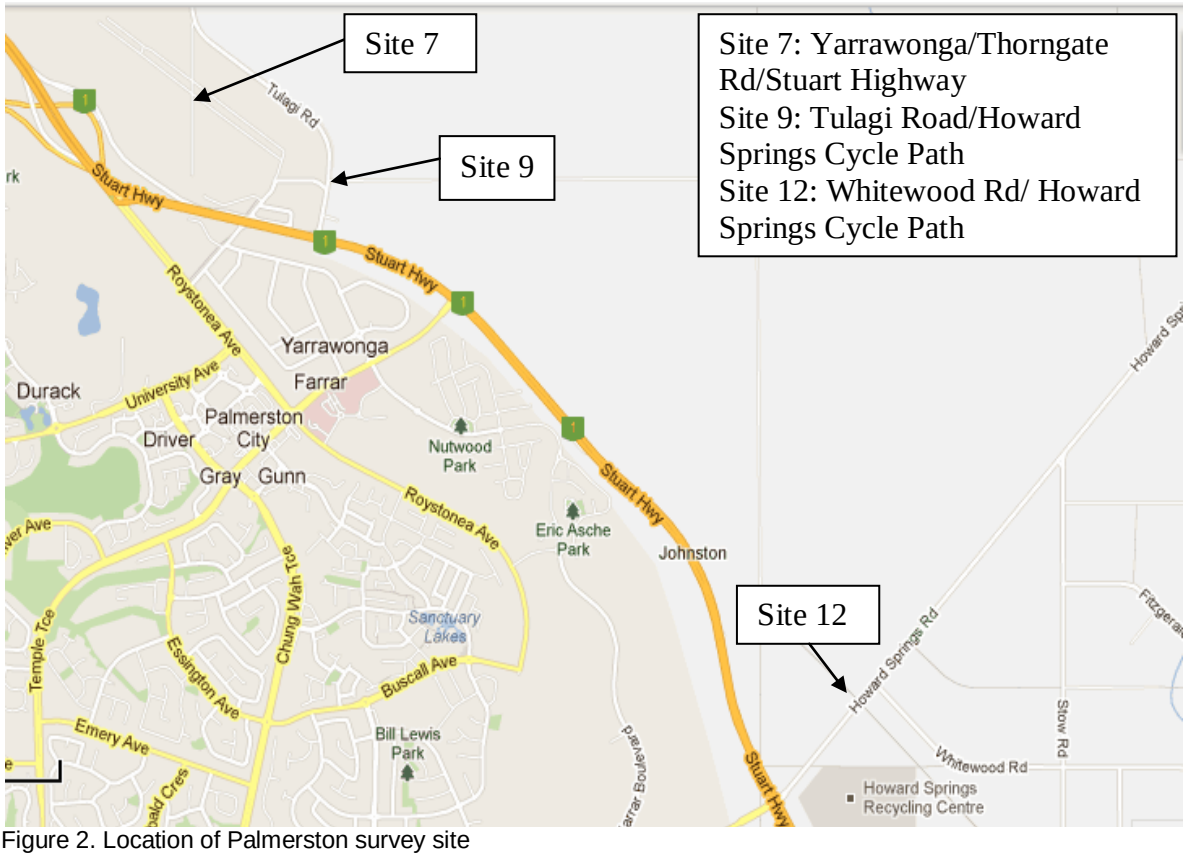


Figure 2. Location of Palmerston survey site

2.2 Count Procedures

Physical counts were conducted by two surveyors from 6:30am to 9:30am on each working day from 2nd February to 17th of February 2012. All counts were on weekdays during peak commuter hours. All counts were conducted during the school term. The surveyors were situated adjacent to the road while recording at most sites. Site 6 (Fitzer Dr, Bagot Rd intersection) was a small intersection and did not require the survey counters to record outside the vehicle as the whole intersection could be viewed from inside the vehicle. In addition, site 7 (Thorngate Rd) and 9 (Tulagi Rd) were surveyed from within the vehicle due to adverse conditions (biting insects) and small size of intersections. The two surveyors both counted while only one recorded on the count sheet; there were no breaks over the 3-hour period. At sites known to have increased cycle traffic (Site 8 and 10) each surveyor was designated certain directions to monitor, this increased the accuracy for recording methods.

2.3 Limitations of the Survey

The purpose of this survey was to provide a snapshot of cycle path usage at selected points on the network. The snapshot consisted of only one 3 hour period of recording on one day per site. This significantly limits the amount of data recorded, the ability of the data to accurately represent trends and the conclusions that can be made.

Site 7 and 8 were new sites used in the 2011 dry season survey. These sites have been recorded again in this survey. A comparison can be made of these sites, it must be noted that this survey was conducted during the school term and in a different season then the 2011 dry season.

No data exists for comparing sites 9, 10, 11 and 12 as these sites have been newly added to this survey.

Site 3 Bagot Rd/ Stuart Hwy and site 5 McMillians Rd/ Vanderlin had poor visibility. Site 5 is a large intersection and even with 2 people counting, visibility is not good and an entry/exit point of cyclists is difficult to determine which may affect count accuracy at this location.

3 Results

A total of 865 cyclists were counted in the 2012 wet season survey (see table 2). Site 8 (Rapid Creek Bridge) recorded the most cyclists (168).

The total number of cyclists recorded in the 2012 wet season survey for the five sites comparable across all five surveys was 374 This was 14.4% greater than 2009 but 0.8% less than 2010 and 16.3% less than the peak in the 2011 wet season survey. However it was 2% greater then the 2011 dry season survey (see table 6).

Total number of cyclists in the 2012 wet season survey for the eight comparable sites from the 2011 dry season survey was 681. This was 2% greater than 2011 dry season total of 661.

All sites recorded more off road cyclists than on road cyclists.

The direction of travel of cyclists was recorded at each site. This data revealed the most common directions cyclists were travelling when moving through each site. Diagrams representing the most common directions have been created (see appendix 1).

