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Research Report Prepared for
Auckland Transport

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2012 Auckland Region Manual Cycle Monitor

- Waitemata and Gulf 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].

Cycle traffic data will help inform a major programme of improvements for cycling in the Auckland region. In 2007, over $100 million was planned to be invested in building over 50% of the Regional Cycle Network by 2016. By mid 2009, 21% of the Regional Cycle Network had been built. Comprehensive cycle data assists with the development of the region's cycle network and prioritisation of projects.

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:

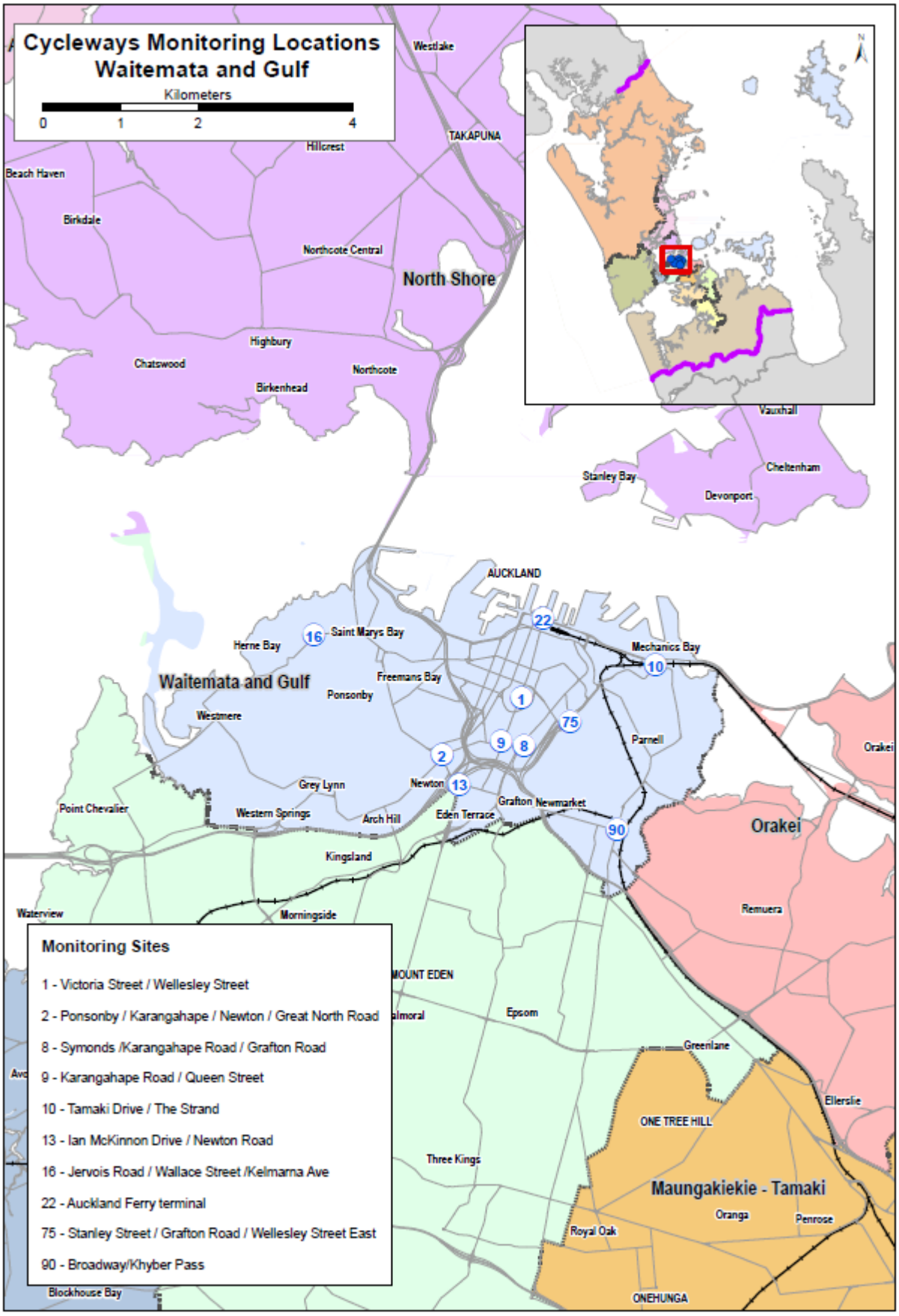
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and 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 10 sites in the Waitemata and Gulf 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 2007, 2008, 2009, 2010 and/or 2011, comparative results are provided.

Important Note: This report provides the results of manual cycle monitoring conducted at ten pre-determined sites in the Waitemata and Gulf 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 Waitemata and Gulf ward.

Figure 1.1: 2011 Cycle Monitoring Locations in Waitemata and Gulf 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 83 different sites throughout the region. Sites were distributed by ward as follows:

- Albany 15 sites
- Albert-Eden–Roskill 10 sites
- Franklin 2 sites
- Howick 5 sites
- Manukau 10 sites
- Manurewa-Papakura 4 sites
- Maungakiekie-Tamaki 7 sites
- North Shore 8 sites
- Orakei 2 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 6th of March and be conducted on the first three fine days of the 6th, 7th, 8th, 13th, 14th, or 15th of March.

Counts were conducted on the following days:

• Tuesday 6th March	Albany, North Shore, Waitakere
• Wednesday 7th March	Whau, Albert-Eden-Roskill, Orakei, Manurewa-Papakura, Maungakiekie-Tamaki
• Tuesday 13th March	Howick, Franklin, Manukau, Waitemata & Gulf

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 2012 was as follows:

Tuesday 6th March

- Sunrise: 7:11am; Sunset: 7:52pm.
- Highest temperature: 21.3 degrees Celsius.
- Mostly fine weather with some cloud for some sites in the morning and afternoon shifts.

Wednesday 7th March

- Sunrise: 7:12am; Sunset: 7:51pm.
- Highest temperature: 24.0 degrees Celsius.
- Mostly fine weather with some cloud for all sites in the morning, some sites experienced showers intermittently from 16:00pm until the end of the evening monitoring period.

Tuesday 13th March

- Sunrise: 7:17am; Sunset: 7:43pm.
- Highest temperature: 21.3 degrees Celsius.
- Mostly fine weather with some cloud for some sites in the morning and afternoon 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 have 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.

[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=317) 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 6th 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 2012, 233 responses were received, a response rate of 74 per cent. (This compares with 68 per cent in 2011).

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.

1.3 Summary of Results

This summary contains the aggregated results of the ten sites surveyed in the Waitemata and Gulf 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 Waitemata and Gulf 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 and Ten of this report.

Note: Surveying in the Waitemata and Gulf ward was undertaken on Tuesday 13th of March, 2012[9]. Sunrise was at 7:17am and sunset at 7:43pm. The highest temperature was 21.3 degrees Celsius.

[9] The Jervois Road/Wallace Street site (16) was monitored on Wednesda7 14th March 2012

1.4 Morning Peak Summary Results

Environmental Conditions

- All sites monitored in the Waitemata and Gulf ward had fine weather in the morning.
- No sites reported road works or accidents that may have affected cycle counts.

Key Points

- A total of 2,193 cyclist movements were recorded across the ten sites in the morning peak period in 2012. Nine per cent (n=138) of the total cycle movements in the morning peak were made by those cycling in groups (unchanged from last year).
- Of the nine sites monitored in both 2011 and 2012, the number of morning cycle movements observed has decreased – down from 2082 to 1901. This represents a 9 per cent decrease in cycle movements over the last 12 months.
- The average volume of morning cyclists across the nine sites monitored in the Waitemata and Gulf ward in 2011 and 2012 is 211 cycle movements. This compares with 231 movements in 2011.
- Of the ten sites monitored, the busiest site in the morning peak continues to be the intersection of Tamaki Drive and The Strand (503 cycle movements, down from 630 movements in 2011), whereas the Stanley Street/Grafton Road site has the lowest volume of morning cyclists (38 movements).
- Six of the nine sites monitored since 2011 recorded decreases this year. The most notable decreases are at:
  - Tamaki Drive/The Strand – down 20 per cent; and
  - Victoria/Wellesley Street – down 29 per cent.
- The remaining three sites (of those monitored since 2009) recorded increases, the most notable being the Stanley Street/Grafton Road site (up 41 per cent since last year).

Table 1.1: Summary of Morning Cyclist Movements

2007 – 2012 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12	Change 07-12
10	Tamaki Drive/The Strand	480	416	321	498	630	**503**	**-20%**	**5%**
8	Symonds Street/Karangahape Road	290	285	246	283	317	**338**	**7%**	**17%**
9	Karangahape Road/Queen Street	246	212	238	272	256	**266**	**4%**	**8%**
2	Ponsonby/Karangahape Road	226	199	176	242	222	**204**	**-8%**	**-10%**
22	Ferry Terminal	195	158	137	198	205	**189**	**-8%**	**-3%**
1	Victoria/Wellesley Street	70	57	59	82	116	**82**	**-29%**	**17%**
	Average per site (6 sites since 2007)	**251**	**221**	**196**	**263**	**291**	**264**	**-9%**	**5%**
	Total (6 sites since 2007)	**1507**	**1327**	**1177**	**1575**	**1746**	**1582**	**-9%**	**5%**
13	Ian McKinnon/Newton Road	-	-	139	190	236	**219**	**-7%**	**-**
16	Jervois Road/Wallace Street	-	-	60	88	73	**62**	**-15%**	**-**
75	Stanley Street/Grafton Road	-	36	49	47	27	**38**	**41%**	**-**
	Average per site (7 sites since 2008, 9 sites in 2009, 2010, and 2011)	**-**	**195**	**158**	**211**	**231**	**211**	**-9%**	**-**
	Total (7 sites since 2008, 9 sites since 2009, 10 sites in 2009, 2010, and 2011)	**-**	**1363**	**1425**	**1900**	**2082**	**1901**	**-9%**	**-**
90	Broadway/Khyber Pass Road	-	-	-	-	-	**292**	**-**	**-**
	Average per site (7 sites since 2008, 9 sites since 2009, 10 sites since 2012)	**-**	-	-	-	-	**219**	**-**	**-**
	Total (7 sites since 2008, 9 sites since 2009, 10 sites since 2012)	**-**	-	-	-	-	**2193**	**-**	**-**

- Morning cyclist characteristics this year are similar to those reported in 2011. Ninety-nine per cent of cyclists are adults (unchanged from 2011).
- Almost all cyclists are wearing a helmet (93 per cent in 2012, stable from 92 per cent in 2011).
- Three-quarters of morning cyclists are male (76 per cent, stable from last year).
- Riding on the road remains common (78 per cent, up from 74 per cent last year).

Table 1.2: Summary of Morning Cyclist Characteristics

2007 – 2012 (%)

	2007	***2008***	***2009***	***2010***	***2011***	**2012**	**Change 11-12**
Cyclist Type							
Adult	99	96	98	99	99	**99**	**0**
School child	1	4	2	1	1	**1**	**0**
Helmet Wearing							
Helmet on head	95	93	93	92	92	**93**	**1**
No helmet	5	7	7	8	8	**7**	**-1**
Gender							
Male	-	-	-	-	74	**76**	**2**
Female	-	-	-	-	19	**16**	**-3**
Can't tell	-	-	-	-	7	**8**	**1**
Where Riding*							
Road	89	94	78	75	74	**78**	**4**
Footpath	11	6	11	16	15	**13**	**-2**
Off-road cycleway	0	0	11	9	11	**9**	**-2**
Base:	***1507***	***1363***	***1425***	***1900***	***2082***	***2193***	

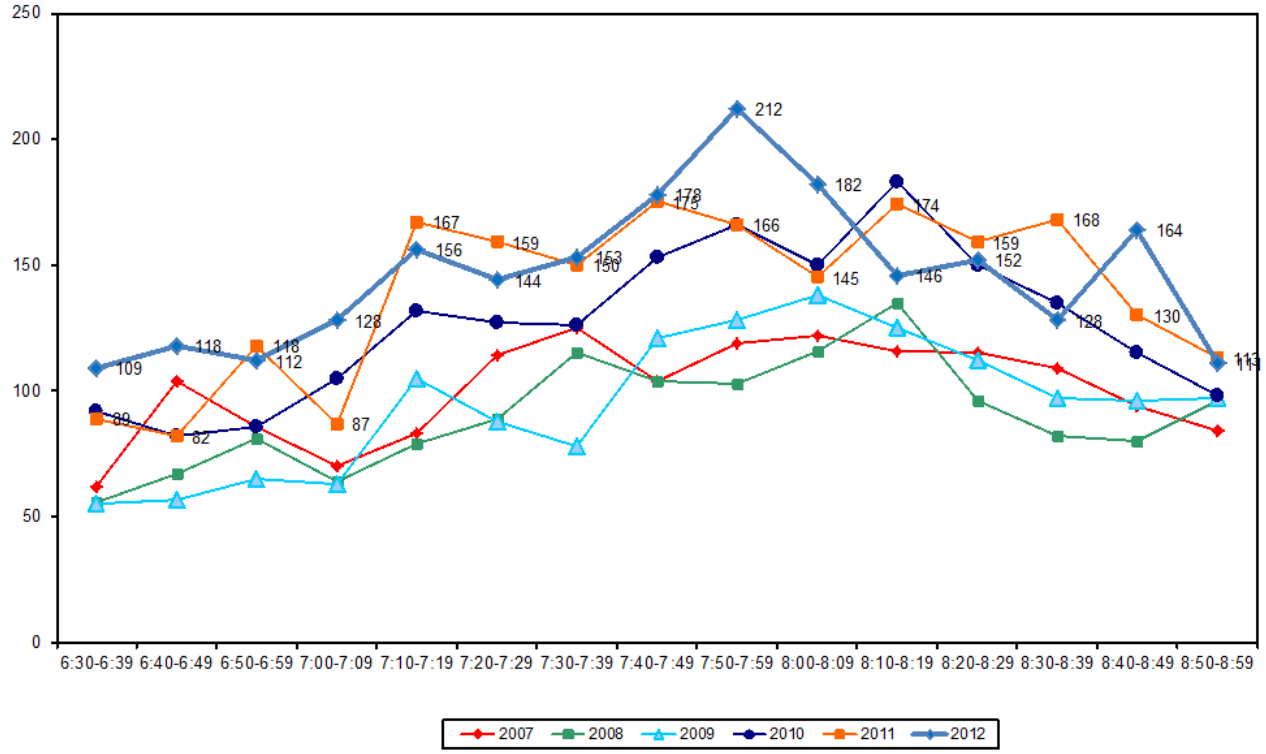
** Note: Prior to 2009, cyclists riding on the North-Western, Waikaraka, Onehunga Harbour Road cycleways, and the designated side of the footpath on Tamaki Drive are categorised as road riders.*

The Ferry Terminal, Auckland Central site has not been included for figures regarding where cyclists were riding.

- Figure 1.2 shows the overall pattern of morning cyclist volumes recorded at the ten sites monitored in 2012. Morning cyclist numbers follow a steady increasing trend from 6:30am to a peak between 7:50am and 7:59am (212 cyclists) after which the numbers of movements decline gradually over the remainder of the morning period with another small peak between 8:40am and 8:49am (164 movements).

Figure 1.2: Total Cyclist Frequency – Morning Peak

2007 – 2011 (n)



1.5 Evening Peak Summary Results

Environmental Conditions

- All sites had fine weather during the evening monitoring period.
- There were no road works or accidents that may affect cycle counts.

Key Points

- A total of 2,450 cyclist movements were recorded across the ten sites in the evening peak period in 2012. Three per cent (n=75) of the total cycle movements in the evening peak were made by those cycling in groups (stable from 2 per cent in 2011).
- Of the nine sites monitored in both 2011 and 2012, the number of morning cycle movements observed has increased – up from 2130 to 2165. This represents a 2 per cent increase in cycle movements over the last 12 months.
- The average volume of morning cyclists across the nine sites monitored in the Waitemata and Gulf ward in 2011 and 2012 is 241 cycle movements. This compares with 237 movements in 2011.
- Of the ten sites monitored, the busiest site in the evening peak continues to be the intersection of Tamaki Drive and The Strand (441 cycle movements, up from 429 movements in 2011), whereas the Stanley Street/Grafton Road site has the lowest volume of evening cyclists (56 movements, up from 47 movements in 2011).
- Eight of the nine sites also monitored in 2011 recorded increases this year. The most notable increases are at:
  - Stanley Street/Grafton Road – up 19 per cent; and
  - Ferry Terminal – up 8 per cent.
- One site recorded a decrease – the Ian McKinnon/Newton Road site down 12 per cent since last year.

Table 1.3: Summary of Evening Cyclist Movements

2007 – 2012 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12	Change 07-12
10	Tamaki Drive/The Strand	420	370	282	438	429	**441**	**3%**	**5%**
8	Symonds Street/Karangahape Road	349	336	282	314	373	**394**	**6%**	**13%**
9	Karangahape Road/Queen Street	261	212	221	310	298	**307**	**3%**	**18%**
2	Ponsonby/Karangahape Road	261	216	194	317	289	**294**	**2%**	**13%**
22	Ferry Terminal	185	158	111	197	186	**200**	**8%**	**8%**
1	Victoria/Wellesley Street	90	79	65	80	109	**110**	**1%**	**22%**
	Average per site (6 sites since 2007)	**261**	**229**	**193**	**276**	**281**	**291**	**4%**	**11%**
	Total (6 sites since 2007)	**1566**	**1371**	**1155**	**1656**	**1684**	**1746**	**4%**	**11%**
13	Ian McKinnon/Newton Road	-	-	152	184	324	**284**	**-12%**	**-**
16	Jervois Road/Wallace Street	-	-	51	79	75	**79**	**5%**	**-**
75	Stanley Street/Grafton Road	-	29	47	46	47	**56**	**19%**	**-**
	Average per site (7 sites since 2008, 9 sites in 2009, 2010, and 2011)	**-**	**189**	**156**	**218**	**237**	**241**	**2%**	**-**
	Total (7 sites since 2008, 9 sites since 2009, 10 sites in 2009, 2010, and 2011)	**-**	**1321**	**1405**	**1965**	**2130**	**2165**	**2%**	**-**
90	Broadway/Khyber Pass Road	**-**	-	-	-	-	**285**	-	**-**
	Average per site (7 sites since 2008, 9 sites since 2009, 10 sites since 2012)	**-**	-	-	-	-	**245**	**-**	**-**
	Total (7 sites since 2008, 9 sites since 2009, 10 sites since 2012)	**-**	-	-	-	-	**2450**	**-**	**-**

- Ninety-nine per cent of evening cyclists this year are adults (unchanged from 2011).
- Most cyclists are wearing a helmet in the evening (90 per cent, stable from 88 per cent in 2011).
- Most cyclists are male (80 per cent).
- The majority of evening cyclists are riding on the road (69 per cent, up from 64 per cent in 2011). Eighteen per cent of cyclists are riding on the footpath, and the remaining 13 per cent are using the off-road cycleway.

