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Research Report Prepared for
Auckland Transport

May 2015

2015 Auckland Region Manual Cycle Monitor

- Albert-Eden-Roskill Ward -

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1.1 Introduction

The Need For Reliable Cycle Trip Data

Monitoring cycle movements and cycle traffic is important to Auckland Transport, to identify where investment may be needed to improve infrastructure for cycling. Cycle traffic data will also help Auckland Transport prioritise future funding through the Auckland Land Transport Programme[1].

This cycle monitoring gives precise cycle traffic information for a number of locations across the region, which can guide investment in infrastructure and other programmes. It also allows Auckland Transport to track progress against a quality baseline over the coming decade.

Manual Cycle Monitoring

Historically, manual cycle monitoring had been carried out in four of the seven Auckland region Territorial Authorities (TAs). However, each monitor had been undertaken using a different methodology[2]. This variability prevented the possibility of comparing the relative popularity of different sites across TA boundaries. In addition, each monitor programme took place at different times of the year, preventing comparability from location to location since factors such as weather, school/tertiary education holidays, seasonal variations and daylight savings each have an impact on the numbers of cyclists. Even within TAs, inconsistencies as to when counts took place from year to year prevented robust comparability over time.

Through the Regional Cycle Monitoring Plan, it was proposed that these manual counts be regionally aligned to ensure better regional consistency. Ideally, cycle count monitoring would be carried out at the same time each year across the region, applying a standard methodology.

[1] Auckland Regional Transport Authority (2006) *Regional Cycle Monitoring Plan (Provisional Guidelines)*

[2] For example, Manukau and North Shore cities' monitors took place at the same morning and evening peak times, while Auckland city's differs by one hour for the evening peak, and Waitakere's differs for both peaks.

As outlined in the Regional Cycle Monitoring Plan, a consistent methodology would ensure that:

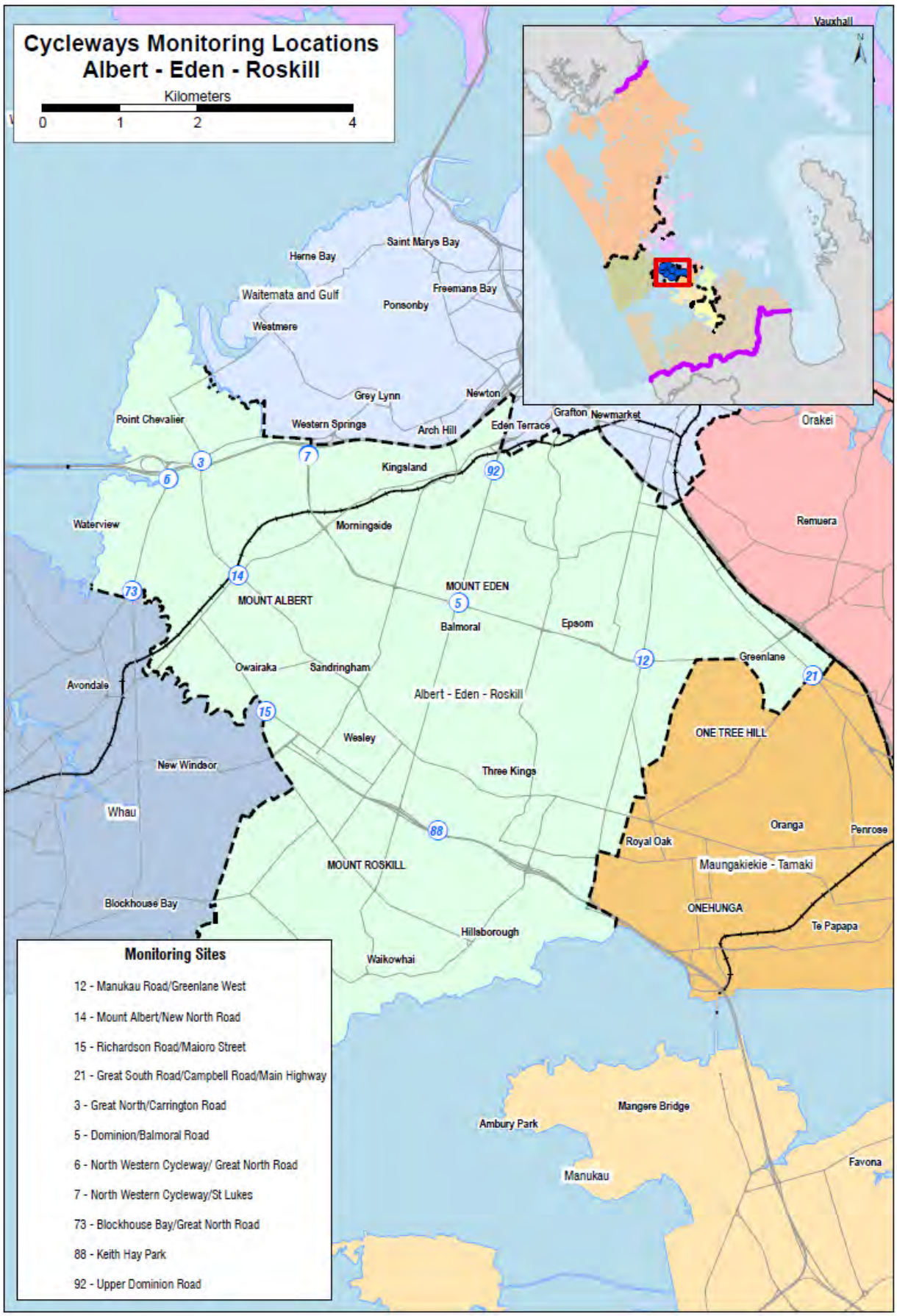
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and weekends would be made at the outset;
- a consistent set of times are used for monitoring, for the morning, evening and inter-peak periods; and
- a consistent method is used for monitoring direction and location of cyclists, including monitoring how many are on the footpath.

This report presents results from manual cycle counts conducted at 11 sites in the Albert-Eden-Roskill ward following a standardised methodology. Results are presented site-by-site, as well as being aggregated to a ward and region level. For sites also monitored in previous years, comparative results are provided.

Important Note: This report provides the results of manual cycle monitoring conducted at 11 pre-determined sites in the Albert-Eden-Roskill ward only. Site-by-site results and ward summaries for all other Auckland region wards have been provided in separate documents. It is strongly recommended that this report be read in conjunction with the Regional Summary document, which provides aggregated data for the region, as well as a regional comparison of results.

Figure 1.1 shows the locations of the monitoring sites in the Albert-Eden-Roskill ward. Note that two sites (Blockhouse Bay/Great North Road in Avondale (Site 73) and Richardson Road/Maioro Street in Mt Roskill (Site 15) lie on the border with the Whau ward. Consequently results for these sites have been included in both ward reports. Similarly, the Great South/Campbell Road/Main Highway site (Site 21) lies on the border with the Maungakiekie-Tamaki ward and has been included in both ward reports also.

Figure 1.1: 2015 Cycle Monitoring Locations in Albert-Eden-Roskill Ward



1.2 Methodology

Manual cycle counts have been conducted using a standardised methodology across all sites. This methodology is outlined below.

Choice of Sites

Decisions as to which sites were chosen for cycle counts were guided by the planned developments for the Regional Cycle Network.

Manual counts were undertaken at 85 different sites throughout the region. Sites were distributed by ward as follows:

- Albany 15 sites
- Albert-Eden–Roskill 11 sites
- Franklin 2 sites
- Howick 5 sites
- Manukau 10 sites
- Manurewa-Papakura 4 sites
- Maungakiekie-Tamaki 7 sites
- North Shore 8 sites
- Orakei 3 sites
- Waitakere 13 sites
- Waitemata and Gulf 10 sites
- Whau 4 sites

(Note: Seven sites lie on the border of two wards. These sites have been included in both ward reports).

Monitoring Times

Time Of Day

Manual counts in the morning peak were conducted between 6:30 and 9:00 am, with manual counts in the evening peak conducted between 4:00pm and 7:00pm.

Day Of Week

Previous experience conducting cycle and other traffic manual counts has found that these counts are best undertaken on either a Tuesday, Wednesday or Thursday as travel patterns on Mondays and Fridays tend to be more variable.

Time Of Year

To ensure consistency throughout the region, standard monitoring days were selected and agreed upon by Auckland Transport. In selecting the days, consideration was given to:

- the timing of school and tertiary holidays/the commencement of term time for tertiary institutions;
- the timing of statutory holidays (particularly Easter);
- the timing of Bikewise Month; and
- daylight saving times.

It was agreed that manual counts would commence on Tuesday the 3rd of March and be conducted on the first three fine days of the 3rd, 4th, 5th, 10th, 11thor 12thof March.

Counts were conducted on the following days:

- Tuesday 3rd March — Albert-Eden-Roskill, Orakei, Manurewa-Papakura, Maungakiekie-Tamaki, Whau
- Wednesday 4th March — Howick, Franklin, Manukau, Waitemata & Gulf
- Thursday 5th March — Albany, North Shore, Waitakere

Note: Counts in the morning and evening peaks took place on the same day for each site.

Weather and Daylight Conditions

To reduce the impact of weather conditions on cycle numbers, manual counts were conducted on predominantly fine days. In addition, if it rained during the morning peak, monitoring in the evening peak on that same day was also postponed, irrespective of the weather (as it can be assumed that cyclists' travel behaviour in the evening peak will have been influenced by decisions they made earlier in the day – for example, the decision to leave their bike at home and use public transport instead). Care was taken to ensure that all manual counts were conducted prior to the conclusion of daylight saving.

The weather on the three count days in 2015 was as follows:

Tuesday 3rd March

- Sunrise: 7:08am; Sunset: 7:58pm.
- Highest temperature: 25 degrees Celsius. Lowest temperature: 17 degree Celsius.
- Mostly fine weather with scattered cloud throughout the day.

Wednesday 4th March

- Sunrise: 7:09am; Sunset: 7:57pm.
- Highest temperature: 26 degrees Celsius. Lowest temperature: 19 degree Celsius.
- Fine with cloud throughout the morning shift. Cloudy in the evening with light rain recorded at some sites from 6:00pm.

Thursday 5th March

- Sunrise: 7:09am; Sunset: 7:55pm.
- Highest temperature: 27 degrees Celsius. Lowest temperature: 17 degree Celsius.
- Fine weather in the morning and evening shifts.

Conducting The Manual Counts

Scoping Visit

Gravitas visited each of the sites prior to the first monitoring shift. This scoping visit was used to map the roading network and to identify and map the range of directions that cyclists could travel through the site. This visit was also used to identify any particular features (such as designated cycle ways) or potential hazards that surveyors needed to be aware of when monitoring at the site. As part of the scoping visit, a recommended observation point was identified and mapped (this point chosen on the basis of offering the best trade-off between visibility and safety). The maps prepared for each site have been included in this report – just prior to the count results for each site.

As part of the scoping visit, a small number of sites were identified as requiring two or more surveyors to accurately capture all cycle movements (due predominantly to the complexity of the roading/cycleway network at the site or poor visibility at the intersection). Two surveyors were used at:

- Great South Road/Campbell Road/Main Highway, Greenlane (Site 21; Maungakiekie-Tamaki/Albert-Eden-Roskill wards).
- Beach Road/Browns Bay Road, Mairangi Bay (Site 45; Albany ward).
- Onehunga Harbour Road (Site 17, Maungakiekie-Tamaki ward).

Three surveyors were used at the ferry terminal site (Site 22; Waitemata and Gulf ward).

Briefing Session

Prior to their monitoring shift, all surveyors participated in a briefing session. The session covered:

- the overall aims of the Regional Cycle Monitoring Plan and how the manual monitoring fits with this Plan;
- the aims and purpose of the cycle monitoring and the process to be used;
- review of all materials supplied – how to interpret and use the maps, how to accurately record data on count sheets etc;
- health and safety issues; and
- general administration – shift times, collection and return of materials etc.

This session was interactive, with surveyors being encouraged to ask questions and seek further explanation on issues they were unsure about. Surveyors were also provided with a copy of the briefing notes for reference during their shifts. During the briefing session, all surveyors were also required to conduct a "practice count" for 20 minutes at the Ponsonby Road/Karangahape Road site.

Conducting The Manual Counts

Each site was assigned to a surveyor, who was issued with a map that showed the range of movements a cyclist could make through that site. In addition to the map, surveyors were issued with a clipboard, a safety vest and a letter identifying them as a member of a Gravitas research team[3].

During their shift the surveyor collected data on:

- The total number of cyclists[4] passing through the intersection;
- The direction in which cyclists are travelling (using the numbers on the map provided);
- The time at which cyclists pass through the intersection (to the nearest minute);
- Whether cyclists are school children or adults (determined by whether they are wearing a school uniform or clearly of school age);
- Whether cyclists are wearing a helmet;
- Gender of the cyclist *(collected for the first time in 2011)*; and
- Whether cyclists are riding on the road, footpath or designated off- road cycleway[5].

[3] This letter also contained contact details for Auckland Transport and Gravitas Research and Strategy for any member of the public or local business owners who had queries about the work being undertaken.

[4] To ensure consistency across all surveyors, a "cycle" was defined as being non-motorised, with one or two wheels and requiring pedalling to make it move. Note that this definition did not include scooters.

[5] Note: For the purpose of this project, an off-road cycleway is defined as designated off-road path for cycles. This includes exclusive cycle paths, separated paths (such as the footpath on Tamaki Drive) and shared-use paths (available to cyclists and pedestrians). It excludes on-road cycle lanes (that is, designated lanes marked on the road).

Since 2009, surveyors have been required to indicate those cyclists riding together in groups of three or more. To be consistent with previous years, each member of these 'pelotons' has been included in the site-level analysis as a separate cyclist movement. However, where pelotons were observed, the number of cyclists and the time they passed through the site has been given in the report, along with a percentage figure indicating what share of all cyclists at the site were riding as groups.

In addition, where cyclists were recognisable, surveyors were instructed to record each cyclist no more than three times during a single shift, irrespective of how many movements they actually made through the site. Surveyors noted where and when this occurred.

Data was collected on the weather and daylight conditions at the site. Surveyors were also encouraged to record any information that may have affected cycle numbers or cycle movements at the site – for example, construction or maintenance works being conducted on the cycle way or road works at the intersection.

A team of supervisors checked that surveyors were in the correct position and recording data accurately.

Data Analysis

Upon their return to Gravitas, all count sheets were checked for completeness. The raw data was then entered into Excel for logic checking, analysis and graphing.

Annual Average Daily Traffic (AADT) Analysis

It is acknowledged that the number of cyclists using a site varies by time of day, day of the week and week of the year, and therefore it is not valid to simply multiply manual count data collected over a certain (relatively brief) period out to represent a full day, week or year. However, according to Land Transport New Zealand[6], Annual Average Daily Traffic (AADT) analysis can be used to estimate the average annual daily flow of cyclists from manual and automated cycle counts conducted at one point in time. The procedure involves deriving scale factors, which account for the time of day, day of the week, and week of the year (which varies with school holidays and season) as well as weather conditions on the count day. These scale factors are then applied to the count data collected to give an AADT estimate.

Using the manual count figures for each site, it has been possible to provide the average annual daily traffic flow of cyclists (cycling AADT) estimate for each site. AADT scale factors (morning and afternoon) were provided by ViaStrada[7].

[6] http://www.ltsa.govt.nz/road-user-safety/walking-and-cycling/cycle-network/appendix2.html
[7] ViaStrada is a traffic engineering and transport planning consultancy based in Christchurch, New Zealand.

By applying the scale factor to the manual count data for each morning and afternoon peak, and averaging the two figures, an average annual daily cyclist flow figure has been obtained for each site. *A more comprehensive overview of the methodology used for this analysis is provided in Appendix One.*

Note: ViaStrada acknowledge that, as cycling volumes fluctuate from day to day depending on the weather, this method should be used with caution. They note that ideally an estimate should be achieved based on the average of the results of several counts, rather than counts from a single day, as in this study[8].

School Bike Shed Counts

As stated above, manual cycle counts were undertaken during the morning (6:30am to 9:00am) and evening (4:00pm to 7:00pm) peaks. However, it was noted in the design phase of the project that the timing of the evening peak monitoring would mean that the greatest share of students cycling home from school will be excluded from the counts. This was identified as a potential weakness of the monitoring proposed.

Therefore, it was suggested that information on numbers of students cycling to and from intermediate and secondary schools across the region could be collected by counting the number of bikes in school bike sheds on a pre-determined day. Rates of cycling among students could also be assessed by calculating the number of bikes counted as a share of the school's total roll (or share of the school's roll eligible to cycle).

Initially it was decided that school bike shed monitoring would focus only on intermediate and secondary schools (and composite schools which included children of intermediate and secondary school age), since children travelling to primary schools are considered by many parents (and schools) as too young to cycle to school. Note however that, to ensure all children of intermediate school age cycling to school were captured, full primary schools (those catering for Years 1 to 8) were included in the school bike shed count from 2011.

Based on feedback from some schools in 2013, from 2014 a count of the number of students who use (non-motorised) scooters to get to and from school was also included in the school bike shed count.

[8] Appendix 2 of the Cycle Network and Route Planning Guide (CNRPG) (Land Transport New Zealand, 2004)

Methodology

The following process was used to collect the school bike shed count data.

1. Gravitas designed an information sheet that was distributed to most full primary, intermediate, secondary and composite (Years 1 to 13) schools in the Auckland region via email (note a small number of schools were omitted due to the special nature of the students e.g. boarding schools, special needs schools). This sheet was designed in consultation with Auckland Transport to ensure all necessary information was collected.

2. This email was then sent to all eligible schools in Auckland region (n=300) to notify them of the bike shed count and to let them know what they would be required to do. Included in this email was a link to an online count form.

3. To enhance the comparability of the school bike shed data with that of the regional cycle monitor, Tuesday 3rd March was designated as the bike shed count day. (Most schools reported that they undertook the count on this day).

4. Once the school bike shed count had been completed, schools completed the online count form and submitted it electronically to Gravitas. Gravitas contacted all participating schools who had not returned their sheets after five working days, first by email (two rounds) and then by telephone. All count forms were checked for completeness before being data-entered into Excel. In 2015, 201 responses were received, a response rate of 64 per cent. (This compares with 88 per cent in 2014).

Reporting

The data from the manual counts has been presented at a site-by-site, TA and regional level.

Manual Counts - Site Level Reporting

The following results have been reported for each site:

- Total number of movements through the intersection during each peak;
- Total number of movements through the intersection during each ten-minute interval during each peak;
- Number of cyclists making each directional movement through the intersection during each peak; and
- Share of cyclists through the intersection during each peak who are:
  - adults/school children
  - wearing a helmet/not wearing a helmet
  - male/female
  - riding on the road/riding on the footpath/riding on an off-road path

Manual Counts - Aggregated Reporting

Results have also been reported at an aggregate level (that is, summing up all sites) – by ward and across the region – to show the total number of cycle movements recorded (both overall and by ten-minute intervals) and the characteristics of the cyclists.

Bike Shed Counts

Results have been provided by school (along with notes explaining why counts for some schools may not be representative), as well as at a ward and regional level. Raw cycle numbers and a "cyclists as a share of total school roll" figure have both been provided. Separate scooter counts have also been provided.

1.3 Summary of Results

This summary contains the aggregated results of the 11 sites surveyed in the Albert-Eden-Roskill ward. It is split into four sections – a summary of results for the morning peak period (6:30am to 9:00am), a summary for the evening peak period (4:00pm to 7:00pm), a summary of aggregated results (morning and evening combined) and a summary of the results from the school bike shed counts.

While the summaries in this section are useful in giving an overall picture of cycling behaviour in the Albert-Eden-Roskill ward, they hide much of the specific details of cycling behaviour at individual sites. The site-specific data varies significantly from site to site, and can be found in Sections Two to Twelve of this report.

Note: Surveying in the Albert-Eden-Roskill ward was undertaken on Tuesday the 3rd of March, 2015. Sunrise was at 7:08am and sunset was at 7:58pm. Highest temperature on that day was 25.0 degree Celsius.

1.4 Morning Peak Summary Results

Environmental Conditions

- All sites monitored in the Albert-Eden-Roskill ward had fine but cloudy weather in the morning. Some sites recorded winds were developing towards the end of the shift.
- Construction for Waterview connection project was reported at the North Western Cycleway/Great North Road (Site 6). The footpath near Movement 5 was closed and cyclists were not able to access the off-road cycleway from the road.
- All other sites had no road works or accidents that may have affected cycle counts.

Key Points

- A total of 1,670 cyclist movements were recorded across the 11 sites in the morning peak period in 2015. Two per cent (n=38) of the total cycle movements in the morning peak were made by those cycling in groups. This compares with two per cent (n=23) in 2014.
- The average volume of morning cyclists across all 11 sites in Albert-Eden-Roskill was 152 cycle movements, an increase from 116 last year.
- Of the 11 sites monitored, the busiest in the morning peak continued to be the North Western Cycleway at St Lukes (392 cycle movements), whereas the Keith Hay Park/Somerset Road/ Bridge site has the lowest volume of morning cyclists (34 cycle movements)
- Of the 11 sites, all but one recorded increases in cycle movements this year compared to 2014. The most notable increases were at:
  - Richardson Road/Maioro Street – up 90 per cent; and
  - Mount Albert/New North – up 58 per cent;
- The site that recorded a decrease in cycle movements this year compared to 2014 was at:
  - Keith Hay Park/Somerset Rd/Bridge – down 21 per cent.

Table 1.1: Summary Of Morning Cyclist Movements

2007 - 2015 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15	Change 07-15
7	North Western Cycleway/St Lukes	152	156	155	222	240	222	277	315	**392**	**24%**	**158%**
6	North Western Cycleway/Great North Road	98	156	145	244	204	201	258	261	**343**	**31%**	**250%**
5	Dominion/Balmoral Road	114	90	85	91	99	97	128	123	**151**	**23%**	**32%**
3	Great North/Carrington Road	114	95	97	150	103	112	112	97	**138**	**42%**	**21%**
12	Manukau Road/Greenlane West	103	92	84	130	120	110	99	92	**120**	**30%**	**17%**
21	Great South Road/Campbell Road/Main Highway	89	53	64	69	60	68	77	79	**111**	**41%**	**25%**
14	Mount Albert/New North Road	75	68	59	91	97	94	70	62	**98**	**58%**	**31%**
	Average per site (7 sites since 2007)	**106**	**101**	**98**	**142**	**132**	**129**	**146**	**147**	**193**	**31%**	**82%**
	Total (7 sites since 2007)	**745**	**710**	**689**	**997**	**923**	**904**	**1021**	**1029**	**1353**	**31%**	**82%**
73	Blockhouse Bay/Great North Road	-	57	57	66	56	60	73	72	**85**	**18%**	**-**
15	Richardson Road/Maioro Street	-	-	8	14	15	29	25	21	**40**	**90%**	**-**
88	Keith Hay Park/Somerset Rd/ Bridge	-	-	-	28	29	28	45	43	**34**	**-21%**	**-**
	Average per site (8 sites in 2008, 9 sites in 2009, 10 sites in 2010)	**-**	**96**	**84**	**110**	**102**	**102**	**117**	**117**	**151**	**29%**	**-**
	Total (8 sites in 2008, 9 sites in 2009, 10 sites in 2010)	**-**	**767**	**754**	**1105**	**1023**	**1021**	**1164**	**1165**	**1512**	**30%**	**-**
92	Upper Dominion Road/Eden Terrace	-	-	-	-	-	-	97	113	**158**	**40%**	**-**
	Average per site (8 sites in 2008, 9 sites in 2009, 10 sites in 2010-2012, 11 sites since 2013)	-	-	-	-	-	-	**115**	**116**	**152**	**31%**	**-**
	Total (8 sites in 2008, 9 sites in 2009, 10 sites in 2010-2012, 11 sites since 2013)	-	-	-	-	-	-	**1261**	**1278**	**1670**	**31%**	**-**

- Morning cyclist characteristics this year were similar to those reported in 2014. Ninety-three per cent of cyclists this year were adults.
- Almost all morning cyclists were wearing a helmet (96 per cent).
- The majority of morning cyclists were male (80 per cent, down 2 percentage points from last year).
- Forty-four per cent of cyclists were riding on the road. The same percentage were riding on the off-road cycleway. The remaining 12 per cent were traveling on the footpath (down 3 percentage points)

Table 1.2: Summary of Morning Cyclist Characteristics

2007 – 2015 (%)

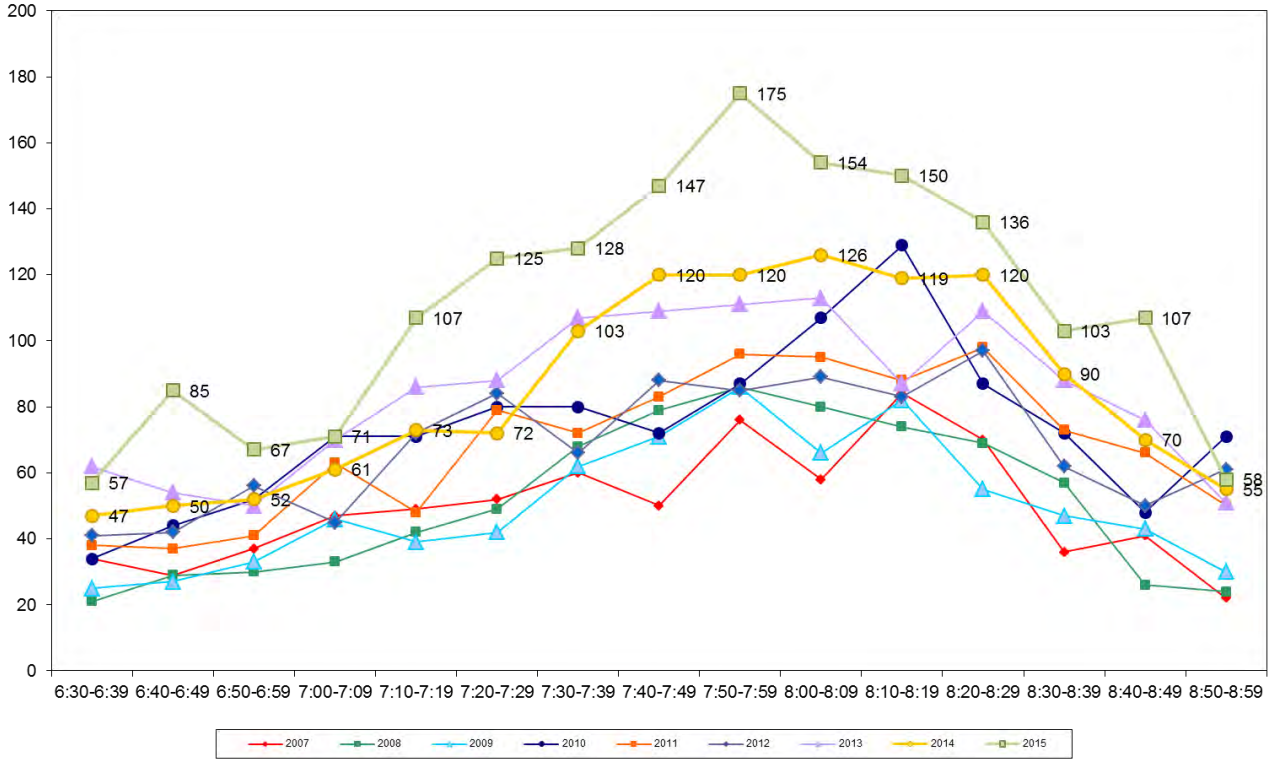
	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	87	87	87	88	89	89	92	92	**93**	**1**
School child	13	13	13	12	11	11	8	8	**7**	**-1**
Helmet Wearing										
Helmet on head	95	95	94	94	94	91	97	97	**96**	**-1**
No helmet	5	5	6	6	6	9	3	3	**4**	**1**
Gender										
Male	-	-	-	-	78	81	84	82	**80**	**-2**
Female	-	-	-	-	18	17	15	17	**18**	**1**
Can't tell	-	-	-	-	4	2	1	1	**2**	**1**
Where Riding*										
Road	81	81	54	48	45	43	46	45	**44**	**-1**
Footpath	19	19	14	16	16	17	16	15	**12**	**-3**
Off-road cycleway	0	0	32	36	39	40	38	40	**44**	**4**
Base:	***745***	***767***	***754***	***1105***	***1023***	***1021***	***1261***	***1278***	***1670***	

** Note: Prior to 2009, cyclists riding on the North-Western Cycleway were categorised as road riders.*

- Figure 1.2 shows the overall pattern of morning cyclist volumes recorded at the 11 sites monitored in 2015. Morning cyclist numbers followed an increasing trend from 6:50am to a peak between 7:50am and 7:59am (175 cyclists), after which the number of movements declined over the remainder of the morning period. This pattern is similar to that observed in previous years.

Figure 1.2: Total Cyclist Frequency

Morning Peak 2007 – 2015 (n)



1.5 Evening Peak Summary Results

Environmental Conditions

- All sites monitored in the Albert-Eden-Roskill ward had fine but cloudy weather in the evening.
- Construction for Waterview connection project was reported at the North Western Cycleway/Great North Road (Site 6). The footpath near Movement 5 was closed and cyclists were not able to access the off-road cycleway from the road.
- All other sites had no road works or accidents that may have affected cycle counts.