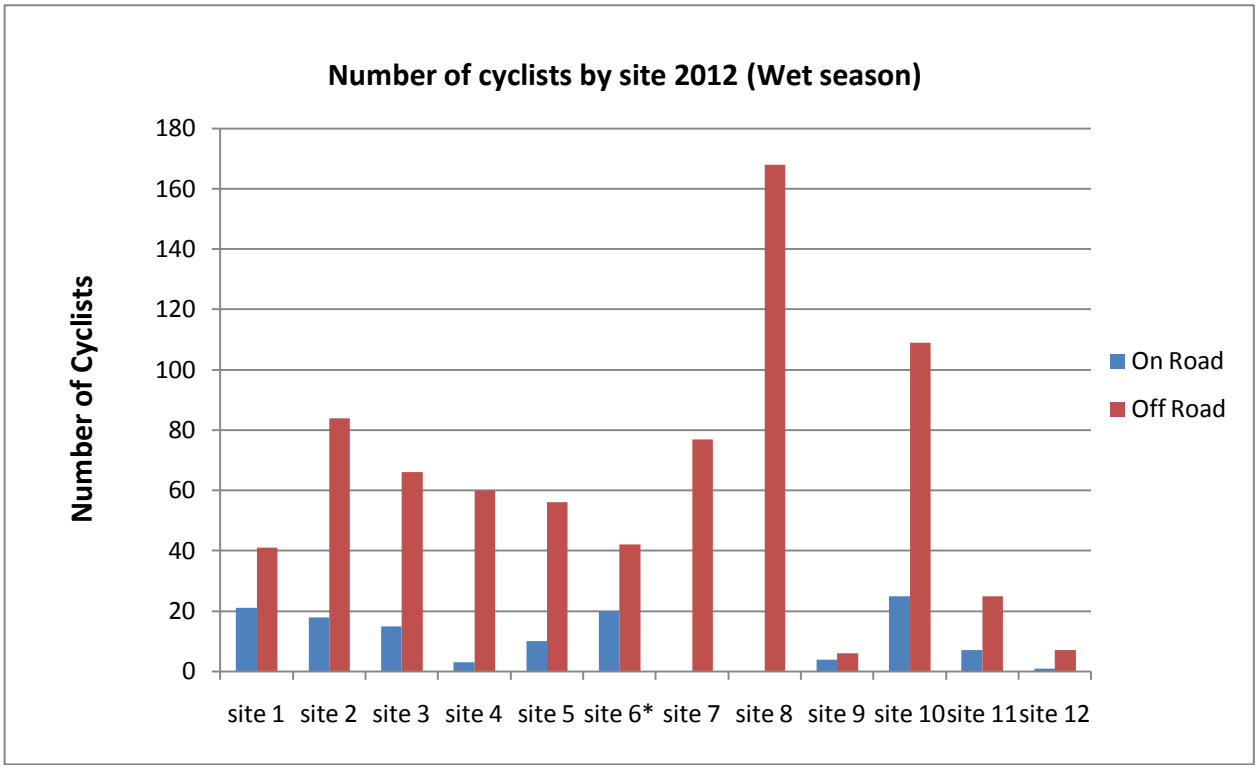


Figure 3. Number of cyclists by site 2012 (wet season)

Table 2. 2012 (wet season) site data

Site	On road	Off road	Total
1 – Bagot Road - Totem Road	21	41	62
2 – Dick Ward Drive - Totem Road	18	84	102
3 – Bagot Road - Stuart Highway	15	66	81
4 – Stuart Highway - Amy Johnson Avenue	3	60	63
5 – McMillans Road - Vanderlin Drive	10	56	66
6 – Fitzer Drive - Bagot Road	20	42	62
7 – Yarrawonga/Thorngate - Stuart Hwy	0	77	77
8 – Rapid Creek Bridge (University side)	0	168	168
9 – Tulagi Road, Howard Springs Path	4	6	10
10- McMinn St – Stuart Hwy	25	109	134
11- McMinn St – Bennett St	7	25	32
12- Whitewood Rd – Howard Springs Path	1	7	8
Total	124	741	865

Table 3. Total counts for five comparable sites 2009-2012

	2009 (wet)			2010 (dry)			2011 (wet)			2011 (dry)			2012 (wet)		
Site	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**	**On road**	**Off Road**	**Total**
Site 1	23	45	68	21	49	70	22	65	87	26	43	69	21	41	62
Site 2	19	74	93	21	80	101	34	105	139	17	86	103	18	84	102
Site 3	15	63	78	29	61	90	19	69	88	15	59	74	15	66	81
Site 4	0	30	30	4	41	45	0	32	32	6	40	46	3	60	63
Site 5	7	44	51	9	62	71	22	67	89	4	70	74	10	56	66
Average	**12.8**	**51.2**	**64**	**16.8**	**58.6**	**75.4**	**19.4**	**67.6**	**87**	**13.6**	**59.6**	**73.2**	**13.4**	**61.4**	**74.8**
Total	**64**	**256**	**320**	**84**	**293**	**377**	**97**	**338**	**435**	**68**	**298**	**366**	**67**	**307**	**374**

Table 4. Total counts for six comparable sites 2011-2012

	2011 (wet)			2011 (dry)			2012 (wet)		
Site	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**
Site 1	22	65	87	26	43	69	21	41	62
Site 2	34	105	139	17	86	103	18	84	102
Site 3	19	69	88	15	59	74	15	66	81
Site 4	0	32	32	6	40	46	3	60	63
Site 5	22	67	89	4	70	74	10	56	66
Site 6	21	61	82	12	41	53	20	42	62
Average	**20**	**67**	**86**	**13**	**57**	**70**	**15**	**58**	**73**
Total	**118**	**399**	**517**	**80**	**339**	**419**	**87**	**349**	**436**

Table 5. Total counts for 8 comparable sites 2011-2012

	2011 (dry)			2012 (wet)		
Site	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**
Site 1	26	43	69	21	41	62
Site 2	17	86	103	18	84	102
Site 3	15	59	74	15	66	81
Site 4	6	40	46	3	60	63
Site 5	4	70	74	10	56	66
Site 6	12	41	53	20	42	62
Site 7	0	73	73	0	77	77
Site 8	0	168	168	0	168	168
Average	**10**	**73**	**83**	**11**	**74**	**85**
Total	**80**	**580**	**660**	**87**	**594**	**681**

Table 6. Percentage change for 5 comparable sites 2009-2012(wet)