Table 1.4: Summary of Evening Cyclist Characteristics

2007 – 2012 (%)

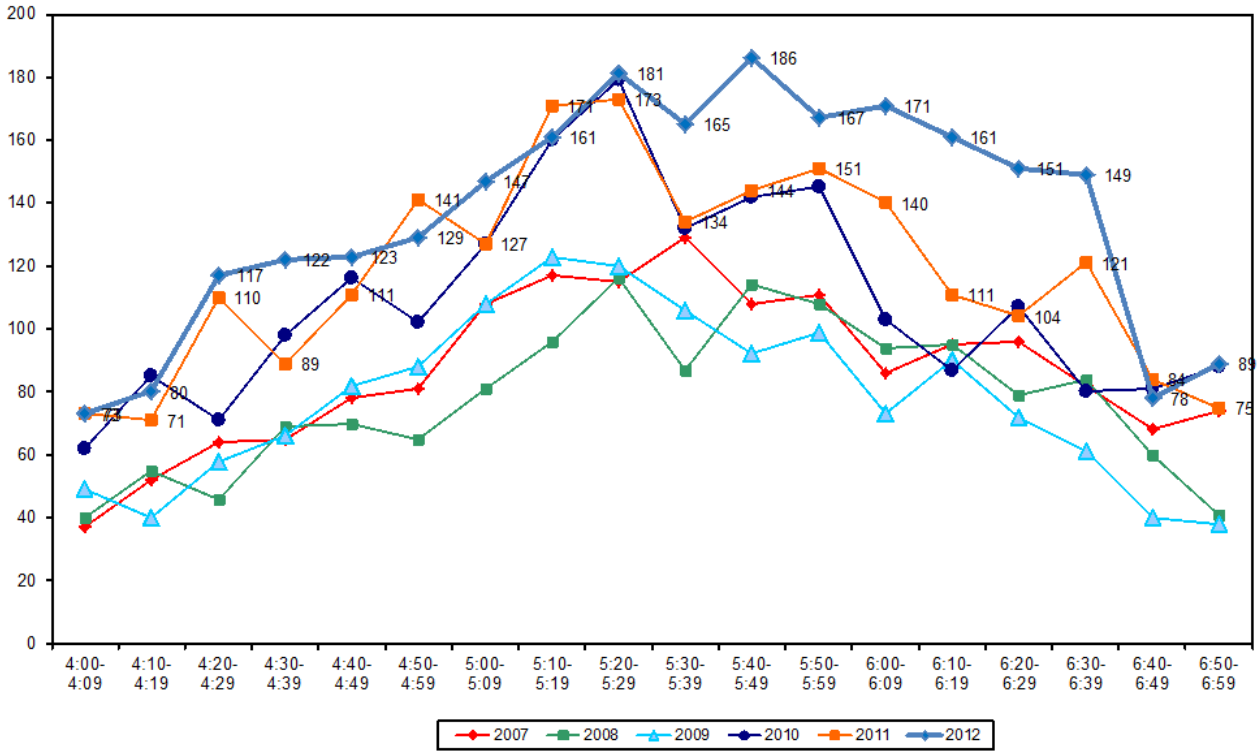
	2007	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type							
Adult	99	99	98	99	99	**99**	**0**
School child	1	1	2	1	1	**1**	**0**
Helmet Wearing							
Helmet on head	89	91	91	89	88	**90**	**2**
No helmet	11	9	9	11	12	**10**	**-2**
Gender							
Male	-	-	-	-	74	**80**	**6**
Female	-	-	-	-	19	**16**	**-3**
Can't tell	-	-	-	-	7	**4**	**-3**
Where Riding*							
Road	86	93	61	62	64	**69**	**5**
Footpath	14	7	18	20	21	**18**	**-3**
Off-road cycleway	0	0	21	18	15	**13**	**-2**
Base:	***1566***	***1321***	***1405***	***1965***	***2130***	***2450***	

** Note: Prior to 2009, cyclists riding on the North-Western, Waikaraka, Onehunga Harbour Road cycleways, and the designated side of the footpath on Tamaki Drive were categorised as road riders.*
The Ferry Terminal, Auckland Central site has not been included for figures regarding where cyclists were riding.

- The overall pattern of evening cyclist volumes derived from the ten Waitemata and Gulf sites is illustrated in Figure 1.3. Evening cycle volumes start off relatively low, and increase gradually to peak between 5:40pm and 5:49pm (186).

Figure 1.3: Total Cyclist Frequency – Evening Peak

2007 – 2011 (n)



1.6 Aggregated Total Summary Results

- Overall, a total of 4,643 cyclist movements were recorded across the ten sites monitored in 2012. Five per cent (n=213) were observed as cycling in groups (unchanged from 2011).
- Of the nine sites monitored in both 2011 and 2012, the number of morning cycle movements observed has decreased – down from 4212 to 4066. This represents a 3 per cent decrease in cycle movements over the last 12 months.
- The average volume of morning cyclists across the nine sites monitored in the Waitemata and Gulf ward in 2011 and 2012 is 452 cycle movements. This compares with 468 movements in 2011.
- Of the ten sites monitored, the busiest site continues to be the intersection of Tamaki Drive and The Strand (944 cycle movements, down from 1059 movements in 2011), whereas the Stanley Street/Grafton Road site has the lowest volume of cyclists (94 movements, up from 74 movements in 2011).

Table 1.5: Summary of Total Cyclist Movements
2007 – 2012 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12	Change 07-12
10	Tamaki Drive/The Strand	900	786	603	936	1059	**944**	**-11%**	**5%**
8	Symonds Street/Karangahape Road	639	621	528	597	690	**732**	**6%**	**15%**
9	Karangahape Road/Queen Street	507	424	459	582	554	**573**	**3%**	**13%**
2	Ponsonby/Karangahape Road	487	415	370	559	511	**498**	**-3%**	**2%**
22	Ferry Terminal	380	316	248	395	391	**389**	**-1%**	**2%**
1	Victoria/Wellesley Street	160	136	124	162	225	**192**	**-15%**	**20%**
	Average per site (6 sites since 2007)	**512**	**450**	**389**	**539**	**572**	**555**	**-3%**	**8%**
	Total (6 sites since 2007)	**3073**	**2698**	**2332**	**3231**	**3430**	**3328**	**-3%**	**8%**
13	Ian McKinnon/Newton Road	-	-	291	374	560	**503**	**-10%**	**-**
16	Jervois Road/Wallace Street	-	-	111	167	148	**141**	**-5%**	**-**
75	Stanley Street/Grafton Road	-	65	96	93	74	**94**	**27%**	**-**
	Average per site (7 sites since 2008, 9 sites in 2009, 2010, and 2011)	**-**	**375**	**314**	**429**	**468**	**452**	**-3%**	**-**
	Total (7 sites since 2008, 9 sites since 2009, 10 sites in 2009, 2010, and 2011)	**-**	**2627**	**2830**	**3865**	**4212**	**4066**	**-3%**	**-**
90	Broadway/Khyber Pass Road						**577**	-	**-**
	Average per site (7 sites since 2008, 9 sites since 2009, 10 sites since 2012)	**-**	-	-	-	-	**464**	**-**	**-**
	Total (7 sites since 2008, 9 sites since 2009, 10 sites since 2012)	**-**	-	-	-	-	**4643**	**-**	**-**

- Overall, cyclist characteristics this year are similar to those reported in 2011. In particular, 99 per cent of evening cyclists this year are adults (unchanged from 2011).
- Most cyclists are wearing a helmet (91 per cent, stable from 90 per cent in 2011).
- Three-quarters of cyclists are male (78 per cent, up from 74 per cent last year).
- The majority of cyclists are riding on the road (74 per cent, up from 69 per cent in 2011). Fifteen per cent are riding on the footpath (down from 18 per cent last year), with the remaining 11 per cent riding on the off-road cycleway.

Table 1.6: Summary of Total Cyclist Characteristics

2007 – 2012 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type							
Adult	99	98	98	99	99	**99**	**0**
School child	1	2	2	1	1	**1**	**0**
Helmet Wearing							
Helmet on head	92	92	92	90	90	**91**	**1**
No helmet	8	8	8	10	10	**9**	**-1**
Gender							
Male	-	-	-	-	74	**78**	**4**
Female	-	-	-	-	19	**16**	**-3**
Can't tell	-	-	-	-	7	**6**	**-1**
Where Riding*							
Road	87	93	66	65	69	**74**	**5**
Footpath	13	7	14	17	18	**15**	**-3**
Off-road cycleway	0	0	20	18	13	**11**	**-2**
Base:	***3073***	***2627***	***2830***	***3865***	***4212***	**4643**	

** Note: Prior to 2009 cyclists riding on the North-Western, Waikaraka, Onehunga Harbour Road cycleways, and the designated side of the footpath on Tamaki Drive were categorised as road riders.*

The Ferry Terminal, Auckland Central site has not been included for figures regarding where cyclists were riding.

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 Tamaki Drive/The Strand (1,377 daily movements, down from 1,555 movements in 2011) and the lowest is at Stanley Street/Grafton Road (135 daily movements).
- Six of the nine sites monitored since 2009 recorded decreases in total AADT estimates this year compared to 2011. The most notable decreases are at:
  - Victoria/Wellesley Street – down 16 per cent;
  - Tamaki Drive/The Strand– down 11 per cent; and
  - Ian McKinnon/Newton Road – down 10 per cent.
- The remaining three sites (of those monitored since 2009) recorded increases, the most notable being the Stanley Street/Grafton Road site up 27 per cent since last year.

Table 1.7: AADT Estimates Based on Morning and Evening Cyclist Movements 2007 – 2012 (n)

Site No.	*Locations*	*2007 AADT*	*2008 AADT*	*2009 AADT*	*2010 AADT*	*2011 AADT*	2012 AADT	11-12 Change	07-12 Change
10	Tamaki Drive/The Strand	1313	1146	880	1365	1555	**1377**	**-11%**	**5%**
8	Symonds Street/Karangahape Road	924	899	765	865	999	**1060**	**6%**	**15%**
90	Broadway/Khyber Pass Road	-	-	-	-	-	**839**	**-**	**-**
9	Karangahape Road/Queen Street	736	616	669	843	802	**830**	**3%**	**13%**
13	Ian McKinnon/Newton Road	-	-	422	544	807	**726**	**-10%**	**-**
2	Ponsonby/Karangahape Road	705	602	536	807	738	**717**	**-3%**	**2%**
22	Ferry Terminal	553	459	363	574	570	**565**	**-1%**	**2%**
1	Victoria/Wellesley Street	231	201	180	236	328	**277**	**-16%**	**20%**
16	Jervois Road/Wallace Street	-	-	162	243	215	**204**	**-5%**	**-**
75	Stanley Street/Grafton Road	-	95	140	135	106	**135**	**27%**	**-**

1.8 School Bike Shed Count Summary

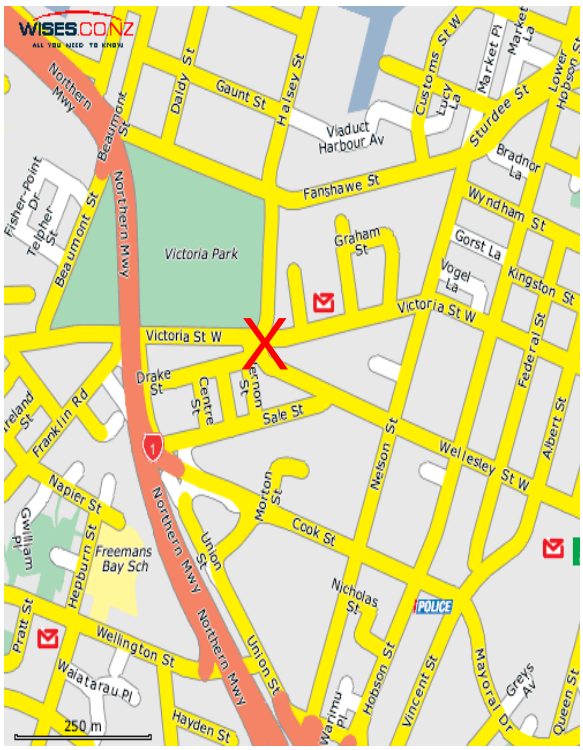
Key Points

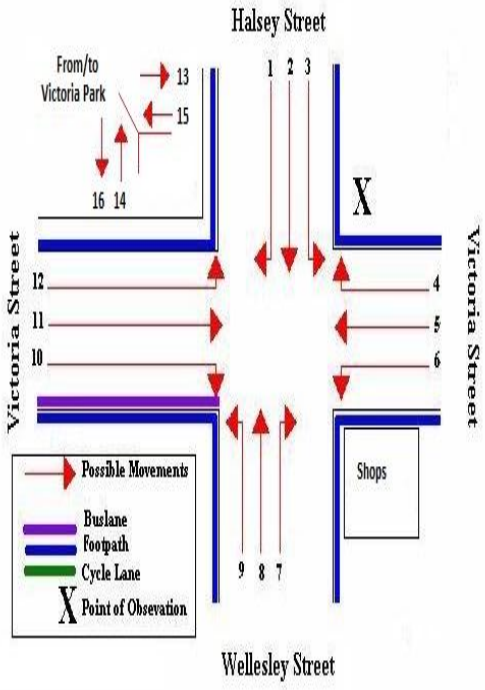
- Of those eligible to cycle, on average two per cent of students are cycling to their schools (unchanged from last year).
- Across the 12 eligible schools that responded, n=168 students were reported to cycle to school.
- Waiheke High School reported the highest share of cyclists – 6 per cent of all eligible students currently cycling.
- Of the 10 schools that participated in the count in both 2011 and 2012, five (Waiheke High School, ACG Senior College, Parnell District School, Marist College and St Mary's College Ponsonby) reported an increase in the share of students cycling to school.
- Three schools (25 per cent) had no students cycling to school (down from 38 per cent in 2011).
- Rates of cycling to school are highest among intermediate schools (4 per cent, stable from, 5 per cent in 2011), while combined intermediate and secondary schools have the lowest rates in this ward (2 per cent).

2. VICTORIA STREET/WELLESLEY STREET/HALSEY STREET (SITE 1)

Figure 2.1 shows the possible cyclist movements at this intersection.

Figure 2.1: Cycle Movements: Victoria/Wellesley/Halsey Street





2.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	70	90	160	231
2008	57	79	136	201
2009	59	65	124	180
2010	82	80	162	236
2011	116	109	225	328
2012	**82**	**110**	**192**	**277**

2.2 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 peak cyclist movements recorded at the Victoria/Wellesley/Halsey intersection has decreased (82 movements, down from 116 in 2011).
- The key routes in the morning are Halsey Street turning left onto Victoria Street travelling east (Movement 3 = 23 movements), at Victoria Street West turning left onto Halsey Street travelling south (Movement 12 = 17 movements) and heading east on Victoria Street West (Movement 11 = 17 movements).
- Of the twelve movements possible at this intersection, the most notable change since last year is at Movement 12 (down 12 movements).

Table 2.1: Morning Cyclist Movements

Victoria/Wellesley/Halsey 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	16	10	6	11	18	**12**	**-6**
2	0	4	2	10	6	**9**	**3**
3	2	5	2	5	23	**18**	**-5**
4	1	0	3	3	0	**1**	**1**
5	3	5	1	5	4	**3**	**-1**
6	0	0	1	1	3	**0**	**-3**
7	0	0	0	0	2	**0**	**-2**
8	1	4	1	4	9	**2**	**-7**
9	0	1	1	0	5	**0**	**-5**
10	2	2	1	3	1	**2**	**1**
11	22	13	11	15	16	**17**	**1**
12	23	13	30	25	29	**17**	**-12**
13	-	-	-	-	-	**1**	**1**
14	-	-	-	-	-	**0**	**-**
15	-	-	-	-	-	**0**	**-**
16	-	-	-	-	-	**0**	**-**
Total	**70**	**57**	**59**	**82**	**116**	**82**	**-34**

- *Note: Movements 13, 14, 15 and 16 are new possible movements in 2012*

- Almost all cyclists at this site were adults (99 per cent, unchanged from 2011).
- Most cyclists were wearing a helmet (93 per cent, stable from last year).
- The majority of cyclists were male (81 per cent, down from 85 per cent in 2011).
- The majority of cyclists are riding on the road (84 per cent, stable from 81 per cent in 2011).