Key Points

- A total of 1,621 cyclist movements were recorded across the 11 sites in the evening peak period in 2015. Two per cent of the total cycle movements in the evening peak were made by those cycling in groups (n=34). This compares two per cent (n=25) in 2014.
- The average volume of evening cyclist movements across all 11 sites in the Albert-Eden-Roskill ward was 147 cycle movements.
- Of the 11 Albert-Eden-Roskill sites, the volume of evening cyclists has continued to be lowest at the Keith Hay Park/Somerset Road/Bridge site (24 cycle movements recorded), whereas the North Western Cycleway/St Lukes site continued to be the busiest in terms of evening cyclists' activity (392 movements recorded).
- Eight out of the eleven sites recorded an increase in evening cycle movements this year compared to 2014. The most notable increases were at:
  - Richardson Road/Maioro Street – up 100 per cent; and
  - Keith Hay Park/Somerset Rd/Bridge – up 60 per cent.
- Mount Albert/New North Road recorded the most notable decrease in evening cycle movements this year compared to 2014, down 22 percentage points.

Table 1.3: Summary of Evening Cyclist Movements

2007 – 2015 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15	Change 07-15
7	North Western Cycleway/St Lukes	172	175	155	210	273	207	270	344	**392**	**14%**	**128%**
6	Northwestern Cycleway/ Great North Rd	134	213	141	241	282	204	261	281	**370**	**32%**	**176%**
5	Dominion/Balmoral Road	123	111	98	114	98	91	107	112	**137**	**22%**	**11%**
3	Great North/Carrington Road	121	136	96	164	129	94	116	130	**128**	**-2%**	**6%**
12	Manukau Road/Greenlane West	122	113	92	127	107	95	100	125	**119**	**-5%**	**-2%**
21	Great South Road/ Campbell Road/Main Highway	85	61	87	102	78	64	69	70	**90**	**29%**	**6%**
14	Mount Albert/New North Road	81	96	83	118	104	76	100	107	**83**	**-22%**	**2%**
	Average per site (7 sites since 2007)	**120**	**129**	**107**	**154**	**153**	**119**	**145**	**167**	**188**	**13%**	**57%**
	Total (7 sites since 2007)	**838**	**905**	**752**	**1076**	**1071**	**831**	**1023**	**1169**	**1319**	**13%**	**57%**
73	Blockhouse Bay/Great North Road	-	60	62	75	73	69	68	70	**94**	**34%**	**-**
15	Richardson Road/Maioro Street	-	-	13	25	22	24	23	20	**40**	**100%**	**-**
88	Keith Hay Park/Somerset Rd/ Bridge	-	-	-	25	40	19	14	15	**24**	**60%**	**-**
	Average per site (8 sites in 2008, 9 sites in 2009, 10 sites since 2010)	**-**	**121**	**92**	**120**	**121**	**94**	**113**	**127**	**148**	**17%**	**-**
	Total (8 sites in 2008, 9 sites in 2009, 10 sites since 2010)	**-**	**965**	**827**	**1201**	**1206**	**943**	**1128**	**1274**	**1477**	**16%**	**-**
92	Upper Dominion Road/EdenTerrace	-	-	-	-	-	-	107	118	**144**	**22%**	-
	Average per site (8 sites in 2008, 9 sites in 2009, 10 sites in 2010-2012, 11 sites in 2013-2014)	-	-	-	-	-	-	**112**	**127**	**147**	**16%**	**-**
	Total (8 sites in 2008, 9 sites in 2009, 10 sites in 2010-2012, 11 sites in 2013-2014)	-	-	-	-	-	-	**1235**	**1392**	**1621**	**16%**	**-**

- Evening cyclist characteristics this year were similar to those reported in 2014.
- Ninety-six per cent of evening cyclists this year were adults (stable from previous years).
- Most cyclists were wearing a helmet in the evening (94 per cent, unchanged from last year).
- The majority of the cyclists recorded over the evening monitoring period were male (80 per cent, down 3 percentage points).
- Riding on the off-road cycleway was the most common this year (45 per cent, up from 39 per cent in 2014).

Table 1.4: Summary of Evening Cyclist Characteristics

2007 – 2015 (%)

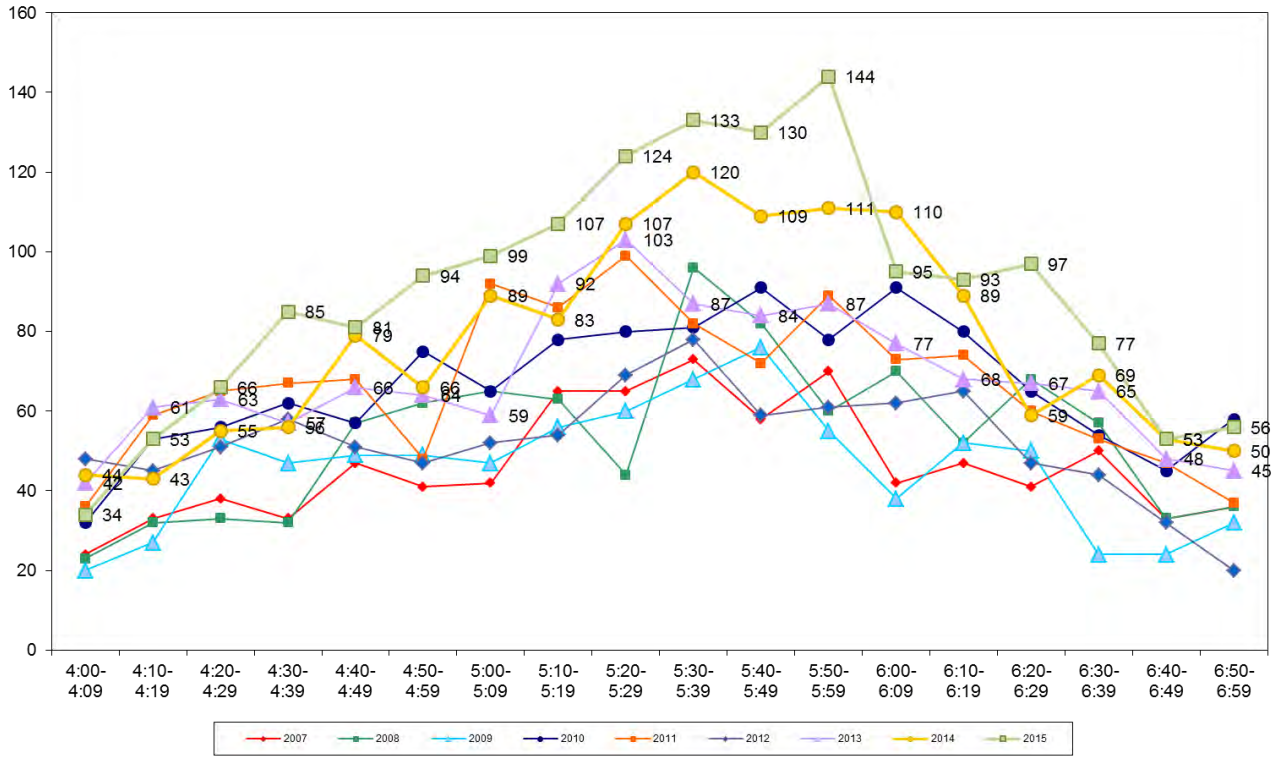
	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	93	90	95	93	92	94	96	95	**96**	**1**
School child	7	10	5	7	8	6	4	5	**4**	**-1**
Helmet Wearing										
Helmet on head	93	92	92	90	92	91	93	94	**94**	**0**
No helmet	7	8	8	10	8	9	7	6	**5**	**-1**
Blank/Don't know	-	-	-	-	-	-	-	-	**1**	**1**
Gender										
Male	-	-	-	-	84	84	84	83	**80**	**-3**
Female	-	-	-	-	14	15	16	16	**18**	**2**
Can't tell	-	-	-	-	2	1	0	1	**2**	**1**
Where Riding*										
Road	80	82	54	48	42	43	46	44	**40**	**-4**
Footpath	20	18	15	19	16	16	17	17	**14**	**-3**
Off-road cycleway	0	0	31	33	42	41	37	39	**45**	**6**
Blank/Don't know	-	-	-	-	-	-	-	-	**1**	**1**
Base:	***838***	***965***	***827***	***1201***	***1206***	***943***	***1235***	***1392***	***1621***	

** Note: Prior to 2009, cyclists riding on the North-Western Cycleway were categorised as road riders.*

- The overall pattern of evening cyclist volumes derived from the 11 sites in the Albert-Eden-Roskill ward has been illustrated in Figure 1.3. Evening cyclist numbers started off at a moderate level, steadily increasing to a peak between 5:50pm and 5:59pm (144 movements). After the peak, cycle volume declined. This pattern is similar to that observed in previous years.

Figure 1.3: Total Cyclist Frequency

Evening Peak 2007 – 2015 (n)



1.6 Aggregated Total Summary Results

- Overall, a total of 3,291 cyclist movements were recorded across the 11 sites monitored in 2015 – among which two per cent (n=72) were made by pelotons. This compares with two per cent (n=48) cycling in groups in 2014.
- Total cycle movements for all sites have increased by 23 per cent over the last 12 months – up from 2,670 in 2014 to 3,291 this year.
- In the Albert-Eden-Roskill ward, the busiest site continued to be North Western Cycleway/St Lukes Road with a total of 784 movements, while Keith Hay Park/Somerset Rd/Bridge has the fewest cyclists (58 movements).

Table 1.5: Summary of Total Cyclist Movements

2007 – 2015 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15	Change 07-15
7	North Western Cycleway/St Lukes	324	331	310	432	513	429	547	659	**784**	**19%**	**142%**
6	North Western Cycleway/ Great North Road	232	369	286	485	486	405	519	542	**713**	**32%**	**207%**
5	Dominion/Balmoral Road	237	201	183	205	197	188	235	235	**288**	**23%**	**22%**
3	Great North/Carrington Road	235	231	193	314	232	206	228	227	**266**	**17%**	**13%**
12	Manukau Road/Greenlane West	225	205	176	257	227	205	199	217	**239**	**10%**	**6%**
21	Great South Road/ Campbell Road/Main Highway	174	114	151	171	138	132	146	149	**201**	**35%**	**16%**
14	Mount Albert/New North Road	156	164	142	209	201	170	170	169	**181**	**7%**	**16%**
	Average per site (7 sites since 2007)	**226**	**231**	**206**	**296**	**285**	**248**	**292**	**314**	**382**	**22%**	**69%**
	Total (7 sites since 2007)	**1583**	**1615**	**1441**	**2073**	**1994**	**1735**	**2044**	**2198**	**2672**	**22%**	**69%**
73	Blockhouse Bay/Great North Road	-	117	119	141	129	129	141	142	**179**	**26%**	-
15	Richardson Road/Maioro Street	-	-	21	39	37	53	48	41	**80**	**95%**	-
88	Keith Hay Park/Somerset Rd/ Bridge	-	-	-	53	69	47	59	58	**58**	**0%**	-
	Average per site (8 sites in 2008, 9 sites in 2009, 10 sites since 2010)	-	**217**	**176**	**231**	**223**	**196**	**229**	**244**	**299**	**23%**	-
	Total (8 sites in 2008, 9 sites in 2009, 10 sites since 2010)	-	**1732**	**1581**	**2306**	**2229**	**1964**	**2292**	**2439**	**2989**	**23%**	-
92	Upper Dominion Road/Eden Terrace	-	-	-	-	-	-	204	231	**302**	**31%**	-
	Average per site (8 sites in 2008, 9 sites in 2009, 10 sites in 2010-2012, 11 sites in 2013-2014)	-	-	-	-	-	-	**227**	**243**	**299**	**23%**	-
	Total (8 sites in 2008, 9 sites in 2009, 10 sites in 2010-2012, 11 sites in 2013-2014)	-	-	-	-	-	-	**2496**	**2670**	**3291**	**23%**	-

- Overall, cyclist characteristics this year are similar to those reported in 2014.
- Ninety-five per cent of all cyclists this year are adults (stable from last year).
- Most cyclists were wearing a helmet (95 per cent, unchanged from the last 3 years).
- Males made up four in five cyclists (80 per cent, stable from last year).
- Forty-four per cent of cyclists were riding on the off-road cycleway (up 5 percentage points from 2014) and 42 per cent were riding on the road.

Table 1.6: Summary of Total Cyclist Characteristics

2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	90	89	91	91	91	91	94	94	**95**	**1**
School child	10	11	9	9	9	9	6	6	**5**	**-1**
Helmet Wearing										
Helmet on head	94	93	93	92	93	91	95	95	**95**	**0**
No helmet	6	7	7	8	7	9	5	5	**4**	**-1**
Blank/Don't know	-	-	-	-	-	-	-	-	**1**	**1**
Gender										
Male	-	-	-	-	81	82	84	83	**80**	**-3**
Female	-	-	-	-	16	16	15	16	**18**	**2**
Can't tell	-	-	-	-	3	2	1	1	**2**	**1**
Where Riding*										
Road	80	82	54	48	43	43	46	45	**42**	**-3**
Footpath	20	18	15	15	16	17	17	16	**13**	**-3**
Off-road cycleway	0	0	31	37	41	40	37	39	**44**	**5**
Blank/Don't know	-	-	-	-	-	-	-	-	**1**	**1**
Base:	***1583***	***1732***	***1581***	***2306***	***2229***	***1964***	***2496***	***2670***	***3291***	

** Note: Prior to 2009 cyclists riding on the North-Western Cycleway were categorised as road riders.*

1.7 Average Annual Daily Traffic (AADT) Estimate

Note: A discussion of Average Annual Daily Traffic Estimates is provided in Section 1.1. A full description of the tool, the calculation used, and the limitations of the estimates are provided in Appendix One. Readers are encouraged to review these sections in conjunction with the data presented here.

- Table 1.7 provides the comparative AADT estimates for each site, based on the average of morning and evening peak AADT calculations.
- The highest AADT is at the North Western Cycleway/St Lukes site (1,140 daily movements, up from 956 movements in 2014) and the lowest is at Keith Hay Park/Somerset Rd/Bridge (85 daily movements, stable from 86 last year).
- All but one site experienced increases in total AADT estimates since last year, the most notable being:
  - Richarson Road/Maioro Street – up 93 percentage points;
  - Great South Road/Campbell Road/Main Highway – up 35 percentage points; and
  - North Western Cycleway/Great North Road – up 32 percentage points.

Table 1.7: AADT Estimates Based on Morning and Evening Cyclist Movements 2007 – 2015 (n)

Site No.	*Locations*	*2007 AADT*	*2008 AADT*	*2009 AADT*	*2010 AADT*	*2011 AADT*	*2012 AADT*	*2013 AADT*	*2014 AADT*	*2015 AADT*	Change 14-15	Change 07-15
7	North Western Cycleway/St Lukes	469	480	451	629	743	625	796	956	**1140**	**19%**	**143%**
6	North Western Cycleway/ Great North Road	335	532	416	705	701	589	754	786	**1034**	**32%**	**209%**
92	Upper Dominion Road/Eden Terrace	-	-	-	-	-	-	296	335	**440**	**1%**	**-**
5	Dominion/Balmoral Road	344	291	265	296	286	274	343	342	**420**	**23%**	**22%**
3	Great North/Carrington Road	341	333	281	455	335	301	331	327	**387**	**18%**	**13%**
12	Manukau Road/Greenlane West	326	296	255	374	331	299	289	313	**348**	**11%**	**7%**
21	Great South Road/Campbell Road/ Main Highway	253	165	218	246	199	192	213	217	**294**	**35%**	**16%**
14	Mount Albert/New North Road	226	236	205	302	292	249	245	242	**264**	**9%**	**17%**
73	Blockhouse Bay/Great North Road	-	170	173	204	186	187	205	207	**260**	**26%**	**-**
15	Richardson Road/Maioro Street	-	-	30	56	53	77	70	60	**116**	**93%**	**-**
88	Keith Hay Park/Somerset Rd/ Bridge	-	-	-	77	99	69	88	86	**85**	**-1%**	**-**

1.8 School Bike Shed Count Summary

Cycle Counts

- Among the surveyed schools, of those eligible to cycle to school, on average, two per cent of students are cycling to their schools. This share is unchanged since 2011.
- Pasadena Intermediate School reported the highest share of cyclists – 20 per cent of all eligible students currently cycling to school, up from 9 per cent last year.
- In total, n=235 students from the responding schools were reported to be cycling to school.
- Of the 17 schools that participated in the count in both 2014 and 2015, only Pasadena Intermediate School reported an increase in the share of students cycling.

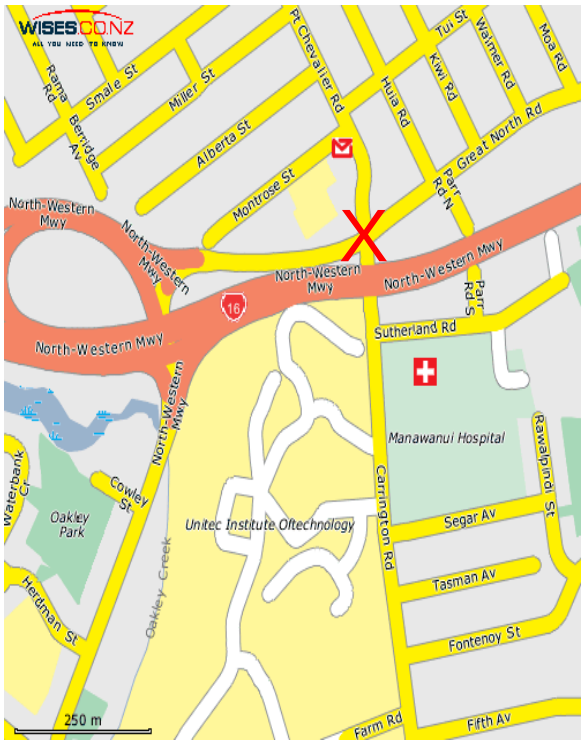
Scooter Counts

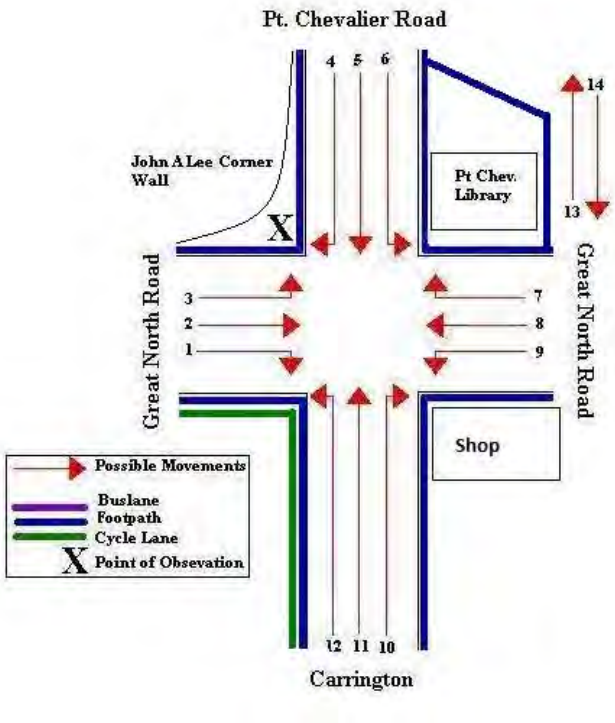
- Among the surveyed schools, of those eligible to scooter, on average, one per cent of students are scooting to their schools. This share is down from two per cent in 2014.
- Kowhai Intermediate School reported the highest share of scooters – 12 per cent of all eligible students currently scooting to school, unchanged from 2014.
- In total, n=149 students from the responding schools were reported to be scooting to school.
- Of the 15 schools that participated in the count in both 2014 and 2015, two (13 per cent) schools reported an increase in the share of students scooting, most notably at Auckland Normal Intermediate School (11 per cent, up from 7 per cent in 2014).

2. GREAT NORTH/CARRINGTON/POINT CHEVALIER ROAD, POINT CHEVALIER (SITE 3)

Figure 2.1 shows the possible cyclist movements at this intersection.

Figure 2.1: Cycle Movements: Great North/Carrington/Point Chevalier





2.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	114	121	235	341
2008	95	136	231	333
2009	97	96	193	281
2010	150	164	314	455
2011	103	129	232	335
2012	112	94	206	301
2013	112	116	228	331
2014	97	130	227	327
2015	**138**	**128**	**266**	**387**

2.2 Morning Peak

Environmental Conditions

- The weather was fine at the beginning but turned cloudy by the end of the morning shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- In 2015, morning cyclist movements recorded at the Great North/Carrington/Point Chevalier Road intersection have increased to 138 movements.
- The key movements at this intersection were straight from Point Chevalier Road into Carrington (Movement 5 = 52 cyclist movements) and the right hand turn from Carrington Road into Great North Road (Movement 10 = 43 cyclist movements).
- Compared with last year, the volume of morning cyclist movements has increased most notably at Movement 5 (up 21 cyclists). There were no notable decreases recorded.

Table 2.1: Morning Cyclist Movements

Great North/Carrington/Point Chevalier 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	0	0	2	0	2	0	1	**0**	**-1**
2	10	10	9	14	6	10	3	2	**1**	**-1**
3	0	5	1	4	3	0	0	2	**0**	**-2**
4	4	2	3	1	1	0	2	0	**0**	**0**
5	23	15	17	24	36	41	28	31	**52**	**21**
6	5	0	0	1	0	0	1	2	**2**	**0**
7	4	2	1	1	0	0	2	1	**0**	**-1**
8	4	2	2	4	1	1	4	3	**1**	**-2**
9	14	4	7	19	13	13	11	9	**17**	**8**
10	32	36	31	36	18	28	21	25	**43**	**18**
11	17	18	22	44	24	16	33	18	**22**	**4**
12	1	1	4	0	1	1	0	1	**0**	**-1**
13	-	-	-	-	-	-	0	0	**0**	**0**
14	-	-	-	-	-	-	0	0	**0**	**0**
Don't know	-	-	-	-	-	-	7	2	**0**	**-2**
Total	**114**	**95**	**97**	**150**	**103**	**112**	**112**	**97**	**138**	**41**

- The majority of cyclists at this intersection were adults (91 per cent, stable from 94 per cent at the previous measure).
- Most cyclists were wearing a helmet (97 per cent, unchanged from 2013).
- Three-quarters of cyclists were male (75 per cent, stable from 78 per cent last year).
- Eighty per cent of cyclists were riding on the road (down from 85 per cent last year).

Table 2.2: Morning Cyclist Characteristics

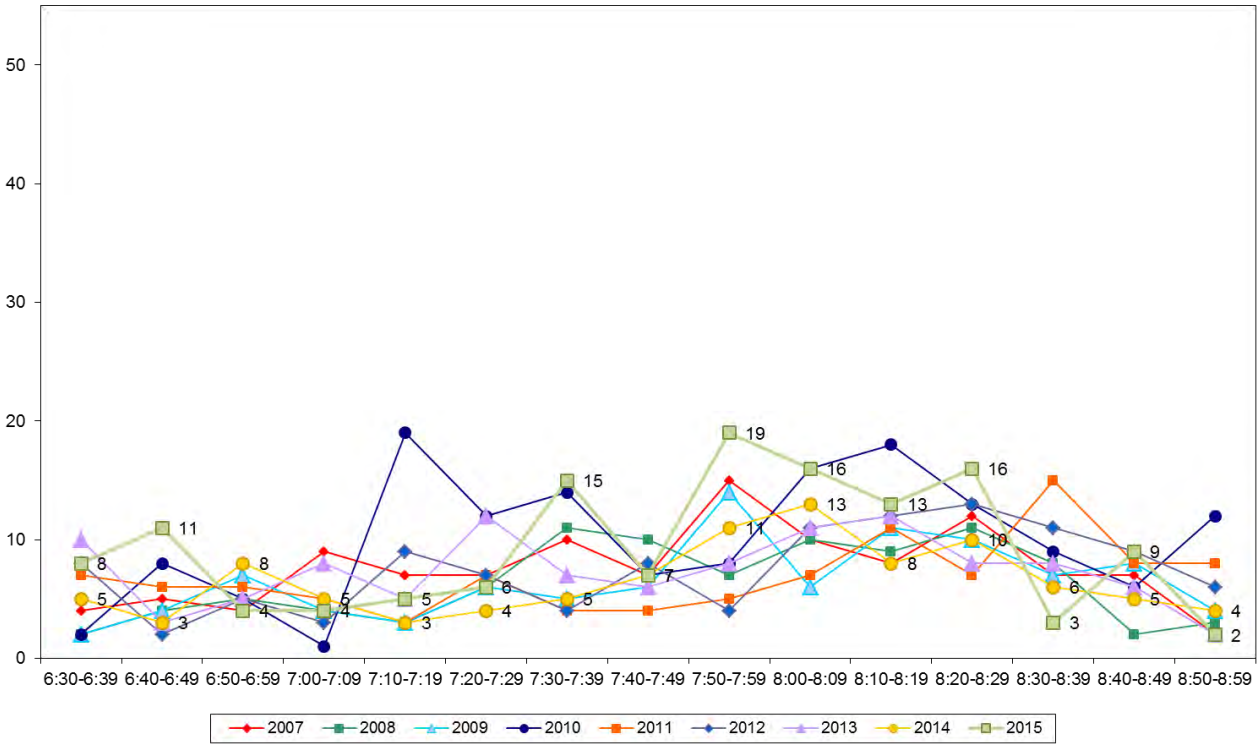
Great North/Carrington/Point Chevalier 2004 – 2015 (%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type													
Adult	91	84	93	86	84	87	89	89	87	88	94	**91**	**-3**
School child	9	16	7	14	16	13	11	11	13	12	6	**9**	**3**
Helmet Wearing													
Helmet on head	86	88	88	89	93	91	94	92	86	97	97	**97**	**0**
No helmet	14	12	12	11	7	9	6	8	14	3	3	**3**	**0**
Gender													
Male	-	-	-	-	-	-	-	64	77	86	78	**75**	**-3**
Female	-	-	-	-	-	-	-	21	20	12	19	**21**	**2**
Can't tell	-	-	-	-	-	-	-	15	3	2	3	**4**	**1**
Where Riding													
Road	64	68	75	67	73	68	73	74	69	76	85	**80**	**-5**
Footpath	36	32	25	33	27	32	27	26	31	24	15	**20**	**5**
Off-road cycleway	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Base:	***70***	***57***	***76***	***114***	***95***	***97***	***150***	***103***	***112***	***112***	***97***	***138***	

- Morning cyclist volumes gradually increased for the first half of the monitoring period, reaching the peak at 7:50am – 7:59am with 19 cyclists recorded.

Figure 2.2: Morning Peak Cyclist Frequency

Great North/Carrington/Point Chevalier 2007 – 2015 (n)



2.3 Evening Peak

Environmental Conditions

- The weather was fine throughout the evening shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- Evening cyclist movement numbers (128 movements) have remained stable at this intersection since last year (130 movements).
- The key movements in the evening at this intersection were straight through from Carrington Road into Point Chevalier Road (Movement 11 = 47 movements), turning left off Great North Road onto Carrington Road (Movement 9 = 30 cyclists) and straight through Point Chevalier into Carrington Road (Movements 5 = 29 cyclists).
- The most notable increase was at Movement 11 (up 14 movements) and the most notable decrease was at Movement 10 (down 9 movements).

Table 2.3: Evening Cyclist Movements

Great North/Carrington/Point Chevalier 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	1	0	0	1	1	0	1	0	**0**	**0**
2	5	5	3	2	3	2	0	2	**0**	**-2**
3	0	1	3	1	0	0	1	0	**0**	**0**
4	4	10	1	6	3	2	2	2	**2**	**0**
5	18	14	18	35	29	12	18	33	**29**	**-4**
6	4	1	1	1	0	0	0	2	**0**	**-2**
7	6	4	2	3	0	0	3	2	**3**	**1**
8	12	12	12	15	8	6	5	3	**1**	**-2**
9	22	29	22	37	31	22	23	31	**30**	**-1**
10	23	25	15	28	22	26	26	22	**13**	**-9**
11	26	34	19	35	31	23	35	33	**47**	**14**
12	0	1	0	0	1	1	0	0	**2**	**2**
13	-	-	-	-	-	-	0	0	**0**	**0**
14	-	-	-	-	-	-	1	0	**0**	**0**
Don't know	-	-	-	-	-	-	1	0	**1**	**1**
Total	**121**	**136**	**96**	**164**	**129**	**94**	**116**	**130**	**128**	**-2**

- Over the evening peak, most cyclists using this intersection were adults (99 per cent, stable from 97 per cent in 2014).
- Compared with last year, the share of cyclists wearing a helmet has remained consistent (91 per cent, stable from 89 per cent in 2014).
- The majority of cyclists continued to be male (80 per cent, unchanged from last year).
- Eighty-six per cent of cyclists were riding on the road (up 10 percentage points from 76 per cent last year). For the first time since monitoring started, two cyclists were recorded traveling in the off-road cycleway.