	% Change 2009(w)-2012(w)			% Change 2010(d)-2012(w)			% Change 2011(w)-2012(w)			%Change 2011(d)-2012(w)		
Site	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**	**On Road**	**Off Road**	**Total**
Site 1	-9%	-9%	-9%	0%	-16%	-11%	-5%	-37%	-29%	-19%	-5%	-10%
Site 2	-5%	14%	10%	-14%	5%	1%	-47%	-20%	-27%	6%	-2%	-1%
Site 3	0%	5%	4%	-48%	8%	-10%	-21%	-4%	-8%	0%	12%	9%
Site 4	300%	100%	110%	-25%	46%	40%	300%	88%	97%	-50%	50%	37%
Site 5	43%	27%	29%	11%	-10%	-7%	-55%	-16%	-26%	150%	-20%	-11%
Total	**36%**	**36%**	**36%**	**4%**	**19%**	**16%**	**-26%**	**-13%**	**-16%**	**9%**	**3%**	**4%**

Table 7. Percentage change for 6 comparable sites 2011 -2012

	%Change 2011 (w) – 2012 (w)			%Change 2011 (d) – 2012 (w)		
Site	**On road**	**Off road**	**Total**	**On road**	**Off road**	**Total**
Site 1	-5%	-37%	-29%	-19%	-5%	-10%
Site 2	-47%	-20%	-27%	6%	-2%	-1%
Site 3	-21%	-4%	-8%	0%	12%	9%
Site 4	300%	88%	97%	-50%	50%	37%
Site 5	-55%	-16%	-26%	150%	-20%	-11%
Site 6	-5%	-31%	-24%	67%	2%	17%
Total	-26%	-13%	-16%	9%	3%	4%

Table 8. Percentage change for 8 comparable sites 2011(d)-2012

	%Change 2011 (d) – 2012 (w)		
Site	**On road**	**Off road**	**Total**
Site 1	-19%	-5%	-10%
Site 2	6%	-2%	-1%
Site 3	0%	12%	9%
Site 4	-50%	50%	37%
Site 5	150%	-20%	-11%
Site 6	67%	2%	17%
Site 7	0%	5%	5%
Site 8	0%	0%	0%
Total	9%	2%	3%

The number of cyclists at sites 1, 2 and 5 were lower than previous counts (see figure 4). Sites 3, 6 and 7 had higher counts then the 2011 dry season survey, however were significantly less then 2011 wet season. Site 4 recorded the highest count number since the first survey in 2009. (see figure 4)