Table 2.2: Morning Cyclist Characteristics

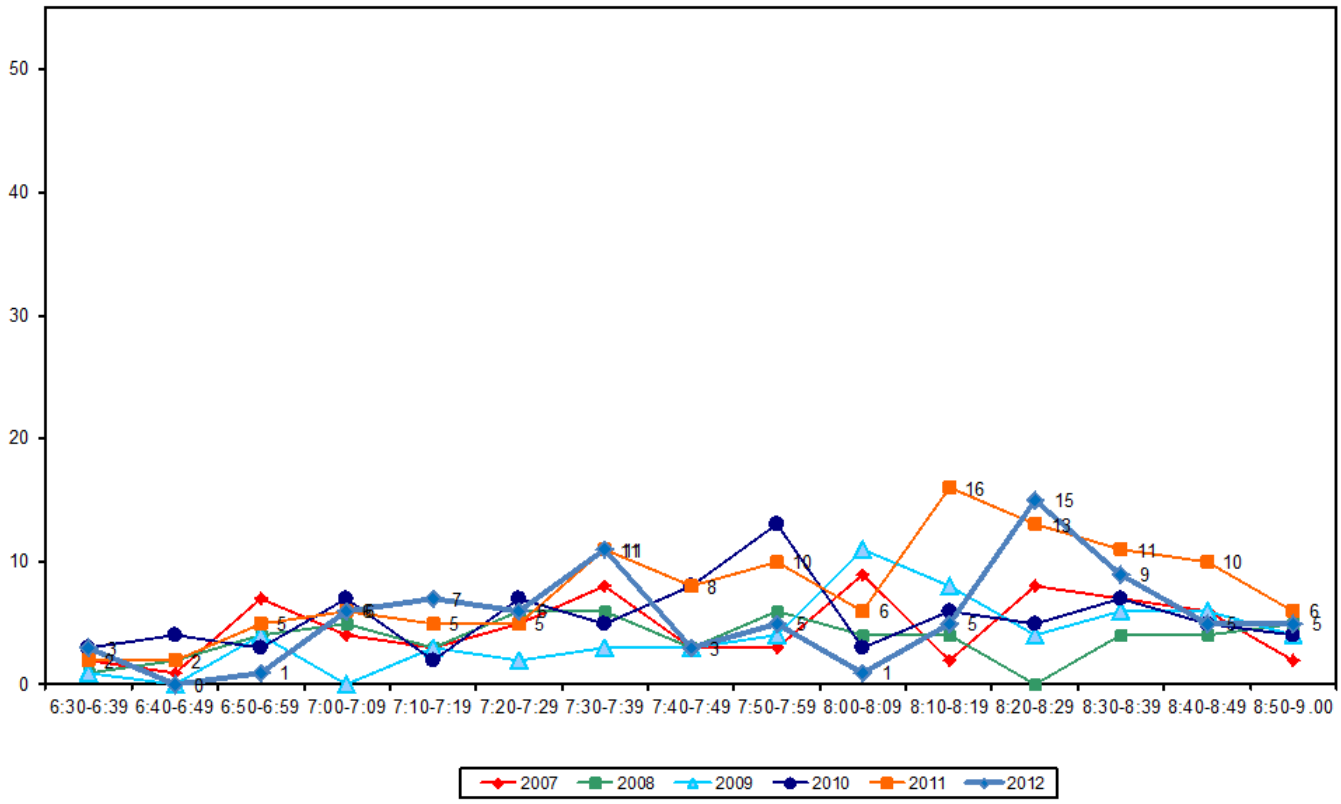
Victoria/Wellesley/Halsey 2004 – 2012 (%)

	2004	***2005***	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***2012***	**Change 11-12**
Cyclist Type										
Adult	100	89	100	100	100	92	99	99	**99**	**0**
School child	0	11	0	0	0	8	1	1	**1**	**0**
Helmet Wearing										
Helmet on head	94	91	96	91	98	93	90	90	**93**	**3**
No helmet	6	9	4	9	2	7	10	10	**7**	**-3**
Gender										
Male	-	-	-	-	-	-	-	85	**81**	**-4**
Female	-	-	-	-	-	-	-	15	**19**	**4**
Can't tell	-	-	-	-	-	-	-	0	**0**	**0**
Where Riding										
Road	88	88	100	91	86	83	84	81	**84**	**3**
Footpath	12	12	0	9	14	17	16	19	**16**	**-3**
Base:	***33***	***56***	***51***	***70***	***57***	***59***	***82***	***116***	***82***	

- The volume of morning cycle movements in 2012 first peaks between 7:30am and 7:39am (11 movements), and reaches its highest peak between 8:20am and 8:29am (15 movements). The highest peak in 2011 was recorded 10 minutes earlier, between 8:10am and 8:19am (16 movements).

Figure 2.2: Morning Peak Cyclist Frequency

Victoria/Wellesley/Halsey 2007 – 2012 (n)



2.3 Evening Peak

Environmental Conditions

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

Key Points

- The volume of evening peak cyclist movements recorded at the Victoria/Wellesley/Halsey intersection is stable from last year (110 movements, up from 109 in 2011).
- The key movements in the evening are heading straight on Victoria Street West travelling west (Movement 5 = 28), turning right from Halsey Street onto Victoria Street travelling west (Movement 1 = 21 cyclists) and Victoria Street West turning left onto Halsey Street travelling north (Movement 12 = 16 movements).
- Evening cyclist volumes have most notably decreased at Movement 12 (down 10 movements) and at Movement 2 (down 9 movements) and most notably increased at Movement 11 (up 9 movements).

Table 2.3: Evening Cyclist Movements

Victoria/Wellesley/Halsey 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	25	23	15	26	28	**21**	**-7**
2	3	6	5	2	12	**3**	**-9**
3	0	1	7	1	1	**3**	**2**
4	5	3	3	3	8	**7**	**-1**
5	23	8	11	12	21	**28**	**7**
6	1	0	0	0	0	**0**	**0**
7	0	2	0	0	1	**0**	**-1**
8	2	10	6	11	6	**6**	**0**
9	3	2	4	3	5	**8**	**3**
10	4	0	0	0	0	**1**	**1**
11	5	7	5	9	1	**10**	**9**
12	19	17	9	13	26	**16**	**-10**
13	-	-	-	-	-	**1**	**1**
14	-	-	-	-	-	**2**	**2**
15	-	-	-	-	-	**2**	**2**
16	-	-	-	-	-	**2**	**2**
Total	**90**	**79**	**65**	**80**	**109**	**110**	**1**

Note: Movements 13, 14, 15 and 16 are new possible movements in 2012

- Almost all cyclists using the Victoria/Wellesley/Halsey intersection were adults (98 per cent, unchanged from 2011).
- Most evening cyclists at this site were wearing a helmet (87 per cent, stable from 86 per cent in 2011).
- The majority of cyclists were male (84 per cent, up from 80 per last year).
- Three quarters of cyclists were riding on the road (76 per cent, stable from 73 per cent in 2011).

Table 2.4: Evening Cyclist Characteristics

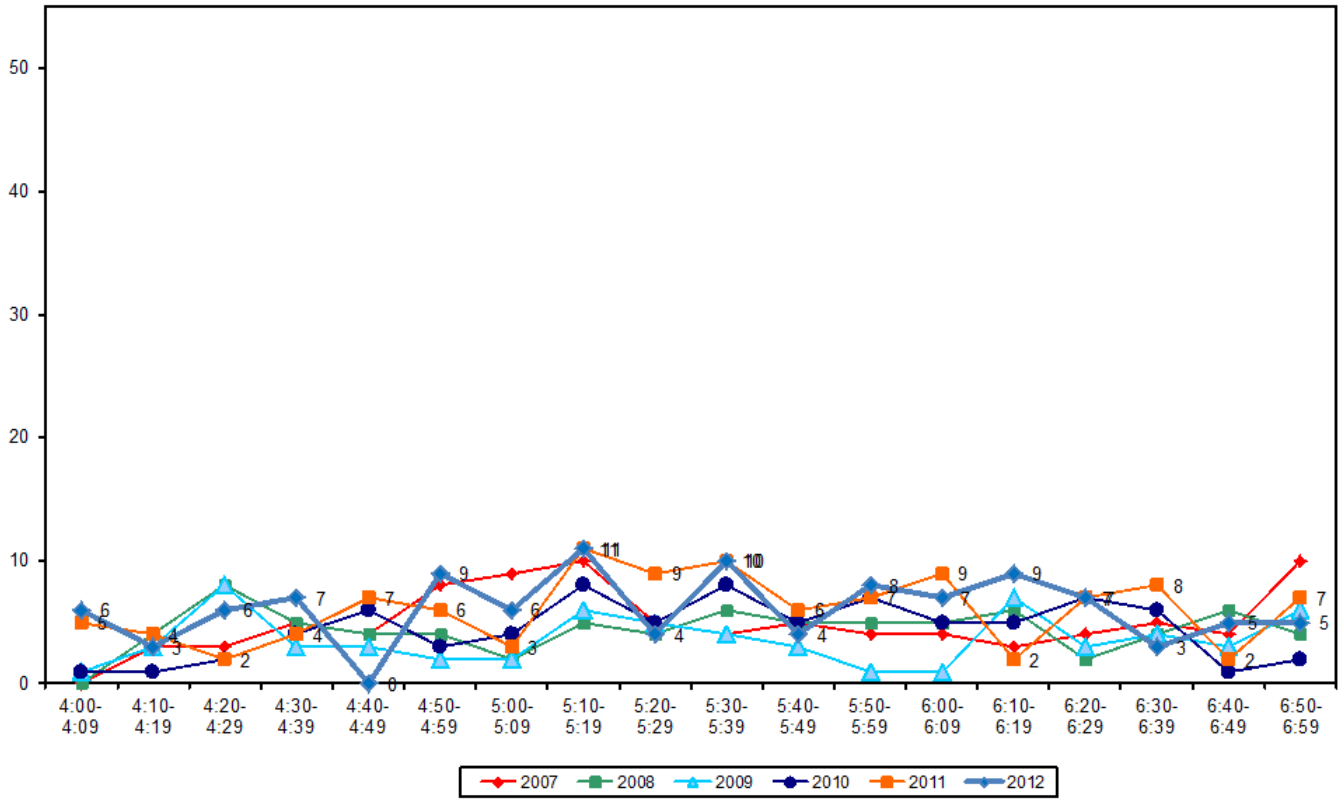
Victoria/Wellesley/Halsey 2004 – 2012 (%)

	2004	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type									
Adult	100	97	100	99	100	100	98	**98**	**0**
School child	0	3	0	1	0	0	2	**2**	**0**
Helmet Wearing									
Helmet on head	86	91	91	96	83	81	86	**87**	**1**
No helmet	14	9	9	4	17	19	14	**13**	**-1**
Gender									
Male	-	-	-	-	-	-	80	**84**	**4**
Female	-	-	-	-	-	-	17	**15**	**-2**
Can't tell	-	-	-	-	-	-	3	**1**	**-2**
Where Riding									
Road	72	94	87	87	71	76	73	**76**	**3**
Footpath	18	6	13	13	29	24	27	**24**	**-3**
Base:	***36***	***33***	***90***	***79***	***65***	***80***	***109***	***110***	

- A notable peak in evening cyclist movements occurs between 5:10pm and 5:19pm (11 movements), the same time and movement number as the peak in 2011.

Figure 2.3: Evening Peak Cyclist Frequency

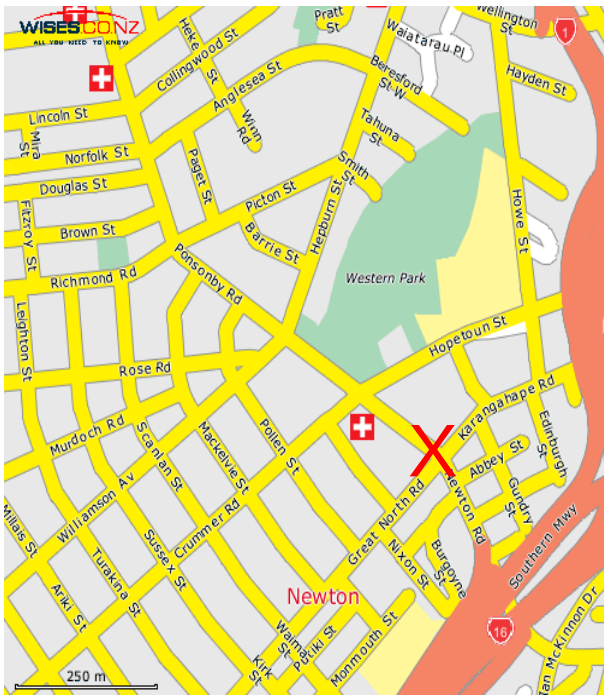
Victoria/Wellesley/Halsey 2007 – 2012 (n)

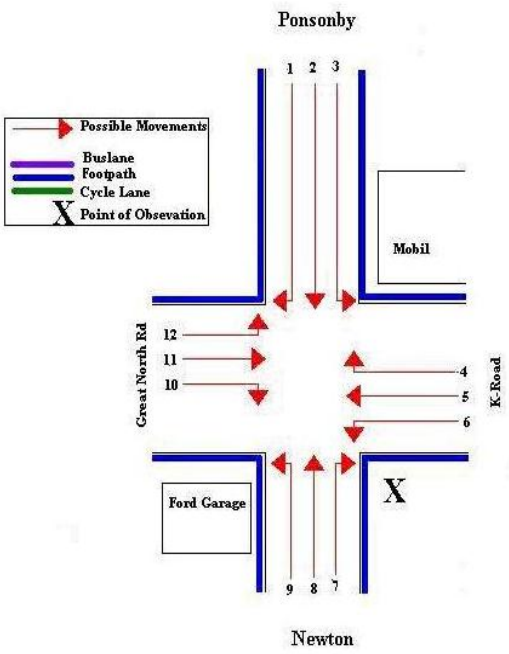


3. PONSONBY/KARANGAHAPE/ NEWTON/GREAT NORTH ROAD, NEWTON (SITE 2)

Figure 3.1 shows the possible cyclist movements at this intersection.

Figure 3.1: Cycle Movements: Ponsonby/Karangahape/Newton/Great North





3.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	226	261	487	705
2008	199	216	415	602
2009	176	194	370	536
2010	242	317	559	807
2011	222	289	511	738
2012	**204**	**294**	**498**	**717**

3.2 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 peak cyclists recorded at the Ponsonby/Karangahape/Newton/Great North Road intersection in 2012 has decreased (204 movements, down from 222 movements in 2011).
- The most common movement at this intersection continues to be straight through from Great North Road into Karangahape Road travelling in a north-easterly direction (Movement 11 = 84 cyclists).
- Morning cyclist volumes decreased most notably at Movement 3 (down 22 movements) while the most notable increase occurred at Movement 8 (up 6 movements).

Table 3.1: Morning Cyclist Movements

Ponsonby/Karangahape/Newton/Great North 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	2012	Change 11-12
1	7	6	8	10	5	**8**	**3**
2	7	6	7	12	6	**8**	**2**
3	24	22	28	36	43	**21**	**-22**
4	15	15	9	14	18	**10**	**-8**
5	16	9	7	10	9	**14**	**5**
6	2	1	1	2	1	**1**	**0**
7	11	5	5	4	8	**7**	**-1**
8	11	15	7	19	15	**21**	**6**
9	0	2	1	2	1	**2**	**1**
10	5	0	0	1	4	**1**	**-3**
11	105	97	84	97	79	**84**	**5**
12	23	21	19	35	33	**27**	**-6**
Total	**226**	**199**	**176**	**242**	**222**	**204**	**-18**

- Almost all cyclists using the Ponsonby/Karangahape/Newton/Great North Road intersection were adults (96 per cent, down slightly from 100 per cent in 2011).
- Most cyclists were wearing a helmet (87 per cent, stable from 89 per cent 12 months ago).
- Almost three-quarters of cyclists were male (73 per cent, stable from 75 per cent in 2011).
- Approximately two thirds of the cyclists at this site were riding on the road (70 per cent, up slightly from 66 per cent in 2011).

Table 3.2: Morning Cyclist Characteristics

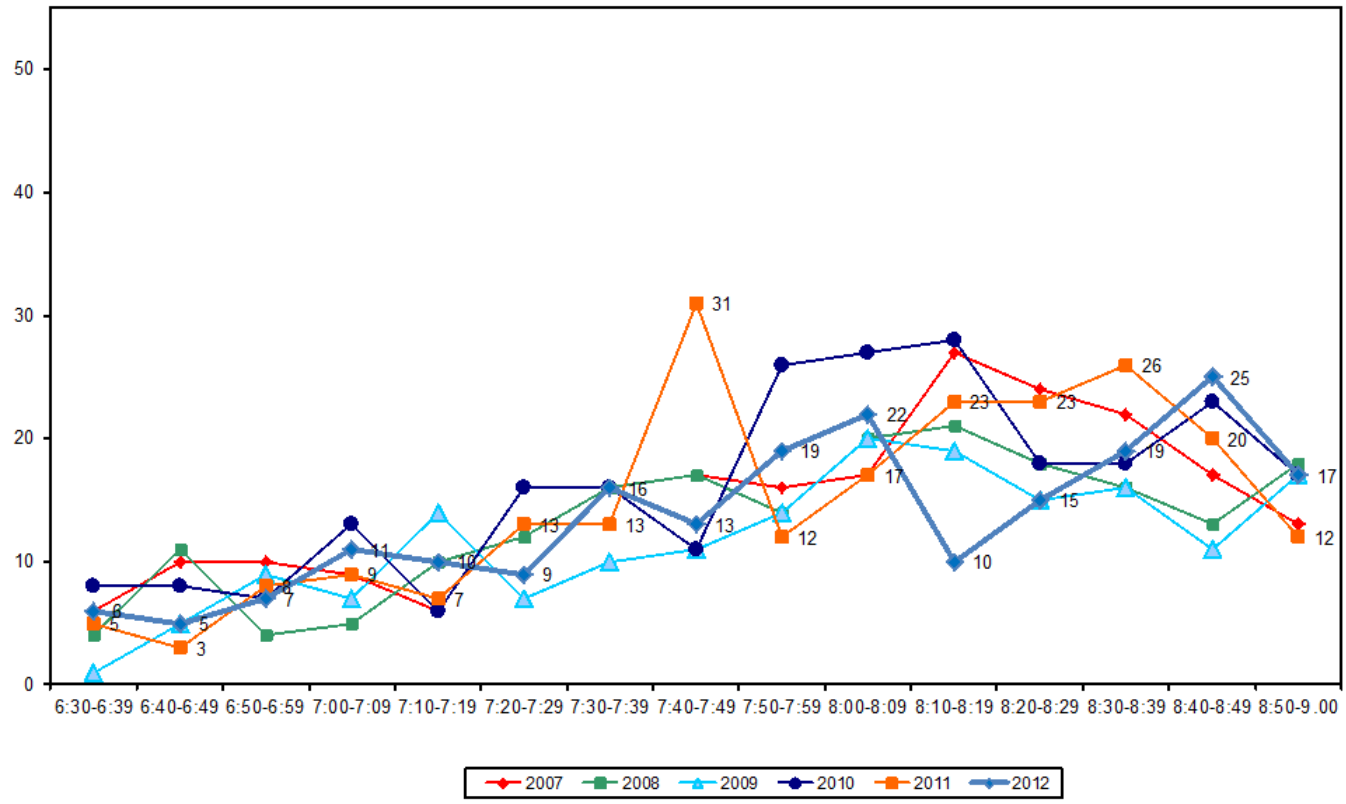
Ponsonby/Karangahape/Newton/Great North 2004 – 2012(%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type										
Adult	96	96	100	98	97	95	99	100	**96**	**-4**
School child	4	4	0	2	3	5	1	0	**4**	**4**
Helmet Wearing										
Helmet on head	92	92	92	93	92	91	89	89	**87**	**-2**
No helmet	8	8	8	7	8	9	11	11	**13**	**2**
Gender										
Male	-	-	-	-	-	-	-	75	**73**	**-2**
Female	-	-	-	-	-	-	-	18	**24**	**6**
Can't tell	-	-	-	-	-	-	-	6	**3**	**-3**
Where Riding										
Road	40	89	72	68	91	79	64	66	**70**	**4**
Footpath	60	11	28	32	9	21	36	34	**30**	**-4**
Base:	***177***	***155***	***140***	***226***	***199***	***176***	***242***	***222***	***204***	

- Morning cyclist movements rose steadily from the beginning of the shift to a peak between 8:00am and 8:19am (22 movements), before decreasing then rising again to a second, larger peak between 8:40am and 8:49am (25 movements). Volumes then decline through to the end of the shift.