Table 2.4: Evening Cyclist Characteristics

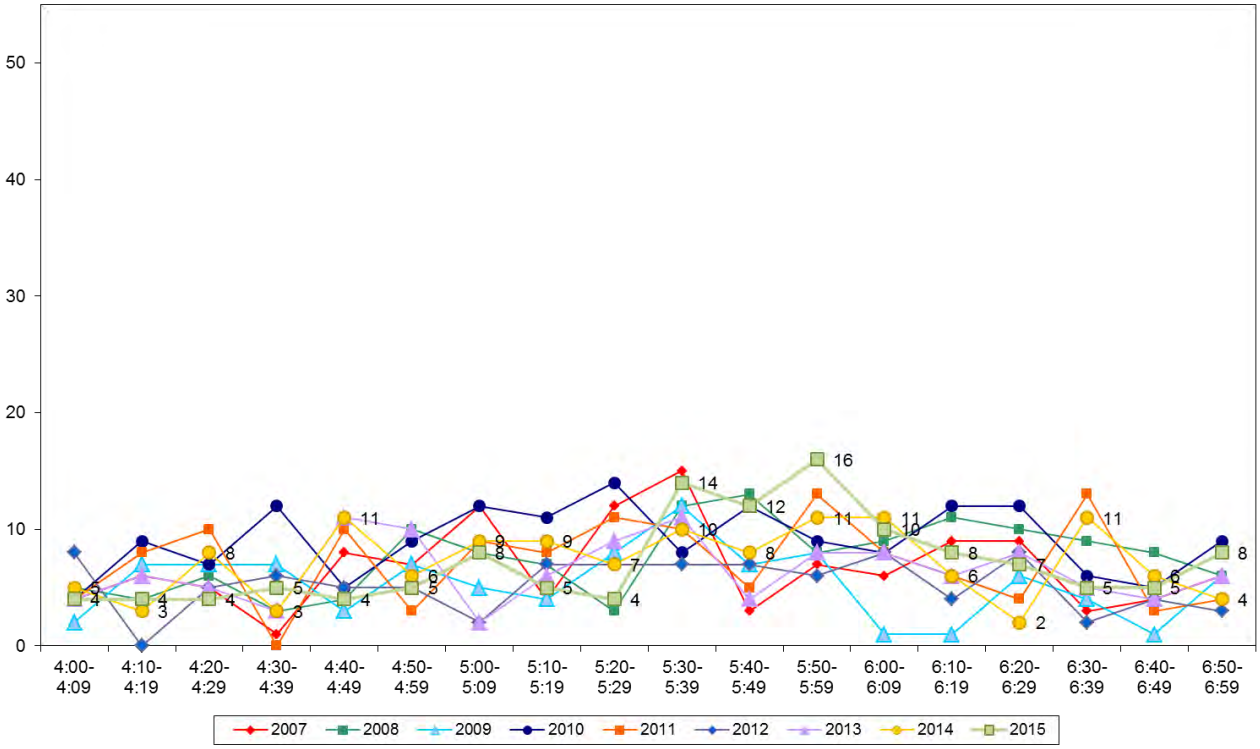
Great North/Carrington/Point Chevalier 2004 – 2015 (%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type													
Adult	86	89	100	89	96	95	96	91	89	98	97	**99**	**2**
School child	14	11	0	11	4	5	4	9	11	2	3	**1**	**-2**
Helmet Wearing													
Helmet on head	81	85	84	85	91	91	84	92	79	88	89	**91**	**2**
No helmet	19	15	16	15	9	9	16	8	21	12	11	**9**	**-2**
Gender													
Male	-	-	-	-	-	-	-	79	88	84	80	**80**	**0**
Female	-	-	-	-	-	-	-	19	12	16	19	**18**	**-1**
Can't tell	-	-	-	-	-	-	-	2	0	0	1	**2**	**1**
Where Riding													
Road	47	66	69	64	71	64	61	64	55	70	76	**86**	**10**
Footpath	53	34	31	36	29	36	39	36	45	30	24	**12**	**-12**
Off-road cycleway	0	0	0	0	0	0	0	0	0	0	0	**2**	**2**
Base:	***43***	***65***	***45***	***121***	***136***	***96***	***164***	***129***	***94***	***116***	***130***	***128***	

- Evening cyclist volumes varied throughout the shift, with only one evident peak. The greatest number of cyclists at any ten minute interval was 16, which occurred between 5:50pm to 5:59pm. Overall, the present trend is similar to that of previous years.

Figure 2.3: Evening Peak Cyclist Frequency

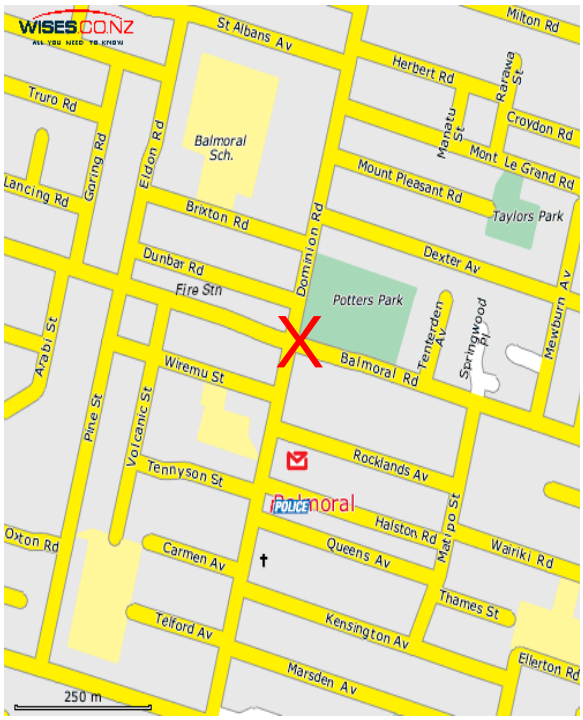
Great North/Carrington/Point Chevalier 2007 -2014 (n)

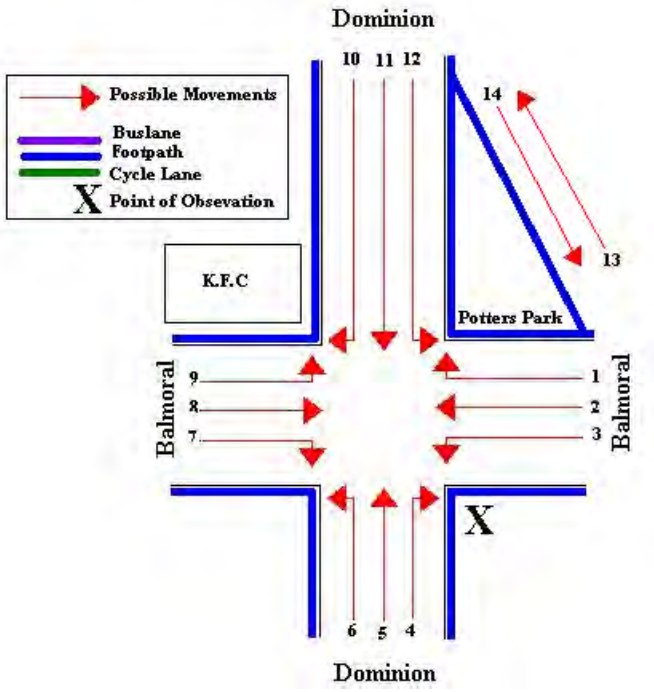


3. DOMINION/BALMORAL ROAD, BALMORAL (SITE 5)

Figure 3.1 shows the possible cyclist movements at this intersection.

Figure 3.1: Cycle Movement: Dominion/Balmoral





3.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	114	123	237	344
2008	90	111	201	291
2009	85	98	183	265
2010	91	114	205	296
2011	99	98	197	286
2012	97	91	188	274
2013	128	107	235	343
2014	123	112	235	342
2015	**151**	**137**	**288**	**420**

3.2 Morning Peak

Environmental Conditions

- The weather was fine at the beginning but turned cloudy by the end of the morning shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- In 2015, the total number of morning cyclist movements at the Balmoral/Dominion Road intersection has increased by 28 movements (151 movements, compared with 123 movements in 2014).
- The key movement at this site was travelling north along Dominion Road towards the city (Movement 5 = 92 cyclists). Movement 5 recorded the most notable increase, up 31 cyclists from last year.
- The most notable decrease was travelling south on Dominion Road (Movement 11) with 9 cyclists, down from 16 cyclists last year.

Table 3.1: Morning Cyclist Movements

Dominion/Balmoral 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	20	15	10	6	1	5	7	7	**9**	**2**
2	11	10	6	7	8	3	4	7	**9**	**2**
3	1	0	0	3	0	5	1	1	**0**	**-1**
4	1	0	2	1	5	7	2	0	**2**	**2**
5	52	41	35	43	53	43	64	61	**92**	**31**
6	4	1	1	3	0	1	1	1	**2**	**1**
7	3	0	1	2	1	2	3	0	**2**	**2**
8	12	12	15	11	17	13	13	14	**9**	**-5**
9	4	4	6	4	4	4	7	10	**12**	**2**
10	1	1	4	0	1	4	5	5	**0**	**-5**
11	3	4	4	10	7	6	17	16	**9**	**-7**
12	2	2	1	1	2	4	3	1	**3**	**2**
13	-	-	-	-	-	-	1	0	**2**	**2**
14	-	-	-	-	-	-	0	0	**0**	**0**
Total	**114**	**90**	**85**	**91**	**99**	**97**	**128**	**123**	**151**	**28**

- Most cyclists at this site were adults (95 per cent, stable from 2013).
- Consistent with previous years, almost all cyclists using this intersection were wearing a helmet (97 per cent, up from 93 per cent last year).
- Seventy-four per cent of the cyclists were male, down from 78 per cent last year.
- Most cyclists were observed riding on the road (89 per cent), an increase from the 85 per cent observed last year.

Table 3.2: Morning Cyclist Characteristics

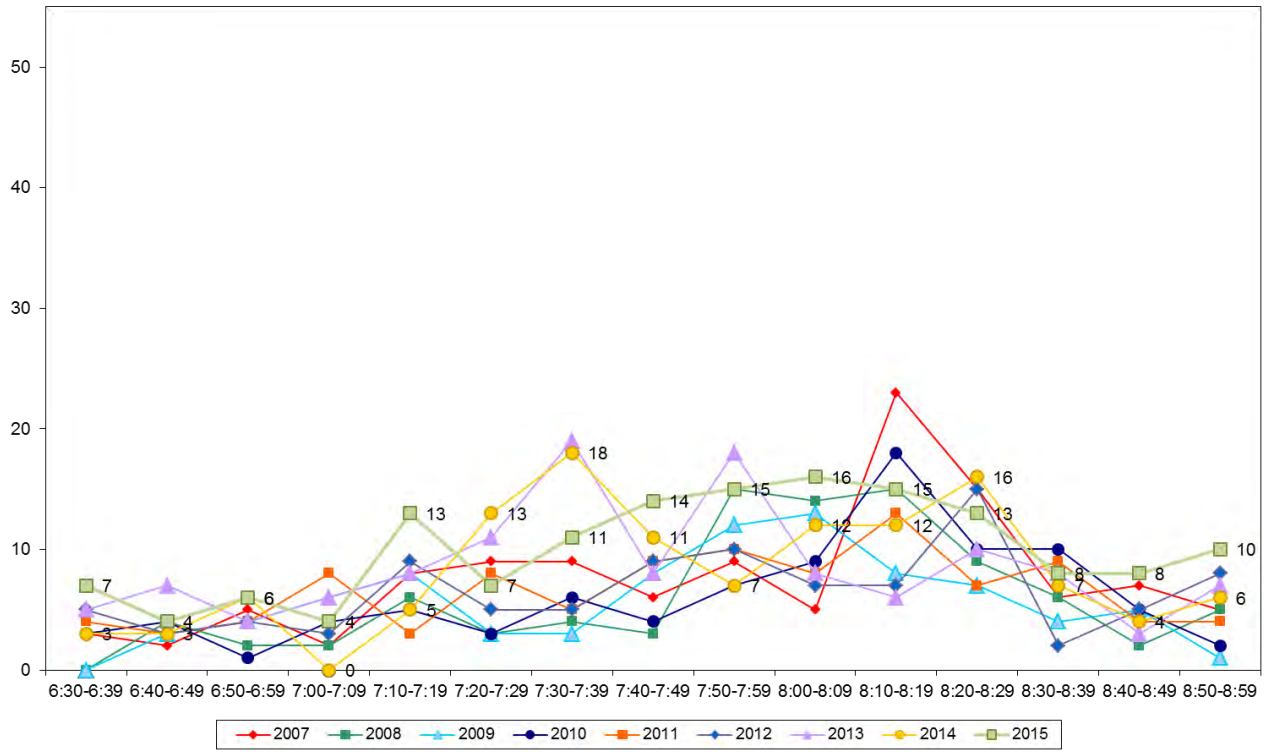
Dominion/Balmoral 2004 – 2015 (%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type													
Adult	67	81	75	71	74	87	78	95	89	95	94	**95**	**1**
School child	33	19	25	29	26	13	22	5	11	5	6	**5**	**-1**
Helmet Wearing													
Helmet on head	93	97	98	96	96	96	97	94	95	95	93	**97**	**4**
No helmet	7	3	2	4	4	4	3	6	5	5	7	**3**	**-4**
Gender													
Male	-	-	-	-	-	-	-	75	80	89	78	**74**	**-4**
Female	-	-	-	-	-	-	-	21	19	9	19	**21**	**2**
Can't tell	-	-	-	-	-	-	-	4	1	2	3	**5**	**2**
Where Riding													
Road	67	69	67	65	67	100	70	92	85	88	85	**89**	**4**
Footpath	33	31	33	35	33	0	30	8	15	12	15	**11**	**-4**
Base:	***76***	***94***	***92***	***114***	***90***	***85***	***91***	***99***	***97***	***128***	***123***	***151***	

- Morning cyclist movement volumes were steady throughout the shift. There was a small peak of 13 cyclists recorded between 7:10am to 7:19am. From 7:20am to 7:29am onwards, there was a clear, consistent increasing trend. The highest volume of cyclists in one ten minute interval was 16, recorded between 8:00am to 8:09am.

Figure 3.2: Morning Peak Cyclist Frequency

Dominion/Balmoral 2007 – 2015 (n)



Note: In 2015, no groups or pelotons were observed riding past this site in the morning. This compares with six cyclists (five per cent of all morning peak cycle movements at this site) in 2014 and eight cyclists (six per cent) in 2013.

3.3 Evening Peak

Environmental Conditions

- The weather was fine throughout the evening shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- In 2015, the volume of evening peak cyclist movements recorded at the Dominion/Balmoral Road intersection is 137 cycle movements, up from 112 movements in 2014.
- The key movement at this site was straight along Dominion Road heading south (Movement 11 = 72 movements). Movement 11 also recorded the most notable change (since last year) in terms of evening cyclist volumes (up 14 movements).

Table 3.3: Evening Cyclist Movements

Dominion/Balmoral Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	3	7	2	3	3	2	9	0	**5**	**5**
2	23	22	18	19	11	15	14	11	**15**	**4**
3	3	2	1	2	4	4	3	3	**2**	**-1**
4	1	0	1	5	1	0	0	8	**3**	**-5**
5	10	10	9	15	14	11	12	15	**10**	**-5**
6	3	4	2	5	4	1	0	0	**2**	**2**
7	5	4	3	1	2	2	0	0	**2**	**2**
8	8	13	4	5	5	4	7	5	**4**	**-1**
9	2	0	1	0	1	2	3	2	**1**	**-1**
10	8	2	7	7	4	7	8	6	**8**	**2**
11	51	44	48	47	45	43	47	58	**72**	**14**
12	5	3	2	5	4	0	4	2	**6**	**4**
13	-	-	-	-	-	-	0	1	**3**	**2**
14	-	-	-	-	-	-	0	1	**3**	**2**
DK	-	-	-	-	-	-	-	-	**1**	**1**
Total	**123**	**111**	**98**	**114**	**98**	**91**	**107**	**112**	**137**	**25**

- Almost all cyclists using the Dominion/Balmoral intersection were adults (98 per cent, up from 94 per cent in 2014).
- The majority of cyclists wore a helmet (91 per cent, stable from previous years).
- Most cyclists were male (77 per cent).
- Seventy-five per cent of the cyclists were riding on the road (down from 79 per cent last year).

Table 3.4: Evening Cyclist Characteristics

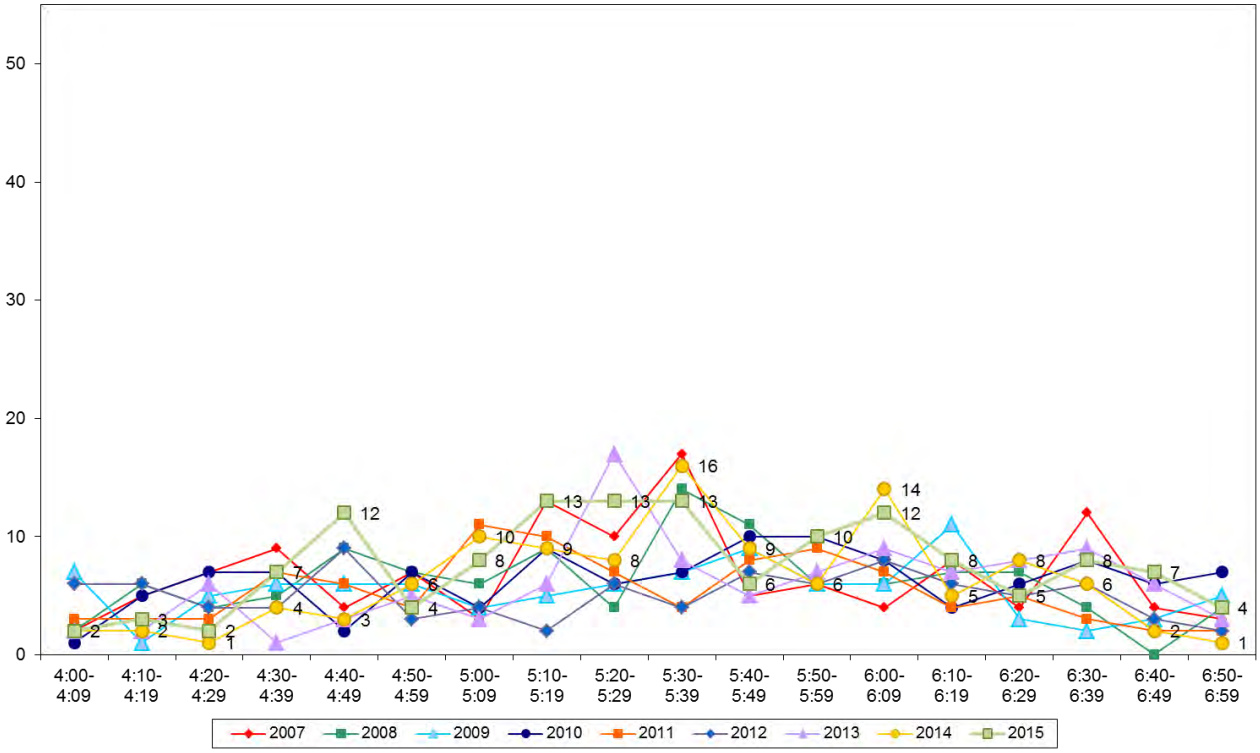
Dominion/Balmoral 2004 – 2015 (%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type													
Adult	81	89	100	93	79	92	86	91	97	98	94	**98**	**4**
School child	19	11	0	7	21	8	14	9	3	2	5	**2**	**-3**
Don't know	0	0	0	0	0	0	0	0	0	0	1	**0**	**-1**
Helmet Wearing													
Helmet on head	82	84	92	89	86	96	86	90	93	94	92	**91**	**-1**
No helmet	18	16	8	11	14	4	14	10	7	6	8	**9**	**1**
Gender													
Male	-	-	-	-	-	-	-	84	80	78	83	**77**	**-6**
Female	-	-	-	-	-	-	-	15	19	21	13	**21**	**8**
Can't tell	-	-	-	-	-	-	-	1	1	1	4	**2**	**-2**
Where Riding													
Road	70	70	92	78	68	100	82	80	80	79	79	**75**	**-4**
Footpath	30	30	8	22	32	0	18	20	20	21	20	**24**	**4**
Don't know	0	0	0	0	0	0	0	0	0	0	1	**1**	**0**
Base:	***73***	***74***	***64***	***123***	***111***	***98***	***114***	***98***	***91***	***107***	***112***	***137***	

- Cyclist volume remained relatively stable in the evening. The highest volume of cyclists recorded in a ten minute interval was 13, which occurred between 5:10pm to 5:19pm, 5:20pm to 5:29pm and 5:30pm to 5:39pm.

Figure 3.3: Evening Peak Cyclist Frequency

Dominion/Balmoral 2007 – 2015 (n)

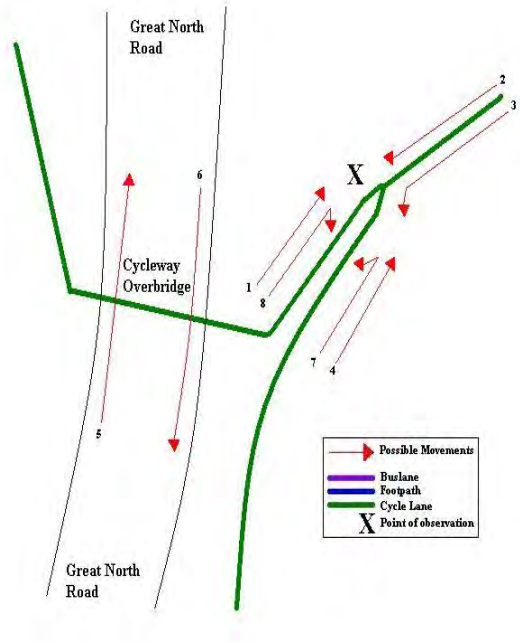


Note: In 2015, no groups or pelotons were observed riding past this site in the evening. This compares with five cyclists (4 per cent of this site's evening cycle movements)in 2014.

4. NORTH WESTERN CYCLEWAY/GREAT NORTH ROAD, WATERVIEW, (SITE 6)

Figure 4.1 shows the possible cyclist movements at this intersection. *Note: A revised map was used for this site from 2008 onwards. The movements monitored now more accurately reflect what is visible from a single observation point, and focus predominantly on cycle movements on the North Western Cycleway. As a result, movement data collected this year can only be compared with data collected from 2008 onwards.*

Figure 4.1: Cycle Movements: Great North Road/North Western Cycleway



4.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	98	134	232	335
2008	156	213	369	532
2009	145	141	286	416
2010	244	241	485	705
2011	204	282	486	701
2012	201	204	405	589
2013	258	261	519	754
2014	261	281	542	786
2015	**343**	**370**	**713**	**1034**

4.2 Morning Peak

Environmental Conditions

- The weather was fine at the beginning but turned cloudy by the end of the morning shift.
- Significant road works were underway at this site as part of the Waterview connection project. Whilst all of the movements in Figure 4.1 were still possible, the footpath near Movement 5 was closed and cyclists were not able to access the off-road cycleway from the road. The surveyor had noted that one cyclist lifted his bike and climbed over the obstacles to get onto the cycleway.
- There were no other road works or accidents that may affect cycle counts.

Key Points

- Morning cyclist movements recorded at Great North Road/North Western Cycleway have increased notably, from 261 movements last year to 343 this year.
- This year experienced the highest traffic volume since monitoring began in 2007.
- The key morning movement was across Great North Road away from the UNITEC overbridge heading north (Movement 1 = 196 movements).
- Notable increases in cycle numbers were evident at Movement 1 (up 56 movements) and at Movement 4 (up 18 movements).

Table 4.1: Morning Cyclist Movements

Great North Road/North Western Cycleway 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	-	82	75	133	117	119	157	140	**196**	**56**
2	-	30	28	55	32	26	29	36	**41**	**5**
3	-	5	9	11	10	10	8	5	**7**	**2**
4	-	27	13	28	34	28	58	74	**92**	**18**
5	-	10	9	12	6	12	1	3	**2**	**-1**
6	-	1	6	4	3	4	1	0	**0**	**0**
7	-	1	1	1	2	2	1	3	**3**	**0**
8	-	0	4	0	0	0	3	0	**2**	**2**
Total	**98**	**156**	**145**	**244**	**204**	**201**	**258**	**261**	**343**	**82**

- Consistent with previous years, most cyclists this year were adults (99 per cent, unchanged from last year).
- Almost all cyclists were wearing a helmet (98 per cent, unchanged from last year).
- The greatest share of morning cyclists continued to be male (82 per cent).
- Nearly all cyclists were riding on the off-road cycleway (99 per cent, unchanged over the last three years).

Table 4.2: Morning Cyclist Characteristics

Great North Road/North Western Cycleway 2006 – 2015 (%)

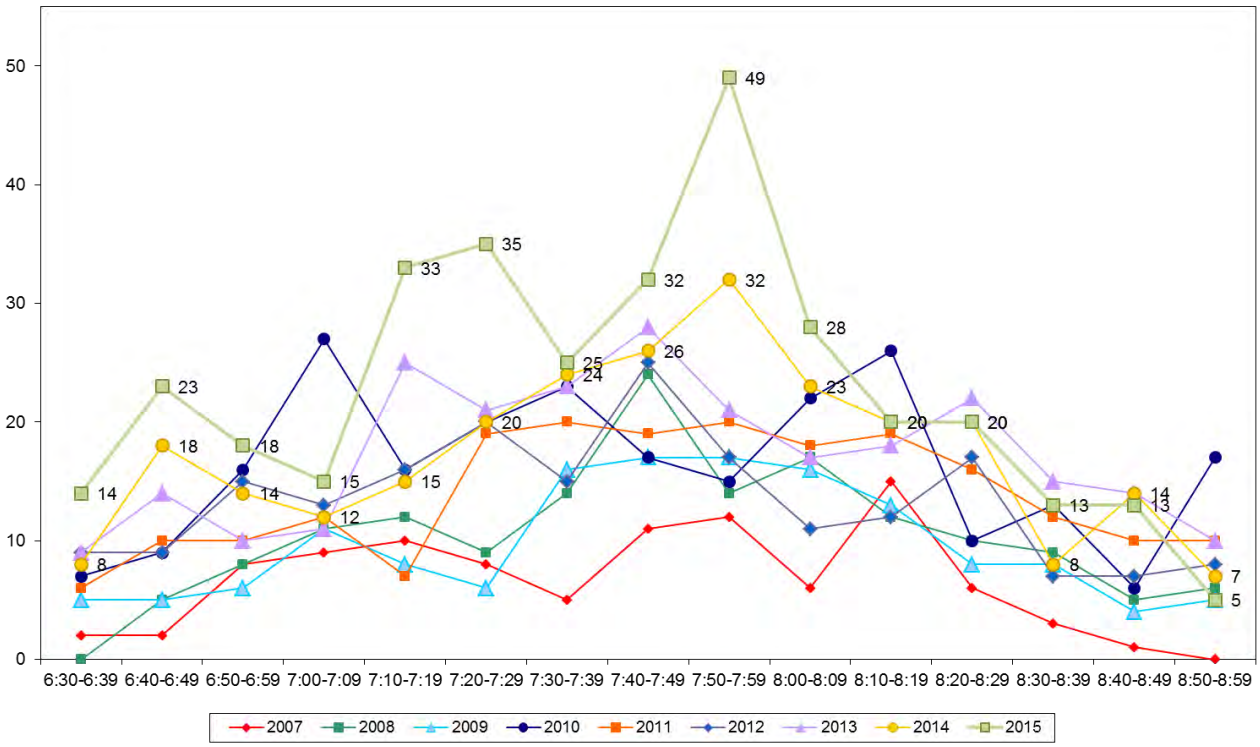
	2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	**Change 14-15**
Cyclist Type										
Adult	91	95	90	93	93	96	97	99	**99**	**0**
School child	9	5	10	7	7	4	3	1	**1**	**0**
Helmet Wearing										
Helmet on head	99	97	97	94	95	96	99	98	**98**	**0**
No helmet	1	3	3	6	5	4	1	2	**2**	**0**
Gender										
Male	-	-	-	-	81	86	86	87	**82**	**-5**
Female	-	-	-	-	16	14	14	13	**17**	**4**
Can't tell	-	-	-	-	3	0	0	0	**1**	**1**
Where Riding*										
Road	100	100	9	5	5	7	1	1	**1**	**0**
Off-road cycleway	-	-	91	95	95	93	99	99	**99**	**0**
Base:	***98***	***156***	***145***	***244***	***204***	***201***	***258***	***261***	***343***	

** In 2009 onwards, riding on the road was split into riding on off road cycleway and road. Therefore, 2015 results are only comparable with results from 2009 onwards.*

- As Figure 4.2 shows, cycle volumes are at their highest this year. At the first ten minute time interval (6:30am to 6:39am) 14 cyclists were recorded. This is the highest starting volume since monitoring began. Cycle volume reached a large peak in frequency between 7:50am to 7:59am, with 49 cyclists recorded. Following this peak, cycle volume steadily declined for the rest of the monitoring period.

Figure 4.2: Morning Peak Cyclist Frequency

Great North Road/North Western Cycleway 2007 – 2015 (n)



Note: In 2015, four per cent of the morning peak cycle movements (n=13) at this site were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *7 cyclists at 7:51am*
- *6 cyclists at 8:00am.*

This compares with eight cyclists (three per cent) in 2014.

4.3 Evening Peak

Environmental Conditions

- The weather was fine but cloudy throughout the evening shift.
- Significant road works were underway at this site as part of the Waterview connection project. Whilst all of the movements in Figure 4.1 were still possible, the footpath near Movement 5 was closed and cyclists were not able to enter the off-road cycleway from the road.
- There were no other road works or accidents that may affect cycle counts.