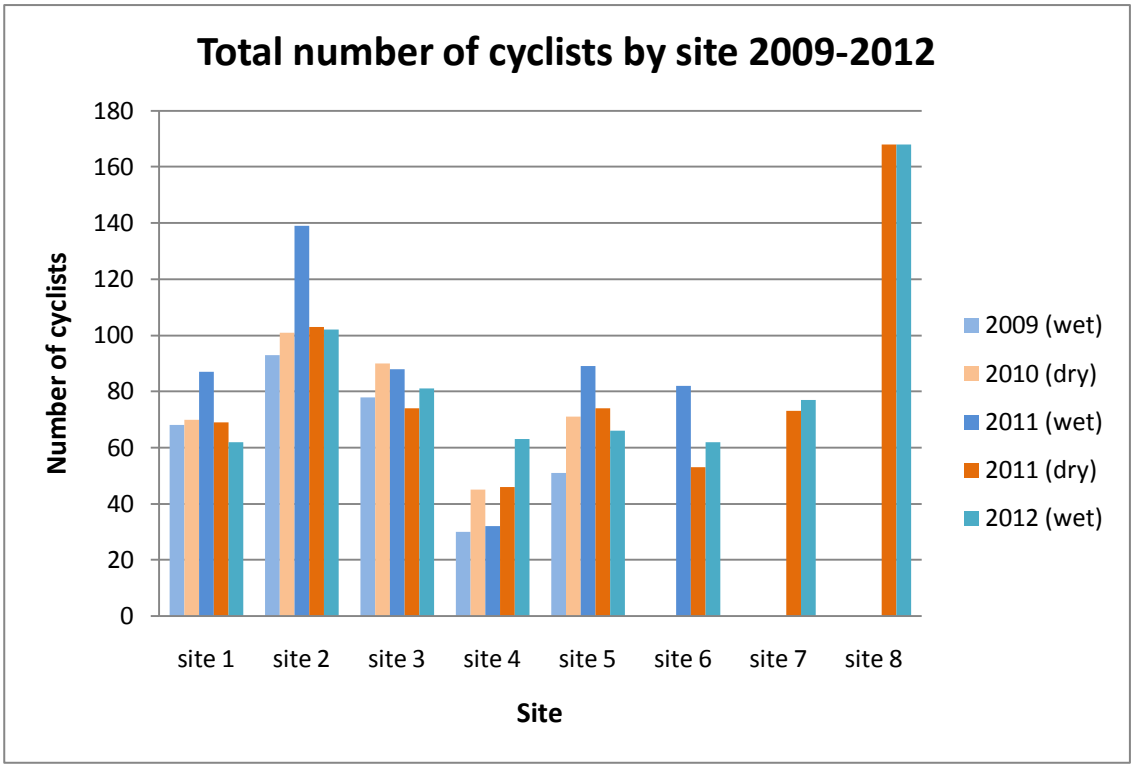


Figure 4. Total number of cyclists by site 2009-2012

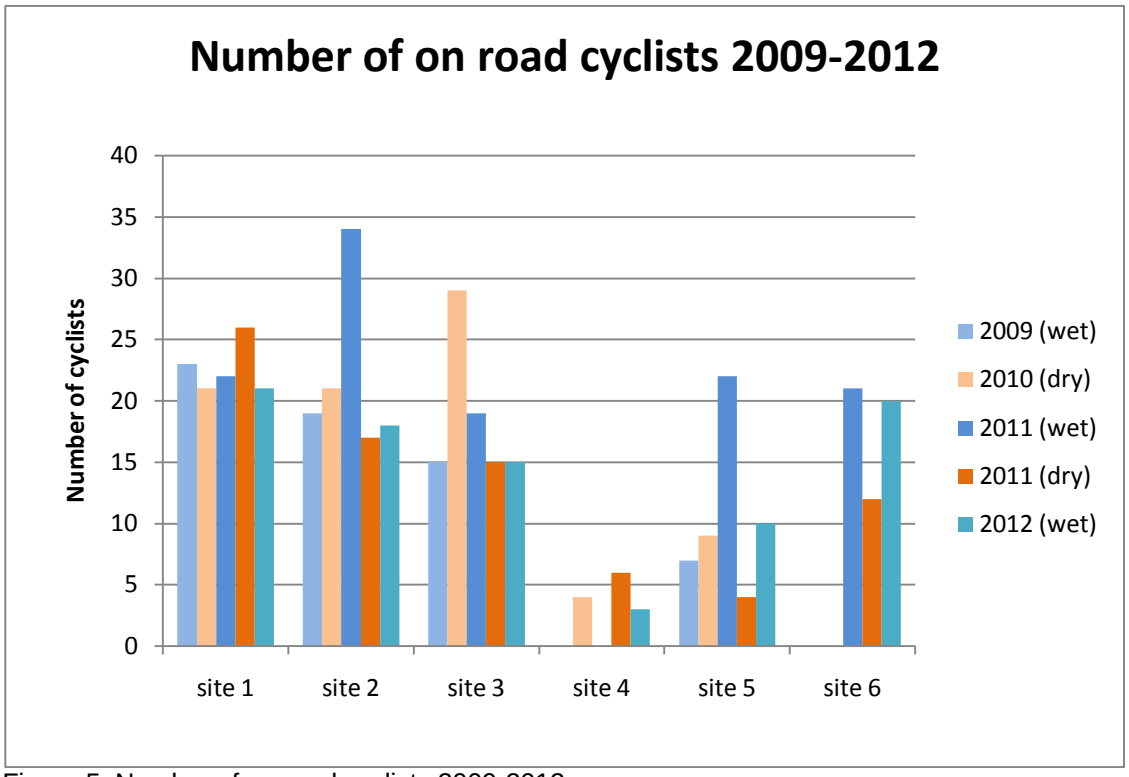


Figure 5. Number of on road cyclists 2009-2012

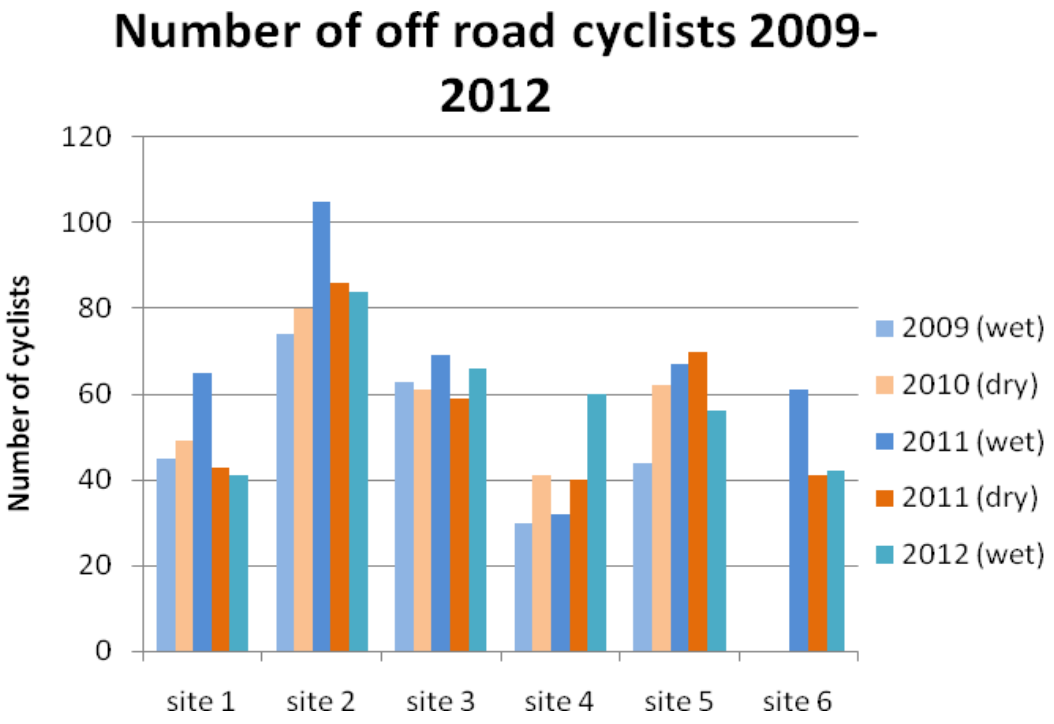


Figure 6. Number of off road cyclists 2009-2012

The average peak time over all 12 sites was at 7:15am (see figure 7). On average, high numbers were from 6:30am to 7:45am.