Figure 3.2: Morning Peak Cyclist Frequency

Ponsonby/Karangahape/Newton/Great North 2007 – 2012 (n)



Note: In 2012, 11 per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *3 cyclists at 7:06am*
- *3 cyclists at 7:52am*
- *3 cyclists at 8:21am*

3.3 Evening 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

- Total cyclist volumes at the Ponsonby/Karangahape/Newton/Great North Road intersection increased in 2012 (294 movements, up from 289 in 2011).
- As in earlier years, the most common movement at this intersection was straight through from Karangahape Road into Great North Road travelling in a south-westerly direction (Movement 5 = 119 movements).
- The most notable change in evening cyclist volumes was at Movement 3 (down 10 movements from 2011). The most notable increase was at Movement 5 (up 9 movements from 12 months ago).

Table 3.3: Evening Cyclist Movements

Ponsonby/Karangahape/Newton/Great North 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	2012	Change 11-12
1	38	18	23	19	27	**26**	**-1**
2	14	20	7	21	18	**23**	**5**
3	20	12	15	19	24	**14**	**-10**
4	32	25	31	45	40	**40**	**0**
5	106	97	85	139	110	**119**	**9**
6	8	1	9	15	15	**8**	**-7**
7	1	1	1	2	2	**1**	**-1**
8	10	6	6	16	11	**15**	**4**
9	1	1	3	0	2	**2**	**0**
10	0	1	1	0	1	**0**	**-1**
11	22	22	8	31	30	**34**	**4**
12	9	12	5	10	9	**12**	**3**
Total	**261**	**216**	**194**	**317**	**289**	**294**	**5**

- Over the evening peak, almost all riders at this intersection were adults (99 per cent, stable from 100 per cent in 2011).
- The majority of cyclists were wearing a helmet (86 per cent, stable from 85 per cent 2011).
- The majority of cyclists were male (81 per cent, stable from 78 per cent 12 months ago).
- Three-quarters of the cyclists were riding on the road (78 per cent, up from 72 per cent in 2011).

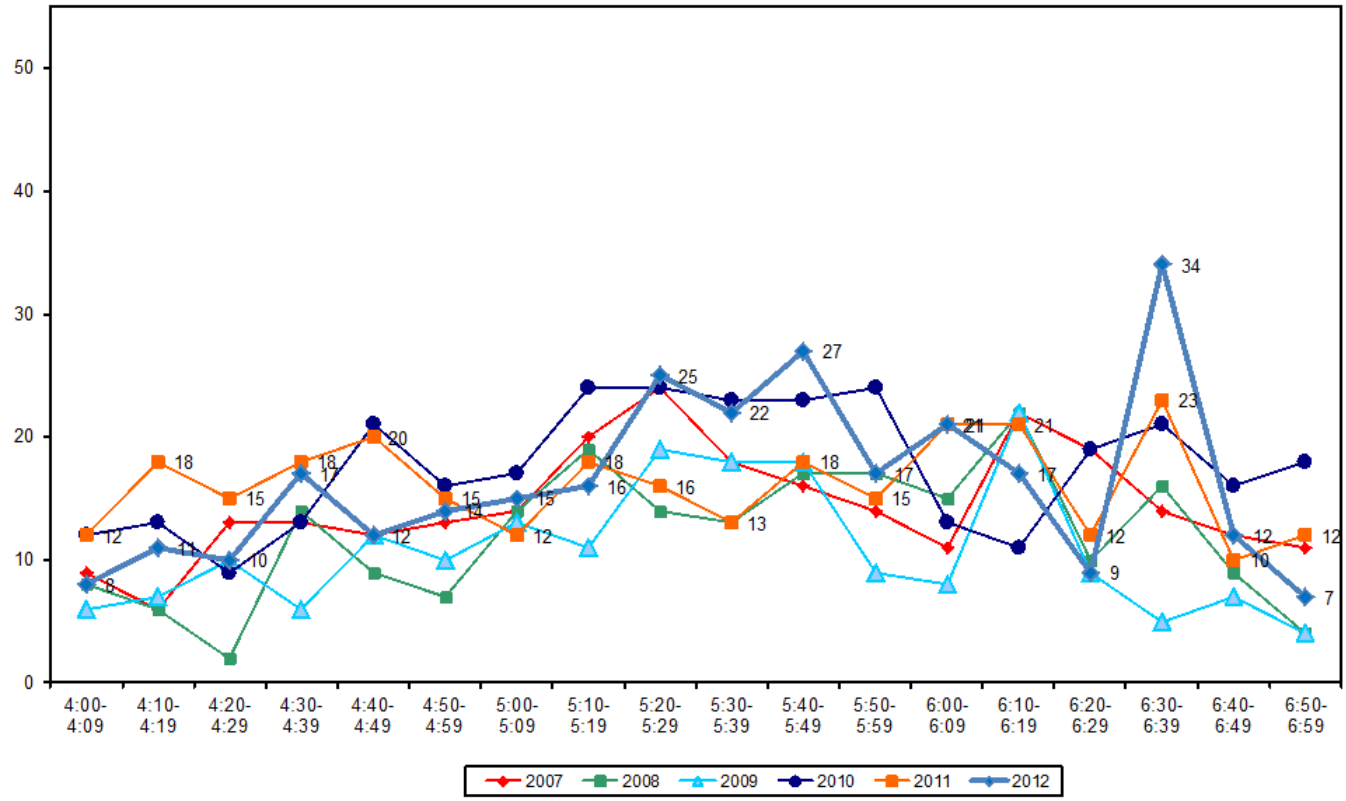
Table 3.4: Evening Cyclist Characteristics

Ponsonby/Karangahape/Newton/Great North 2004 – 2012(%)

	2004	***2005***	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	**2012**	**Change 11-12**
Cyclist Type										
Adult	94	98	100	99	98	97	99	100	**99**	**-1**
School child	6	2	0	1	2	3	1	0	**1**	**1**
Helmet Wearing										
Helmet on head	87	90	86	87	89	88	85	85	**86**	**1**
No helmet	13	10	14	13	11	12	15	15	**14**	**-1**
Gender										
Male	-	-	-	-	-	-	-	78	**81**	**3**
Female	-	-	-	-	-	-	-	20	**18**	**-2**
Can't tell	-	-	-	-	-	-	-	2	**1**	**-1**
Where Riding										
Road	65	88	68	74	90	75	68	72	**78**	**6**
Footpath	35	12	32	26	10	25	32	28	**22**	**-6**
Base:	***154***	***136***	***117***	***261***	***216***	***194***	***317***	***289***	***294***	

- The volume of cyclist movements remains high throughout the observation period. A slight peak was evident between 5:40pm and 5:49pm (27 movements) and again between 6:30pm and 6:39pm (34 movements).

Figure 3.3: Evening Peak Cyclist Frequency
Ponsonby/Karangahape/Newton/Great North 2007 – 2012 (n)



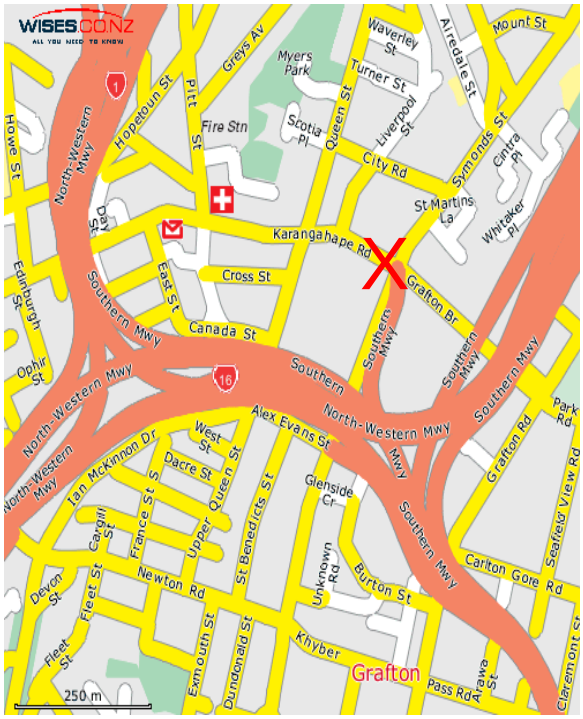
Note: In 2012, 9 per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

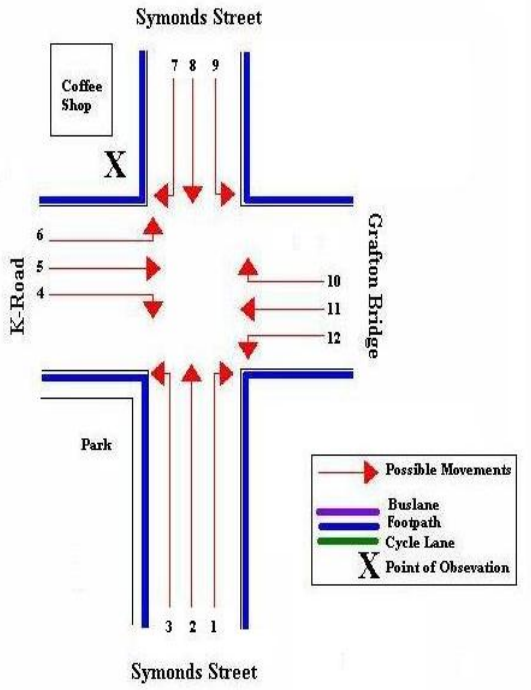
- *Three cyclists at 5:20pm*
- *Five cyclists at 5:28pm*
- *Nineteen cyclists at 6:34pm.*

4. SYMONDS/KARANGAHAPE/ GRAFTON ROAD, GRAFTON (SITE 8)

Figure 4.1 shows the possible cyclist movements at this intersection.

Figure 4.1: Cycle Movements: Symonds/Karangahape/Grafton





4.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	290	349	639	924
2008	285	336	621	899
2009	246	282	528	735
2010	283	314	597	865
2011	317	373	690	999
2012	**338**	**394**	**732**	**1060**

4.2 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 peak cyclists recorded at the Symonds/Karangahape/Grafton intersection in 2012 (338 movements) has increased since last year (317 movements).
- This year, key routes in the morning are northbound along Symonds Street (Movement 2 = 107 cyclists), from Karangahape Road onto Grafton Bridge (Movement 5 = 54 cyclists), and straight through from Grafton Bridge into Karangahape Road (Movement 11 = 55 cyclists).
- The most notable change since last year is at Movement 2 (up 32 movements).

Table 4.1: Morning Cyclist Movements

Symonds/Karangahape/Grafton 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	3	10	6	4	17	19	**2**
2	92	81	77	87	75	107	**32**
3	9	18	18	22	9	11	**2**
4	2	6	1	1	6	2	**-4**
5	55	54	51	51	57	54	**-3**
6	12	11	12	7	26	21	**-5**
7	3	3	0	1	6	0	**-6**
8	11	8	2	19	17	19	**2**
9	8	5	9	7	8	13	**5**
10	41	33	21	31	38	35	**-3**
11	51	53	48	48	55	55	**0**
12	3	3	1	5	3	2	**-1**
Total	**290**	**285**	**246**	**283**	**317**	**338**	**21**

- Almost all morning cyclists at this site are adults (99 per cent, unchanged from last year).
- Ninety-six per cent of cyclists at this site were wearing a helmet (stable from 95 per cent at the previous measure).
- The greatest share of cyclists continue to be males (75 per cent in 2012).
- The share of cyclists riding on the road is stable from 2011 (91 per cent, compared with 93 per cent last year).

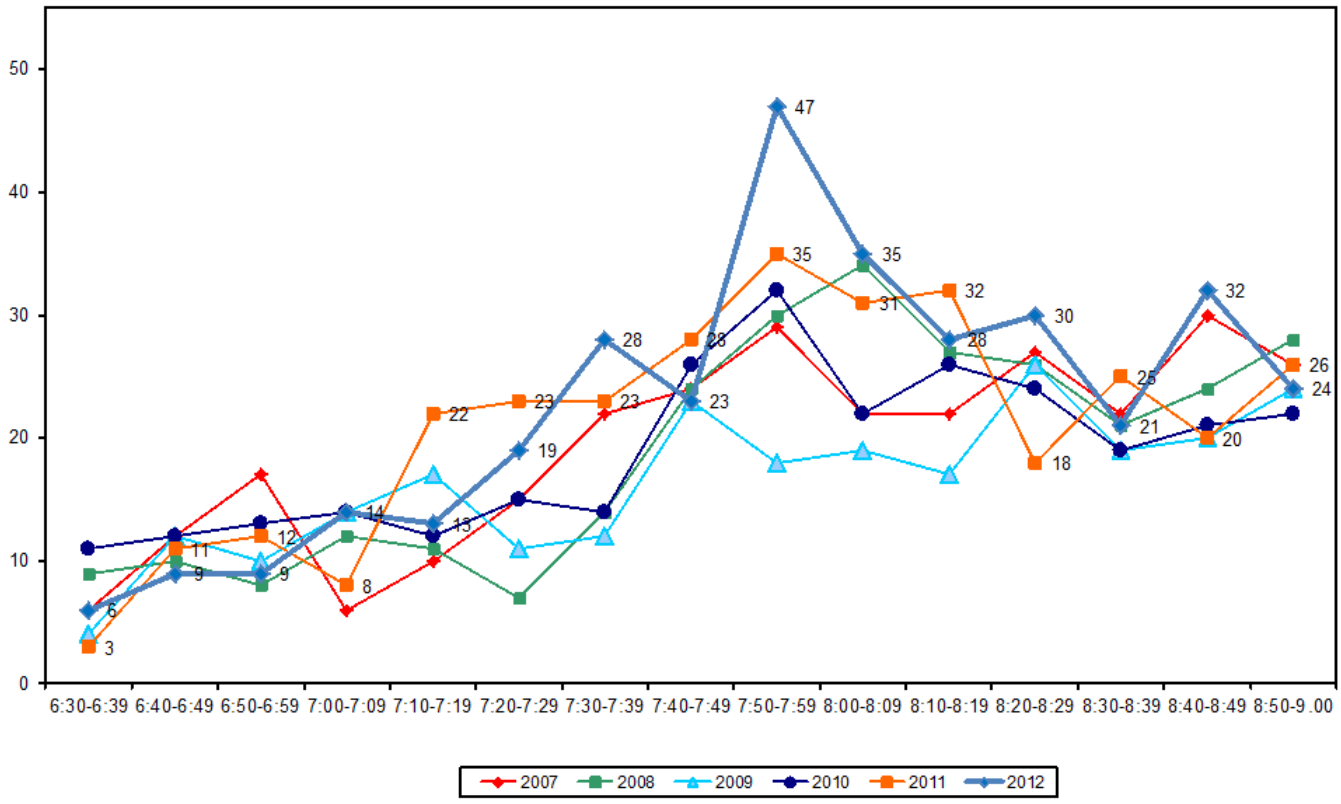
Table 4.2: Morning Cyclist Characteristics

Symonds/Karangahape/Grafton 2004 – 2012 (%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type										
Adult	99	99	99	99	100	100	99	99	99	**0**
School child	1	1	1	1	0	0	1	1	1	**0**
Helmet Wearing										
Helmet on head	95	96	94	98	95	94	94	95	96	**1**
No helmet	5	4	6	2	5	6	6	5	4	**-1**
Gender										
Male	-	-	-	-	-	-	-	68	75	**7**
Female	-	-	-	-	-	-	-	18	18	**0**
Can't tell	-	-	-	-	-	-	-	14	7	**-7**
Where Riding										
Road	84	92	92	91	92	91	87	93	91	**-2**
Footpath	16	8	8	9	8	9	13	7	9	**2**
Base:	***202***	***231***	***271***	***290***	***285***	***246***	***283***	***317***	***338***	

- Morning cyclist movement volumes increased over the morning period to reach the highest peak volume between 7:50am and 7:59am (47 movements), the same time as 2011's highest peak (35 movements).

Figure 4.2: Morning Peak Cyclist Frequency
Symonds/Karangahape/Grafton 2007 – 2012 (n)



4.3 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 number of cyclists at this site has increased this year (394 movements, up from 373 in 2011).
- The key evening movements at this site were straight along Symonds Street travelling south (Movement 8 = 121 movements) and straight from Grafton Bridge into Karangahape Road travelling (Movement 11 = 54 movements).
- The most notable increases this year were at Movements 8 and 9 (up 32 and 21 movements respectively). The most notable decreases were at Movements 11 and 7 (down 35 and 17 movements respectively).

Table 4.3: Evening Cyclist Movements

Symonds/Karangahape/Grafton 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	2	1	0	2	2	1	**-1**
2	20	17	11	24	15	22	**7**
3	4	4	6	3	3	4	**1**
4	17	24	23	20	21	24	**3**
5	56	49	40	41	58	62	**4**
6	4	5	3	8	10	10	**0**
7	16	16	12	7	29	12	**-17**
8	117	103	74	85	89	121	**32**
9	38	55	33	27	30	51	**21**
10	20	11	16	15	9	16	**7**
11	42	42	60	74	89	54	**-35**
12	13	9	4	8	18	17	**-1**
Total	**349**	**336**	**282**	**314**	**373**	**394**	**21**

- All evening cyclists at the Symonds/Karangahape/Grafton intersection were adults (100 per cent, stable since the monitor began).
- The majority of cyclists at this site are wearing a helmet (93 per cent, relatively stable since the monitor began).
- The majority of cyclists continue to be male (80 per cent).
- Most cyclists were riding on the road (80 per cent, stable from 82 per cent in 2011).