Key Points

- The number of evening cyclists has increased this measure, from 281 last year to 370 movements this year.
- The dominant movements at this site in the evening were straight across Great North Road (via the overbridge) in both directions (Movement 2 = 218 cyclists; Movement 1 = 50 cyclists) and coming from the east on the cycle lane and continuing south along Great North Road (Movement 3 = 85 cyclists).
- The most notable increase in cyclists movements were recorded at Movement 2 (up 61 cyclists from 2014) and Movement 3 (up 23 cyclists).

Table 4.3: Evening Cyclist Movements

Great North Road/North Western Cycleway 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	-	59	25	55	57	25	44	46	**50**	**4**
2	-	94	70	113	142	105	131	157	**218**	**61**
3	-	40	29	42	49	53	63	62	**85**	**23**
4	-	7	7	11	5	8	11	5	**7**	**2**
5	-	6	5	9	9	5	2	1	**0**	**-1**
6	-	5	5	9	13	7	1	0	**1**	**1**
7	-	1	0	0	1	0	2	3	**4**	**1**
8	-	1	0	2	6	1	7	7	**5**	**-2**
Total	**134**	**213**	**141**	**241**	**282**	**204**	**261**	**281**	**370**	**89**

- Almost all recorded cyclists in the evening peak were adults (97 per cent, stable from 100 per cent last year).
- Almost all cyclists were wearing helmets (96 per cent, stable for the last three years).
- The greatest share of cyclists continued to be male (82 per cent).
- All cyclists were recorded as riding on the off-road cycleway (unchanged from 2014).

Table 4.4: Evening Cyclist Characteristics

Great North Road/North Western Cycleway 2006 – 2015 (%)

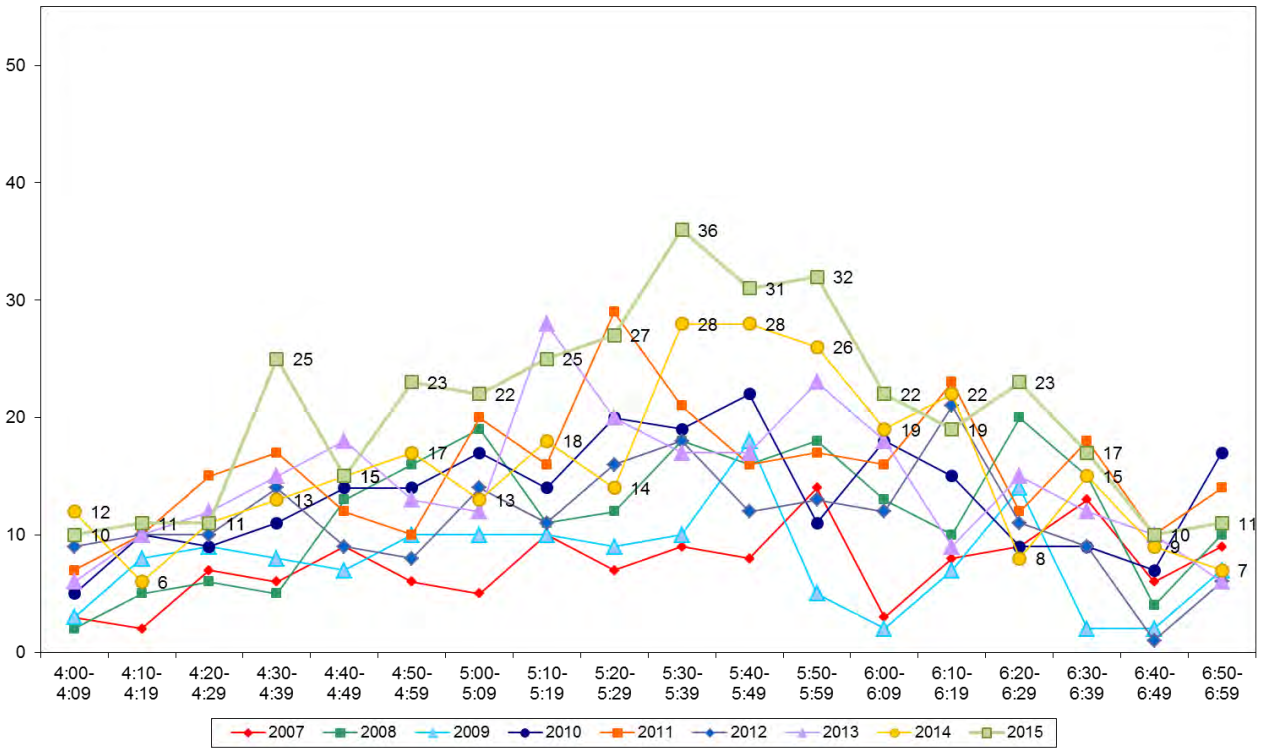
	2007	***2008***	***2009***	***2010***	***2011***	**2012**	**2013**	**2014**	**2015**	**Change 14-15**
Cyclist Type										
Adult	93	100	97	98	96	99	99	100	**97**	**-3**
School child	7	0	3	2	4	1	1	0	**3**	**3**
Helmet Wearing										
Helmet on head	98	97	95	95	96	92	97	97	**96**	**-1**
No helmet	2	3	5	5	4	8	3	3	**3**	**0**
Blank/Don't know	-	-	-	-	-	-	-	-	**1**	**1**
Gender										
Male	-	-	-	-	82	89	85	86	**82**	**-4**
Female	-	-	-	-	15	11	15	14	**18**	**4**
Can't tell	-	-	-	-	2	0	0	0	**0**	**0**
Where Riding*										
Road	100	100	7	7	8	6	1	0	**0**	**0**
Off-road cycleway	-	-	93	93	92	94	99	100	**100**	**0**
Base:	***134***	***213***	***141***	***241***	***282***	***204***	***261***	***281***	***370***	

** In 2009 onwards, riding on the road was split into riding on off road cycleway and road. Therefore, 2015 results are only comparable with results from 2009 onwards.*

- The volume of evening cyclists varied over the course of the shift. A small peak was observed at the beginning of the monitoring period (4:30pm to 4:39pm) with 25 cyclists recorded. Cyclist volume increased from 5:00pm onwards, until reaching a peak of 36 cyclists (recorded between 5:30pm to 5:39pm). The remainder of the monitoring period observed a fluctuating decline in cycle volume.

Figure 4.3: Evening Peak Cyclist Frequency

Great North Road/North Western Cycleway 2007 – 2015 (n)

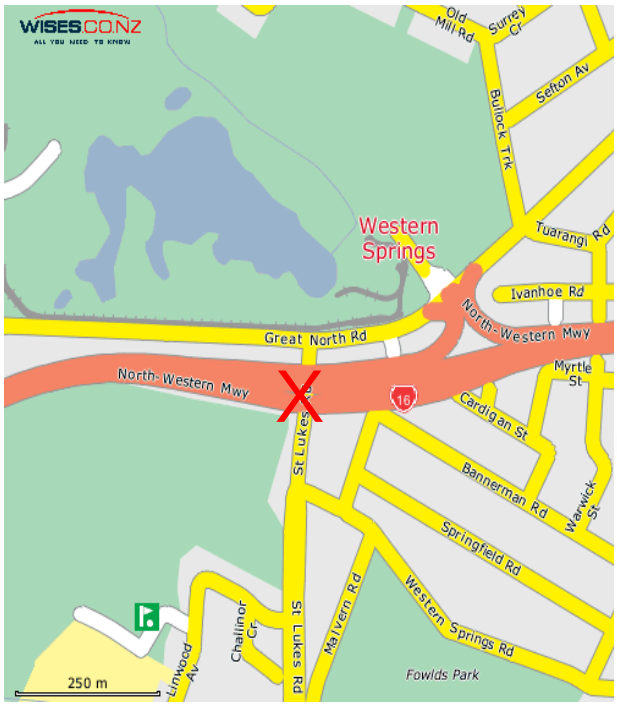


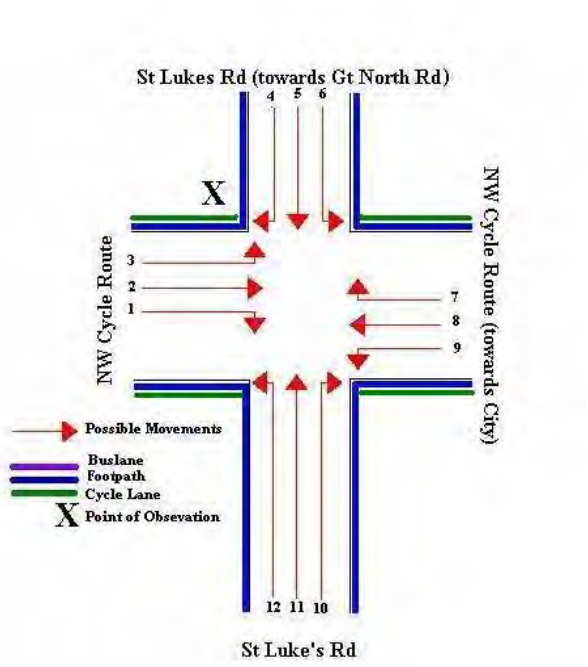
Note: In 2015, a peloton of 17 cyclists rode past at 4:34pm, which accounted for five per cent of this site's evening cycle movements. This compares with nine cyclists (three per cent) riding in a group in 2014.

5. NORTH WESTERN CYCLEWAY/ST LUKES ROAD, WESTERN SPRINGS (SITE 7)

Figure 5.1 shows the possible cyclist movements at this intersection.

Figure 5.1: Cycle Movements: North Western Cycleway/St Lukes Road





5.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	152	172	324	469
2008	156	175	331	480
2009	155	155	310	451
2010	222	210	432	629
2011	240	273	513	743
2012	222	207	429	625
2013	277	270	547	796
2014	315	344	659	956
2015	**392**	**392**	**784**	**1140**

5.2 Morning Peak

Environmental Conditions

- The weather was cloudy and windy throughout the morning shift.
- There were road works on St Lukes Road which may have affected cyclists travelling from or to Great North Road from St Lukes Road (Movements 5 and 11)
- There were no other road works or accidents that may affect cycle counts.

Key Points

- Morning cyclist movements recorded at the North Western Cycleway/St Lukes Road site in 2015 have increased for the past four years (392 movements this year, compared with 315 in 2014).
- The key morning movement at this site was straight along the North Western cycleway towards the city (Movement 2 = 268 movements).
- The most notable change was the increase seen at Movement 2 (up 95 movements). Movement 1 had the largest decrease in cycle numbers (down 7 movements).

Table 5.1: Morning Cyclist Movements

North Western Cycleway/St Lukes Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	8	6	9	12	13	14	14	12	**5**	**-7**
2	60	63	59	83	120	124	162	173	**268**	**95**
3	10	10	11	6	4	4	7	5	**3**	**-2**
4	7	3	5	5	2	4	1	1	**3**	**2**
5	6	4	7	11	9	2	2	4	**3**	**-1**
6	3	2	0	8	7	7	7	10	**8**	**-2**
7	15	7	4	7	14	15	15	20	**15**	**-5**
8	9	16	15	20	16	21	22	22	**28**	**6**
9	0	2	4	0	0	3	5	7	**4**	**-3**
10	7	14	4	13	18	15	18	23	**31**	**8**
11	21	23	29	40	30	8	20	29	**23**	**-6**
12	6	6	8	17	7	5	4	8	**1**	**-7**
Don't know	0	0	0	0	0	0	0	1	**0**	**-1**
Total	**152**	**156**	**155**	**222**	**240**	**222**	**277**	**315**	**392**	**77**

- The greatest share of cyclists were adults (96 per cent, stable from the last four years).
- Most cyclists were wearing a helmet (98 per cent, up slightly from 95 per cent in 2014).
- The majority of cyclists continued to be male (79 per cent, stable from last year).
- The majority of cyclists were cycling on the off-road cycleway (86 per cent, an increase from 69 per cent in 2014). Five per cent of cyclists were riding on the footpath (down from 15 per cent in 2014).

Table 5.2: Morning Cyclist Characteristics

North Western Cycleway/St Lukes Road 2004 – 2015 (%)

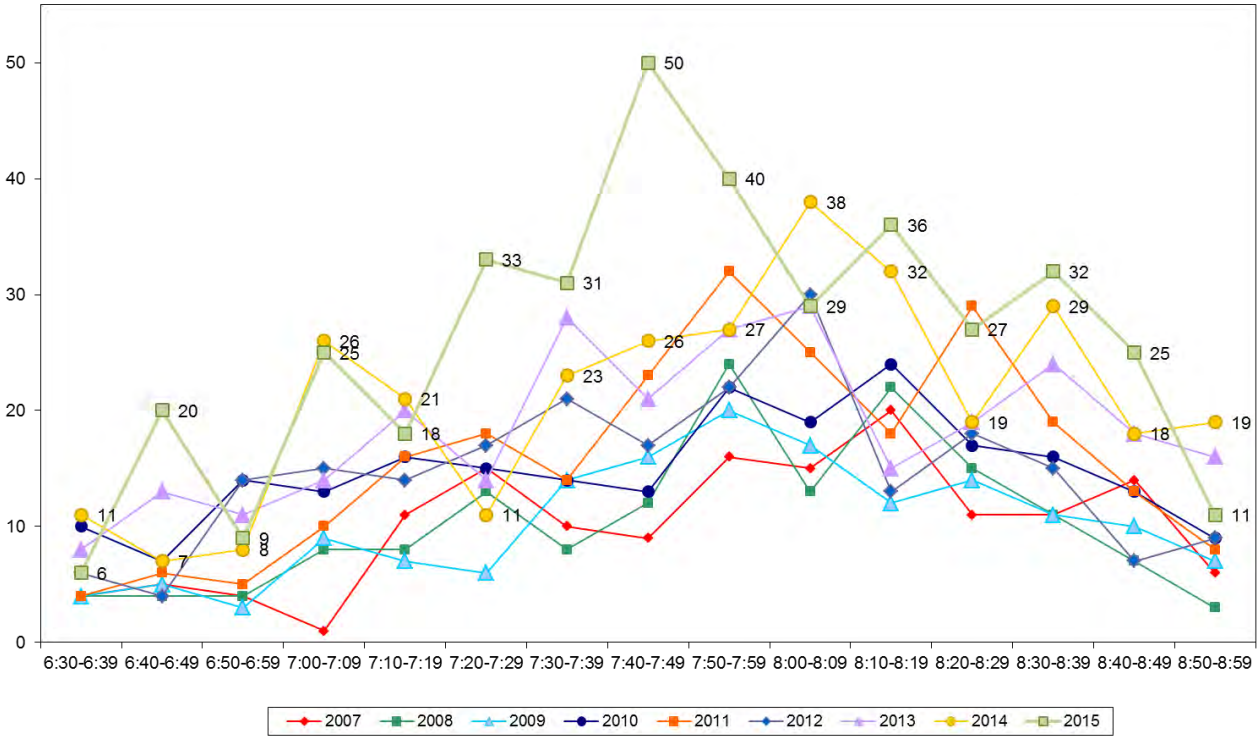
	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	82	85	89	86	91	96	96	95	**96**	**1**
School child	18	15	11	14	9	4	4	5	**4**	**-1**
Helmet Wearing										
Helmet on head	97	94	95	94	95	96	98	95	**98**	**3**
No helmet	3	6	5	6	5	4	2	4	**2**	**-2**
Don't know	0	0	0	0	0	0	0	1	**0**	**-1**
Gender										
Male	-	-	-	-	80	78	81	78	**79**	**1**
Female	-	-	-	-	16	18	18	18	**19**	**1**
Can't tell	-	-	-	-	4	4	1	4	**2**	**-2**
Where Riding										
Road	87	94	20	21	9	10	13	15	**8**	**-7**
Footpath	13	6	10	15	20	10	19	15	**5**	**-10**
Off-road cycleway*	-	-	70	64	71	80	68	69	**86**	**17**
Don't know	-	-	0	0	0	0	0	1	**1**	**0**
Base:	***152***	***156***	***155***	***222***	***240***	***222***	***277***	***315***	***392***	

** In 2009 onwards, riding on the road was split into riding on off road cycleway and road. Therefore, 2015 results are only comparable with results from 2009 onwards.*

- Unlike previous years, cycle volume this year for North Western Cycleway/St Lukes Road has recorded a series of fluctuations. There is one clear peak between 7:40am to 7:49am, with 50 cycle movements. Following the peak, cyclist volume declined.

Figure 5.2: Morning Peak Cyclist Frequency

North Western Cycleway/St Lukes Road 2007 – 2015 (n)



Note: In 2015, three cyclists (one per cent of all morning peak cycle movements at this site) were observed riding together at 6:44am. This compares with three cyclists (two per cent) in 2014.

5.3 Evening Peak

Environmental Conditions

- The weather was fine but cloudy with light winds throughout the evening shift.
- There were road works on St Lukes Road which might have affected cyclists travelling from or to Great North Road from St Lukes Road (Movements 5 and 11)
- There were no other road works or accidents that may affect cycle counts.

Key Points

- Evening cyclist numbers have notably increased since last year (392 movements compared to 344 last year). There has been an increasing trend since 2012 at this site (North Western Cycleway/St Lukes Road).
- Consistent with previous years, in the evening peak, the key route was along the North Western cycleway away from the city (Movement 8 = 262 cyclists).
- Of the 12 movements possible at this site, the biggest change since last year was at Movement 8 (up 79 movements).

Table 5.3: Evening Cyclist Movements

North Western Cycleway/St Lukes Road 2007 – 2015 (n)

Movement	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	11	8	5	8	6	**6**	**0**
2	28	28	22	22	37	**36**	**-1**
3	5	4	3	2	3	**0**	**-3**
4	16	12	6	11	8	**8**	**0**
5	24	23	9	15	21	**14**	**-7**
6	1	1	6	4	11	**6**	**-5**
7	10	10	10	11	21	**11**	**-10**
8	80	149	121	152	183	**262**	**79**
9	8	18	7	14	17	**25**	**8**
10	1	1	2	5	2	**4**	**2**
11	14	16	11	9	14	**10**	**-4**
12	12	3	5	17	20	**10**	**-10**
Don't know	0	0	0	0	1	**0**	**-1**
Total	**210**	**273**	**207**	**270**	**344**	**392**	**48**

- Consistent with previous years, adults comprised the greatest share of cyclists (95 per cent, stable from 97 per cent in 2014).
- Most cyclists were wearing a helmet (95 per cent, stable from previous measure).
- The majority of cyclists continued to be male (76 per cent, unchanged from last year).
- The greatest share of cyclists were cycling on the off-road cycleway (81 per cent, a notable increase from 68 per cent in 2014), while 11 per cent were riding on the footpath.

Table 5.4: Evening Cyclist Characteristics

North Western Cycleway/St Lukes Road 2004 – 2015 (%)

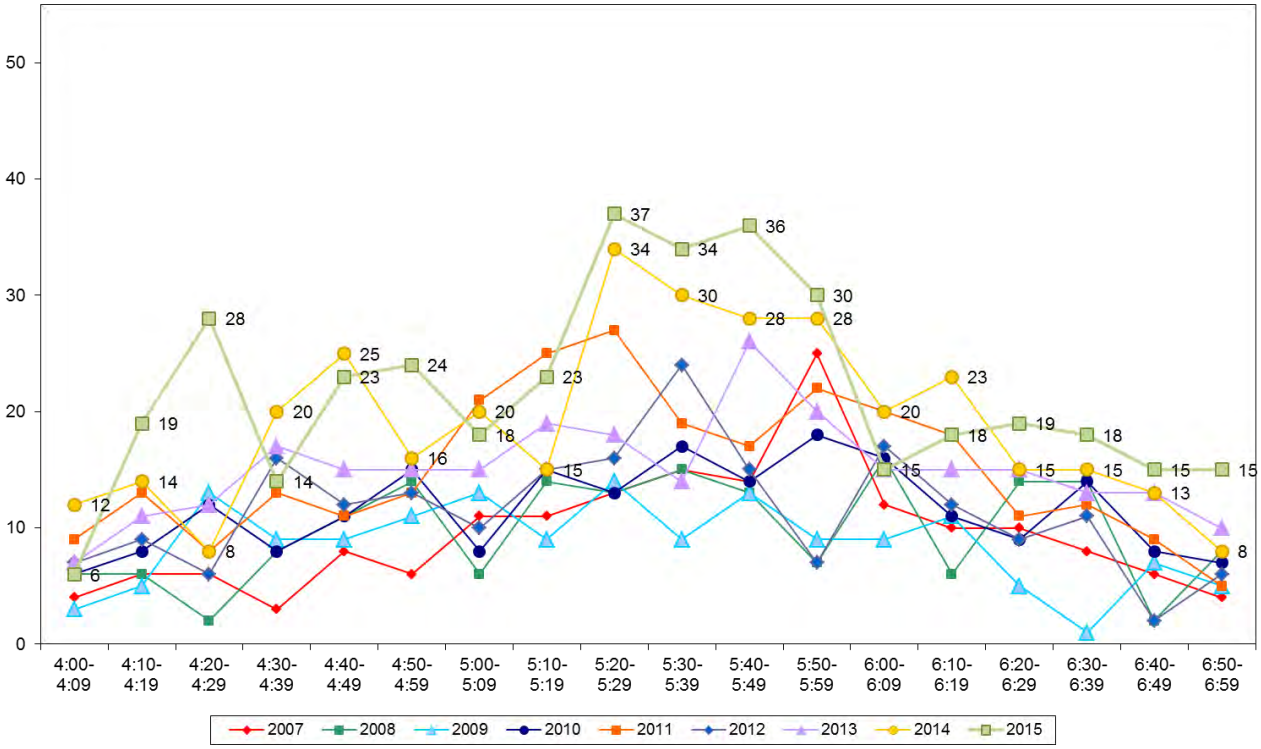
	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type													
Adult	93	98	100	96	88	100	95	98	98	99	97	**95**	**-2**
School child	7	2	0	4	12	0	5	2	2	1	3	**5**	**2**
Helmet Wearing													
Helmet on head	97	92	98	97	91	93	93	96	96	93	96	**95**	**-1**
No helmet	3	8	2	3	9	7	7	4	4	7	4	**1**	**-3**
Blank/Don't know	-	-	-	-	-	-	-	-	-	-	-	**4**	**4**
Gender													
Male	-	-	-	-	-	-	-	84	80	84	76	**76**	**0**
Female	-	-	-	-	-	-	-	12	18	16	22	**20**	**-2**
Can't tell	-	-	-	-	-	-	-	4	2	0	2	**4**	**2**
Where Riding*													
Road	98	87	98	85	89	15	16	15	10	12	11	**4**	**-7**
Footpath	2	13	2	15	11	5	20	13	14	22	21	**11**	**-10**
Off-road cycleway*	-	-	-	-	-	80	64	72	76	66	68	**81**	**13**
Blank/Don't know	-	-	-	-	-	-	-	-	-	-	-	**4**	**4**
Base:	***87***	***108***	***80***	***172***	***175***	***155***	***210***	***273***	***207***	***270***	***344***	***392***	

** In 2009 onwards, riding on the road was split into riding on off road cycleway and road. Therefore, 2015 results are only comparable with results from 2009 onwards.*

- Evening cyclist movements fluctuated throughout the evening monitoring period. There was a small peak of 28 cycle movements between 4:20pm and 4:29pm. Volumes then dropped, before increasing to the largest peak of 37 cyclists between 5:20pm and 5:29pm. A curve in volume frequency was present near the end of the monitoring period.

Figure 5.3: Evening Peak Cyclist Frequency

North Western Cycleway/St Lukes Road 2007 –2015 (n)

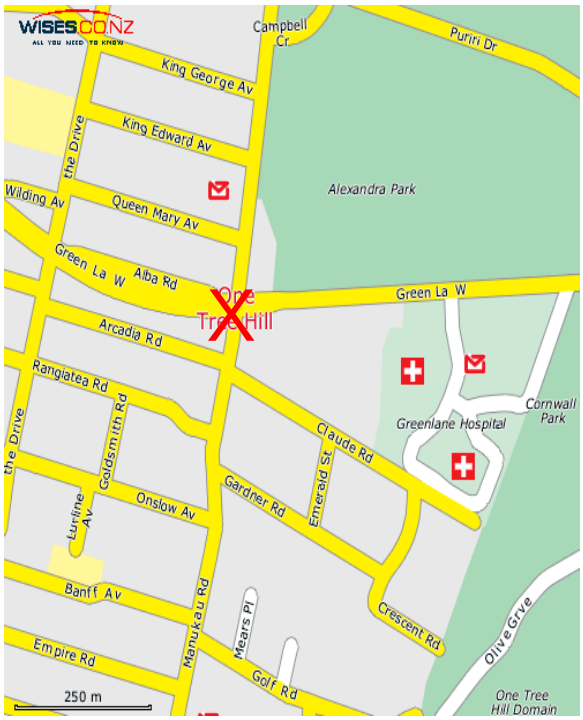


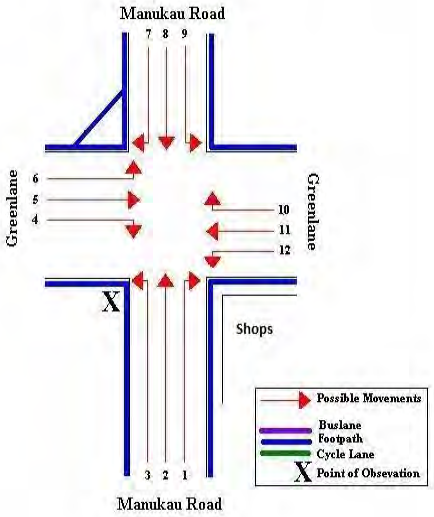
Note: In 2015, a group of 17 cyclists rode past at 4:28pm (four per cent of this site's evening cycle movements). This compares with 11 cyclists (three per cent) riding as groups in 2014.

6. MANUKAU/GREENLANE ROAD, EPSOM (SITE 12)

Figure 6.1 shows the possible cyclist movements at this intersection.

Figure 6.1: Cycle Movements: Manukau/Greenlane West





6.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	103	122	225	326
2008	92	113	205	296
2009	84	92	176	255
2010	130	127	257	374
2011	120	107	227	331
2012	110	95	205	299
2013	99	100	199	289
2014	92	125	217	313
2015	**120**	**119**	**239**	**348**

6.2 Morning Peak

Environmental Conditions

- The weather was overcast with light wind throughout the morning shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- In 2015, the number of morning cyclist movements recorded at the Manukau/Greenlane West intersection increased from 2014 (up by 28 movements to 120).
- As in previous years, the most common morning movement at this intersection was north along Manukau Road towards the city (Movement 2 = 36 movements).
- The largest increase in cyclist movements was observed at Movement 6 (up 8 movements) and Movement 9 (up 7 movements) and the largest decrease was at Movement 8 (down 7 movements).

Table 6.1: Morning Cyclist Movements

Manukau/Greenlane West 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	4	6	1	4	4	4	1	5	**3**	**-2**
2	27	26	30	48	48	30	32	34	**36**	**2**
3	4	2	4	7	5	3	3	3	**5**	**2**
4	1	5	2	1	7	8	5	2	**2**	**0**
5	20	15	16	20	20	15	21	18	**20**	**2**
6	1	6	4	8	5	8	6	4	**12**	**8**
7	4	4	1	4	3	2	1	1	**6**	**5**
8	22	14	14	16	16	20	10	17	**10**	**-7**
9	9	4	1	3	3	7	3	0	**7**	**7**
10	2	2	2	5	0	0	5	1	**6**	**5**
11	7	7	9	11	9	10	12	6	**5**	**-1**
12	2	1	0	3	0	3	0	1	**0**	**-1**
Don't know	-	-	-	-	-	-	-	-	**8**	**8**
Total	**103**	**92**	**84**	**130**	**120**	**110**	**99**	**92**	**120**	**28**

- Almost all of the morning cyclists at the Manukau/Greenlane West intersection were adults (95 per cent, compared with 88 per cent last year).
- Almost all cyclists were wearing a helmet (98 per cent, stable from 97 last year).
- Around two thirds of cyclists were male (68 per cent), a notable decline from 82 per cent last year.
- The proportion of cyclists riding on the footpath has increased by 7 percentage points to 20 per cent this year.