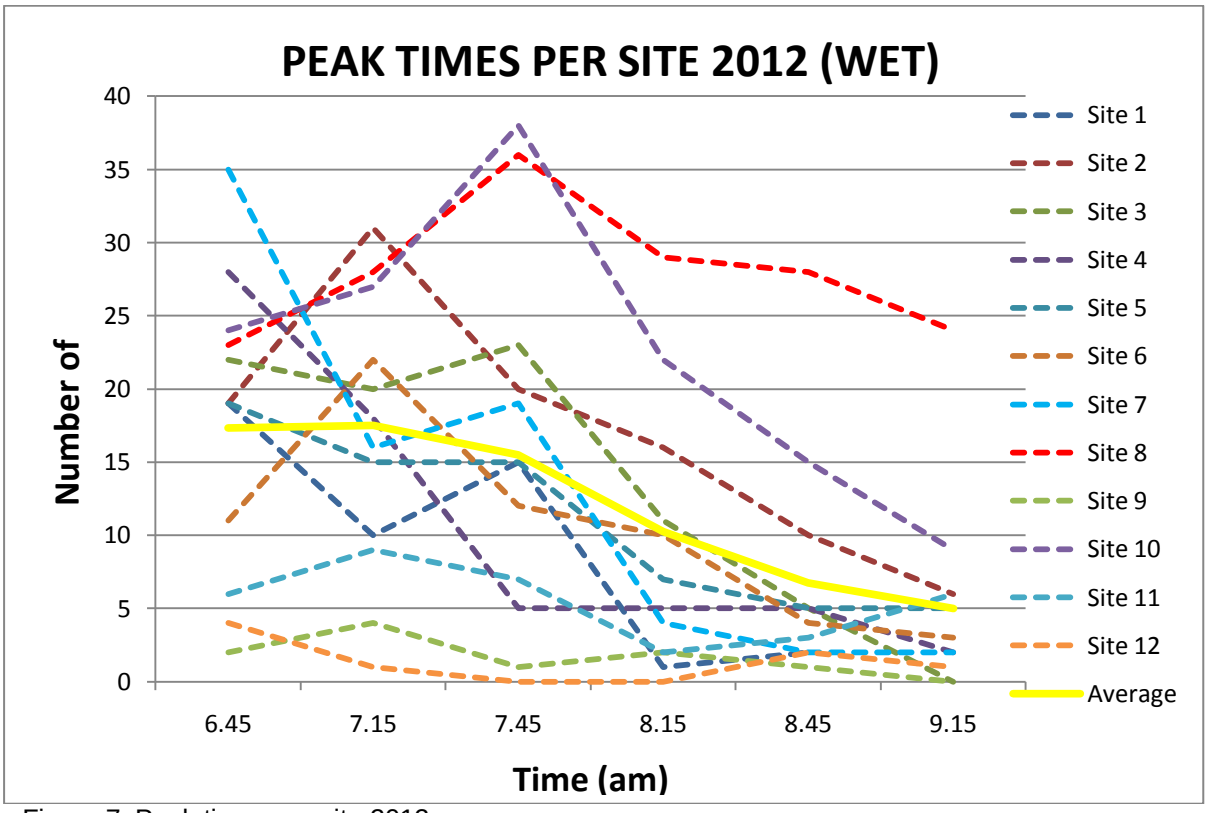


Figure 7. Peak times per site 2012

4 Discussion

Overall the 2012 wet season was very comparable to the 2011 dry season and 2010 dry season count with a 2% increase and 0.8%% decrease. Numbers were similar across all five comparable sites. However, numbers were down 16.3% from the 2011 wet season count. Numbers were also similar over the 8 comparable sites from the 2011 dry season. The similar numbers between the 2012 wet season and 2011 dry season may indicate that weather does not have a significant impact on a cyclist's decision to ride in the morning.

Survey methods have remained constant throughout all five counts. This survey did have one of the same counters from the 2011 dry season. Which may have increased the accuracy of the results as site setup and methods of recording were carried over from 2011.

The average peak times were similar to those of the last survey with 7:15am having the most cycle traffic. However numbers between 6:30am – 7am did increase from last years count, this could be due to the large number of army personell cycling to the Barracks at site 7.

Site 8 recorded the highest number of cyclists (168) in the three hour period. This was followed by Site 10 (McMinn And Stuart Hwy) which recorded 134 cyclists.

Thorngate Rd (site 7) experienced increased cycle traffic between 630am – 7am mainly for direction 9 (see appendix 1). This increase is due to the army personell using the path, which leads to Roberson Barracks, located on Thorngate Road.

Site 12 had the lowest recorded cycle traffic of 8 riders.

5 Recommendations

No new sites have been purposed for the next follow up survey.

Site 4 recorded an average 71% increase in cyclists since recording begun in 2009, therefore the site should remain in future surveys.

Site 3 and Site 5 had poor visibility. It is recommended that new count points be identified at this location or the counters split up for better vision in all directions.

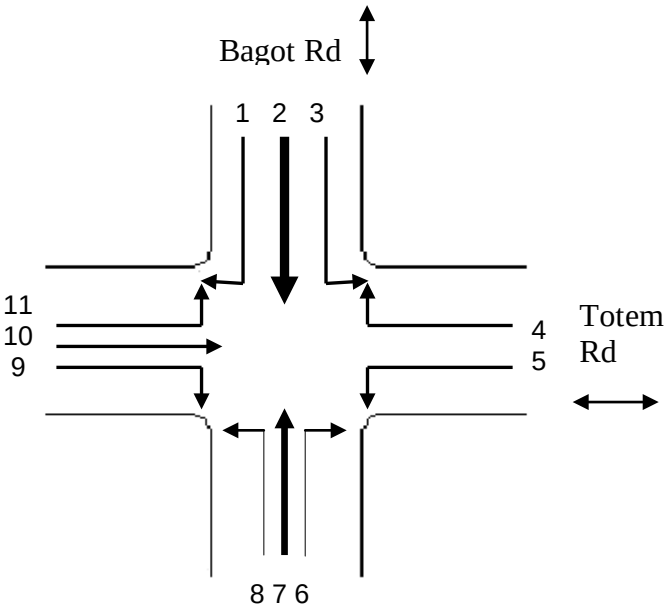
Site 9 and 12 recorded only a small number riders during the 3 hour count period, therefore different count options could be explored at these sites. Adding a recreational count at this

site may be beneficial. An morning weekend count to provide and indication of recreational use of the Howard Springs to Palmerston cycle path could be considered.

The current survey method should continue to be used so that data can be accurately compared across all previous surveys. However, this method is only a snapshot and options for developing a formal cycle path usage data collection program should continue to be explored. Increasing the frequency of counts increases the accuracy of data and allows for comparison between months, seasons and weather conditions.