Table 4.4: Evening Cyclist Characteristics

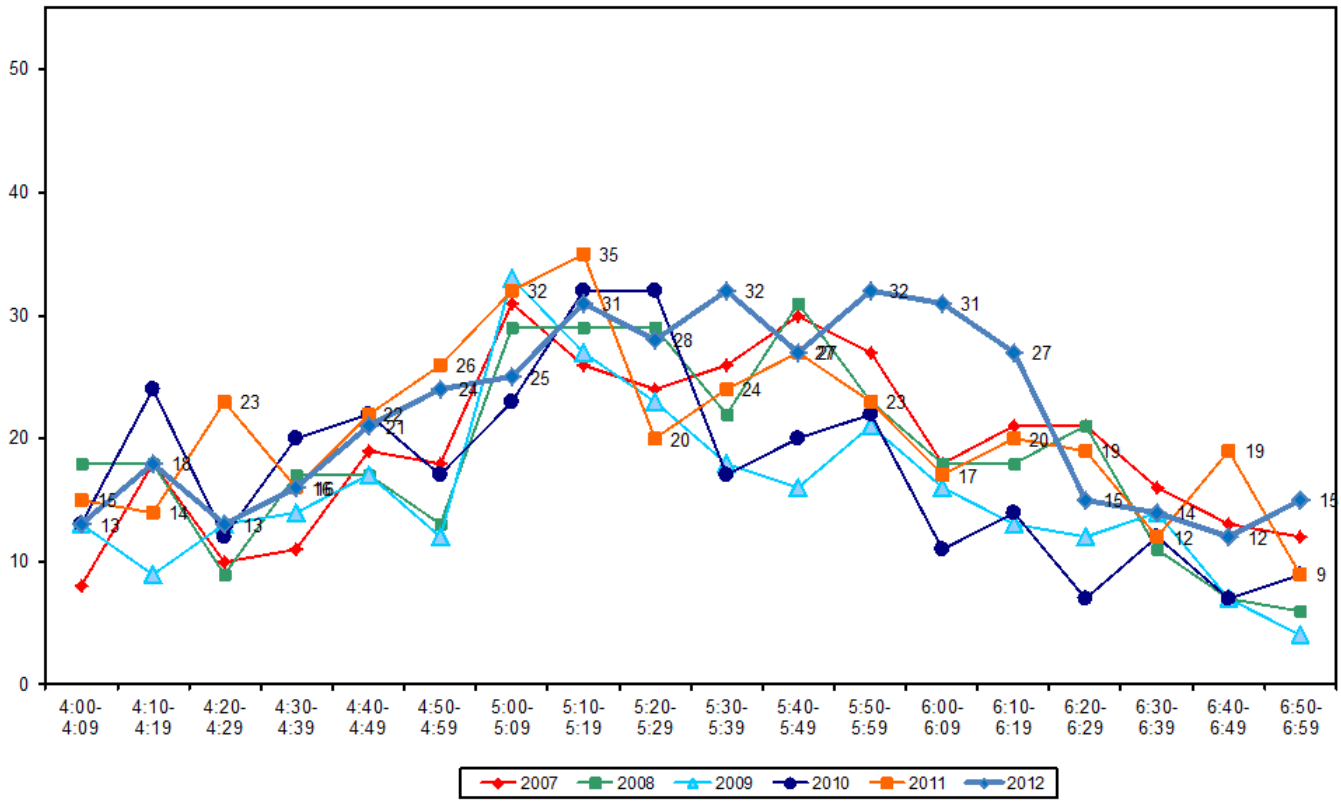
Symonds/Karangahape/Grafton 2004 – 2012(%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type										
Adult	99	98	99	99	100	100	99	99	100	**1**
School child	1	2	1	1	0	0	1	1	0	**-1**
Helmet Wearing										
Helmet on head	90	90	94	90	92	90	92	90	93	**3**
No helmet	10	10	6	10	8	10	8	10	7	**-3**
Gender										
Male	-	-	-	-	-	-	-	69	80	**11**
Female	-	-	-	-	-	-	-	22	16	**-6**
Can't tell	-	-	-	-	-	-	-	9	4	**-5**
Where Riding										
Road	81	88	80	84	97	88	79	82	80	**2**
Footpath	19	12	20	16	3	12	21	18	20	**-2**
Base:	***205***	***202***	***258***	***349***	***336***	***282***	***314***	***373***	***394***	

- Evening cycle volumes in 2012 increase over the monitoring period to peak between 5:30pm and 5:39pm and 5:50pm and 5:59pm (32 movements per ten minute interval). Movement volumes then decrease through the remainder of the monitoring period. The first peak this year is 20 minutes later than the peak observed in 2011.

Figure 4.3: Evening Peak Cyclist Frequency

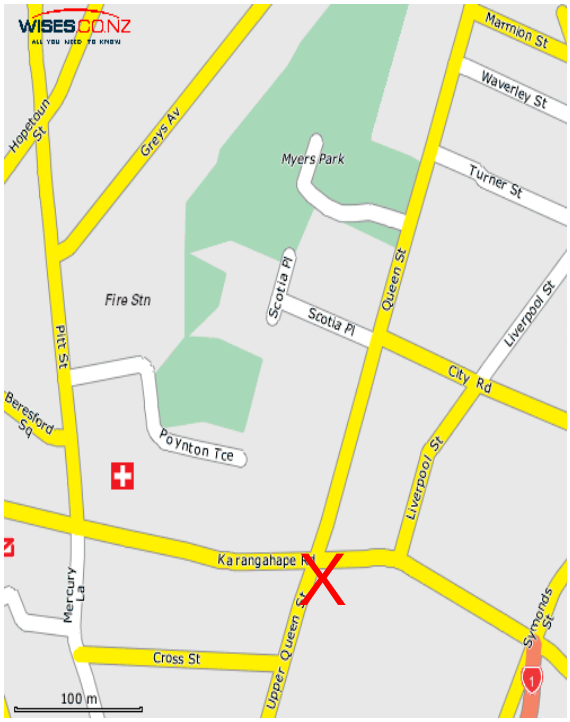
Symonds/Karangahape/Grafton 2007 – 2012 (n)

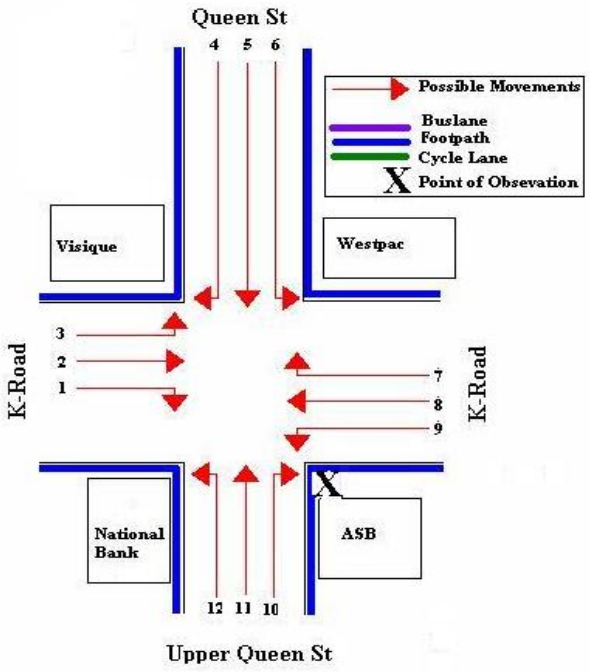


5. KARANGAHAPE ROAD/QUEEN STREET, AUCKLAND CENTRAL (SITE 9)

Figure 5.1 shows the possible cyclist movements at this intersection.

Figure 5.1: Cycle Movements: Karangahape/Queen





5.1 Site Summary

	Raw Counts			*AADT*
	Morning Peak	***Evening Peak***	***Total***	***Total***
2007	246	261	507	736
2008	212	212	424	616
2009	238	221	459	669
2010	272	310	582	843
2011	256	298	554	802
2012	**266**	**307**	**573**	**830**

5.2 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

- Total morning cyclist volumes recorded at the Karangahape/Queen Street intersection in 2012 have increased from last year (266 movements, up from 256 in 2011).
- Key morning movements are straight along Karangahape Road in both directions (Movement 2 = 95 movements travelling east; Movement 8 = 66 movements travelling west).
- Of the twelve movements possible at this intersection, the most notable change occurred at Movement 11 (up 18 movements).

Table 5.1: Morning Cyclist Movements

Karangahape/Queen 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	0	0	1	0	0	1	**1**
2	85	77	96	99	93	95	**2**
3	10	6	13	8	6	11	**5**
4	8	2	2	2	2	2	**0**
5	2	4	2	3	4	2	**-2**
6	9	0	3	2	6	0	**-6**
7	9	11	10	15	12	13	**1**
8	60	67	69	74	69	66	**-3**
9	0	1	0	0	4	1	**-3**
10	12	16	8	13	13	14	**1**
11	38	20	28	46	30	48	**18**
12	13	8	6	10	17	13	**-4**
Total	**246**	**212**	**238**	**272**	**256**	**266**	**10**

- All cyclists were adults (100 per cent, consistent with results recorded in previous years with the exception of 2008 – 83 per cent).
- Most of the cyclists were wearing a helmet (91 per cent, stable from 92 per cent in 2011).
- The majority of cyclists continue to be male (79 per cent).
- The percentage of cyclists riding on the road continues to be high (88 per cent, stable from 86 per cent in 2011).

Table 5.2: Morning Cyclist Characteristics

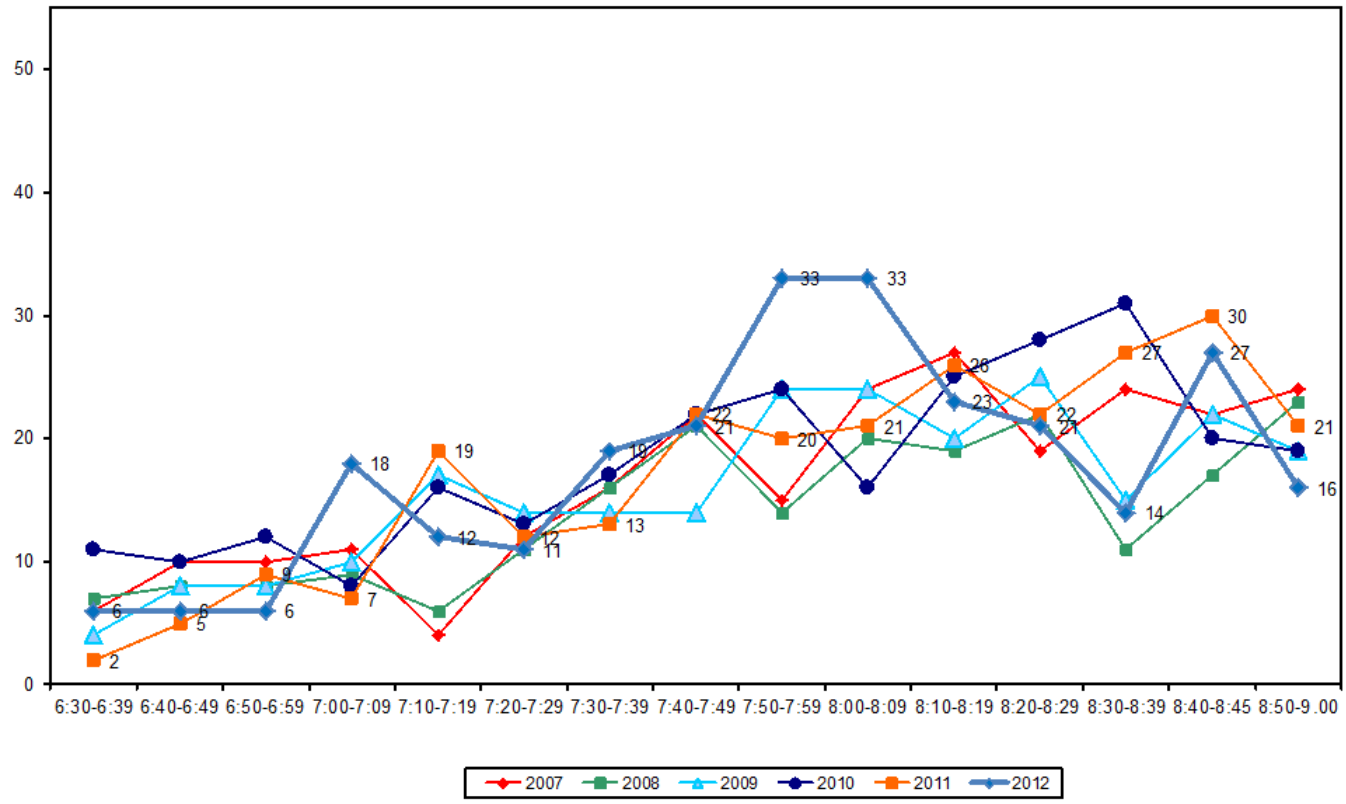
Karangahape/Queen 2004 – 2012(%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type										
Adult	99	99	99	99	83	99	100	99	100	**1**
School child	1	1	1	1	17	1	0	1	0	**-1**
Helmet Wearing										
Helmet on head	90	91	91	95	92	93	97	92	91	**1**
No helmet	10	9	9	5	8	7	3	8	9	**-1**
Gender										
Male	-	-	-	-	-	-	-	78	79	**1**
Female	-	-	-	-	-	-	-	18	21	**3**
Can't tell	-	-	-	-	-	-	-	4	0	**-4**
Where Riding										
Road	95	93	94	92	92	92	94	86	88	**2**
Footpath	5	7	6	8	8	8	6	14	12	**-2**
Base:	***209***	***203***	***211***	***246***	***212***	***238***	***272***	***256***	***266***	

- Morning cyclist volumes increased over the morning period to peak between 7:50am and 8:09am, with 33 movements per ten minute interval, with moderate cyclist volumes for the remainder of the monitoring period. This compares to increasing volumes to peak near the end of the shift between 8:40am and 8:49am (30 movements) in 2011.

Figure 10.2: Morning Peak Cyclist Frequency

Karangahape/Queen 2007 – 2012 (n)



Note: In 2012, three cyclists were observed riding as a group at 7:03am. This comprises one per cent of the total cycle movements at this site in the morning peak.

5.3 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 number of evening cyclist movements recorded at the Karangahape Road/Queen Street intersection has increased (307 movements, up from 298 in 2011).
- Key evening movements are straight along Karangahape Road in both directions (Movement 8 = 109 movements travelling east; Movement 2 = 112 movements travelling west).
- A notable decrease in cycle movement volumes was seen at Movement 8 (down 31 movements), while a notable increase was seen at Movement 2 (up 29 movements).

Table 5.3: Evening Cyclist Movements

Karangahape/Queen 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	4	3	3	6	6	1	**-5**
2	85	63	70	104	83	112	**29**
3	2	8	5	4	3	8	**5**
4	6	4	14	15	10	9	**-1**
5	24	17	10	15	21	39	**18**
6	16	4	5	4	5	4	**-1**
7	6	5	5	10	9	3	**-6**
8	94	84	101	137	140	109	**-31**
9	5	11	4	8	9	5	**-4**
10	2	3	0	1	3	3	**0**
11	11	9	3	4	7	11	**4**
12	6	1	1	2	2	3	**1**
Total	**261**	**212**	**221**	**310**	**298**	**307**	**9**

- Almost all riders at this intersection were adults (99 per cent, consistent with previous years).
- Most cyclists were wearing a helmet (87 per cent, up from 82 per cent in 2011).
- The majority of cyclists continue to be male (80 percent).
- The percentage of cyclists riding on the road has increased from last year (81 per cent, up from 74 per cent in 2011).

Table 4.4: Evening Cyclist Characteristics

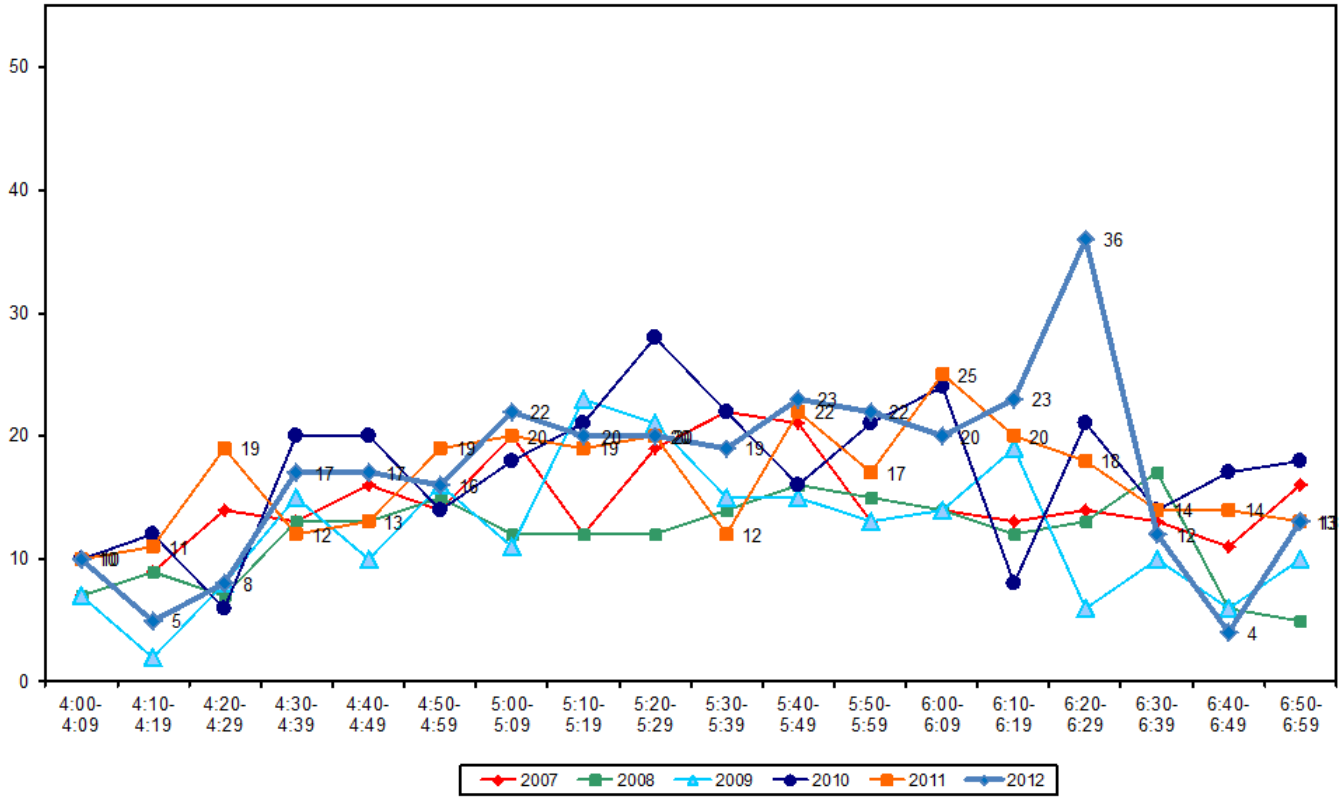
Karangahape/Queen 2004 – 2012(%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 10-11
Cyclist Type										
Adult	98	99	100	99	94	100	100	99	99	**0**
School child	2	1	0	1	6	0	0	1	1	**0**
Helmet Wearing										
Helmet on head	80	77	88	78	88	86	91	82	87	**5**
No helmet	20	23	12	22	12	14	9	18	13	**-5**
Gender										
Male	-	-	-	-	-	-	-	76	80	**4**
Female	-	-	-	-	-	-	-	23	20	**-3**
Can't tell	-	-	-	-	-	-	-	1	0	**-1**
Where Riding										
Road	81	75	78	80	86	77	86	74	81	**7**
Footpath	19	25	22	20	14	23	14	26	19	**-7**
Base:	***168***	***142***	***120***	***261***	***212***	***221***	***310***	***298***	***307***	

- Evening cyclist movement volumes increase over the monitoring period to peak between 6:20pm and 6:29pm (36 movements). This compares to a slight peak between 6:00pm and 6:09pm (25 movements) in 2011.