Table 6.2: Morning Cyclist Characteristics

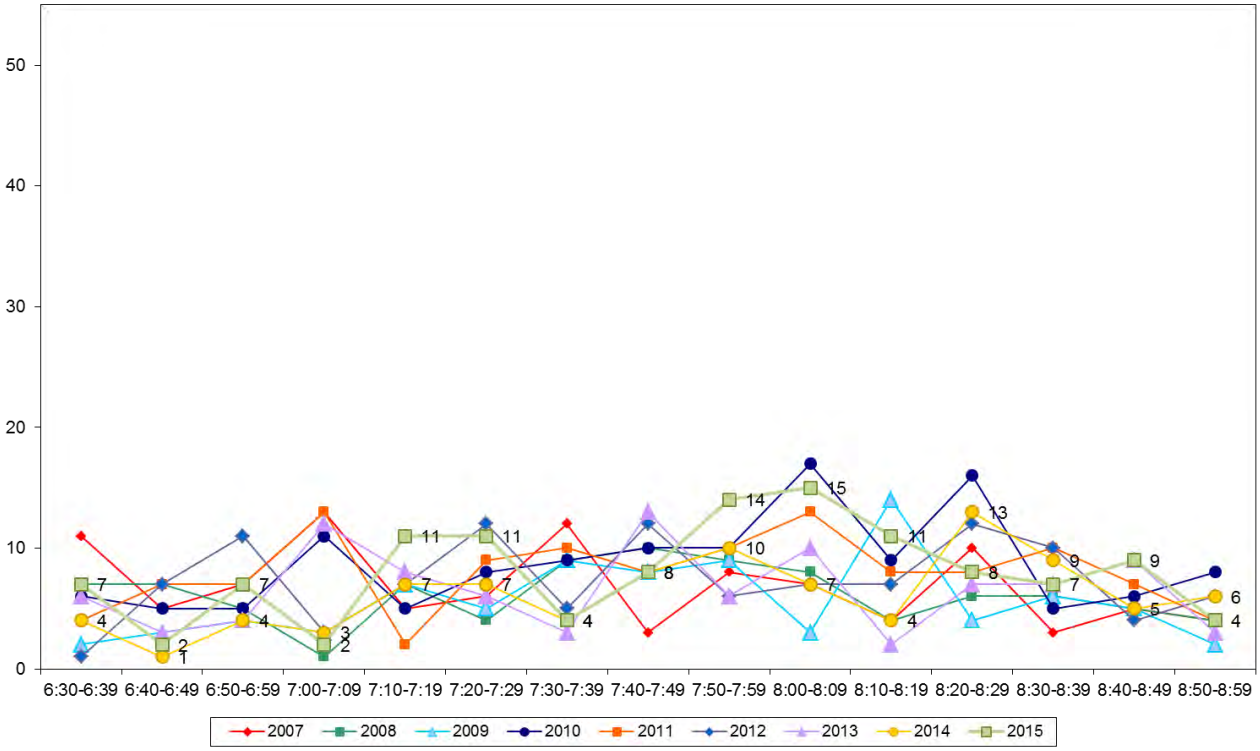
Manukau/Greenlane West 2004 – 2015 (%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type													
Adult	71	89	87	95	87	87	97	87	84	90	88	**95**	**7**
School child	29	11	13	5	13	13	3	13	16	10	12	**4**	**-8**
Blank/Don't know	-	-	-	-	-	-	-	-	-	-	-	**1**	**1**
Helmet Wearing													
Helmet on head	92	99	93	95	99	95	99	98	95	94	97	**98**	**1**
No helmet	8	1	7	5	1	5	1	2	5	6	3	**1**	**-2**
Blank/Don't know	-	-	-	-	-	-	-	-	-	-	-	**1**	**1**
Gender													
Male	-	-	-	-	-	-	-	74	71	81	82	**68**	**-14**
Female	-	-	-	-	-	-	-	23	24	18	18	**22**	**4**
Can't tell	-	-	-	-	-	-	-	3	5	1	0	**10**	**10**
Where Riding													
Road	71	71	74	78	79	73	88	75	75	78	87	**80**	**-7**
Footpath	29	29	26	22	21	27	12	25	25	22	13	**20**	**7**
Base:	***66***	***92***	***89***	***103***	***92***	***84***	***130***	***120***	***110***	***99***	***92***	***120***	

- The volume of morning cyclists fluctuated over the entire monitoring period, with no more than 15 cyclist movements per 10 minute interval. Small peaks in cyclist volumes were observed throughout the monitoring period.

Figure 6.2: Morning Peak Cyclist Frequency

Manukau/Greenlane West 2007 – 2015 (n)



Note: In 2015, a group of three cyclists rode past at 6:32am (three per cent of this site's morning cycle movements).

6.3 Evening Peak

Environmental Conditions

- The weather was fine but mostly overcast throughout the evening shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- In 2015, the number of evening cyclist movements recorded at the Manukau/Greenlane West intersection has decreased (119 movements, down from 125 movements last year).
- The two key movements in the evening at this intersection were straight along Manukau Road heading south (Movement 8 = 35 cyclists) and west along Greenlane West (Movement 11 = 28 cyclists).
- The most notable change in cycle movement numbers occurred at Movement 2 (a decrease of 7 movements).

Table 6.3: Evening Cyclist Movements

Manukau/Greenlane West 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	4	1	2	6	3	3	2	1	**1**	**0**
2	16	17	5	17	8	8	6	15	**8**	**-7**
3	4	4	3	4	5	7	6	6	**4**	**-2**
4	6	7	5	7	8	9	8	9	**12**	**3**
5	9	11	8	11	3	3	6	11	**11**	**0**
6	1	1	5	0	6	4	0	1	**1**	**0**
7	5	3	3	3	1	6	8	5	**4**	**-1**
8	26	37	33	36	36	25	31	40	**35**	**-5**
9	6	0	2	4	3	2	4	1	**4**	**3**
10	11	4	3	6	5	9	9	5	**5**	**0**
11	30	25	17	29	24	15	17	28	**28**	**0**
12	4	3	6	4	5	4	3	3	**3**	**0**
DK	-	-	-	-	-	-	-	-	**3**	**3**
Total	**122**	**113**	**92**	**127**	**107**	**95**	**100**	**125**	**119**	**-6**

- The greatest share of cyclists continued to be adults (97 per cent, an increase from 85 per cent in 2014).
- The share wearing a helmet remained high (97 per cent, stable from 95 per cent in 2014).
- The majority of cyclists continued to be male (82 per cent).
- The proportion of cyclists riding on the road is stable from last year (81 per cent).

Table 6.4: Evening Cyclist Characteristics

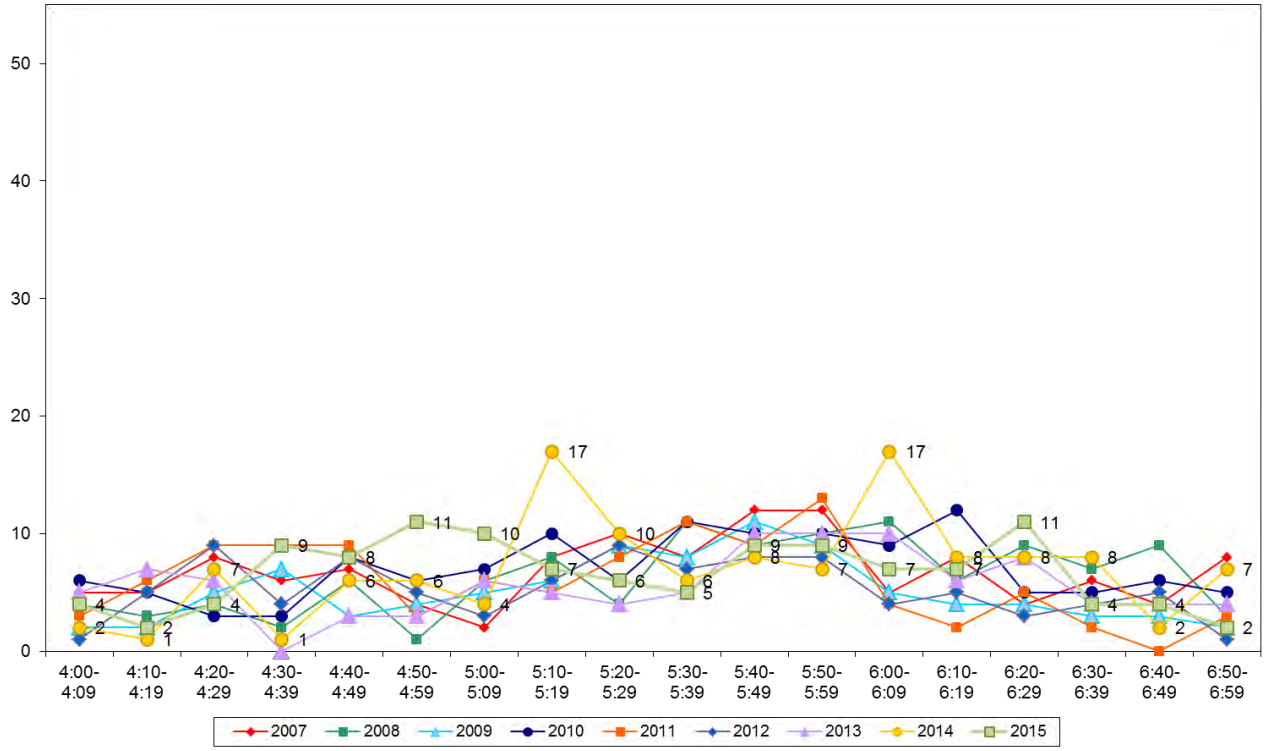
Manukau/Greenlane West 2004 – 2015 (%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type													
Adult	78	96	95	88	81	91	94	84	95	87	85	**97**	**12**
School child	22	4	5	12	19	9	6	16	5	13	14	**3**	**-11**
Don't know	0	0	0	0	0	0	0	0	0	0	1	**0**	**-1**
Helmet Wearing													
Helmet on head	90	98	98	95	94	93	98	91	97	93	95	**97**	**2**
No helmet	10	2	2	5	6	7	2	9	3	7	4	**3**	**-1**
Don't know	0	0	0	0	0	0	0	0	0	0	1	**0**	**-1**
Gender													
Male	-	-	-	-	-	-	-	84	74	88	89	**82**	**-7**
Female	-	-	-	-	-	-	-	16	23	11	11	**16**	**5**
Can't tell	-	-	-	-	-	-	-	0	3	1	0	**2**	**2**
Where Riding													
Road	73	87	86	76	78	84	74	74	90	77	80	**81**	**1**
Footpath	27	13	14	24	22	16	26	26	10	23	20	**18**	**-2**
Don't know	-	-	-	-	-	-	-	-	-	-	-	**1**	**1**
Base:	***60***	***55***	***56***	***122***	***113***	***92***	***127***	***107***	***95***	***100***	***125***	***119***	

- In the evening, cyclist movement volume remained low but steady, with no more than 11 movements during most 10 minute intervals. Eleven cyclists were observed between 4:50pm to 4:59pm and 6:20pm to 6:29pm.

Figure 6.3: Evening Peak Cyclist Frequency

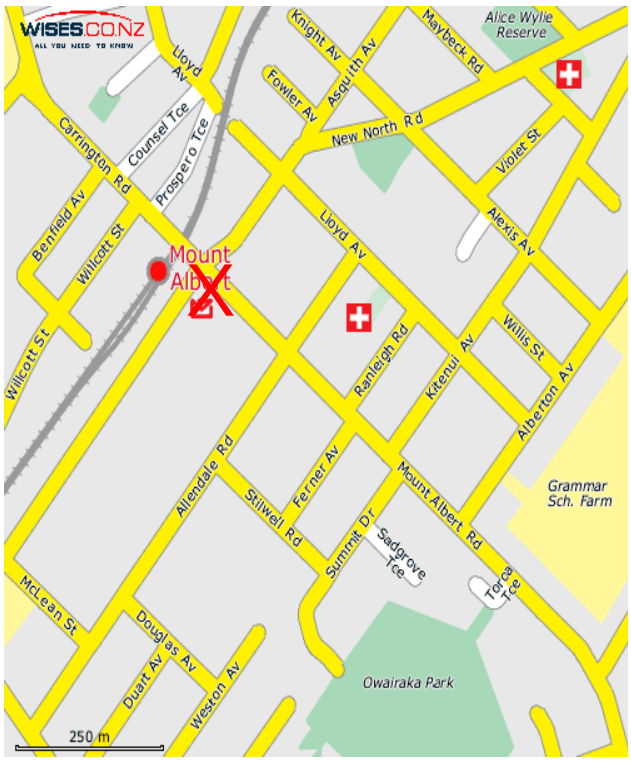
Manukau/Greenlane West 2007 – 2015 (n)

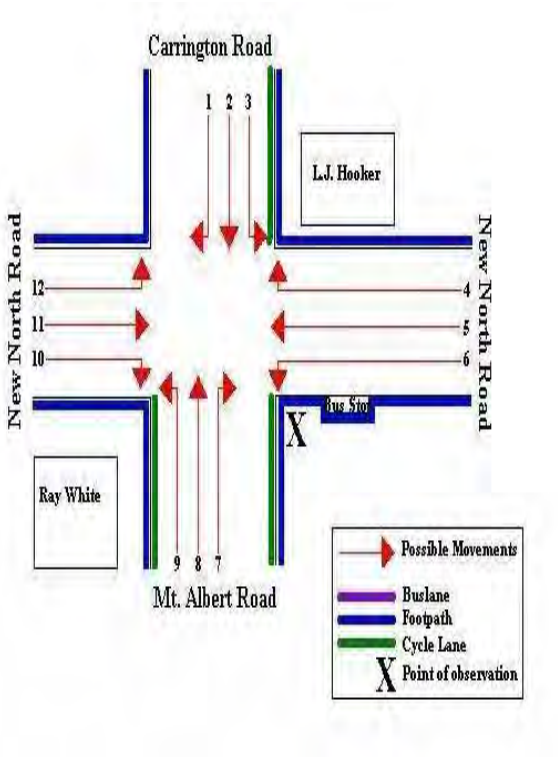


7. MOUNT ALBERT/NEW NORTH/ CARRINGTON ROAD, MT ALBERT (SITE 14)

Figure 7.1 shows the possible cyclist movements at this intersection.

Figure 7.1: Cycle Movements: Mount Albert/New North Road/Carrington Road





7.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	75	81	156	226
2008	68	96	164	236
2009	59	83	142	205
2010	91	118	209	302
2011	97	104	201	292
2012	94	76	170	249
2013	70	100	170	245
2014	62	107	169	242
2015	**98**	**83**	**181**	**264**

7.2 Morning Peak

Environmental Conditions

- The weather was fine with light breeze throughout the morning shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- Compared with last year, the volume of morning cyclist movements at the Mount Albert/New North Road/Carrington Road intersection has increased notably (98 movements, up from 62 movements in 2014).
- The most common movements in the morning was straight along Mount Albert Road heading into Carrington Road (Movement 8 = 20 movements) and traveling straight, heading east, on New North Road (Movement 11 = 20 movements).
- The greatest change in morning cyclist movement volumes was traveling straight along Mount. Albert Road, heading north onto Carrington Road (Movement 7 = up 8 movements).

Table 7.1: Morning Cyclist Movements

Mount Albert/New North Road/Carrington Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	1	3	1	2	2	3	3	2	2	**0**
2	11	10	11	19	26	18	10	11	12	**1**
3	3	2	2	4	5	3	5	1	7	**6**
4	3	3	1	2	0	5	3	1	6	**5**
5	5	3	5	6	9	7	3	6	5	**-1**
6	0	0	0	0	2	1	1	1	0	**-1**
7	2	3	2	1	1	5	3	2	10	**8**
8	14	14	6	22	19	19	15	18	20	**2**
9	1	3	1	0	4	2	0	0	0	**0**
10	6	4	3	1	0	2	1	2	7	**5**
11	25	23	25	32	26	25	24	14	20	**6**
12	4	0	2	2	3	4	2	3	4	**1**
Don't know	0	0	0	0	0	0	0	1	**5**	**4**
Total	**75**	**68**	**59**	**91**	**97**	**94**	**70**	**62**	**98**	**36**

- Over the morning peak, most cyclists using the Mount Albert/New North Road/Carrington Road intersection were adults (89 per cent, stable from 87 last year).
- Helmet-wearing was unchanged from last year (97 per cent).
- Three quarters of cyclists were male (77 per cent), the lowest percentage recorded since 2011 when the recording of gender began.
- The proportion of cyclists riding on the road at this site has increased over the last 12 months – up 10 percentage points to 84 per cent. The remaining 16 per cent rode on the footpath.

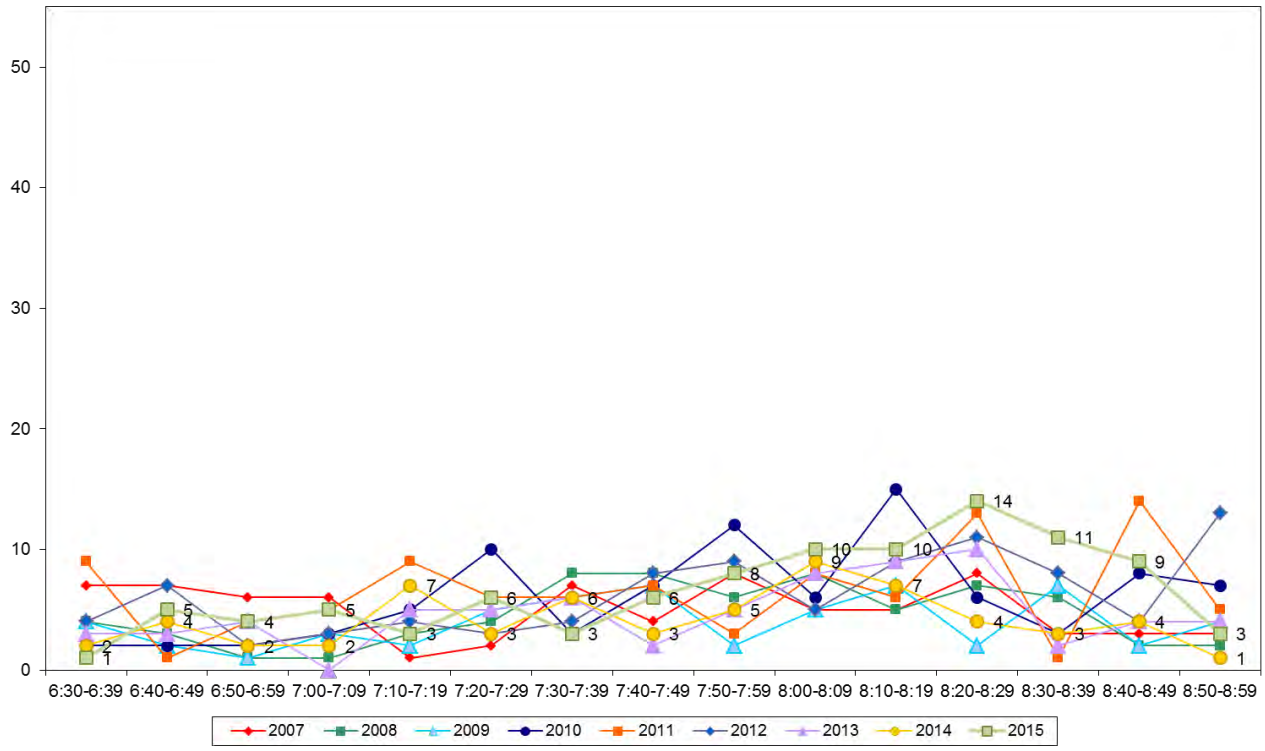
Table 7.2: Morning Cyclist Characteristics

Mount Albert/New North Road/Carrington Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	95	91	92	87	94	80	91	87	**89**	**2**
School child	5	9	8	13	6	20	9	13	**11**	**-2**
Helmet Wearing										
Helmet on head	91	91	86	90	91	79	96	97	**97**	**0**
No helmet	9	9	14	10	9	21	4	3	**3**	**0**
Gender										
Male	-	-	-	-	85	89	84	84	**77**	**-7**
Female	-	-	-	-	13	9	16	16	**22**	**6**
Can't tell	-	-	-	-	2	2	0	0	**1**	**1**
Where Riding										
Road	84	85	90	81	84	68	87	74	**84**	**10**
Footpath	16	15	10	19	16	32	13	26	**16**	**-10**
Base:	***75***	***68***	***59***	***91***	***97***	***94***	***70***	***62***	***98***	

- The volume of morning cycle movements remained low and steady throughout the majority of the monitoring period. There was one peak of 14 cyclists, which occurred near the end of the morning period (between 8:20am and 8:29am).

Figure 7.2: Morning Peak Cyclist Frequency
Mount Albert/New North Road/Carrington Road 2007 – 2015 (n)



Note: In 2015, a group of five cyclists rode past at 8:24am (five per cent of this site's morning cycle movements).

7.3 Evening Peak

Environmental Conditions

- The weather was fine at the start of the evening shift but turned overcast from 6:00pm.
- There were no road works, accidents or events that may affect cycle counts.

Key Points

- The total number of evening cycle movements recorded at the Mount Albert/New North Road/Carrington Road intersection has decreased, from 107 in 2014 to 83 movements this year.
- The most common evening movement was straight along Carrington Road heading south onto Mt. Albert Road (Movement 2 = 20 cyclists).
- Evening cyclist volumes decreased most notably at Movement 11 – travelling straight, heading east on New North Road (down 12 movements).

Table 7.3: Evening Cyclist Movements

Mount Albert/New North Road/Carrington Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	3	5	2	2	4	1	3	8	**2**	**-6**
2	13	16	17	23	20	11	12	19	**20**	**1**
3	3	5	1	5	2	5	5	5	**4**	**-1**
4	5	3	4	5	8	6	6	7	**3**	**-4**
5	28	31	34	34	21	23	26	15	**19**	**4**
6	2	2	3	1	1	2	3	1	**4**	**3**
7	3	1	3	1	1	2	1	1	**2**	**1**
8	9	8	9	16	19	13	16	20	**16**	**-4**
9	1	2	0	12	10	2	8	6	**4**	**-2**
10	3	4	1	7	7	3	6	4	**2**	**-2**
11	7	10	6	8	9	3	12	18	**6**	**-12**
12	4	9	3	4	2	5	2	3	**1**	**-2**
Total	**81**	**96**	**83**	**118**	**104**	**76**	**100**	**107**	**83**	**-24**

- The majority of cyclists using this intersection were adults (96 per cent, unchanged from last year).
- The majority of cyclists were wearing a helmet (86 per cent, up from 83 in 2014).
- Three in four cyclists were male (76 per cent, down from 83 per cent last year).
- Three in four cyclists were riding on the road (77 per cent, up 4 percentage points from 2014).

Table 7.4: Evening Cyclist Characteristics

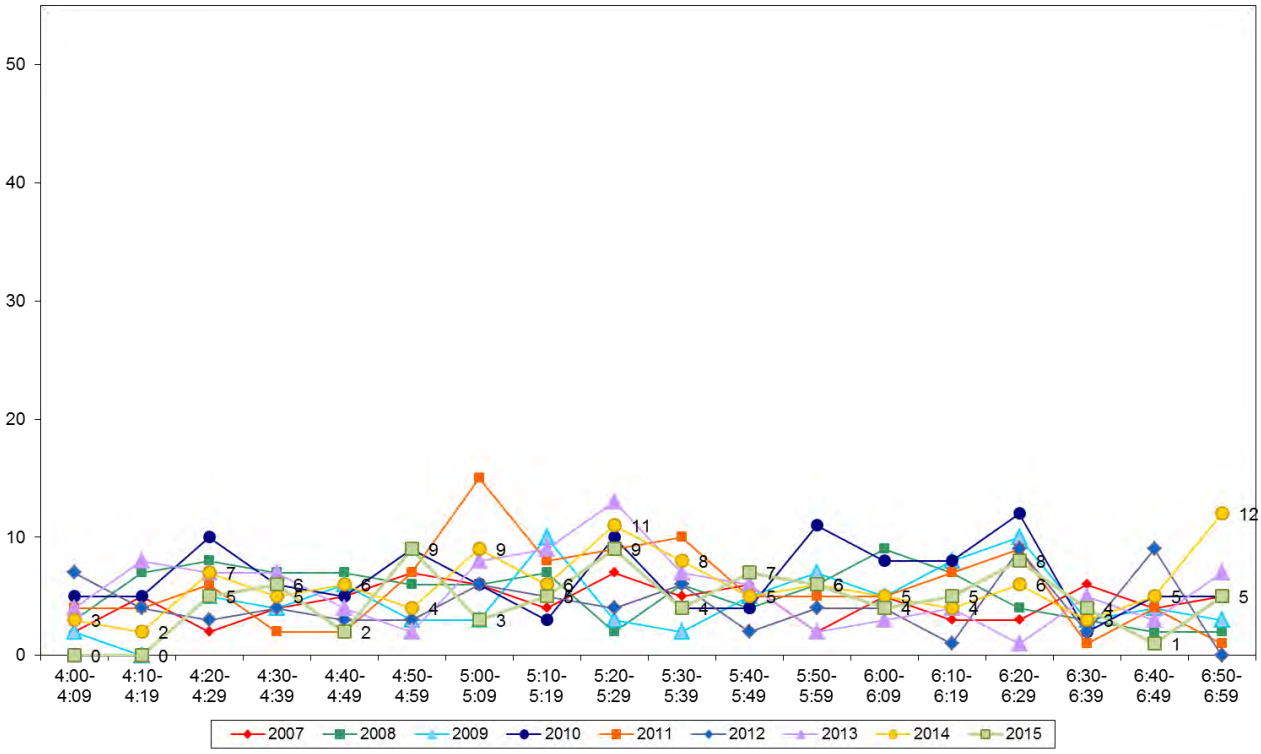
Mount Albert/New North Road/Carrington Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	94	85	98	84	88	88	89	96	**96**	**0**
School child	6	15	2	16	12	12	11	4	**4**	**0**
Helmet Wearing										
Helmet on head	90	90	86	81	83	82	91	83	**86**	**3**
No helmet	10	10	14	19	17	18	9	17	**14**	**-3**
Gender										
Male	-	-	-	-	90	90	88	83	**76**	**-7**
Female	-	-	-	-	10	9	11	14	**24**	**10**
Can't tell	-	-	-	-	0	1	1	3	**0**	**-3**
Where Riding										
Road	63	78	75	73	70	66	81	73	**77**	**4**
Footpath	37	22	25	27	30	34	19	27	**23**	**-4**
Base:	***81***	***96***	***83***	***118***	***104***	***76***	***100***	***107***	***83***	

- The volume of cycle movements varied throughout the evening shift, but remained low. No more than nine movements were recorded during any ten minute interval.

Figure 7.3: Evening Peak Cyclist Frequency

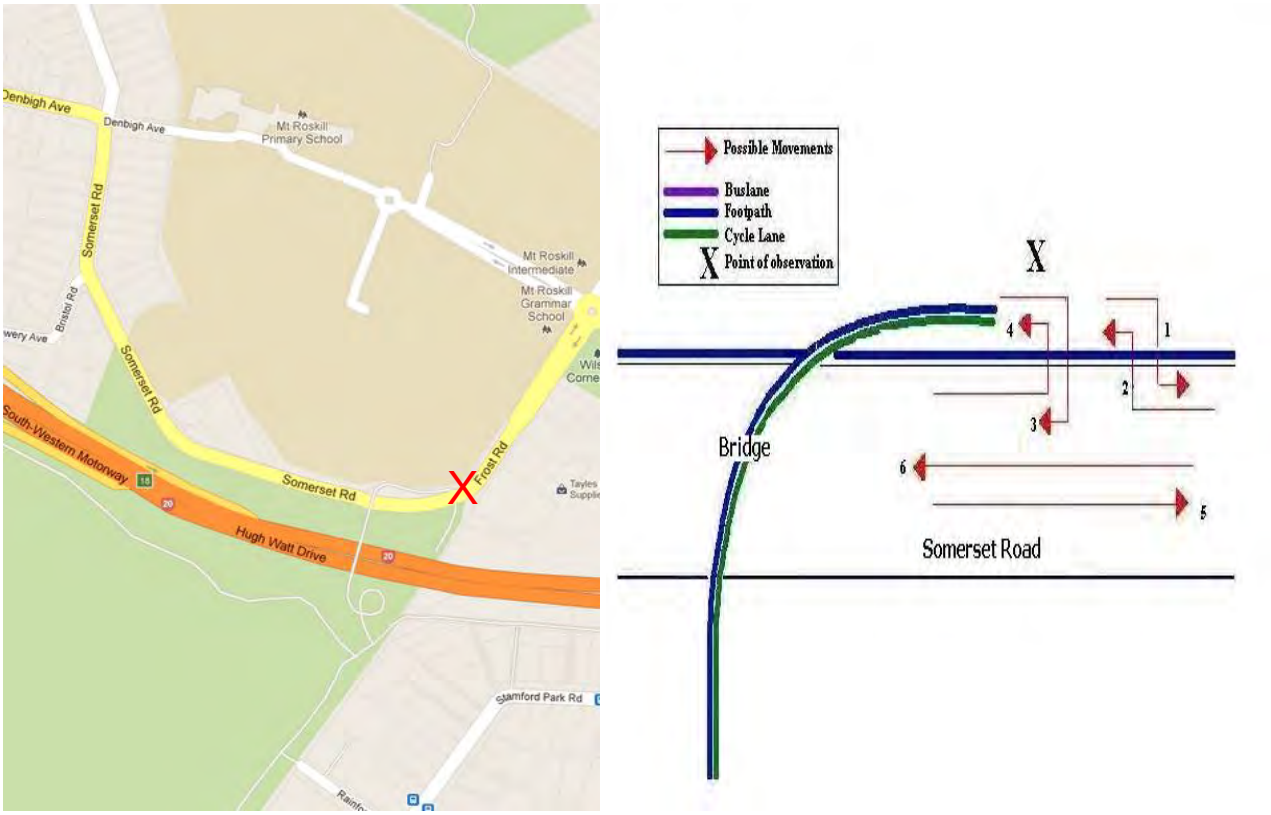
Mount Albert/New North Road/Carrington Road 2007 – 2015 (n)



8. KEITH HAY PARK/SOMERSET RD/ BRIDGE, MT ROSKILL (SITE 88)

Figure 8.1 shows the possible cyclist movements at this intersection.