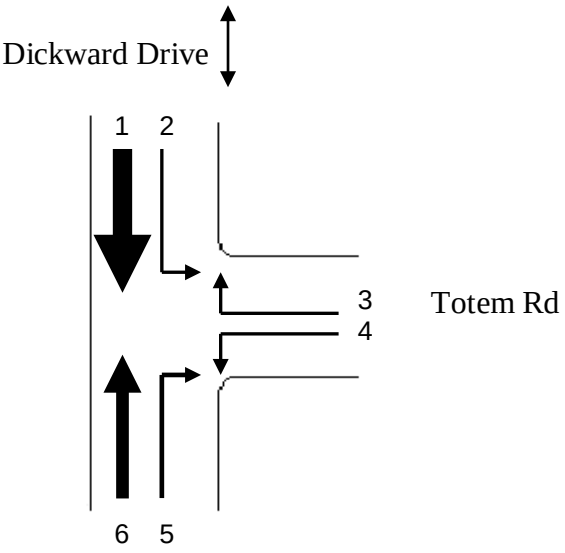
6 Appendix 1 Count Directions

Site 1. Bagot Road – Totem Road



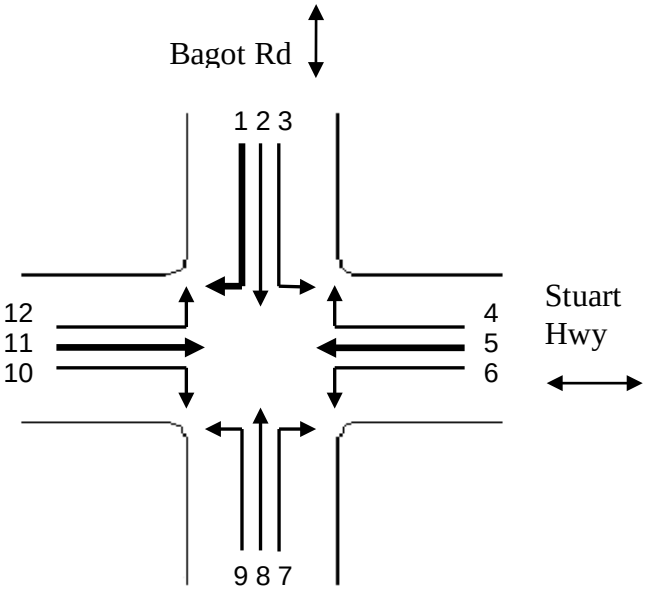
Date of Survey	1	2	3	4	5	6	7	8	9	10	11	Total
Mon 06/02/2012	3	32	0	0	6	0	11	0	3	1	6	62
Wed 29/06/2011	6	28	0	0	10	1	18	1	1	0	4	69
Mon 07/02/2011	20	48	2	1	3	0	7	0	3	1	2	87
2010	3	38	0	0	4	1	16	1	2	1	3	69
2009	12	30	0	0	4	3	12	1	3	1	1	67

Site 2. Dick Ward Drive – Totem Road



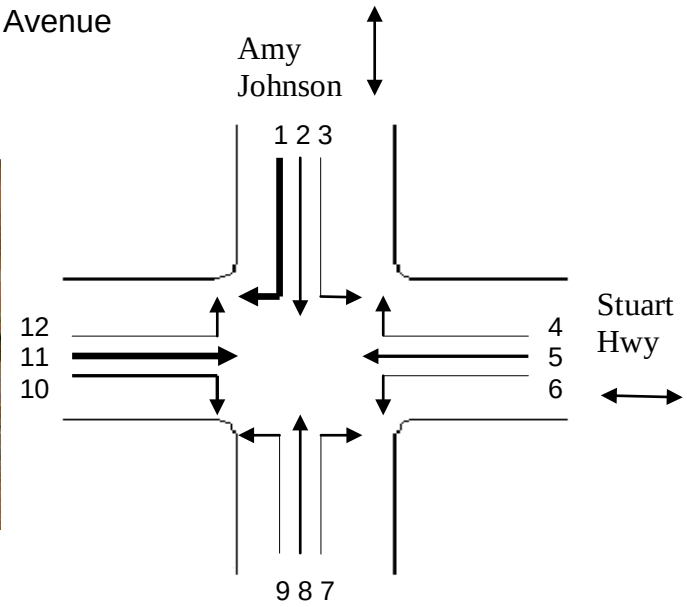
Date of Survey	1	2	3	4	5	6	Total
Thur 09/02/2012	60	4	0	5	6	27	102
Thur 30/06/2011	59	2	2	5	2	33	103
Wed 09/02/2011	77	8	4	5	3	42	139
2010	55	12	1	9	2	22	101
2009	56	3	4	10	4	16	93

Site 3. Bagot Road – Stuart Highway



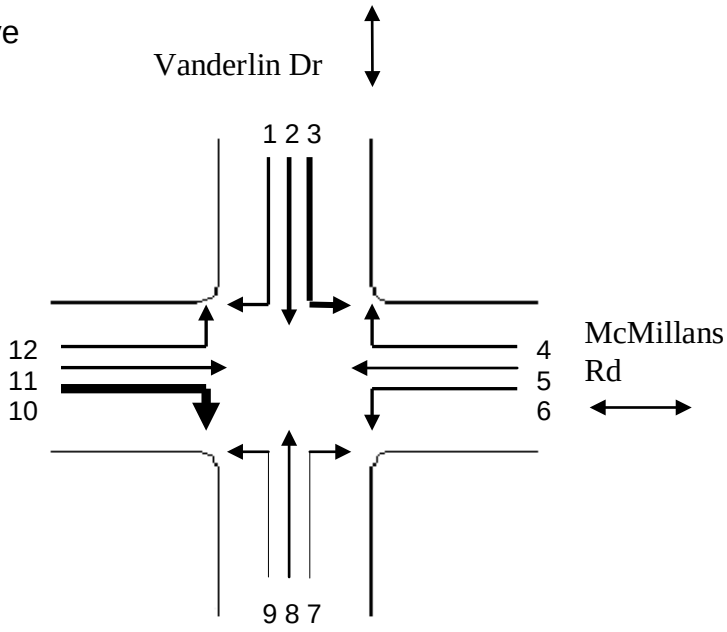
Date of Survey	1	2	3	4	5	6	7	8	9	10	11	12	Total
Wed 08/02/2012	17	7	8	2	18	2	2	1	0	5	17	2	81
Fri 1/07/11	20	4	7	0	16	2	2	1	0	2	14	6	74
Fr 11/02/2011	15	7	6	1	16	4	3	3	3	8	10	12	88
2010	11	6	0	1	18	4	2	5	2	11	19	11	90
2009	23	5	5	1	6	1	3	0	1	2	16	15	61