Figure 5.3: Evening Peak Cyclist Frequency

Karangahape/Queen 2007 – 2012 (n)

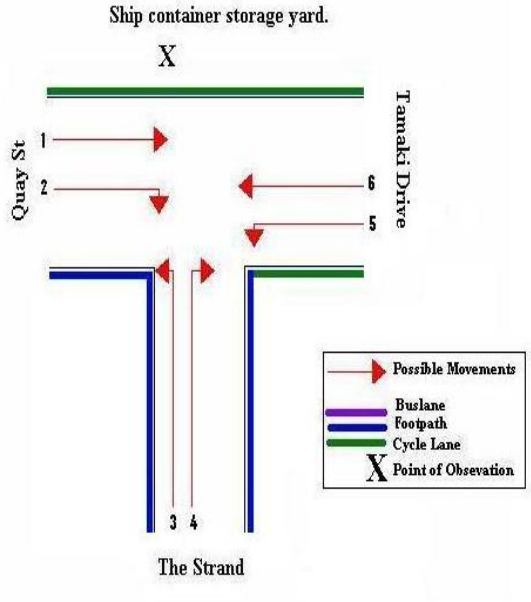


Note: In 2012, 19 cyclists were observed riding as a group at 6:29pm. This comprises six per cent of the total cycle movements at this site in the evening peak.

6. TAMAKI DRIVE/THE STRAND, PARNELL (SITE 10)

Figure 6.1 shows the possible cyclist movements at this intersection.

Figure 6.1: Cycle Movements: Tamaki/The Strand



6.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	480	420	900	1313
2008	416	370	786	1146
2009	321	282	603	880
2010	498	438	936	1365
2011	630	429	1059	1555
2012	**503**	**441**	**944**	**1377**

6.2 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

- Morning cyclist numbers at the Tamaki Drive/The Strand/Quay Street intersection in 2012 have decreased notably from the previous year (503 movements, down from 630 in 2011).
- The majority of cycle movements occur heading straight olong Tamaki Drive onto Quay Street (Movement 6 = 211 movements) and turning left from Tamaki Drive onto The Strand (Movement 5 = 170).
- Of the six movements possible at this site, cyclist movements have decreased at all but one movement. This decrease is most notable at Movement 5 (down 51 movements) and Movement 6 (down 42 movements).

Table 6.1: Morning Cyclist Movements

Tamaki/The Strand 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	55	58	47	92	57	44	**-13**
2	31	36	29	37	43	38	**-5**
3	14	9	14	29	19	22	**3**
4	26	25	8	17	37	18	**-19**
5	147	112	50	106	221	170	**-51**
6	207	176	173	217	253	211	**-42**
Total	**480**	**416**	**321**	**498**	**630**	**503**	**-127**

- Almost all cyclists at this intersection were adults (99 per cent, unchanged from previous years).
- Nearly all riders were wearing a helmet (99 per cent, stable from previous years).
- The majority of riders were male (87 per cent, up from 77 per cent in 2011).
- Most cyclists were riding on the road (79 per cent), while 15 per cent rode on the off-road cycleway, and 6 per cent road on the footpath.

Table 6.2: Morning Cyclist Characteristics

Tamaki/The Strand 2004 – 2012 (%)

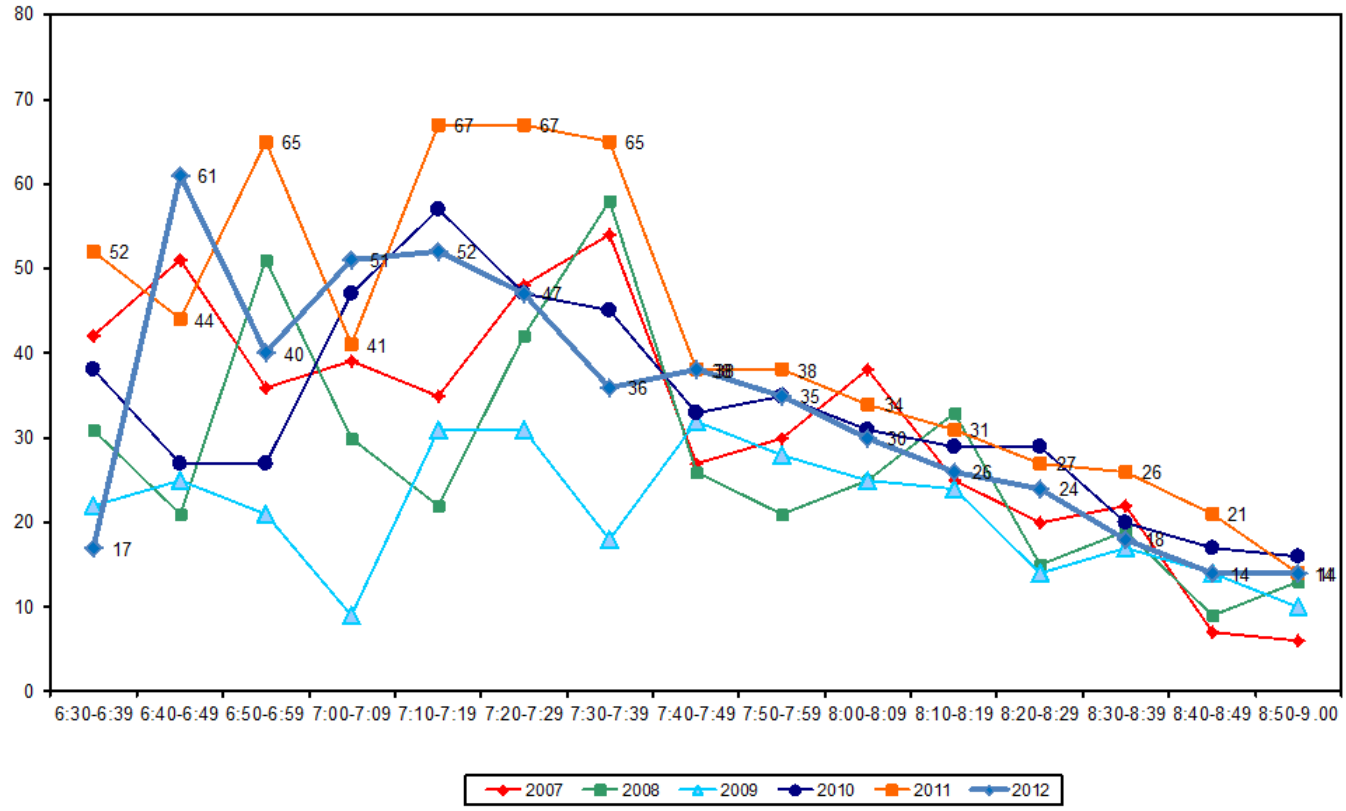
	2004	***2005***	***2006***	***2007***	***2008***	***2009***	***2010***	***2011***	***2012***	**Change 11-12**
Cyclist Type										
Adult	98	100	100	100	100	100	100	99	99	**0**
School child	2	0	0	0	0	0	0	1	1	**0**
Helmet Wearing										
Helmet on head	97	98	98	99	100	99	97	97	99	**2**
No helmet	3	2	2	1	0	1	3	3	1	**-1**
Gender										
Male	-	-	-	-	-	-	-	77	87	**10**
Female	-	-	-	-	-	-	-	23	13	**-10**
Can't tell	-	-	-	-	-	-	-	0	0	**0**
Where Riding*										
Road	83	71	70	95	99	74	78	77	79	**2**
Footpath	17	29	30	5	1	2	7	9	6	**-3**
Off-road cycleway	-	-	-	-	-	24	15	14	15	**1**
Base:	***125***	***261***	***282***	***480***	***416***	***321***	***498***	***630***	***503***	

** Prior to 2009, cyclists riding on the cycle-designated side of the footpath on Tamaki Drive were classified as road riders. In 2009, a separate classification of 'off-road cycleway' was introduced, which incorporates separated cycleways such as Tamaki Drive. From 2009, 'road riders' were defined as those cycling on the cycle designated side of the footpath, and 'footpath' riders as those cycling on the pedestrian-designated side of the footpath.*

- Morning cyclist volumes peak early in the shift (61 movements between 6:40am and 6:49am) from where cyclist volumes declined throughout the remainder of the shift. This compares to a peak between 6:50am and 6:59am (65 movements), and another peak between 7:10am and 7:39am (67, 67 and 65 movements per ten minute interval respectively) in 2011.

Figure 6.2: Morning Peak Cyclist Frequency

Tamaki/The Strand 2007 – 2012 (n)



Note: In 2012, 13 per cent of the total cycle movements in the morning peak (n = 67) were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *Fifteen cyclists at 6.41am*
- *Seven cyclists at 6:46am*
- *Six cyclists at 6:48am*
- *Eighteen cyclists at 7:09am*
- *Eight cyclists at 7:19am*
- *Seven cyclists at 7:23am*
- *Six cyclists at 7:34am.*

This compares with 24 per cent of total cycles movements (n = 148) in 2011.

6.3 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 cycle movement volumes increased slightly from last year (441 movements, up from 429 in 2011).
- Key movements in the evening are dominated by those travelling east along Tamaki Drive away from the city (Movement 1 = 198 cyclists), and also to a lesser extent, by those travelling right onto Tamaki Drive from The Strand (Movement 4 = 77 cyclists).
- Cyclist volumes have increased most notably at Movement 6 (up 18 movements).

Table 6.3: Evening Cyclist Movements
Tamaki/The Strand 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	182	150	152	170	200	198	**-2**
2	24	12	15	29	28	31	**3**
3	21	25	24	28	38	32	**-6**
4	98	78	51	102	73	77	**4**
5	38	30	13	36	49	44	**-5**
6	57	75	27	73	41	59	**18**
Total	**420**	**370**	**282**	**438**	**429**	**441**	**12**

- All cyclists using this intersection were adults (100 per cent, unchanged from 2011).
- Almost all cyclists were wearing a helmet (94 per cent, stable from 93 per cent last year).
- The greatest share of evening cyclists are male (84 per cent, stable from 82 per cent in 2011).
- Most cyclists were riding on the road (58 per cent), 28 per cent rode on the off-road cycle way, while 14 per cent road on the footpath (all results stable from last year).

Table 6.4: Evening Cyclist Characteristics

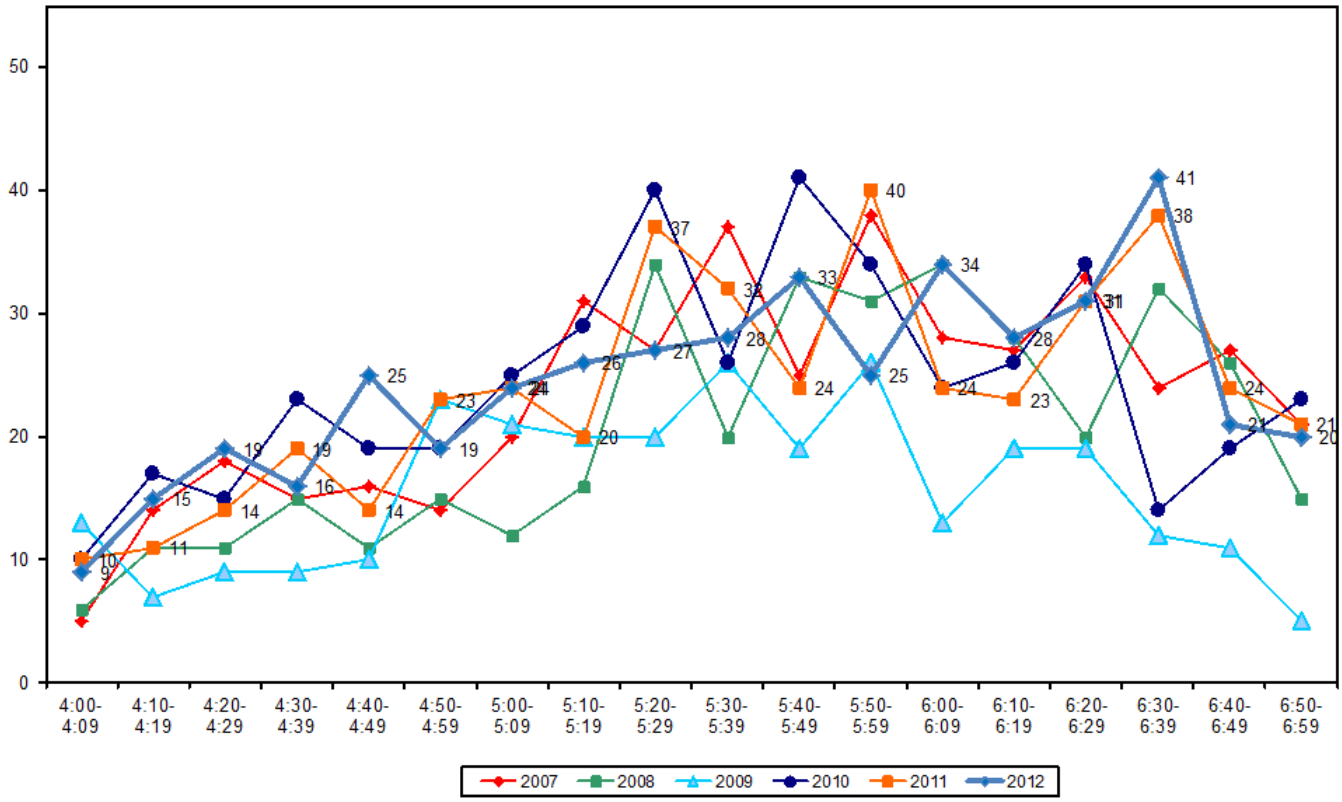
Tamaki/The Strand 2004 – 2012 (%)

	2004	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	2012	Change 11-12
Cyclist Type										
Adult	94	98	100	100	100	100	99	100	100	**0**
School child	6	2	0	0	0	0	1	0	0	**0**
Helmet Wearing										
Helmet on head	91	98	98	96	100	99	96	93	94	**1**
No helmet	9	2	2	4	0	1	4	7	6	**-1**
Gender										
Male	-	-	-	-	-	-	-	82	84	**2**
Female	-	-	-	-	-	-	-	18	16	**-2**
Can't tell	-	-	-	-	-	-	-	0	0	**0**
Where Riding*										
Road	54	78	61	97	99	57	63	61	58	**-3**
Footpath	46	22	39	3	1	4	12	16	14	**-2**
Off-road cycleway	-	-	-	-	-	39	25	23	28	**5**
Base:	***116***	***199***	***120***	***420***	***370***	***282***	***438***	***429***	***441***	

** Prior to 2009, cyclists riding on the cycle-designated side of the footpath on Tamaki Drive were classified as road riders. In 2009, a separate classification of 'off-road cycleway' was introduced, which incorporates separated cycleways such as Tamaki Drive. From 2009, 'road riders' were defined as those cycling on the cycle designated side of the footpath, and 'footpath' riders as those cycling on the pedestrian-designated side of the footpath.*

- In the evening, cyclist movement volumes generally increased over the observation period to peak between 6:30am and 6:39am (41 movements). This trend is similar to the one observed in 2011.

Figure 6.3: Evening Peak Cyclist Frequency
Tamaki/The Strand 2007 – 2012 (n)



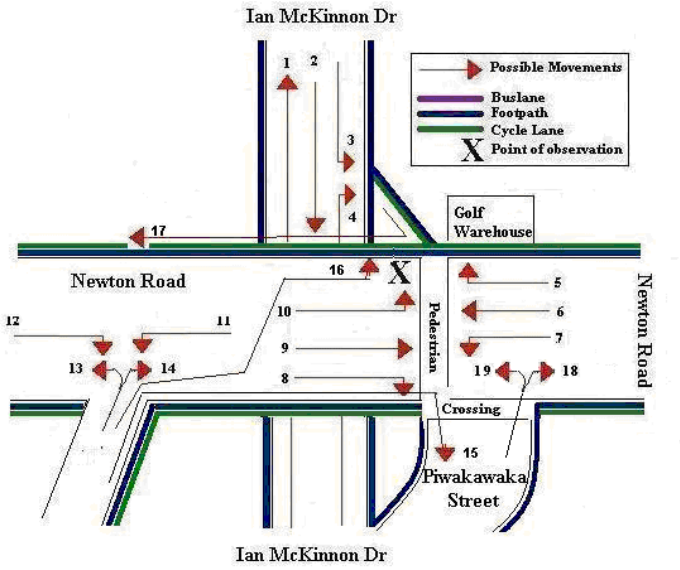
Note: In 2012, five per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *Three cyclists at 4:57pm*
- *Three cyclists at 5:03pm*
- *Ten cyclists at 6:30pm*
- *Three cyclists at 6:35pm.*

7. IAN MCKINNON DRIVE/NEWTON ROAD, NEWTON (SITE 13)

Figure 7.1 shows the possible cyclist movements at this intersection.

Figure 7.1: Cycle Movements: Ian McKinnon Drive/Newton Road



7.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2009	139	152	291	422
2010	190	184	374	544
2011	236	324	560	807
2012	**219**	**284**	**503**	**726**

7.2 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 Ian McKinnon Drive/Newton Road site has decreased, from 236 in 2011 to 219 this year.
- The key morning movement at this intersection is straight along Ian McKinnon Drive heading north towards the city (Movement 1 = 70 cyclists, stable from 71 cyclists last year).
- The most notable changes in cyclist numbers are at Movement 15 (down 27 cyclists) and Movement 13 (up 15 cyclists).

Table 7.1: Morning Cyclist Movements

Ian McKinnon Drive/Newton Road 2009 – 2012 (n)

Movement	2009	2010	2011	*2012*	Change 11-12
1	51	78	71	**70**	**-1**
2	1	0	6	**1**	**-5**
3	0	2	0	**2**	**2**
4	0	1	1	**0**	**-1**
5	1	0	0	**0**	**0**
6	9	17	10	**5**	**-5**
7	1	0	0	**0**	**0**
8	6	0	0	**1**	**1**
9	10	16	12	**3**	**-9**
10	7	4	8	**3**	**-5**
11	2	1	2	**2**	**0**
12	1	1	1	**6**	**5**
13	9	21	36	**51**	**15**
14	41	13	22	**24**	**2**
15	0	19	41	**14**	**-27**
16	0	17	19	**25**	**6**
17	0	0	2	**1**	**-1**
18	-	-	0	**1**	**1**
19	-	-	5	**10**	**5**
Total	**139**	**190**	**236**	**219**	**-17**

- Almost all cyclists at this site (99 per cent) are adults (stable from 100 per cent last year).
- Most cyclists are wearing a helmet (95 per cent, stable from 98 per cent in 2011).
- Just over half of cyclists are identified as male (57 per cent, up from 53 per cent 12 months ago).
- Just over half of cyclists are riding on the off-road cycleway (58 per cent, up from 53 per cent last year), while 24 per cent are riding on the footpath. The remaining 18 per cent are riding on the road.