Figure 8.1: Cycle Movements: Keith Hay Park/Somerset Rd/ Bridge, Mt Roskill



Note: This site was monitored for the first time in 2010.

8.1 Site Summary

	Raw Counts			AADT
	Morning Peak	Evening Peak	Total	Total
2010	28	25	53	77
2011	29	40	69	99
2012	28	19	47	69
2013	45	14	59	88
2014	43	15	58	86
2015	**34**	**24**	**58**	**85**

8.2 Morning Peak

Environmental Conditions

- The weather was overcast throughout the morning shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- Thirty-four cycle movements were recorded at this site this year, a 9 percentage point decrease compared with 2014 (43 movements).
- Consistent with last year, the key morning movement is Movement 1 – turning off the overbridge and heading east (19 movements).
- The largest decline was observed at Movement 5 (down 9 movements). The other movements remained stable from their 2014 results.

Table 8.1: Morning Cyclist Movements

Keith Hay Park/Somerset Rd/ Bridge, Mt Roskill 2010 – 2015 (n)

Movement	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	22	22	19	0	21	**19**	**-2**
2	3	1	1	1	3	**2**	**-1**
3	0	1	1	1	0	**2**	**2**
4	0	1	2	0	2	**3**	**1**
5	1	2	2	41	16	**7**	**-9**
6	2	2	3	2	1	**1**	**0**
Total	**28**	**29**	**28**	**45**	**43**	**34**	**-9**

- Over the morning peak, the majority of cyclists were school children (62 per cent, down from 67 per cent in 2014).
- The majority of cyclists were wearing a helmet (91 per cent, unchanged from 2014).
- The majority of cyclists were male (94 per cent).
- There has been a notable (22 percentage point) increase in the share of cyclists riding on the cycleway (76 per cent). Riders on the footpath and road have decreased by 11 percentage points each.

Table 8.2: Morning Cyclist Characteristics

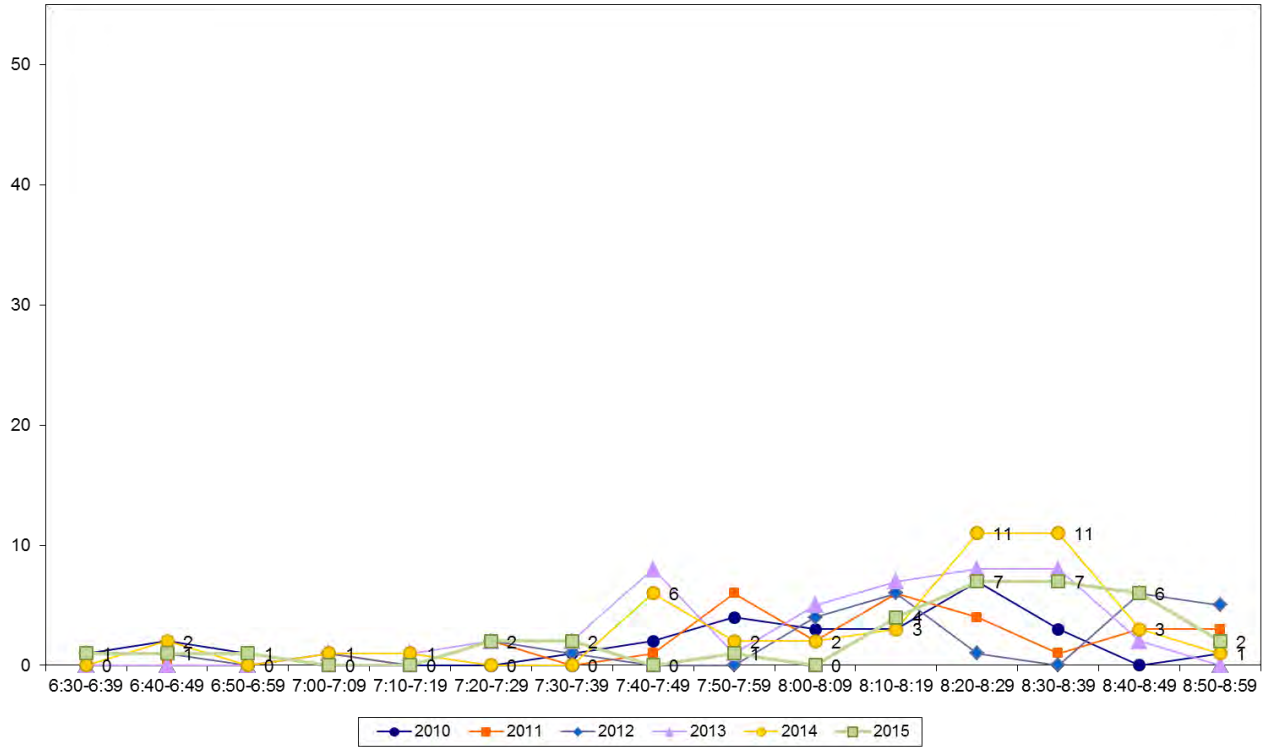
Keith Hay Park/Somerset Rd/ Bridge, Mt Roskill 2010 – 2015 (%)

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type							
Adult	25	28	29	36	33	**38**	**5**
School child	75	72	71	64	67	**62**	**-5**
Helmet Wearing							
Helmet on head	82	83	68	80	91	**91**	**0**
No helmet	18	17	32	20	9	**9**	**0**
Gender							
Male	-	86	89	87	86	**94**	**8**
Female	-	14	11	13	14	**6**	**-8**
Can't tell	-	0	0	0	0	**0**	**0**
Where Riding							
Road	7	14	18	22	23	**12**	**-11**
Footpath	4	0	0	47	23	**12**	**-11**
Off-road cycleway	89	86	82	31	54	**76**	**22**
Base:	***28***	***29***	***28***	***45***	***43***	***34***	

- Consistent with last year, morning cycle volumes were low throughout the shift. Towards the end of the shift, volume increased up to 7 cyclists between 8:20pm and 8:39pm (for two intervals). This small peak is consistent with previous years.

Figure 8.2: Morning Peak Cyclist Frequency

Keith Hay Park/Somerset Rd/ Bridge, Mt Roskill 2010 – 2015 (n)



Note: In 2015, no groups or pelotons were observed riding past this site in the morning. This compares with six cyclists (14 per cent of all morning peak cycle movements at this site) in 2014 and 11 cyclists (24 per cent) in 2013.

8.3 Evening Peak

Environmental Conditions

- The weather was fine but cloudy throughout the evening shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- Twenty-four cyclist movements were recorded at this site this year (up from 15 recorded last year).
- The most notable increase in the evening was turning off the over bridge and heading east (Movement 1 = up 8 movements).
- The biggest decrease was at Movement 5 – heading east, travelling straight on Somerset Road (down 3 movements).

Table 8.3: Evening Cyclist Movements

Keith Hay Park/Somerset Rd/ Bridge, Mt Roskill 2010 – 2015 (n)

Movement	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	8	13	7	0	4	**12**	**8**
2	7	17	5	7	4	**8**	**4**
3	0	0	2	0	1	**1**	**0**
4	4	2	2	0	0	**1**	**1**
5	4	4	0	3	4	**1**	**-3**
6	2	4	3	4	2	**1**	**-1**
Total	**25**	**40**	**19**	**14**	**15**	**24**	**9**

- Three-quarters of cyclists were adults (a notable increase from 47 per cent in 2014).
- Helmet wearing by cyclists has decreased over the past 12 months (67 per cent, compared with 80 per cent in 2014).
- The majority of cyclists were male (83 per cent).
- Ninety-two per cent of cyclists were riding on the cycleway (a notable increase from 60 per cent in 2014). The remaining 8 per cent of cyclists were equally spilt between the road and footpath.

Table 8.4: Evening Cyclist Characteristics

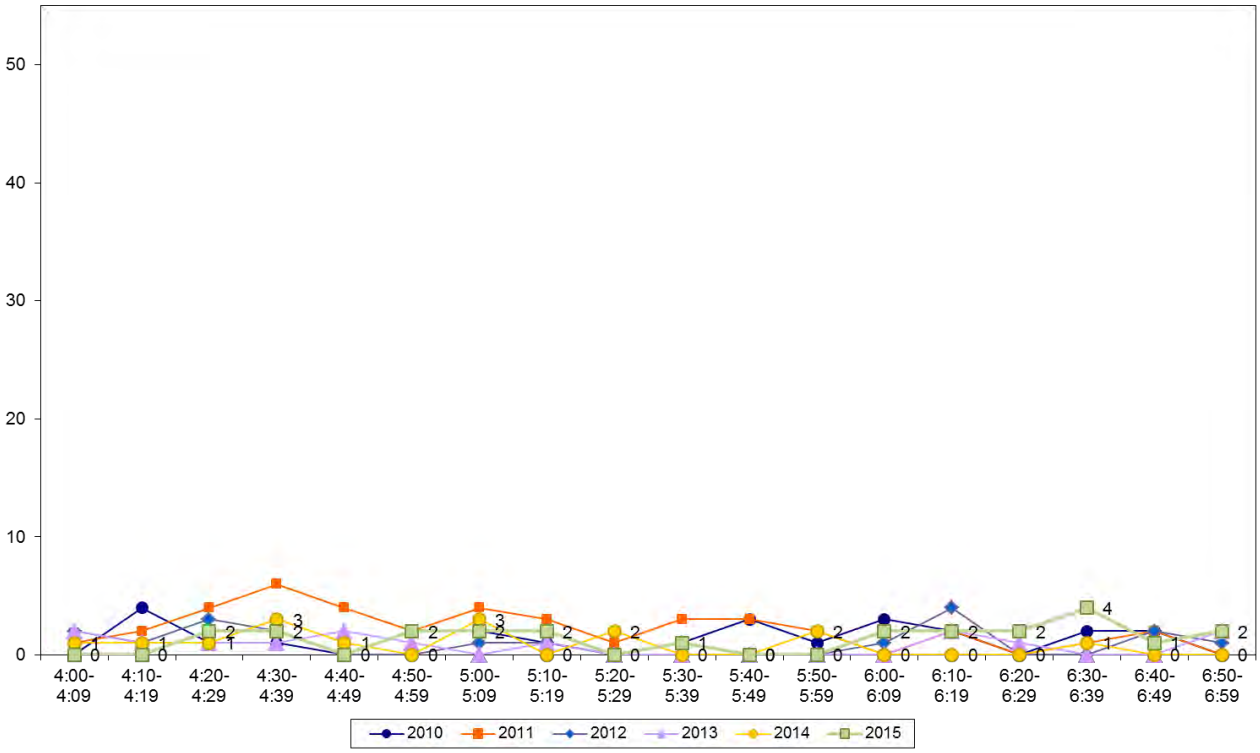
Keith Hay Park/Somerset Rd/ Bridge, Mt Roskill 2010 – 2015 (%)

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type							
Adult	72	48	53	50	47	**75**	**28**
School child	28	53	47	50	53	**25**	**-28**
Helmet Wearing							
Helmet on head	76	58	89	57	80	**67**	**-13**
No helmet	24	43	11	43	20	**33**	**13**
Gender							
Male	-	95	84	79	87	**83**	**-4**
Female	-	5	16	21	13	**17**	**4**
Can't tell	-	0	0	0	0	**0**	**0**
Where Riding							
Road	20	20	16	7	33	**4**	**-29**
Footpath	4	0	0	29	7	**4**	**-3**
Off-road cycleway	76	80	84	64	60	**92**	**32**
Base:	***25***	***40***	***19***	***14***	***15***	***24***	

- Evening cyclist volumes were very low throughout the monitoring period, with no more than four cyclists recorded during any ten minute interval.

Figure 8.3: Evening Peak Cyclist Frequency

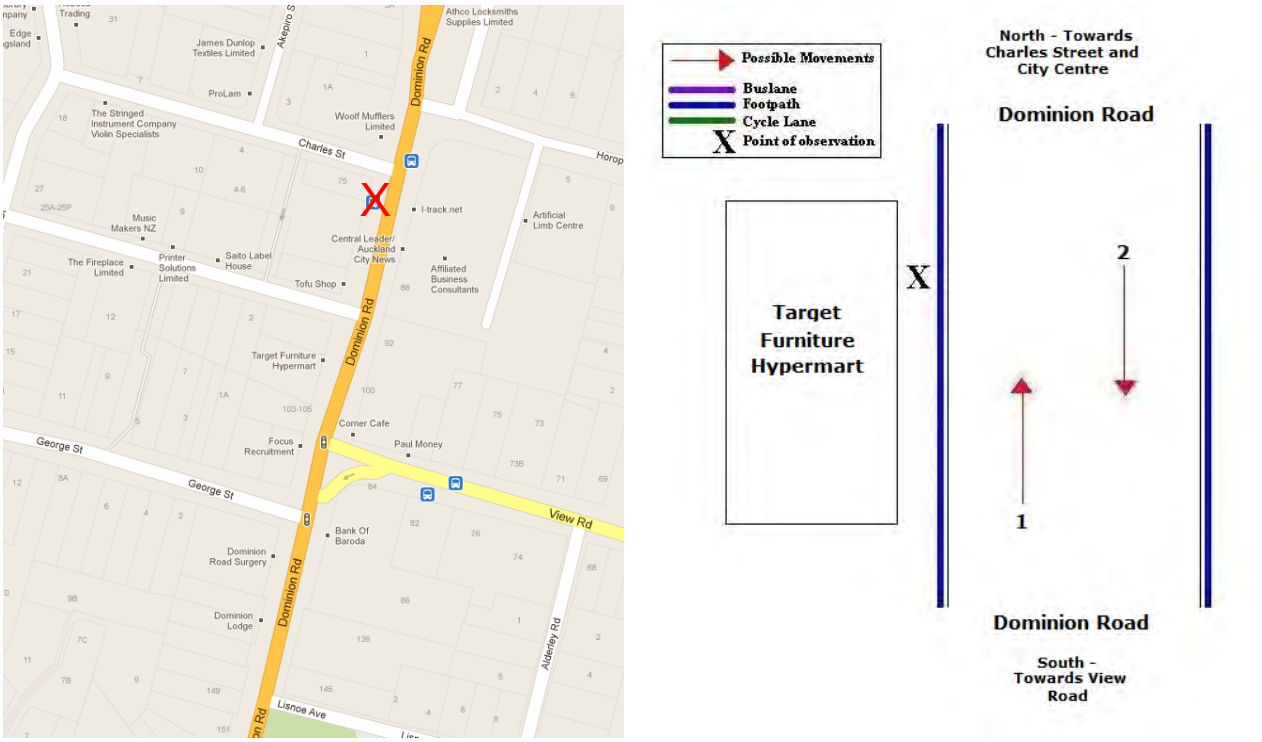
Keith Hay Park/Somerset Rd/ Bridge, Mt Roskill 2010 – 2014 (n)



9. UPPER DOMINION ROAD, EDEN TERRACE (SITE 92)

Figure 9.1 shows the possible cyclist movements at this intersection.

Figure 9.1: Cycle Movements: Upper Dominion Road, Eden Terrace



Note: This site is monitored for the first time in 2013.

9.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2013	97	107	204	296
2014	113	118	231	335
2015	**158**	**144**	**302**	**440**

9.2 Morning Peak

Environmental Conditions

- The weather was overcast with wind developing as the morning went by.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The number of morning cycle movements recorded at this site was 158 (an increase from 113 recorded in 2014).
- The key morning movement was riding straight along Dominion Road towards the city centre (Movement 1 = 140 cyclists).

Table 9.1: Morning Cyclist Movements

Upper Dominion Road, Eden Terrace 2013 - 2015 (n)

Movement	*2013*	*2014*	*2015*	Change 14-15
1	87	105	**140**	**35**
2	10	8	**18**	**10**
Total	**97**	**113**	**158**	**45**

- Over the morning peak, almost all cyclists were adults (93 per cent, down from 99 last year).
- The majority of cyclists were wearing a helmet (89 per cent, down from 2014).
- Seventy-seven per cent of cyclists were male (unchanged from last year).
- Riding on the road was the most common at this site (85 per cent, stable from 87 per cent recorded last year).

Table 9.2: Morning Cyclist Characteristics

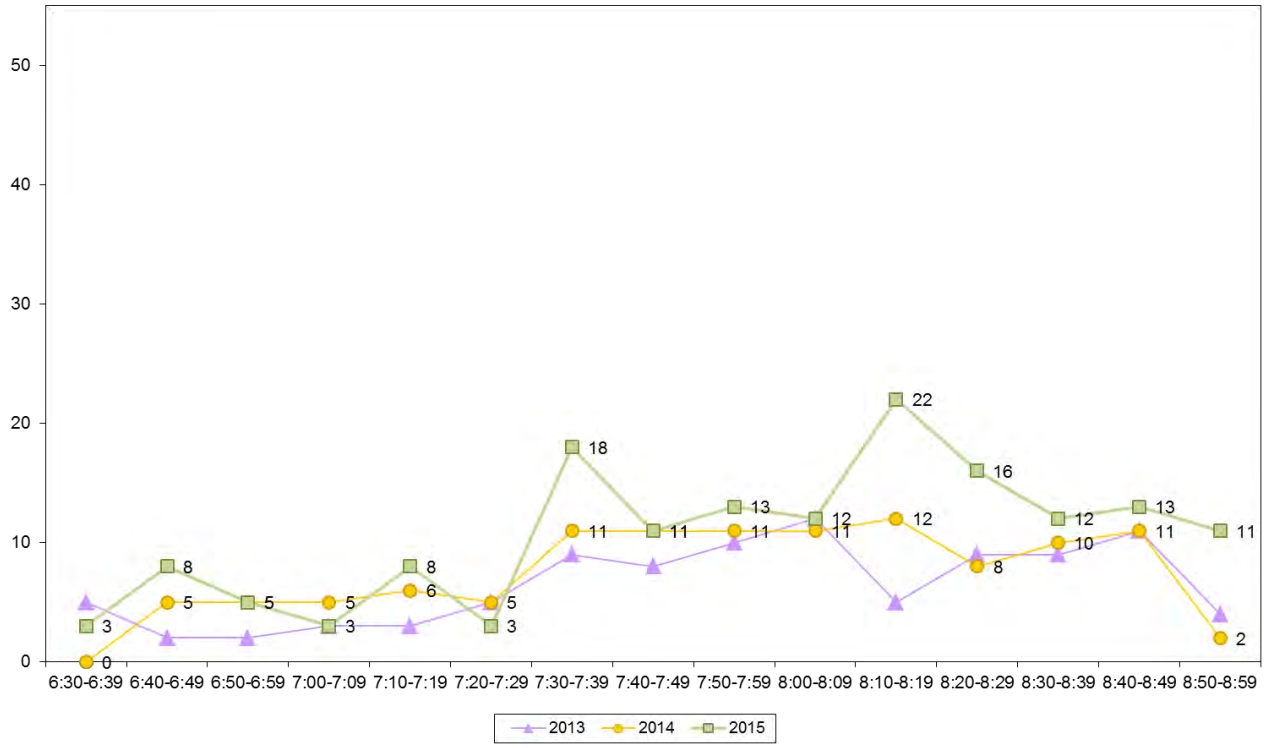
Upper Dominion Road, Eden Terrace 2013 - 2015 (%)

	2013	***2014***	***2015***	**Change 14-15**
Cyclist Type				
Adult	99	99	**93**	**-6**
School child	1	1	**7**	**6**
Helmet Wearing				
Helmet on head	99	97	**89**	**-8**
No helmet	1	3	**11**	**8**
Gender				
Male	84	77	**77**	**0**
Female	15	23	**22**	**-1**
Can't tell	1	0	**1**	**1**
Where Riding				
Road	96	87	**85**	**-2**
Footpath	4	13	**15**	**2**
Off-road cycleway	0	0	**0**	**0**
Base:	***97***	***113***	***158***	

- Consistent with previous years, morning cycle volumes started off low. In contrast to previous years, cyclist volumes this year were less stable over the monitoring period. Two peaks were evident, the first occurring between 7:30am and 7:39am with 18 cyclists. The second occurred between 8:10am and 8:19am with 22 cyclists.

Figure 9.2: Morning Peak Cyclist Frequency

Upper Dominion Road, Eden Terrace 2013 - 2015 (n)



Note: In 2015, a group of six cyclists rode past at 7:33am (four per cent of this site's morning cycle movements).

9.3 Evening Peak

Environmental Conditions

- The weather was fine but partly cloudy throughout the evening shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The number of evening cycle movements during the evening shift was 144, an increase of 26 movements from 2014.
- The key evening movement was riding straight along Dominion Road heading south (Movement 2 = 113 cyclists).

Table 9.3: Evening Cyclist Movements

Upper Dominion Road, Eden Terrace 2013 - 2015 (n)

Movement	*2013*	*2014*	*2015*	Change 14-15
1	24	23	**31**	**8**
2	83	95	**113**	**18**
Total	**107**	**118**	**144**	**26**

- Nearly all cyclists were adults (98 per cent, a small increase from 95 per cent last year).
- Ninety-one per cent of the cyclists were wearing a helmet (stable from last year).
- The greatest share of cyclists were male (82 per cent, stable from last year).
- Riding on the road was the most common at this site (88 per cent, stable from the previous year).

Table 9.4: Evening Cyclist Characteristics

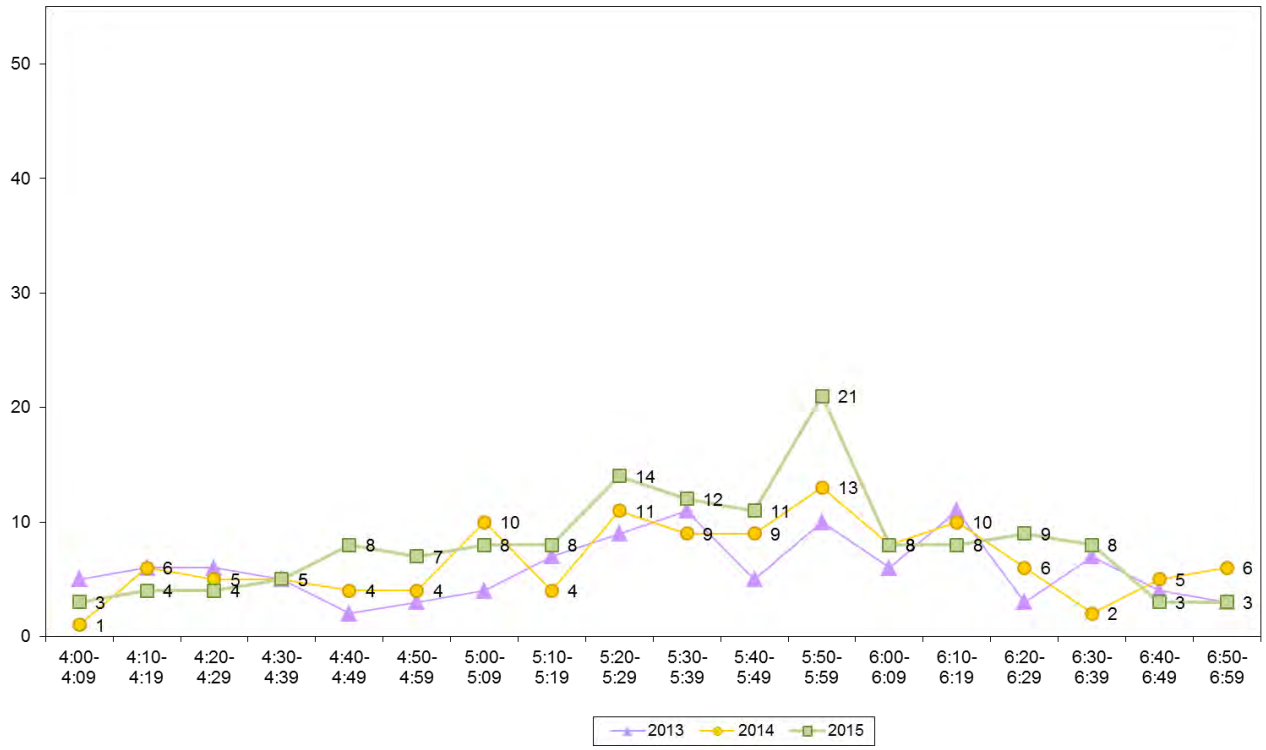
Upper Dominion Road, Eden Terrace 2013 - 2015 (%)

	2013	*2014*	*2015*	Change 14-15
Cyclist Type				
Adult	99	95	**98**	**3**
School child	1	5	**2**	**-3**
Helmet Wearing				
Helmet on head	96	90	**91**	**1**
No helmet	4	10	**9**	**-1**
Gender				
Male	78	81	**82**	**1**
Female	22	19	**17**	**-2**
Can't tell	0	0	**1**	**1**
Where Riding				
Road	87	86	**88**	**2**
Footpath	13	14	**12**	**-2**
Off-road cycleway	0	0	**0**	**0**
Base:	***107***	***118***	***144***	

- Evening cyclist volumes were low and steady during the first hour of the monitoring period. After 5:10pm, cycle volumes fluctuated and peaked between 5:50pm to 5:59pm with 21 movements. This peak, (although larger) is consistent with previous years. Following the peak, cyclist volumes were steady for forty minutes (between 6:00pm and 6:39pm), before declining to three movements during each of the last two ten minute intervals.

Figure 9.3: Evening Peak Cyclist Frequency

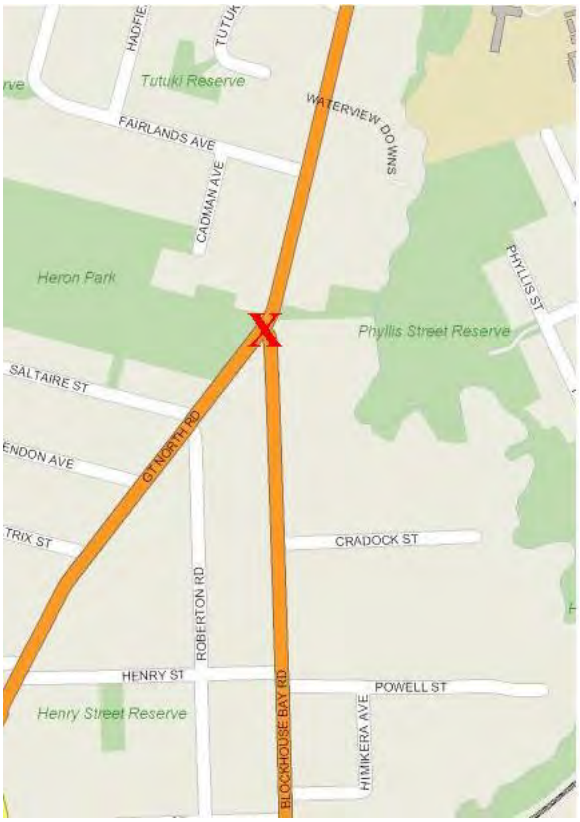
Upper Dominion Road, Eden Terrace 2013 - 2015 (n)

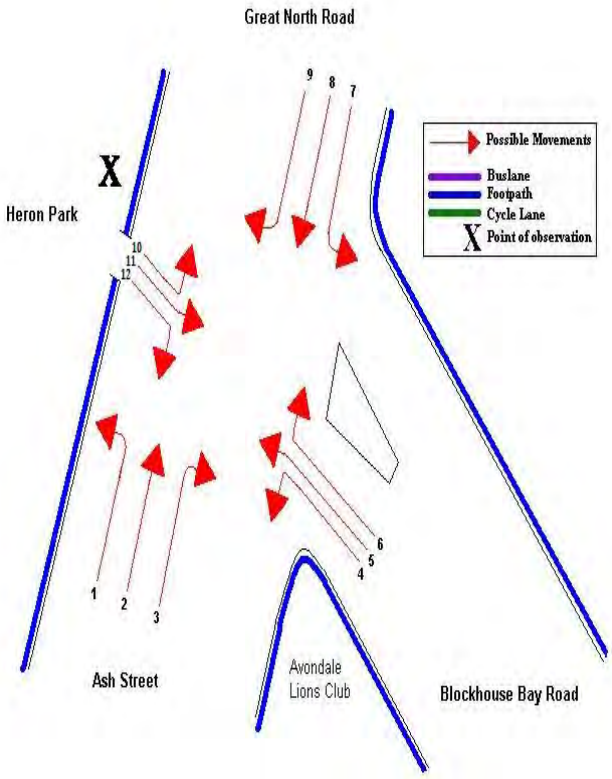


10. BLOCKHOUSE BAY ROAD/GREAT NORTH ROAD, AVONDALE (SITE 73)

Figure 10.1 shows the possible cyclist movements at this intersection.

Figure 10.1: Cycle Movements: Blockhouse Bay/Great North Road





10.1 Site Summary

	Raw Counts			*AADT*
	Morning Peak	***Evening Peak***	***Total***	***Total***
2008	57	60	117	170
2009	57	62	119	173
2010	66	75	141	204
2011	56	73	129	186
2012	60	69	129	187
2013	73	68	141	205
2014	72	70	142	182
2015	**85**	**94**	**179**	**260**

10.2 Morning Peak

Environmental Conditions

- The weather was fine at the beginning but turned cloudy by the end of the morning shift.
- There were no road works or accidents that may affected cycle counts.