Site 4. Stuart Highway – Amy Johnson Avenue



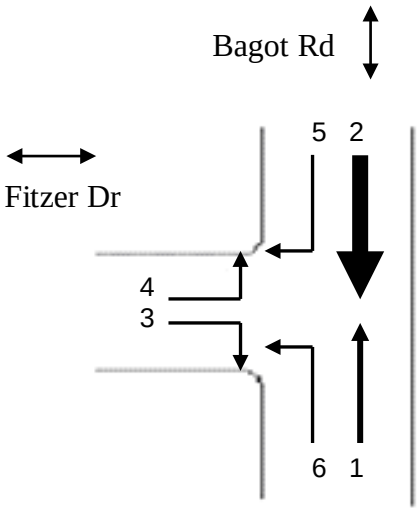
Date of Survey	1	2	3	4	5	6	7	8	9	10	11	12	Total
Tue 14/02/2012	10	0	4	3	24	0	0	0	0	0	17	5	63
Mon 4/07/11	13	0	0	0	4	6	0	0	4	0	13	0	40
Mon 14/02/2011	12	0	0	0	10	0	0	0	0	5	5	0	32
2010	17	0	4	1	9	0	0	3	2	0	4	5	45
2009	7	1	6	0	2	0	0	0	0	0	13	1	30

Site 5. McMillans Road – Vanderlin Drive



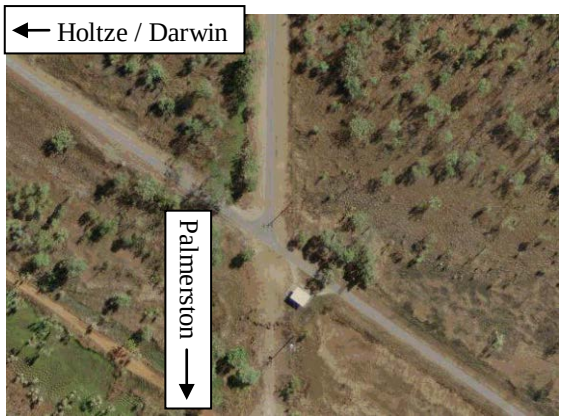
Date of Survey	1	2	3	4	5	6	7	8	9	10	11	12	Total
Mon 13/02/2012	3	8	13	6	2	0	1	0	3	17	10	3	66
Tue 5/07/11	3	16	9	5	3	2	0	0	8	26	1	1	74
Wed 23/02/2011	7	16	23	6	0	1	0	0	0	30	4	2	89
2010	6	12	8	6	1	4	0	1	0	20	6	7	71
2009	1	8	19	2	0	0	0	1	1	10	7	2	51

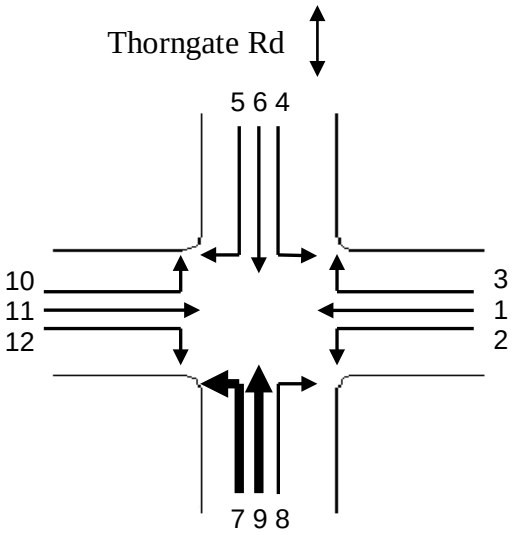
Site 6. Fitzer Drive – Bagot Road



Date of Survey	1	2	3	4	5	6	Total
Tue 07/02/2012	11	43	2	2	2	2	62
Wed 6/7/11	10	41	1	0	1	0	53
Mon 21/02/2011	19	45	3	5	6	4	82

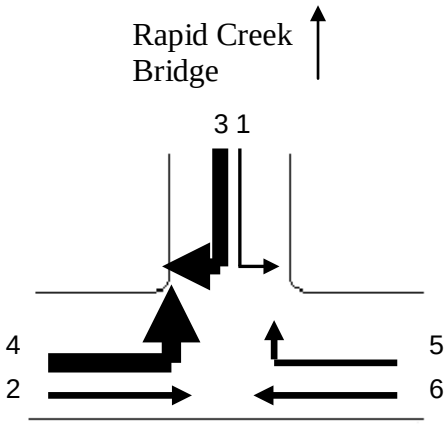
Site 7. Yarrawonga – Thorngate Road – Stuart Highway





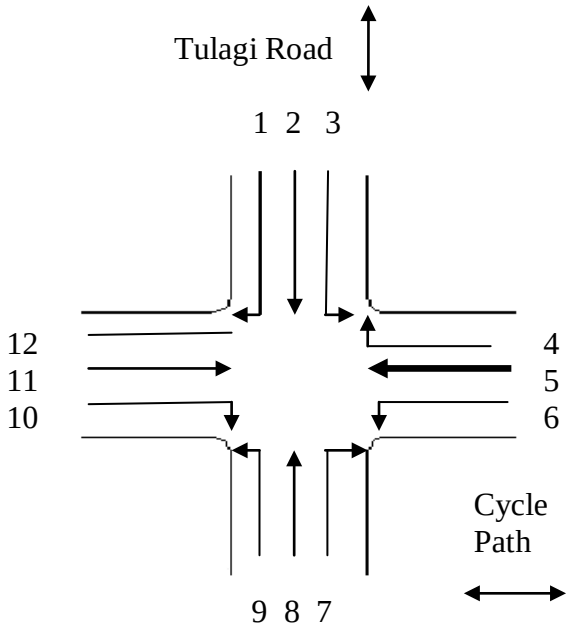
Date of Survey	1	2	3	4	5	6	7	8	9	10	11	12	Total
Fri 03/02/2012	7	1	4	0	3	0	18	0	32	0	5	7	77
Thur 7/07/11	3	7	5	0	0	1	22	0	25	1	5	4	73