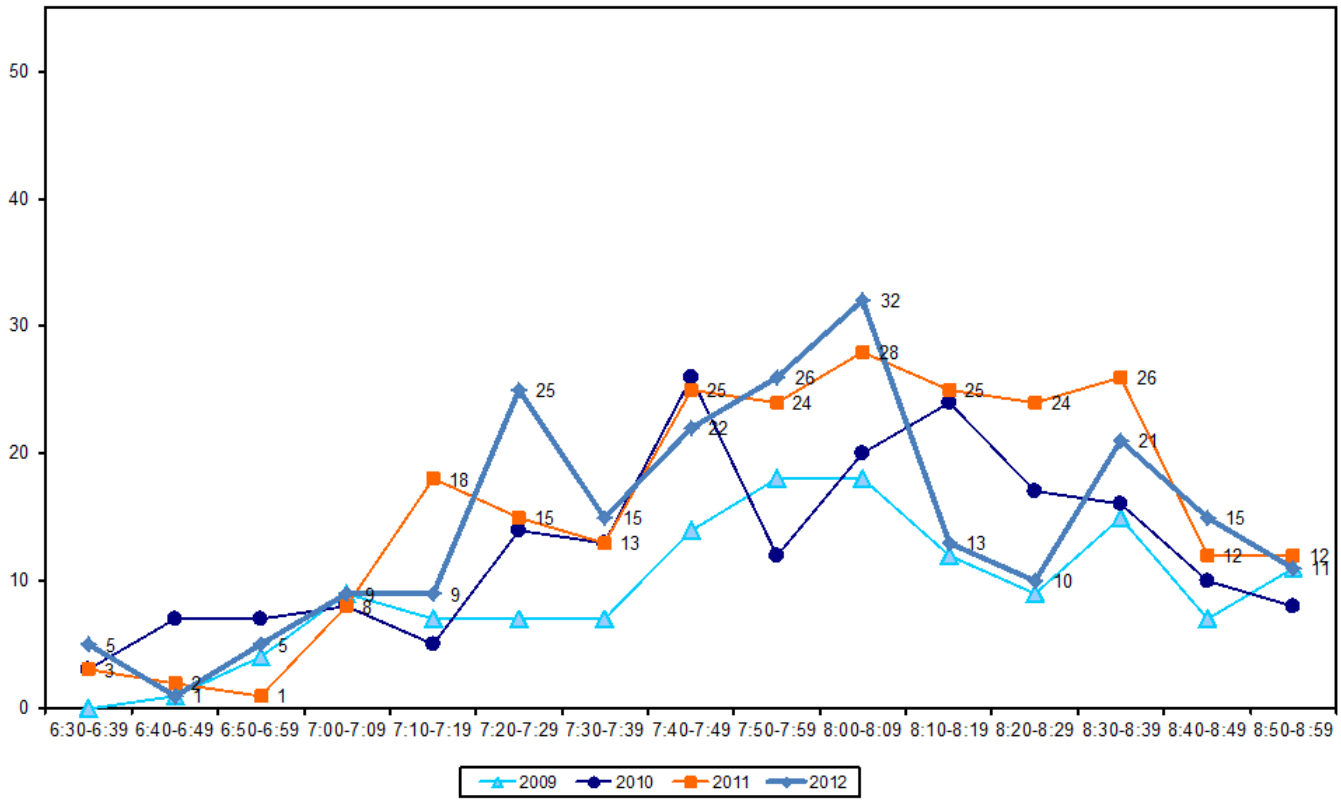
Table 7.2: Morning Cyclist Characteristics

Ian McKinnon Drive/Newton Road 2009 – 2012 (%)

	2009	***2010***	***2011***	***2012***	**Change 11-12**
Cyclist Type					
Adult	99	99	100	**99**	**-1**
School child	1	1	0	**1**	**1**
Helmet Wearing					
Helmet on head	90	93	98	**95**	**-3**
No helmet	10	7	2	**5**	**3**
Gender					
Male	-	-	53	**57**	**4**
Female	-	-	15	**14**	**-1**
Can't tell	-	-	32	**29**	**-3**
Where Riding					
Road	40	43	25	**18**	**-7**
Footpath	15	19	22	**24**	**2**
Off-road cycleway	45	38	53	**58**	**5**
Base:	***139***	***190***	***236***	***219***	

- As in 2011, morning cyclist movement volumes started off low. In 2012, the first peak occurred between 7:20 and 7:29 (25 movements). A second peak occurs between 8:00 and 8:19 (32 movements).

Figure 7.2: Morning Peak Cyclist Frequency
Ian McKinnon Drive/Newton Road 2009 – 2012 (n)



7.3 Evening Peak

Environmental Conditions

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

Key Points

- The number of evening cyclists recorded at the Ian McKinnon Drive/Newton Road intersection was 284, down from 324 movements in 2011.
- The key evening movements at this intersection is turning left off Newton Road onto the Cycleway heading west (Movement 11 = 112 cyclist movements).
- The most notable changes in cyclist movement this year were at Movement 11 (up 50 cyclists) and Movement 19 (down 54 cyclists).

Table 7.3: Evening Cyclist Movements

Ian McKinnon Drive/Newton Road 2009 – 2012 (n)

Movement	2009	2010	2011	*2012*	Change 11-12
1	4	4	3	**9**	**6**
2	48	43	74	**61**	**-13**
3	7	3	12	**0**	**-12**
4	1	1	1	**0**	**-1**
5	0	0	1	**1**	**0**
6	11	14	21	**9**	**-12**
7	4	1	0	**0**	**0**
8	0	7	7	**5**	**-2**
9	22	19	12	**10**	**-2**
10	0	4	6	**0**	**-6**
11	45	49	62	**112**	**50**
12	2	14	40	**50**	**10**
13	5	7	6	**14**	**8**
14	3	3	3	**4**	**1**
15	0	0	3	**2**	**-1**
16	0	4	0	**4**	**4**
17	0	11	13	**0**	**-13**
18	-	-	3	**0**	**-3**
19	-	-	57	**3**	**-54**
Total	**152**	**184**	**324**	**284**	**-40**

- Over the evening peak, almost all cyclists using this site are adults (99 per cent, stable from 100 per cent in 2011).
- The greatest share of cyclists at this site are wearing a helmet (96 per cent, stable from 97 per cent last year).
- The greatest single share of respondents are riding on the off-road cycleway (63 per cent, stable from 60 per cent in 2011). A further 19 per cent are riding on the footpath (stable from 16 per cent last year), while the remaining 18 per cent are riding on the road (compared with 24 per cent in 2011).

Table 7.4: Evening Cyclist Characteristics

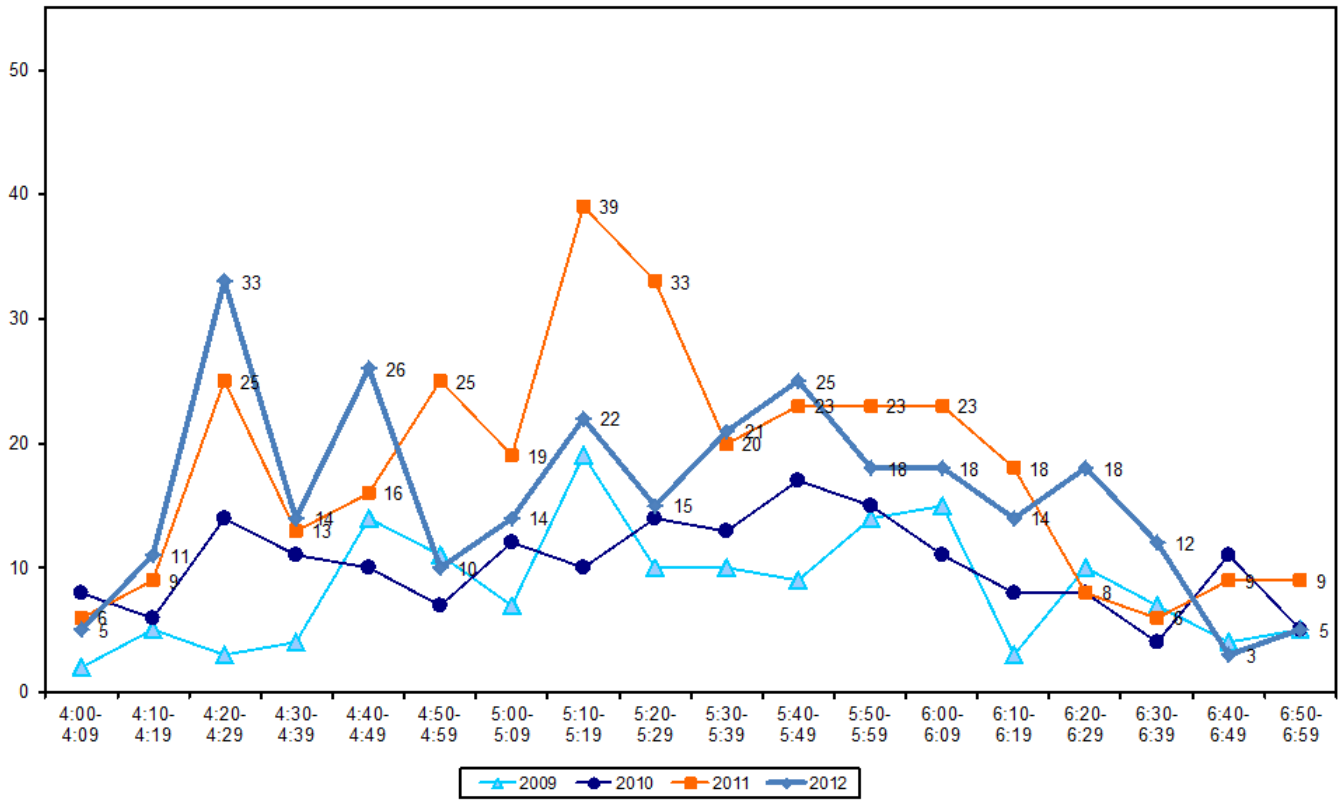
Ian McKinnon Drive/Newton Road 2009 – 2012 (%)

	2009	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type					
Adult	98	99	100	**99**	**-1**
School child	2	1	0	**1**	**1**
Helmet Wearing					
Helmet on head	95	96	97	**96**	**-1**
No helmet	5	4	3	**4**	**1**
Gender					
Male	-	-	56	**60**	**4**
Female	-	-	17	**11**	**-6**
Can't tell	-	-	27	**29**	**2**
Where Riding					
Road	31	39	24	**18**	**-6**
Footpath	25	29	16	**19**	**3**
Off-road cycleway	44	32	60	**63**	**3**
Base:	***152***	***184***	***324***	***284***	

- This year cycle movements are variable, peaking three times: 4:20pm and 4:29pm (33 movements), 4:40pm and 4:49pm (26 movements), and again between 5:40pm and 5:49pm (25 movements). By comparison, the largest peak in 2011 occurred between 5:10pm and 5:19pm (39 movements).

Figure 7.3: Evening Peak Cyclist Frequency

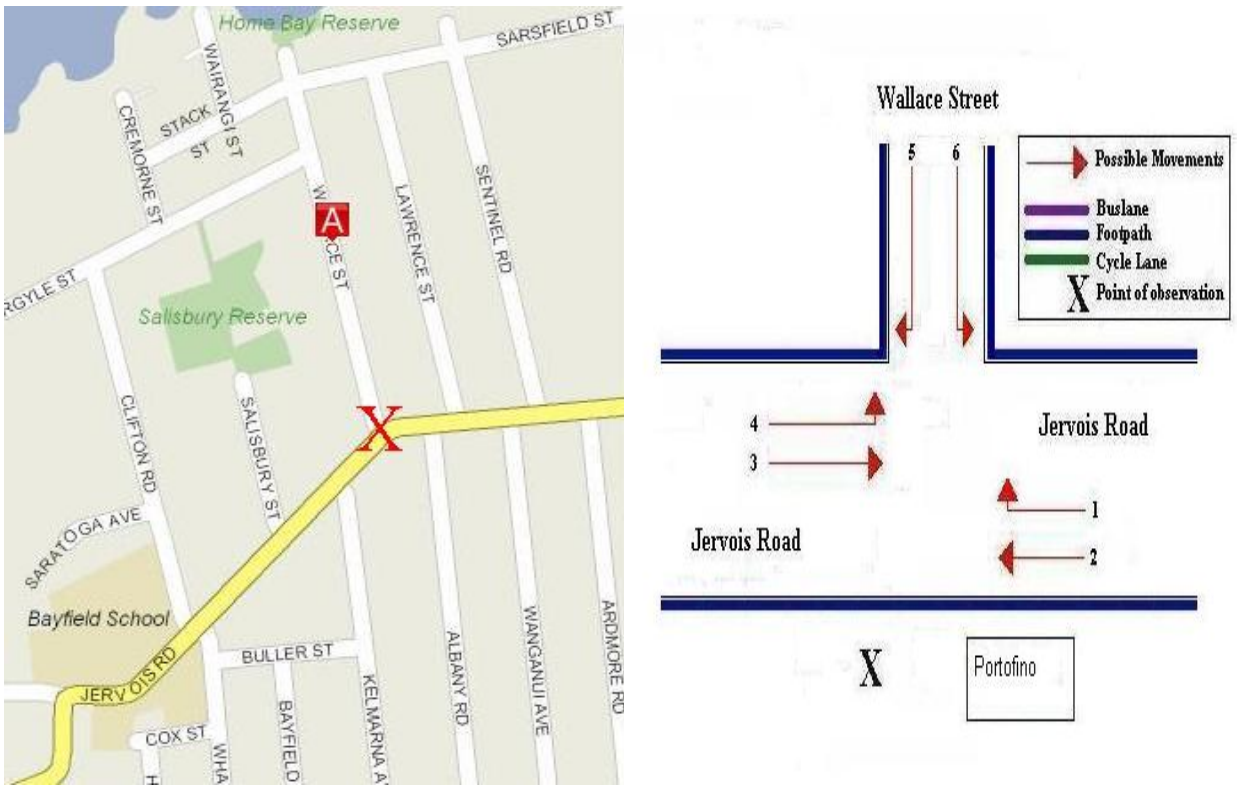
Ian McKinnon Drive/Newton Road 2009 – 2012 (n)



8. JERVOIS ROAD/WALLACE STREET, HERNE BAY (SITE 16)

Figure 8.1 shows the possible cyclist movements at this intersection.

Figure 8.1: Cycle Movements: Jervois Road/Wallace Street



Note: This site was monitored on Tuesday 14th March 2012

8.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2009	60	51	111	162
2010	88	79	167	243
2011	73	79	152	215
2012	**62**	**79**	**141**	**204**

8.2 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 total number of cyclists recorded at this site in the morning has decreased (62 movements, down from 73 in 2011).
- The key movements are straight along Jervois Road in both directions (Movement 2 heading southwest = 17 movements; Movement 3 heading northeast = 29 movements).
- The most notable change was a decline at Movements 2 (down 20 movements).

Table 8.1: Morning Cyclist Movements

Jervois Road/Wallace Street 2009 – 2012 (n)

Movement	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	0	1	1	**0**	**-1**
2	30	36	37	**17**	**-20**
3	24	37	25	**29**	**4**
4	2	12	8	**12**	**4**
5	1	1	0	**2**	**2**
6	3	1	2	**2**	**0**
Total	**60**	**88**	**73**	**62**	**-11**

- All the cyclists at this intersection were adults (100 per cent, stable from 97 per cent in 2011).
- Helmet wearing continues to be widespread (94 per cent, stable from 93 per cent last year).
- The majority of cyclists were male (79 per cent, up from 71 per cent 12 months ago).
- Most cyclists were riding on the road (93 per cent, up from 85 per cent in 2011).

Table 8.2: Morning Cyclist Characteristics

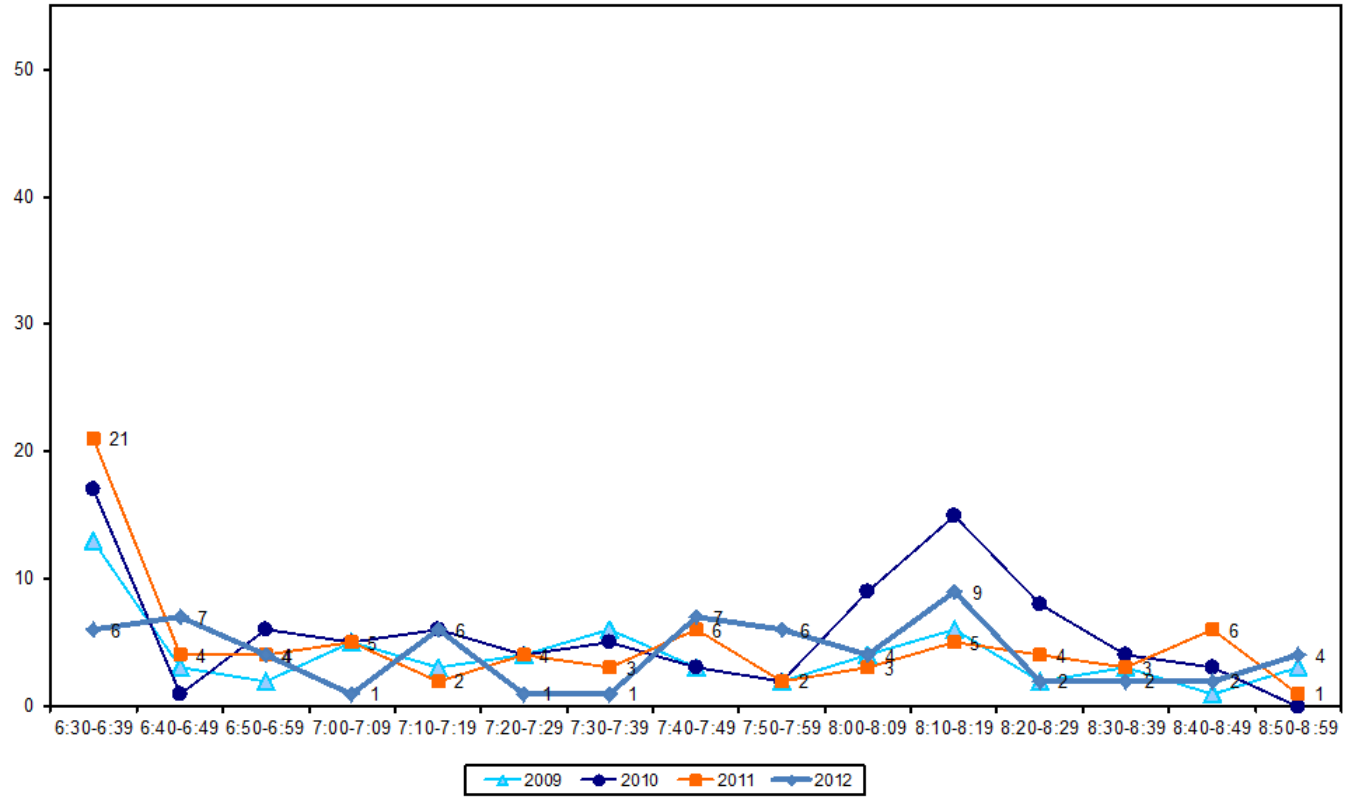
Jervois Road/Wallace Street 2009 – 2012 (%)

	2009	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type					
Adult	90	80	97	**100**	**3**
School child	10	20	3	**0**	**-3**
Helmet Wearing					
Helmet on head	98	97	93	**94**	**1**
No helmet	2	3	7	**6**	**-1**
Gender					
Male	-	-	71	**79**	**8**
Female	-	-	29	**21**	**-8**
Can't tell	-	-	0	**0**	**0**
Where Riding					
Road	85	73	85	**93**	**8**
Footpath	15	27	15	**7**	**-8**
Base:	***60***	***88***	***73***	***62***	

- Morning cycle volumes are relatively low over most of the monitoring period. This year a peak occurs between 8:10am and 8:19am (9 movements).