Key Points

- Eighty-five movements were recorded at the Blockhouse Bay/Great North Road site in the morning peak, an increase from 72 movements recorded last year.
- The key morning movements were traveling straight from Ash Street to Great North Road (Movement 2 = 54 cyclists) and the right turn out of Blockhouse Bay Road into Great North Road (Movement 6 = 14 cyclists).
- The most notable increase in cyclist movements in the morning at this site was at Movement 2 (up 12 cyclists) and the most notable decrease in cyclist movements was at Movement 6 (down 7 cyclists.

Table 10.1: Morning Cyclist Movements

Blockhouse Bay/Great North Road 2008 – 2015 (n)

Movement	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	0	0	0	0	0	1	**2**	**1**
2	29	28	33	23	36	34	42	**54**	**12**
3	0	0	2	0	0	1	0	**1**	**1**
4	0	1	1	0	1	0	0	**0**	**0**
5	0	0	0	0	0	0	0	**0**	**0**
6	16	14	16	21	11	19	21	**14**	**-7**
7	3	4	2	4	4	7	4	**4**	**0**
8	9	10	12	8	6	12	2	**8**	**6**
9	0	0	0	0	0	0	0	**0**	**0**
10	-	-	-	-	-	-	0	**1**	**1**
11	-	-	-	-	-	-	1	**0**	**-1**
12	-	-	-	-	-	-	1	**1**	**0**
Total	**57**	**57**	**66**	**56**	**58**	**73**	**72**	**85**	**13**

Note: In 2014 Movements 10, 11 and 12 were created in order to count cyclists who entered the intersection from Heron Park.

- Over the morning peak, most cyclists were adults (93 per cent, a decrease from 97 per cent in 2014).
- The share of cyclists wearing a helmet has remained stable (93 per cent, compared with 94 per cent last year).
- Most cyclists were male (86 per cent).
- Fifty-two per cent of cyclists were observed riding on the road, stable from 50 per cent last year.

Table 10.2: Morning Cyclist Characteristics

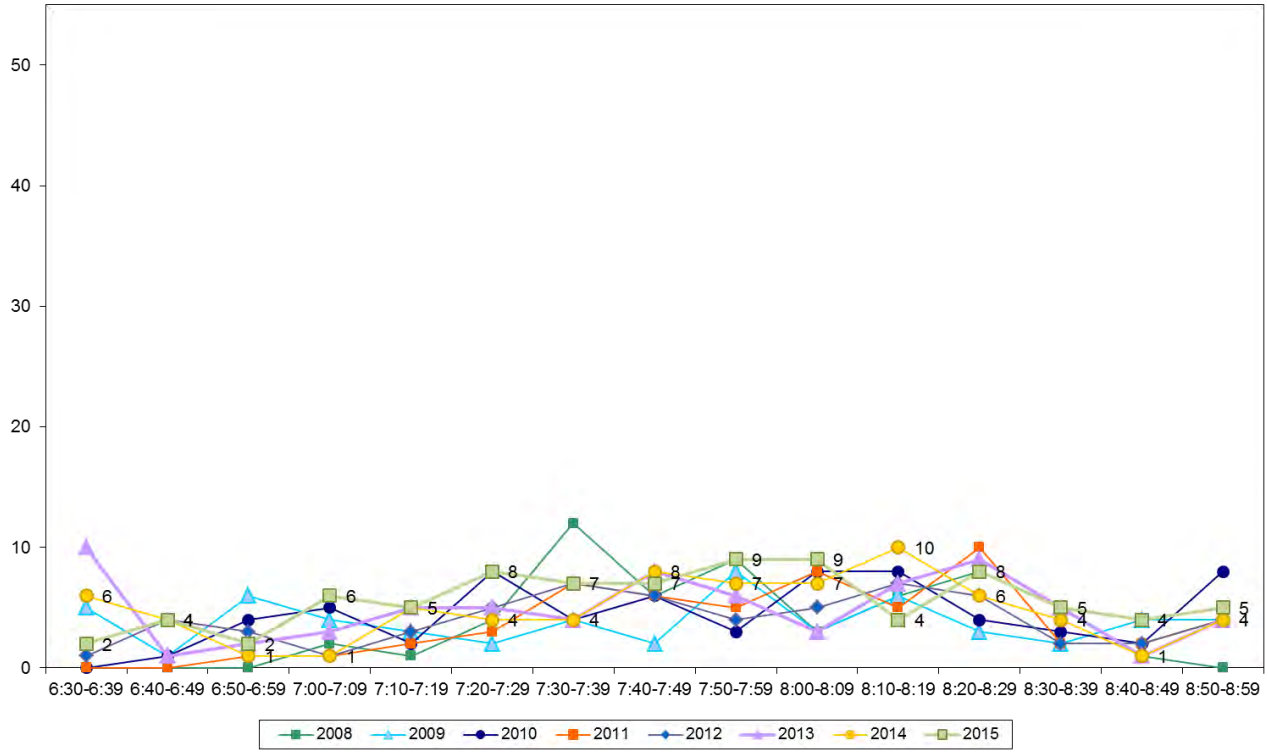
Blockhouse Bay/Great North Road 2008 – 2015 (%)

	2008	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type									
Adult	89	65	92	82	93	86	97	**93**	**-4**
School child	11	35	8	18	7	14	3	**7**	**4**
Helmet Wearing									
Helmet on head	93	88	95	98	88	96	94	**93**	**-1**
No helmet	7	12	5	2	12	4	6	**7**	**1**
Gender									
Male	-	-	-	86	85	91	83	**86**	**3**
Female	-	-	-	5	13	8	17	**14**	**-3**
Can't tell	-	-	-	9	2	1	0	**0**	**0**
Where Riding									
Road	44	65	62	50	57	44	50	**52**	**2**
Footpath	56	35	38	50	43	56	50	**48**	**-2**
Base:	***57***	***57***	***66***	***56***	***60***	***73***	***72***	***85***	

- Morning cycle volume remained stable throughout the morning monitoring period. The largest number of cycle movements recorded during any ten minute interval was 9, which was observed between 7:50am and 7:59am, and again between 8:00am and 8:09am.

Figure 10.2: Morning Peak Cyclist Frequency

Blockhouse Bay/Great North Road 2008 – 2015 (n)



Note: No groups were observed riding past this site in 2015. This compares with 3 cyclists (4 per cent of all morning peak cycle movements at this site) in 2014 and 10 per cent (n=7) observed in 2013.

10.3 Evening Peak

Environmental Conditions

- The weather was fine throughout the evening shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The total number of evening peak cycle movements recorded at the Blockhouse Bay/Great North Road site has increased from last year (94 movements compared to 70 movements last year).
- The most common movement in the evening was straight through Great North Road in a south-westerly direction (Movement 8 = 60 cyclists).
- The number of cycle movements over the evening period has increased most notably at Movement 8 (up 22 cyclists) and decreased most notably at Movement 7 (down 6 cyclists).

Table 10.3: Evening Cyclist Movements

Blockhouse Bay/Great North Road 2008 – 2015 (n)

Movement	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	0	0	0	0	0	0	**3**	**3**
2	14	15	17	15	10	7	5	**8**	**3**
3	0	0	2	1	2	0	0	**0**	**0**
4	0	1	0	0	1	0	0	**0**	**0**
5	0	2	0	0	0	0	0	**0**	**0**
6	1	2	4	6	5	5	4	**5**	**1**
7	15	13	15	20	10	12	22	**16**	**-6**
8	30	28	37	27	39	44	38	**60**	**22**
9	0	1	0	4	1	0	0	**0**	**0**
10	-	-	-	-	-	-	0	**0**	**0**
11	-	-	-	-	-	-	0	**0**	**0**
12	-	-	-	-	-	-	1	**1**	**0**
DK	-	-	-	-	-	-	-	**1**	**1**
Total	**60**	**62**	**75**	**73**	**68**	**68**	**70**	**94**	**24**

Note: In 2014 Movements 10, 11 and 12 were created in order to specifically count cyclists who entered the intersection from Heron Park and exited elsewhere.

- Over the evening peak, almost all cyclists at this site were adults (96 per cent, stable from last year).
- Most cyclists at this site were wearing a helmet (93 per cent, stable from 94 per cent at the previous measure).
- The majority of cyclists were recorded as male (82 per cent).
- Sixty-four per cent of cyclists were riding on the road, stable from 66 per cent in 2014.

Table 10.4: Evening Cyclist Characteristics

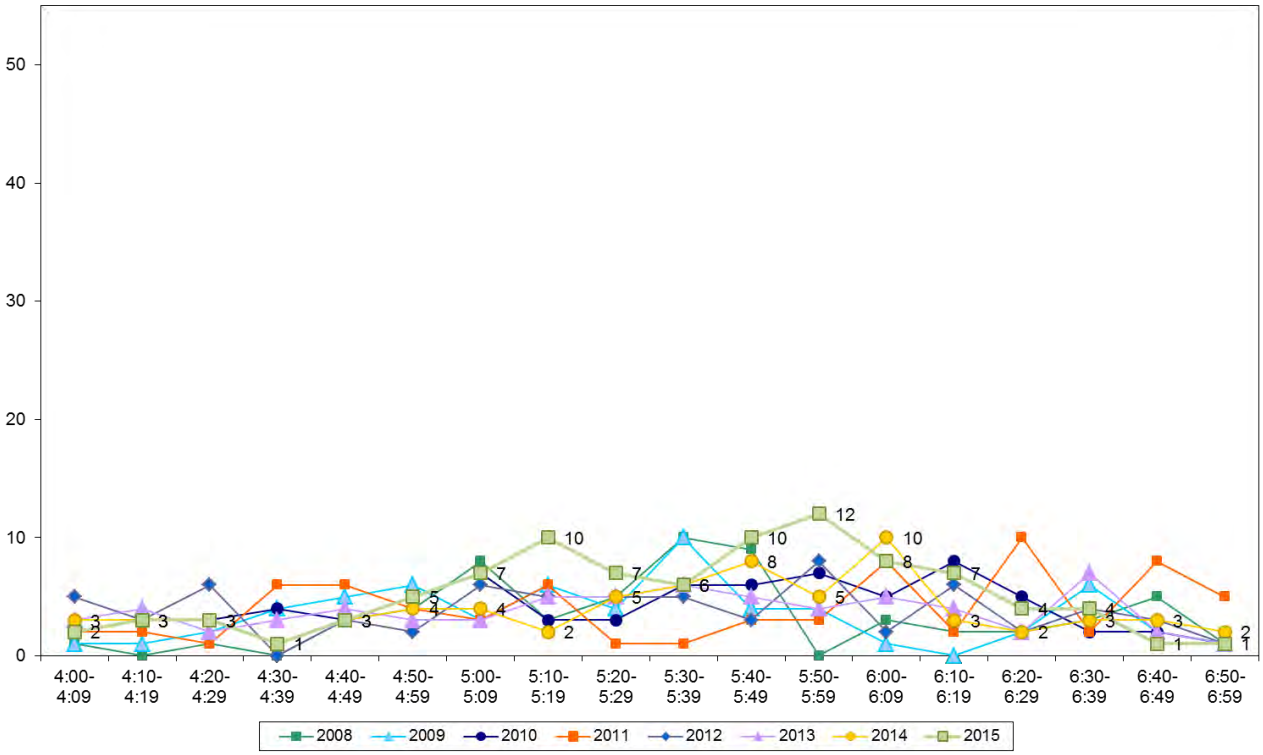
Blockhouse Bay/Great North Road 2008 – 2015 (%)

	2008	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type									
Adult	90	76	96	95	100	99	99	**96**	**-3**
School child	10	24	4	5	0	1	1	**4**	**3**
Helmet Wearing									
Helmet on head	87	81	93	89	94	93	94	**93**	**-1**
No helmet	13	19	7	11	6	7	6	**7**	**1**
Gender									
Male	-	-	-	86	87	91	77	**82**	**5**
Female	-	-	-	12	12	9	22	**17**	**-5**
Can't tell	-	-	-	1	1	0	1	**1**	**0**
Where Riding									
Road	67	56	72	70	75	72	66	**64**	**-2**
Footpath	33	44	28	30	25	28	34	**36**	**2**
Base:	***60***	***62***	***75***	***73***	***68***	***68***	***70***	***94***	

- Evening cycle volumes were relatively steady throughout the monitoring period. There was a steady increase in cyclist volumes observed, beginning from 4:30pm to 4:39pm through to 5:10pm to 5:19pm. There was a peak of 12 cyclists observed between 5:50pm to 5:59pm. Following this peak, cyclist volumes declined steadily for the rest of the monitoring period.

Figure 10.3: Evening Peak Cyclist Frequency

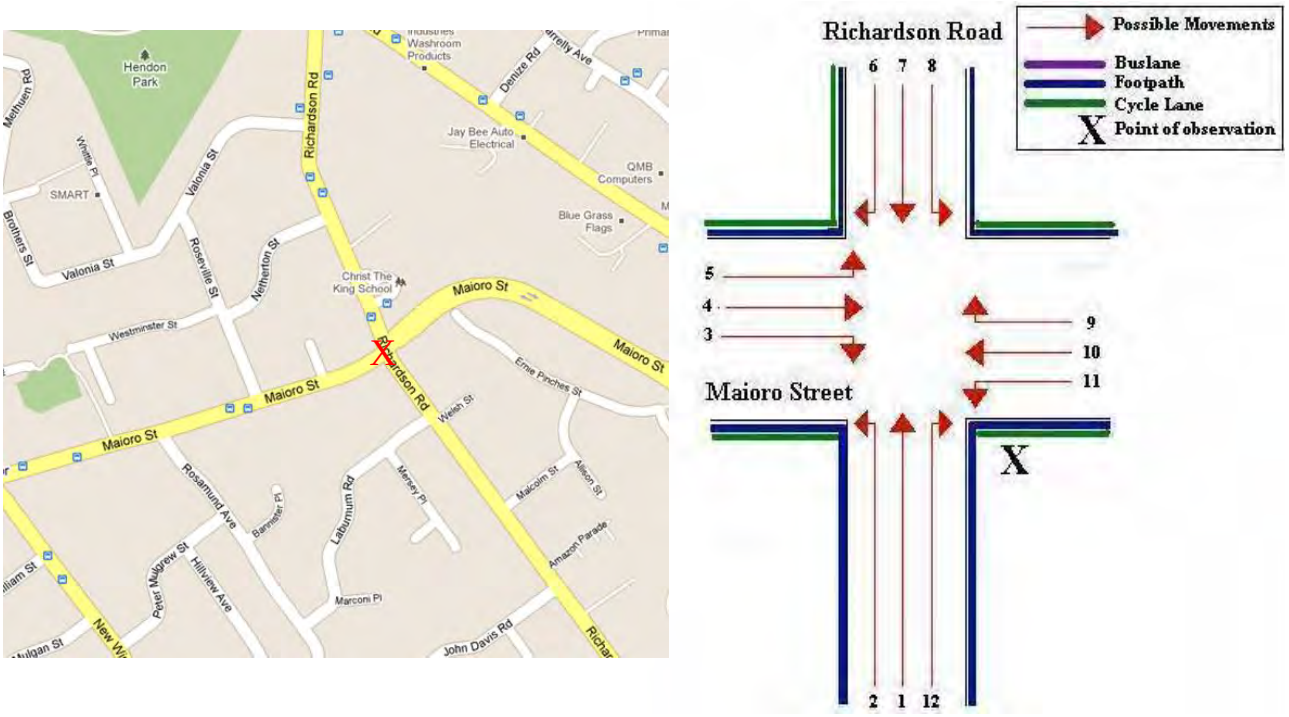
Blockhouse Bay/Great North Road 2008 – 2015 (n)



11. RICHARDSON ROAD/MAIORO STREET, MT ROSKILL (SITE 15)

Figure 11.1 shows the possible cyclist movements at this intersection.

Figure 11.1: Cycle Movement: Richardson Road/Maioro Street



Note: In 2010, the site map for this site was changed to reflect the construction of the southern motorway connection to the Manukau motorway. Consequently, comparative results are indicative only.

11.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2009	8	13	21	30
2010	14	25	39	56
2011	15	22	37	53
2012	29	24	53	77
2013	25	23	48	70
2014	21	20	41	60
2015	**40**	**40**	**80**	**116**

11.2 Morning Peak

Environmental Conditions

- The weather was fine at the beginning but had turned cloudy by the end of the morning shift.
- There were no road works or accidents that may affected cycle counts.

Key Points

- The volume of cycle movements at the Richardson/Maioro intersection has increased this year, with 40 cycle movements recorded (up 19 movements from last year).
- The key movement was travelling straight along Maioro Street travelling west (Movement 10 = 12 cyclists).
- The most notable changes occurred at Movement 10 (up 10 movements) and at Movement 4 – travelling straight along Maioro Road heading east (down 7 movements).

Table 11.1: Morning Cyclist Movements

Richardson/Maioro Street 2009 – 2015 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	2	4	1	4	1	0	3	**3**
2	1	1	1	2	1	2	4	**2**
3	2	1	0	2	1	1	2	**1**
4	0	3	0	9	9	12	5	**-7**
5	0	0	0	5	2	1	0	**-1**
6	1	0	0	0	1	0	4	**4**
7	2	1	1	1	1	2	3	**1**
8	-	2	1	0	1	0	1	**1**
9	-	0	1	0	0	0	1	**1**
10	-	2	10	6	8	2	12	**10**
11	0	0	0	0	0	0	5	**5**
12	-	0	0	0	0	1	0	**-1**
Total	**8**	**14**	**15**	**29**	**25**	**21**	**40**	**19**

Note: In 2009, Movements 8, 9, 10 and 12 were not possible.

- Ninety per cent of the cyclists were adults (unchanged from last year).
- The majority of cyclists were wearing helmets (85 per cent, down from 95 per cent in 2014).
- Most of the cyclists were male (92 per cent).
- Over half of cyclists were riding on the off-road cycleway (54 per cent, up from 48 per cent last year).

Table 11.2: Morning Cyclist Characteristics

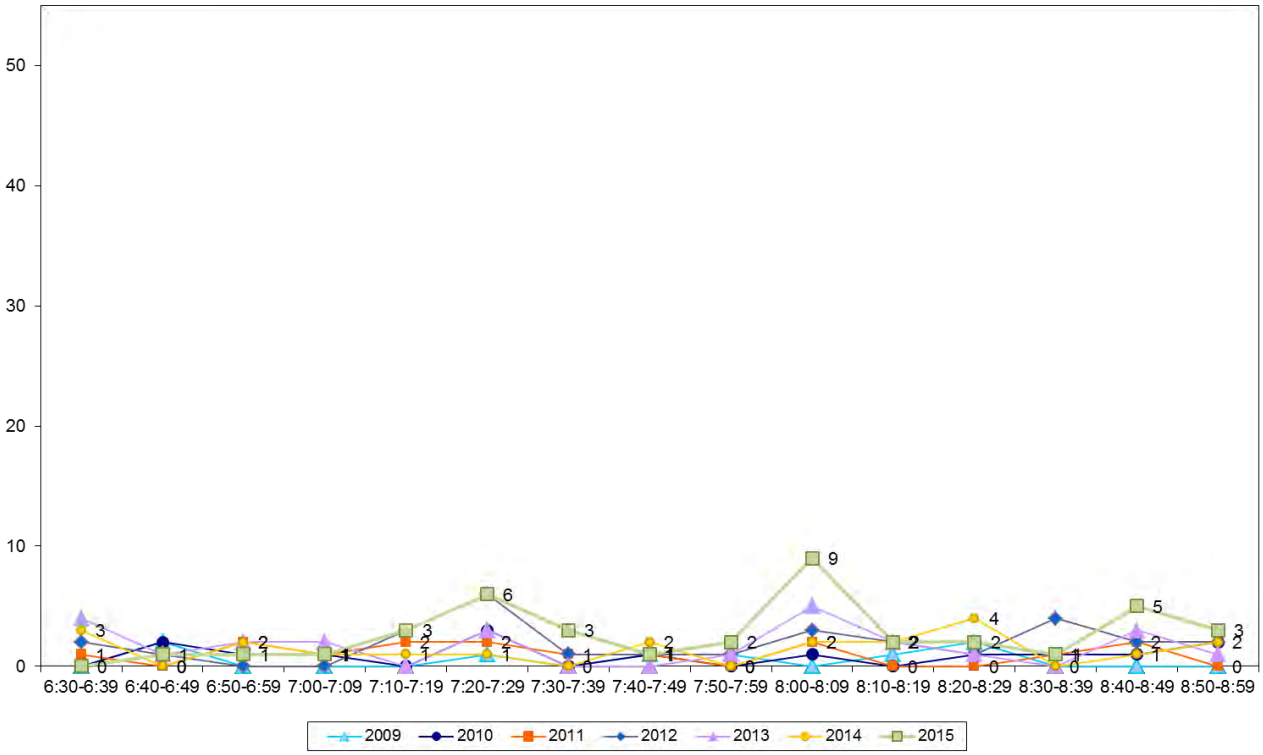
Richardson/Maioro Street 2009 – 2015 (%)

	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type								
Adult	100	100	93	69	92	90	**90**	**0**
School child	0	0	7	31	8	10	**10**	**0**
Helmet Wearing								
Helmet on head	100	93	87	79	88	95	**85**	**-10**
No helmet	0	7	13	21	12	0	**15**	**15**
Don't know	0	0	0	0	0	5	**0**	**-5**
Gender								
Male	-	-	80	76	84	90	**92**	**2**
Female	-	-	20	24	16	10	**8**	**-2**
Can't tell	-	-	0	0	0	0	**0**	**0**
Where Riding								
Road	88	57	47	38	32	52	**43**	**-9**
Footpath	12	14	13	0	0	0	**3**	**3**
Off-road Cycleway	-	29	40	62	68	48	**54**	**6**
Base:	***8***	***14***	***15***	***29***	***25***	***21***	***40***	

- This year, the morning cycle volumes for Richardson/Maioro Street show a different pattern from previous years. The volume was low throughout most of the morning monitoring period, with the exception of one clear peak between 8:00am to 8:09am (9 cyclists) and two smaller peaks between 7:20am to 7:29am (6 cyclists) and between 8:40am to 8:49am (5 cyclists).

Figure 11.2: Morning Peak Cyclist Frequency

Richardson/Maioro Street 2009 – 2015 (n)



11.3 Evening Peak

Environmental Conditions

- The weather was fine at the beginning but had turned cloudy by the end of the evening shift.
- There were no road works or accidents that may affected cycle counts.

Key Points

- The total number of evening cycle movements recorded at the Richardson/Maioro Street intersection was 40 (doubled from last year).
- The key movement in the evening was travelling straight on Maioro Street heading east (Movement 4 = 7 cyclists).
- Turning left from Maioro Street to Richardson Road (Movement 5) experienced the greatest change across all sites (up 5 movements from none recorded at the previous measure).

Table 11.3: Evening Cyclist Movements

Richardson/Maioro Street 2009 – 2015 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	6	1	1	1	0	3	**3**
2	4	2	1	6	1	5	3	**-2**
3	1	1	2	3	2	0	3	**3**
4	1	1	9	2	6	5	7	**2**
5	1	0	1	0	1	0	5	**5**
6	1	1	0	0	0	1	0	**-1**
7	4	5	3	4	1	2	5	**3**
8	-	0	3	0	1	0	2	**2**
9	-	3	1	1	1	1	1	**0**
10	-	4	1	4	7	5	5	**0**
11	1	2	0	3	2	1	2	**1**
12	-	0	0	0	0	0	4	**4**
Total	**13**	**25**	**22**	**24**	**23**	**20**	**40**	**20**

Note: In 2009, Movements 8, 9, 10 and 12 were not possible.

- Four in five cyclists passing by this site were adults (92 per cent, stable from last year).
- Almost all cyclists were wearing a helmet (97 per cent, stable from last year).
- The majority of cyclists continued to be male (95 per cent, unchanged from last year).
- Forty-seven per cent of the cyclists were riding on the off-road cycleway (down 18 percentage points from 2014).

Table 11.4: Evening Cyclist Characteristics

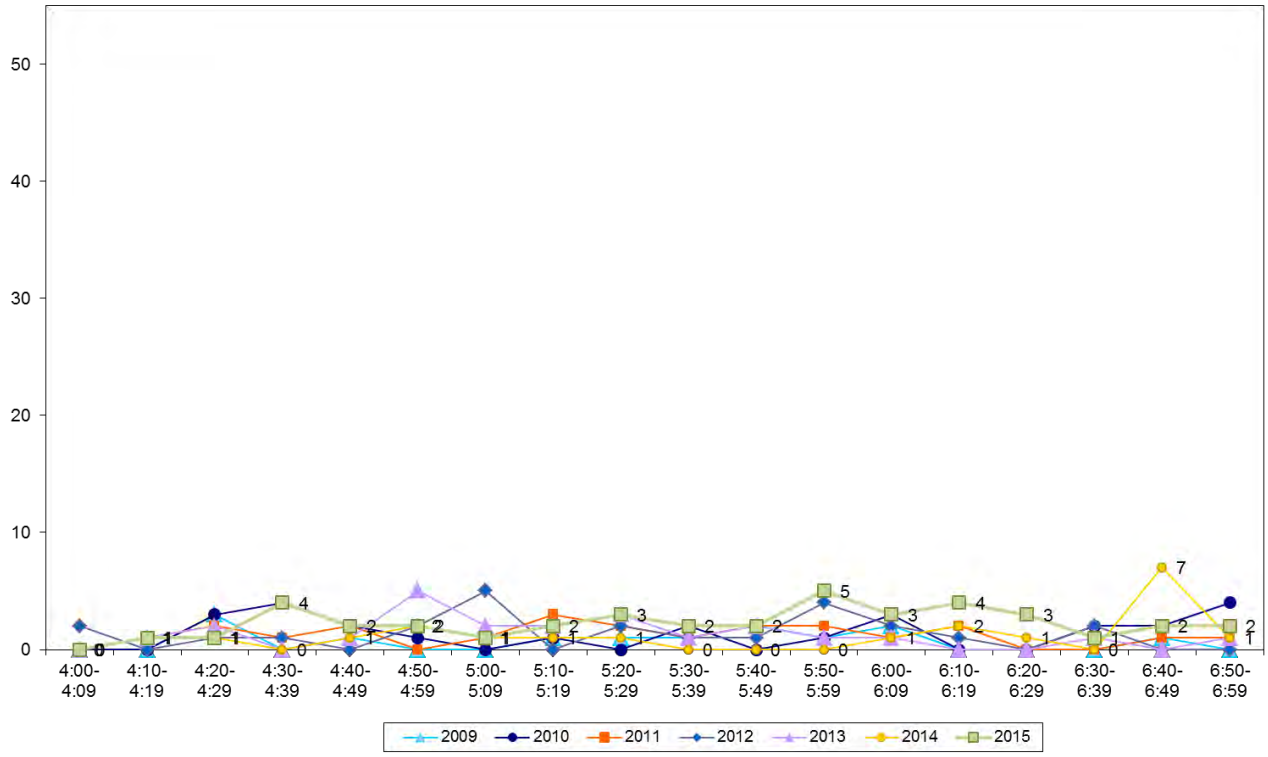
Richardson/Maioro Street 2009 – 2015 (%)

	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type								
Adult	100	80	91	75	100	90	**92**	**2**
School child	0	20	9	25	0	10	**8**	**-2**
Helmet Wearing								
Helmet on head	85	76	77	75	100	95	**97**	**2**
No helmet	15	24	23	25	0	5	**3**	**-2**
Gender								
Male	-	-	86	92	87	95	**95**	**0**
Female	-	-	9	8	13	5	**5**	**0**
Can't tell	-	-	5	0	0	0	**0**	**0**
Where Riding								
Road	46	16	32	46	30	35	**50**	**15**
Footpath	54	16	14	0	0	0	**3**	**3**
Off-road cycleway	-	68	54	54	70	65	**47**	**-18**
Base:	***13***	***25***	***22***	***24***	***23***	***20***	***40***	

- The volume of cycle movements remained low over the evening monitoring period. There were no more than five cyclists observed in any of the ten minute monitoring intervals.