Site 8. Rapid Creek Bridge



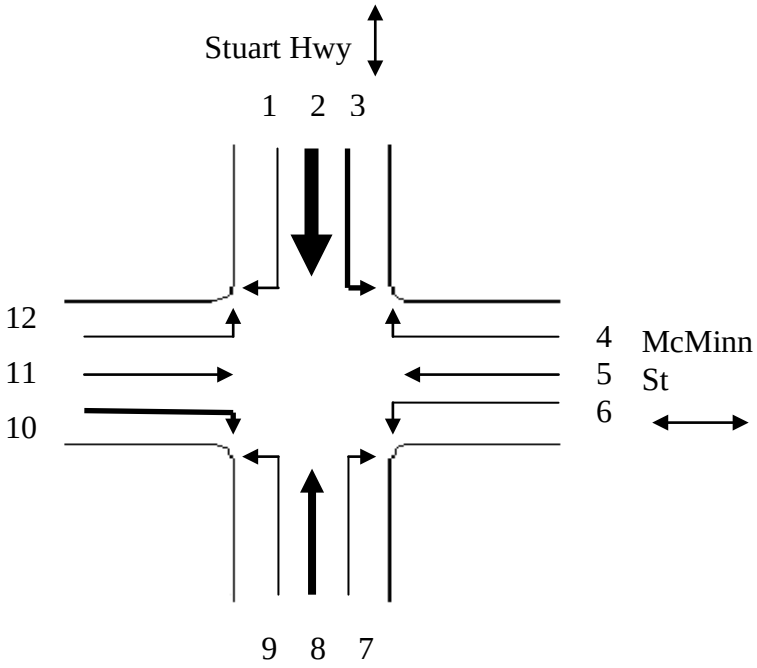
Date of Survey	1	2	3	4	5	6	Total
Fri 10/02/2012	6	24	26	67	20	25	168
Fri 8/07/11	7	14	43	67	20	17	168

Site 9 Tulagi Road – Howard Springs Cycle Path



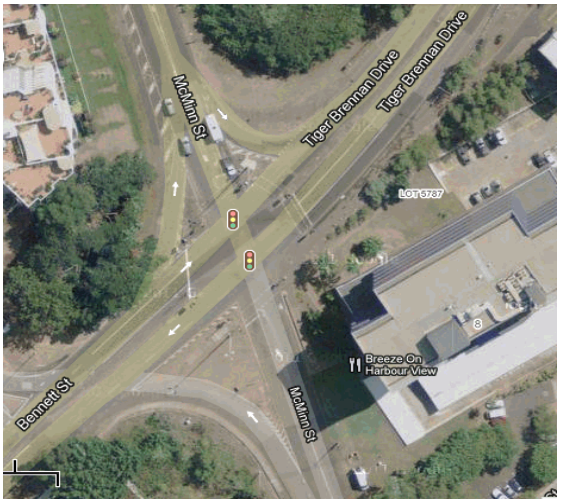
Date of Survey	1	2	3	4	5	6	7	8	9	10	11	12	Total
Thur 02/02/2012	1	0	0	0	7	0	0	1	0	0	1	0	10

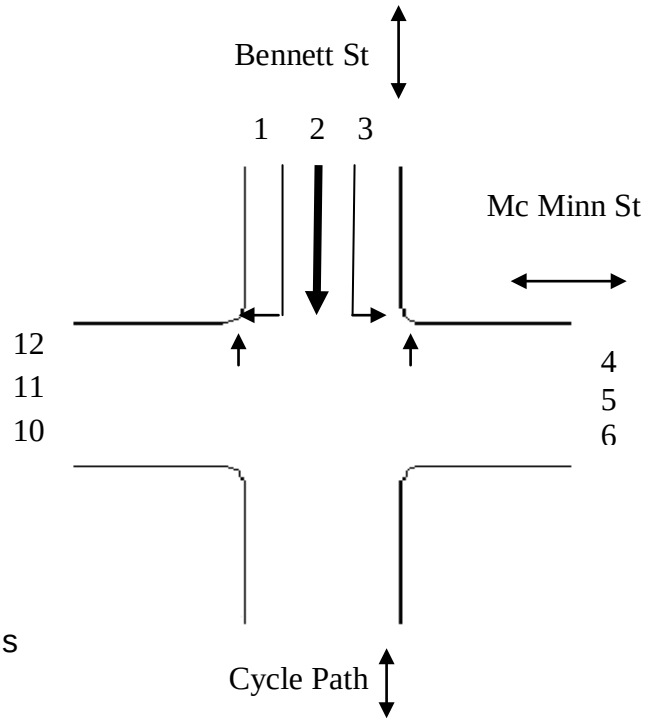
Site 10 McMinn St – Stuart Highway



Date of Survey	1	2	3	4	5	6	7	8	9	10	11	12	Total
Wed 15/02/2012	2	76	11	5	0	1	1	22	1	10	5	0	134

Site 11 McMinn St – Bennett St

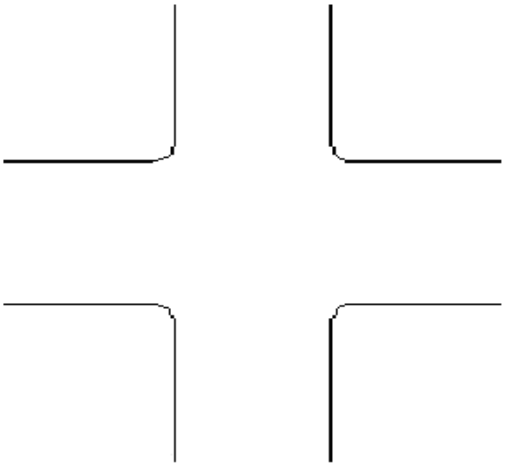




Site 12 Whitewood Road – Howard Springs Cycle path

Date of Survey	1	2	3	4	5	6	7	8	9	10	11	1 2 3
Thru 16/02/2012	0	12	1	0	0	4	1	5	1	0	6	2	32

Date of Survey	1	2	3	4	5	6	7	8	9	10	11	12	Total
Fri 17/02/2012	1	0	0	0	0	0	0	2	0	0	0	5	8



7 Appendix 2 Sample Count Sheet

Date							Time						
Location							Weather						
		Directions											
	Time (am)	1	2	3	4	5	6	7	8	9	10	11	12
On Road	6.30 – 7.00												
	7.00 - 7.30												
	7.30 – 8.00												
	8.00 – 8.30												
	8.30 – 9.00												
	9.00 – 9.30												
Off Road	6.30 - 7.00												
	7.00 – 7.30												
	7.30 – 8.00												
	8.00 – 8.30												
	8.30 – 9.00												
	9.00 – 9.30												
Total													