Figure 11.3: Evening Peak Cyclist Frequency

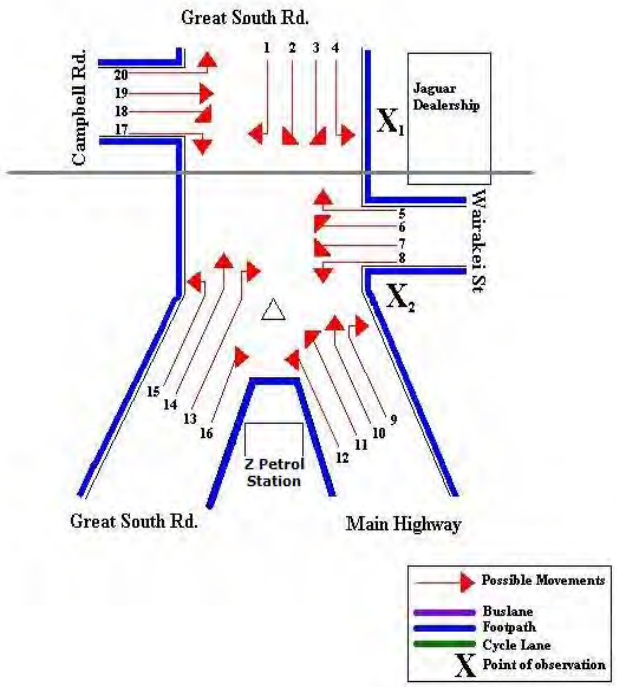
Richardson/Maioro Street 2009 – 2015 (n)



12. GREAT SOUTH ROAD/CAMPBELL ROAD/MAIN HIGHWAY, GREENLANE (SITE 21)

Figure 12.1 shows the possible cyclist movements at this intersection. *Note: Due to the size of this intersection, two surveyors were used to conduct the cycle counts.*

Figure 12.1: Cycle Movements: Great South/Campbell Road



12.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	89	85	174	253
2008	53	61	114	165
2009	64	87	151	218
2010	69	102	171	246
2011	60	78	138	199
2012	68	64	132	192
2013	77	69	146	213
2014	79	70	149	217
2015	**111**	**90**	**201**	**294**

12.2 Morning Peak

Environmental Conditions

- The weather was fine throughout the morning shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of morning cyclists at the Great South/Campbell Road intersection has increased, from 79 movements last year to 111 this year.
- Key morning movements were travelling straight on Great South Road heading south (Movement 2 = 24 cyclists, unchanged from last year), heading straight on Great South Road heading north (Movement 14 = 23 cyclists) and from Great South Road heading south onto the Main Highway (Movement 3 = 14 cyclists, stable from last year).
- The most notable increases were at Movement 14 (up 9 cyclists) and Movement 19 (up 8 cyclists)

Table 12: Morning Cyclist Movements
Great South/Campbell Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	3	1	2	5	1	0	2	1	**4**	**3**
2	20	9	19	3	19	15	18	24	**24**	**0**
3	14	7	9	8	6	13	12	13	**14**	**1**
4	2	0	0	7	0	0	0	2	**0**	**-2**
5	2	0	1	0	0	1	2	1	**1**	**0**
6	0	0	0	0	0	0	0	0	**0**	**0**
7	0	0	0	4	2	3	2	1	**3**	**2**
8	1	0	0	0	0	0	0	1	**2**	**1**
9	0	0	0	0	0	0	0	0	**0**	**0**
10	15	12	8	11	10	8	19	10	**11**	**1**
11	1	0	0	2	2	2	1	0	**0**	**0**
12	1	0	2	3	0	0	1	1	**1**	**0**
13	0	0	0	0	1	0	0	2	**1**	**-1**
14	15	9	12	17	11	17	15	14	**23**	**9**
15	2	4	0	0	1	2	0	0	**1**	**1**
16	2	0	0	0	0	0	0	0	**0**	**0**
17	1	1	1	1	2	1	0	0	**4**	**4**
18	5	1	2	4	2	3	1	0	**4**	**4**
19	3	4	2	0	0	0	0	0	**8**	**8**
20	2	5	6	4	3	3	1	9	**9**	**0**
Don't know	-	-	-	-	-	-	3	0	**1**	**1**
Total	**89**	**53**	**64**	**69**	**60**	**68**	**77**	**79**	**111**	**32**

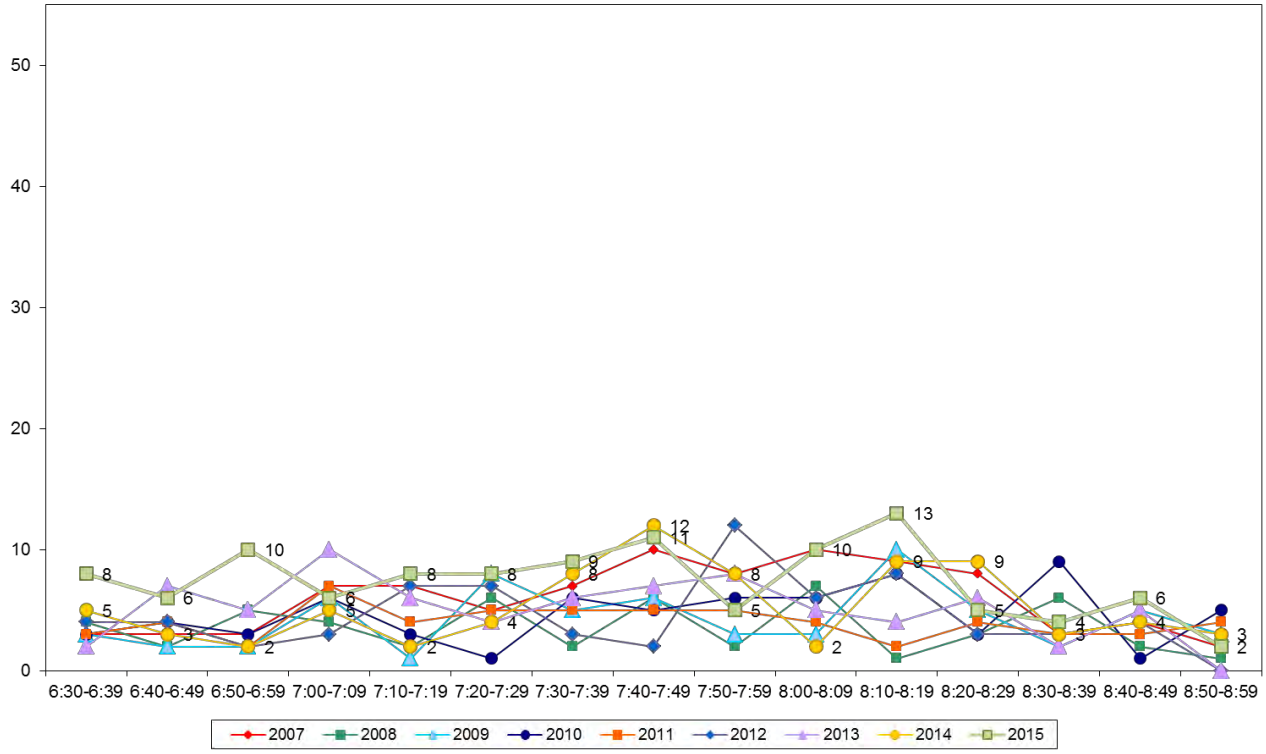
- Over the morning peak, adults comprised the greatest share of cycle movements (86 per cent, stable from 85 per cent in 2014).
- Almost all recorded cyclists were wearing a helmet (99 per cent, stable from 100 per cent in 2014).
- The greatest share of cyclists continued to be male (86 per cent).
- The majority of cyclists were riding on the road (76 per cent, stable from 75 per cent in 2014).

Table 12.2: Morning Cyclist Characteristics
Great South/Campbell Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	94	92	88	93	95	97	92	85	**86**	**1**
School child	6	8	12	7	5	3	8	15	**12**	**-3**
Don't know	-	-	-	-	-	-	-	-	**2**	**2**
Helmet Wearing										
Helmet on head	97	94	95	96	95	97	99	100	**99**	**-1**
No helmet	3	6	5	4	5	3	1	0	**1**	**1**
Gender										
Male	-	-	-	-	84	79	73	89	**86**	**-3**
Female	-	-	-	-	13	18	22	11	**12**	**1**
Can't tell	-	-	-	-	3	3	5	0	**2**	**2**
Where Riding										
Road	87	68	84	83	82	81	84	75	**76**	**1**
Footpath	13	32	16	17	18	19	16	25	**23**	**-2**
Don't know	-	-	-	-	-	-	-	-	**1**	**1**
Base:	***89***	***53***	***64***	***69***	***60***	***68***	***77***	***79***	***111***	

- Morning cyclist volumes were relatively stable throughout the monitoring period. A gradual increase in cyclist frequency occurred from 7:00am -7:49am. A drop to 5 cyclists occurred during the time interval 7:50am - 7:59am before frequency increased again, to a clear peak of 13 cyclists recorded at 8:10am - 8:19am.

Figure 12.2: Morning Peak Cyclist Frequency
Great South/Campbell Road 2007 – 2015 (n)



Note: In 2015, 7 per cent of the morning peak cycle movements (n=8) at this site were identified as cycling in groups. The group rode past at 6:51am.

12.3 Evening Peak

Environmental Conditions

- The weather was fine throughout the evening shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of evening cyclists at the Great South/Campbell Road intersection has increased notably – 90 cycle movements this year, up from 70 cycle movements in 2014.
- Consistent with last year, the key movement was straight along Great South Road heading north (Movement 14 = 33 cyclists).
- The most notable increase in cyclist movements was at Movement 14 (up 15 cyclists). The largest decrease occurred at Movement 1 – traveling on Great South Road turning right onto Campbell Road (down 5 cyclists).

Table 12.3: Evening Cyclist Movements

Great South/Campbell Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	2	3	5	5	1	3	1	7	**2**	**-5**
2	14	7	13	14	16	16	9	13	**13**	**0**
3	16	8	10	19	14	15	17	13	**14**	**1**
4	1	0	4	2	0	1	1	0	**0**	**0**
5	0	0	0	1	0	0	0	0	**1**	**1**
6	0	0	0	0	0	0	0	0	**0**	**0**
7	0	0	2	0	0	1	0	0	**1**	**1**
8	0	0	0	1	0	1	2	1	**1**	**0**
9	0	0	0	1	0	1	1	1	**1**	**0**
10	14	7	8	12	7	3	3	11	**12**	**1**
11	4	5	4	6	3	2	3	1	**1**	**0**
12	1	0	0	1	0	1	1	2	**1**	**-1**
13	0	0	1	0	1	0	0	0	**1**	**1**
14	15	13	28	34	30	17	24	18	**33**	**15**
15	5	8	2	1	3	0	2	1	**1**	**0**
16	3	1	1	1	0	0	1	0	**1**	**1**
17	2	2	1	0	0	0	0	1	**2**	**1**
18	4	1	5	0	0	1	1	1	**2**	**1**
19	0	3	0	0	1	0	0	0	**0**	**0**
20	4	3	3	4	2	2	0	0	**3**	**3**
Don't know	-	-	-	-	-	-	3	0	**0**	**0**
Total	**85**	**61**	**87**	**102**	**78**	**64**	**69**	**70**	**90**	**20**

- Over the evening peak, almost all cyclists using this intersection were adults (93 per cent, down from 97 per cent last year).
- Most cyclists at this site were wearing a helmet (93 per cent, down from 99 per cent in 2014).
- Approximately three out of four cyclists were recorded as male (78 per cent, down 21 percentage points from last year).
- The majority of cyclists were riding on the road (65 per cent, down 6 percentage points from last year).

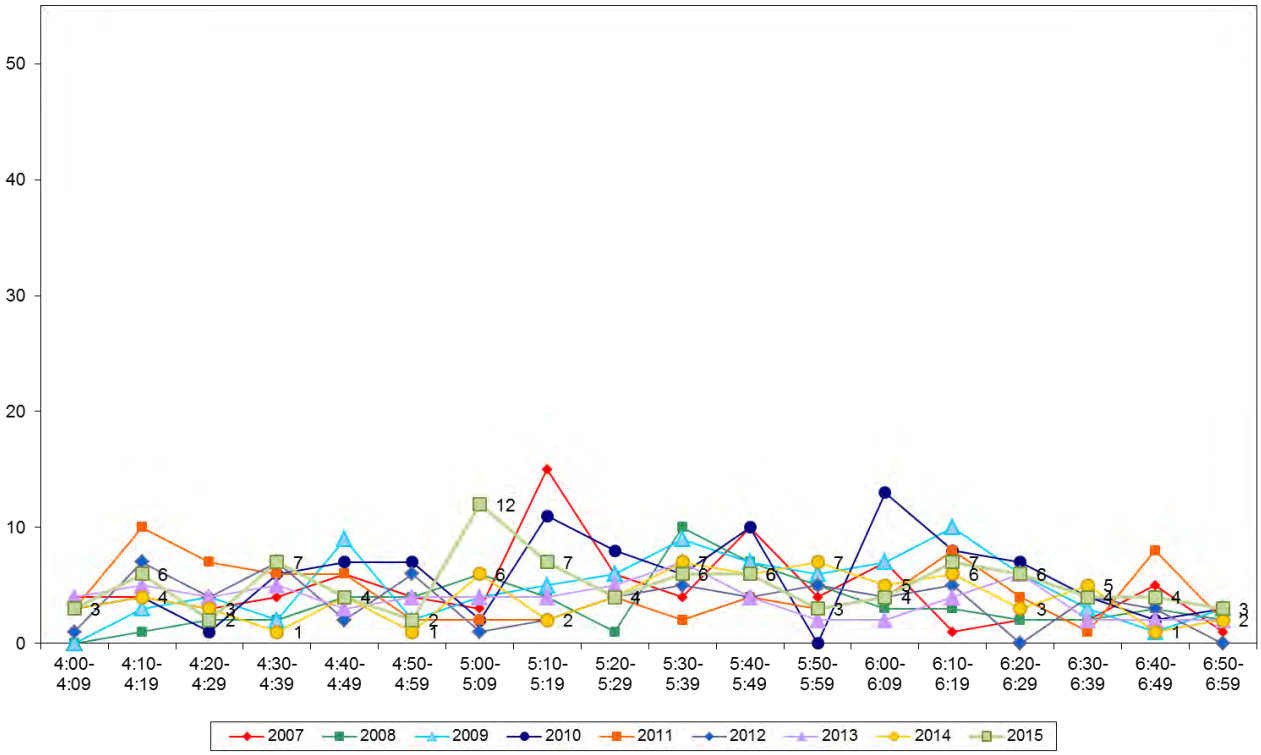
Table 12.4: Evening Cyclist Characteristics

Great South/Campbell Road 2007 – 2015 (%)

	2007	*2008*	*2009*	2010	2011	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	100	97	97	95	97	97	91	97	**93**	**-4**
School child	0	3	3	5	3	3	9	3	**7**	**4**
Helmet Wearing										
Helmet on head	95	89	98	92	99	92	97	99	**93**	**-6**
No helmet	5	11	2	8	1	8	3	1	**6**	**5**
Don't know	-	-	-	-	-	-	-	-	**1**	**1**
Gender										
Male	-	-	-	-	82	83	74	99	**78**	**-21**
Female	-	-	-	-	17	14	23	1	**18**	**17**
Can't tell	-	-	-	-	1	3	3	0	**4**	**4**
Where Riding										
Road	87	82	83	89	85	77	74	71	**65**	**-6**
Footpath	13	18	17	11	15	23	26	29	**33**	**4**
Don't know	-	-	-	-	-	-	-	-	**2**	**2**
Base:	***85***	***61***	***87***	***102***	***78***	***64***	***69***	***70***	***90***	

- Evening cycle volumes were relatively steady, with one clear peak recorded at 5:00pm - 5:09pm (12 cyclists).

Figure 12.3: Evening Peak Cyclist Frequency
Great South/Campbell Road 2007 – 2015 (n)



13. SCHOOL BIKE SHED COUNT

13.1 Cycle Count Background Information

- A total of 17 schools in the Albert-Eden-Roskill ward participated in the school bike shed count. Of the schools that responded to the survey, most had no policies that restrict students cycling to school[9].
- Four schools reported an event or issue that may have affected cycle counts[10].
- The designated count day was Tuesday 3rd of March 2015[11].

Note: Full primary schools (those taking children through to Year 8) were included in the count for the first time in 2011.

13.2 Cycle Count Key Points

- Among the surveyed schools, of those eligible to cycle to school, on average, two per cent of students are cycling to their schools. This share is unchanged since 2011.
- Pasadena Intermediate School reported the highest share of cyclists – 20 per cent of all eligible students currently cycling to school, up from 9 per cent last year.
- In total, n=235 students from the responding schools were reported to be cycling to school.
- Of the 17 schools that responded, 6 (35 per cent) had no students cycling to school.

[9] The following school has a policy surrounding cycling to school:
- Ficino School *"Years 6-8"*

[10] The following schools reported events or issues that had an effect on the cycle count:
- Auckland Grammar School *"One class away on camp – 32 students"*
- Hebron Christian College *"We have the middle school at a camp, Y5 to Y8 students"*
- Our Lady of the Sacred Heart School (Epsom) *"Some are at a cricket competition"*
- Waikowhai Intermediate *"Parent-teacher meetings, so many students picked up today"*

[11] The following schools conducted their counts on alternative days:
- Christ the King Catholic School – 17th March 2015
- Dilworth School – 26th February 2015
- Ficino School – 6th March 2015
- St Cuthbert's College – 26th February 2015
- St Therese School (Three Kings) –5th March 2015

- Of the 17 schools that participated in the count in both 2014 and 2015, only Pasadena Intermediate School reported an increase in the share of students cycling.
- Of the 17 schools that participated in the count in both 2014 and 2015, 4 (24 per cent) reported a decrease in the share of students cycling, most notably at Auckland Normal Intermediate School (5 per cent, down from 10 per cent in 2014).

Table 13.1 shows the results of the 17 schools surveyed in the Albert-Eden-Roskill ward.

Table 13.1: Summary Table of School Bike Count

2007 – 2015 (n)

School Name	*School Type*	*School Roll Eligible To Cycle*	*No. of Cycles Counted*	*Cyclists as share of those eligible*[12]								
				2015	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
Pasadena Intermediate School	Intermediate	222	44	**20%**	9%	11%	12%	22%	26%	17%	12%	18%
Auckland Normal Intermediate	Intermediate	699	32	**5%**	10%	3%	4%	7%	7%	6%	5%	7%
Waikowhai Intermediate School	Intermediate	355	16	**5%**	5%	4%	6%	5%	3%	4%	3%	3%
Auckland Grammar School	Secondary	2505	79	**3%**	4%	3%	3%	4%	4%	4%	3%	2%
Kowhai Intermediate School	Intermediate	472	11	**2%**	2%	2%	3%	5%	5%	6%	6%	6%
Our Lady Sacred Heart School (Epsom)	Full Primary	217	3	**1%**	1%	3%	-	-	-	-	-	-
Mount Albert Grammar School	Secondary	2650	32	**1%**	1%	1%	2%	-	-	-	-	-
Mt Roskill Intermediate School	Intermediate	578	6	**1%**	1%	2%	3%	2%	4%	-	2%	2%
Hebron Christian College	Composite	213	2	**1%**	2%	5%	1%	-	-	-	-	-
Diocesan School for Girls	Composite	1318	4	**<1%**	<1%	<1%	<1%	<1%	<1%	0%	<1%	0%
Lynfield College	Secondary	1800	6	**<1%**	1%	<1%	<1%	<1%	<1%	1%	<1%	1%
Christ the King Catholic School	Full Primary	154	0	**0%**	0%	0%	0%	0%	-	-	-	-
Dilworth School	Full Primary	628	0	**0%**	0%	-	0%	-	-	-	-	-
Ficino School	Full Primary	32	0	**0%**	0%	0%	0%	0%	-	-	-	-
Marcellin College	Intermediate/ Secondary	592	0	**0%**	0%	0%	0%	<1%	0%	0%	1%	-

[12] This share is calculated by averaging the number of cycles counted over the total number of students eligible to cycle. The figure obtained is rounded to zero decimal places.

School Name	*School Type*	*School Roll Eligible To Cycle*	*No. of Cycles Counted*	*Cyclists as share of those eligible*[12]								
				2015	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
St Cuthbert's College	Intermediate/ Secondary	1251	0	**0%**	0%	4%	<1%	-	-	-	-	-
St Therese School (Three Kings)	Full Primary	120	0	**0%**	0%	0%	-	0%	-	-	-	-
Total		**13806**	**235**	**2%**	**2%**	**2%**	**2%**	**2%**	**-**	**-**	**-**	**-**

Table 13.2 illustrates the rates of cycling to school at different school levels. Rates of cycling to school are highest among intermediate schools (5 per cent, down from 6 per cent in 2014), and lowest for intermediate/secondary schools (0 per cent, unchanged since 2012).

Table 13.2: Summary Table of School Bike Count by School Type

2007 – 2015 (%)

School Type	*Number of Schools Responded in 2015 (n)*	*Cyclists as share of those eligible*									Change 14-15
		2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	
Intermediate	5	7%	6%	8%	9%	7%	5%	4%	6%	**5%**	**-1%**
Secondary	3	2%	<1%	1%	<1%	1%	1%	1%	1%	**2%**	**1%**
Full Primary	5	-	-	-	-	2%	2%	3%	3%	**<1%**	**-3%**
Composite	2	0%	<1%	0%	<1%	<1%	<1%	2%	<1%	**<1%**	**0%**
Intermediate/Secondary	2	-	1%	0%	<1%	<1%	0%	0%	0%	**0%**	**0%**

13.3 Scooter Count Background Information

- A total of 15 schools in the Albert-Eden-Roskill ward participated in the school bike shed scooter count. Of the schools that responded to the survey, most had no policies that restrict students scooting to school[13].
- Two schools surveyed reported an event or issue that may affect the scooter counts[14].
- The designated count day was Tuesday 3rd of March 2015[15].

Note: Non-motorised scooters were counted for the first time in 2014.

13.4 Scooter Count Key Points

- Among the surveyed schools, of those eligible to scooter, on average, one per cent of students are scooting to their schools. This share is down from two per cent in 2014.
- Kowhai Intermediate School reported the highest share of scooters – 12 per cent of all eligible students currently scooting to school, unchanged from 2014.
- In total, n=149 students from the responding schools were reported to be scooting to school.
- Of the 15 schools that responded, 11 (73 per cent) had no students scooting to school.
- Of the 15 schools that participated in the count in both 2014 and 2015, two (13 per cent) schools reported an increase in the share of students scooting, most notably at Auckland Normal Intermediate School (11 per cent, up from 7 per cent in 2014).
- Of the 15 schools that participated in the count in both 2014 and 2015, two (13 per cent) schools reported a decrease in the share of students scooting, most notably at Pasadena Intermediate (5 per cent, down from 9 per cent in 2014).

[13] The following school had a policy surrounding scooting to school:
- Christ the King Catholic School *"Students are not permitted to use scooters to get to school"*

[14] The following schools reported events or issues that had an effect on the scooter count:
- Auckland Grammar School *"One class away on camp – 32 students"*
- Waikowhai Intermediate *"Parent-teacher meetings, so many students picked up today"*

[15] The following schools conducted their counts on alternative days:
- Christ the King Catholic School – 17th March 2015
- Dilworth School – 26th February 2015
- Ficino School – 6th March 2015
- St Cuthbert's College – 26th February 2015
- St Therese School (Three Kings) –5th March 2015

Table 13.3 shows the results of the 15 schools surveyed in the Albert-Eden-Roskill ward.

Table 13.3: Summary Table of School Scooter Count

2014 – 2015 (n)

School Name	*School Type*	*School Roll Eligible To Scooter*	*No. of Scooters Counted*	*Scooters as share of those eligible*[16]	
				2015	*2014*
Kowhai Intermediate	Intermediate	472	56	**12%**	12%
Auckland Normal Intermediate	Intermediate	699	79	**11%**	7%
Pasadena Intermediate	Intermediate	222	11	**5%**	9%
Mt Roskill Intermediate School	Intermediate	578	3	**1%**	0%
Christ the King Catholic School	Full Primary	154	0	**0%**	0%
Dilworth School	Composite	628	0	**0%**	0%
Diocesan School for Girls	Composite	1318	0	**0%**	0%
Ficino School	Full Primary	100	0	**0%**	0%
Lynfield College	Secondary	1800	0	**0%**	<1%
Marcellin College	Intermediate/ Secondary	592	0	**0%**	0%
Mt Albert Grammar School	Secondary	2650	0	**0%**	0%
St Cuthbert's College	Intermediate/ Secondary	1251	0	**0%**	0%
St Therese School (Three Kings)	Full Primary	120	0	**0%**	0%
Waikowhai Intermediate	Intermediate	355	0	**0%**	5%
Auckland Grammar School	Secondary	0	0	**-**	-
Total		**10939**	**149**	**1%**	2%

[16] This share is calculated by averaging the number of scooters counted over the total number of students eligible to scooter. The figure obtained is rounded to zero decimal places.

Table 13.4 illustrates the rates of scooting to school at different school levels. Rates of scooting to school are highest for intermediate schools (6 per cent, unchanged from 2014).

Table 13.4: Summary Table of School Scooter Count by School Type

2014 – 2015 (%)

School Type	*Number of Schools Responded in 2015 (n)*	*Scooter riders as share of those eligible*		Change
		2014	*2015*	14-15
Intermediate	5	6%	**6%**	**0%**
Full Primary	3	9%	**0%**	**-9%**
Secondary	3	<1%	**0%**	**-<1%**
Composite	2	0%	**0%**	**0%**
Intermediate/Secondary	2	0%	**0%**	**0%**

APPENDICES

Appendix One: Annual Average Daily Traffic (AADT) Calculation

APPENDIX ONE: ANNUAL AVERAGE DAILY TRAFFIC (AADT) CALCULATION

Note: This description of the calculation of the Annual Average Daily Traffic Flow of Cyclists has been provided by ViaStrada based on their May 2007 report for ARTA entitled "Development of a Cycle Traffic AADT Tool".

Purpose

The purpose of this appendix is to document the recommended procedure for estimating a cycling AADT[17] in the Auckland region from any Gravitas manual count.

Method for Estimating AADT

The methodology is based on that published in Appendix 2 of the Cycle Network and Route Planning Guide (CNRPG)[18], adjusted for Auckland conditions based on data collected during March 2007. The aim was to use the published methodology as much as possible, with any necessary departure from it documented below. The following equation yields the best estimate of a cycling AADT:

$$AADT_{Cyc} = Count \times \frac{1}{\sum H} \times \frac{1}{D} \times \frac{W}{7} \times \frac{1}{R}$$

where *Count = result of count period*

H = scale factor for time of day

D = scale factor for day of week

W = scale factor for week of year

R = scale factor for weather conditions on the count day

If more than one set of count data is available (for example, both a morning count and afternoon count), then **the calculation should be carried out for each set of data, and the estimates derived from each averaged**.

The values for the scale factors (*H, D*, *W* and *R*) have been deduced in the ViaStrada report and are included in this report in Figure 1.

[17] Annual average daily traffic

[18] LTSA, 2004

For the Gravitas counts, the following factors apply:

$\sum H_{AM} = 30$; $\sum H_{PM} = 33.3$; (AM and PM refer to morning and afternoon respectively)

D = 14

W = 0.9

$R_{DRY} = 100$; $R_{WET} = 64$ (DRY and WET refer to fine and rainy conditions respectively)

These can be combined as a single multiplier to convert the manual count to an AADT estimate as follows:

	Morning	Afternoon
Dry weather	**3.06**	**2.78**
Wet weather	**4.78**	**4.35**

Worked Example

If morning and afternoon manual traffic counts are available at a site, the AADT can be calculated using the count summaries for each period. For example, a morning survey of 102 and an afternoon survey of 130 are suggested. It is assumed for this example that the weather was fine in both surveys.

- Thus the AADT from the morning survey is estimated as 3.06 x 102 = 312.
- The AADT from the afternoon survey is estimated as 2.78 x 130 = 359.
- The average of these two estimates is 335; this is the estimate of AADT for this site, based on the two surveys.

Appendix Figure 1: Scale Factors for Auckland Region

Period Starting	Period Ending	Interval (hours)	$H_{Weekday}$ Mon to Fri	$H_{Weekend}$ Sat & Sun
0:00	6:30	6.50	5.5%	1.8%
6:30	6:45	0.25	2.3%	0.8%
6:45	7:00	0.25	2.6%	1.5%
7:00	7:15	0.25	3.2%	1.4%
7:15	7:30	0.25	3.7%	2.1%
7:30	7:45	0.25	3.8%	2.8%
7:45	8:00	0.25	4.0%	3.3%
8:00	8:15	0.25	3.9%	3.2%
8:15	8:30	0.25	3.1%	3.8%
8:30	8:45	0.25	2.3%	3.5%
8:45	9:00	0.25	1.3%	3.5%
9:00	10:00	1.00	4.2%	13.6%
10:00	11:00	1.00	3.4%	11.6%
11:00	12:00	1.00	2.6%	9.1%
12:00	13:00	1.00	2.7%	6.6%
13:00	14:00	1.00	2.7%	5.0%
14:00	14:15	0.25	0.7%	1.9%
14:15	14:30	0.25	0.7%	1.3%
14:30	14:45	0.25	0.6%	1.3%
14:45	15:00	0.25	0.6%	1.2%
15:00	15:15	0.25	0.8%	1.1%
15:15	15:30	0.25	1.0%	0.9%
15:30	15:45	0.25	1.3%	1.4%
15:45	16:00	0.25	1.2%	1.3%
16:00	16:15	0.25	2.1%	1.0%
16:15	16:30	0.25	2.3%	1.7%
16:30	16:45	0.25	2.1%	1.0%
16:45	17:00	0.25	2.5%	1.2%
17:00	17:15	0.25	3.3%	1.2%
17:15	17:30	0.25	3.7%	1.2%
17:30	17:45	0.25	4.0%	1.1%
17:45	18:00	0.25	3.2%	1.1%
18:00	18:15	0.25	3.0%	0.9%
18:15	18:30	0.25	2.7%	0.7%
18:30	18:45	0.25	2.4%	0.8%
18:45	19:00	0.25	2.1%	0.6%
19:00	20:00	1.00	5.6%	2.0%
20:00	0:00	4.00	3.0%	1.5%
		24.00	100.0%	100.0%

Day	D
Monday	14%
Tuesday	14%
Wednesday	14%
Thursday	14%
Friday	14%
Saturday	14%
Sunday	16%

Period	W
Summer holidays	1.0
Term 1	0.9
April holidays	1.0
Term 2	1.0
July holidays	1.2
Term 3	1.1
Sep/Oct holidays	1.2
Term 4	1.0

Weather	R
Fine	100%
Rain	64%