Figure 8.2: Morning Peak Cyclist Frequency

Jervois Road/Wallace Street 2009 – 2012 (n)



Note: In 2012, 15 per cent of the total cycle movements in the morning peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *Six cyclists at 6.36am*
- *Three cyclists at 7:18am*

8.3 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 numbers have remained relatively stable since last year's count (79 movements, up slightly from 75 in 2011).
- Consistent with the morning peak, the key movement in the evening is straight along Jervois Road travelling in a southwest direction (Movement 2 = 35 movements).
- The most notable changes occurred at Movement 2 (down 6 movements).

Table 8.3: Evening Cyclist Movements

Jervois Road/Wallace Street 2009 – 2012 (n)

Movement	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	1	4	1	**3**	**2**
2	22	50	41	**35**	**-6**
3	17	21	19	**22**	**3**
4	3	0	1	**3**	**2**
5	3	4	10	**13**	**3**
6	5	0	3	**3**	**0**
Total	**51**	**79**	**75**	**79**	**4**

- Most cyclists at this site in 2012 were adults (91 per cent, stable from 92 per cent in 2011).
- Most cyclists were wearing a helmet (89 per cent, stable from 92 per cent last year).
- The majority of cyclists were male (89 per cent, up from 76 per cent in 2011).
- Three-quarters of the cyclists were riding on the road (74 per cent, stable from 76 per cent 12 months ago).

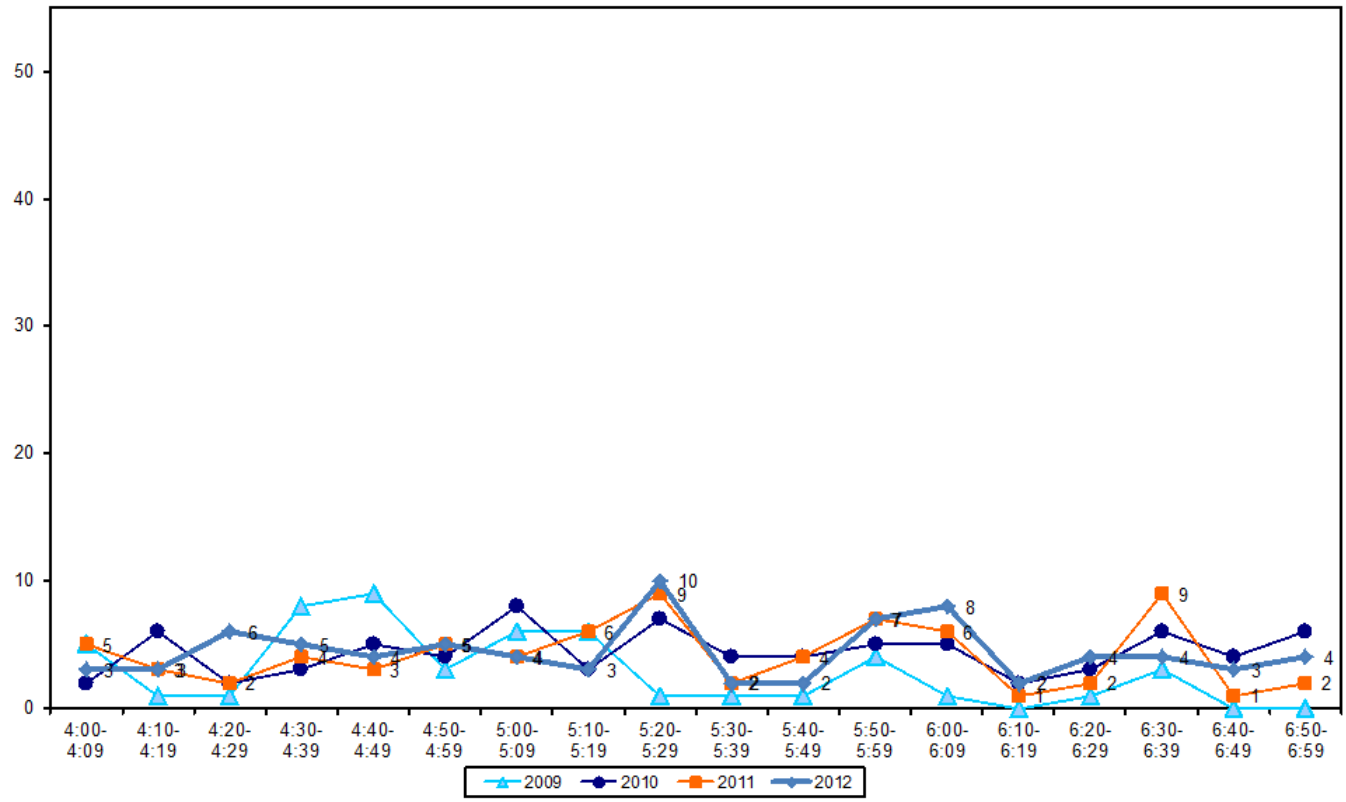
Table 8.4: Evening Cyclist Characteristics

Jervois Road/Wallace Street 2009 – 2012 (%)

	2009	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type					
Adult	55	78	92	**91**	**-1**
School child	45	22	8	**9**	**1**
Helmet Wearing					
Helmet on head	98	85	92	**89**	**-3**
No helmet	2	15	8	**11**	**3**
Gender					
Male	-	-	76	**89**	**13**
Female	-	-	24	**11**	**-13**
Can't tell	-	-	0	**0**	**0**
Where Riding					
Road	55	62	76	**74**	**-2**
Footpath	45	38	24	**26**	**2**
Base:	***51***	***79***	***75***	***79***	

- Evening cycle movement volumes were relatively stable across the entire monitoring period, with the first peak occurring between 5:20pm and 5:29pm (10 movements), and another occurring between 6:00pm and 6:09pm (8 movements).

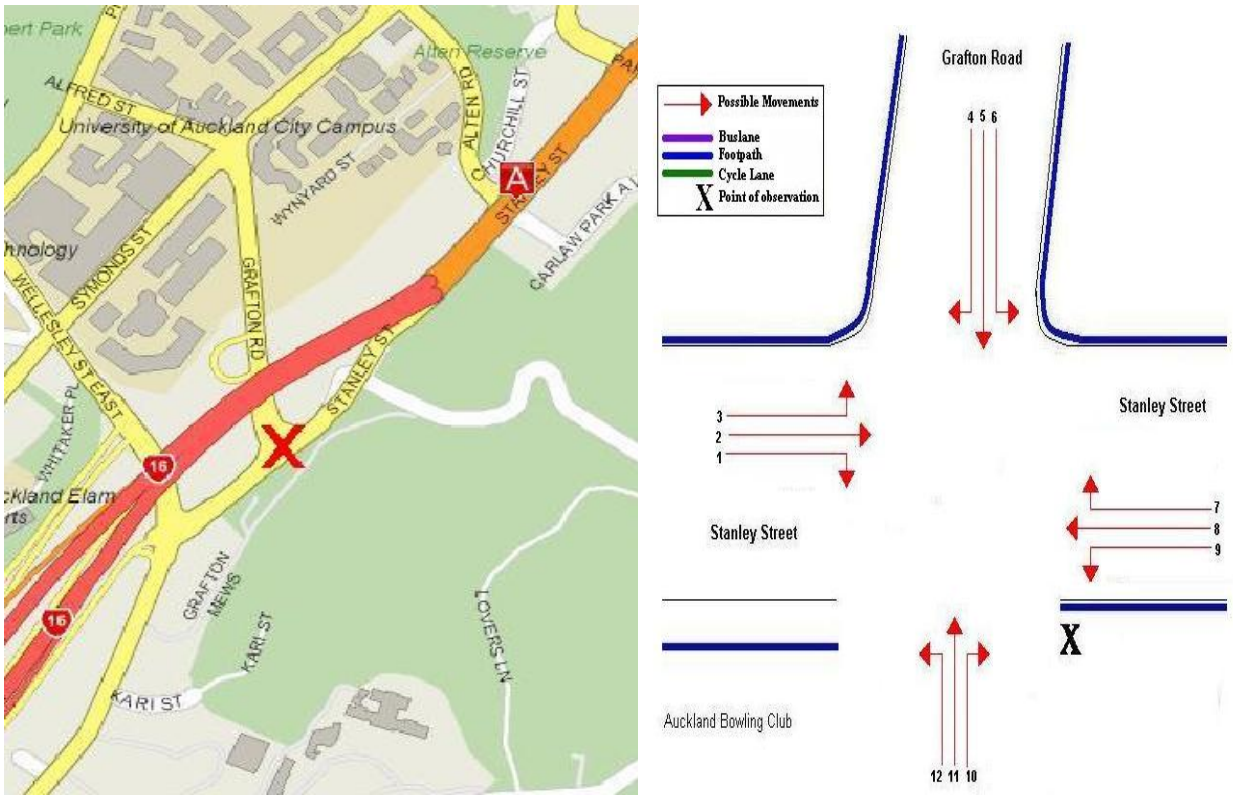
Figure 8.3: Evening Peak Cyclist Frequency
Jervois Road/Wallace Street 2009 – 2012 (n)



9. STANLEY STREET/GRAFTON ROAD, GRAFTON (SITE 75)

Figure 9.1 shows the possible cyclist movements at this intersection.

Figure 9.1: Cycle Movements: Stanley Street/Grafton Road



9.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2008	36	29	65	95
2009	49	47	96	140
2010	47	46	93	135
2011	27	47	74	106
2012	**38**	**56**	**94**	**135**

9.2 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 cycle volumes at the Stanley Street/Grafton Road site decreased this year (38 movements, up from 27 12 months ago).
- The most common morning movement is from Stanley Street, turning right onto Grafton Road (Movement 7 = 20 movements).
- The most notable change in cyclist volumes from 2011 was at Movement 7 (up 12 movements).

Table 9.1: Morning Cyclist Movements

Stanley Street/Grafton Road 2008 – 2012 (n)

Movement	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	0	0	0	0	**0**	**0**
2	3	10	9	6	**2**	**-4**
3	1	1	1	1	**1**	**0**
4	0	0	0	0	**0**	**0**
5	0	0	1	0	**0**	**0**
6	1	1	0	1	**1**	**0**
7	8	11	9	8	**20**	**12**
8	9	13	16	5	**10**	**5**
9	2	3	0	4	**1**	**-3**
10	0	0	0	0	**0**	**0**
11	12	9	11	2	**3**	**1**
12	0	1	0	0	**0**	**0**
Total	**36**	**49**	**47**	**27**	**38**	**11**

- Over the morning peak, all cyclists were adults (100 per cent, unchanged from last year).
- Almost all cyclists were wearing a helmet (95 per cent, down from 100 per cent in 2011).
- Three-quarters of cyclists were male (74 per cent, down from 85 per cent last year).
- The greatest share of cyclists were riding on the footpath (58 per cent, up notably from 19 per cent last year).

Table 9.2: Morning Cyclist Characteristics

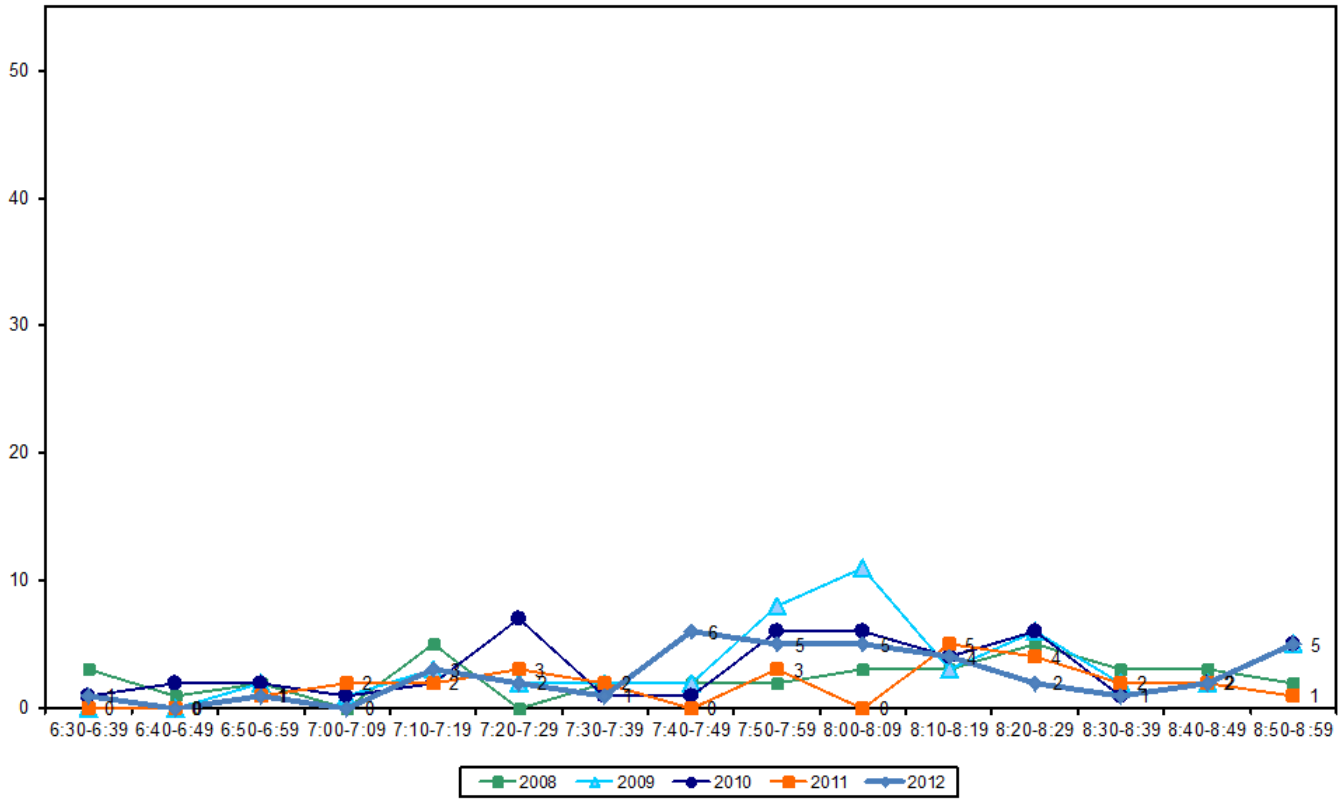
Stanley Street/Grafton Road 2008 – 2012 (%)

	2008	***2009***	***2010***	***2011***	***2012***	**Change 11-12**
Cyclist Type						
Adult	100	100	100	100	**100**	**0**
School child	0	0	0	0	**0**	**0**
Helmet Wearing						
Helmet on head	92	94	94	100	**95**	**-5**
No helmet	8	6	6	0	**5**	**5**
Gender						
Male	-	-	-	85	**74**	**-11**
Female	-	-	-	15	**24**	**9**
Can't tell	-	-	-	0	**2**	**2**
Where Riding						
Road	78	61	49	81	**42**	**-39**
Footpath	22	39	51	19	**58**	**39**
Base:	***36***	***49***	***47***	***27***	***38***	

- Morning cyclist movement volumes remained low and stable throughout the observation period, peaking slightly between 7:40am and 7:49am (6 movements). .

Figure 26.2: Morning Peak Cyclist Frequency

Stanley Street/Grafton Road 2008 – 2012 (n)



9.3 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 cycle movements recorded at the Stanley Street/Grafton Road site has increased from last year (56 movements, up from 47 movements in 2011).
- The key movements in the evening are straight along Stanley Street heading northwest (Movement 8 = 11 cyclists) and from Grafton Road, turning left onto Stanley Street travelling in a north-easterly direction (Movement 6 = 10 cyclists).
- The most notable change since 2011 was at Movement 2 (up 12 movements).

Table 9.3: Evening Cyclist Movements

Stanley Street/Grafton Road 2008 – 2012 (n)

Movement	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
1	0	0	0	0	**1**	**1**
2	8	13	11	2	**14**	**12**
3	3	0	1	2	**0**	**-2**
4	1	1	1	2	**3**	**1**
5	3	8	7	2	**4**	**2**
6	4	5	8	10	**10**	**0**
7	2	1	1	3	**4**	**1**
8	2	12	15	11	**11**	**0**
9	1	2	1	8	**7**	**-1**
10	4	2	0	4	**2**	**-2**
11	1	3	1	3	**0**	**-3**
12	0	0	0	0	**0**	**0**
Total	**29**	**47**	**46**	**47**	**56**	**9**

- Over the evening peak, all cyclists using this site were adults (100 per cent, unchanged from 2011).
- Most cyclists at this site were wearing a helmet (91 per cent, unchanged from 12 months ago).
- The majority of cyclists were male (77 per cent, down from 85 per cent last year).
- Fifty-six per cent of cyclists were riding on the road (down from 64 per cent in 2011).

Table 9.4: Evening Cyclist Characteristics

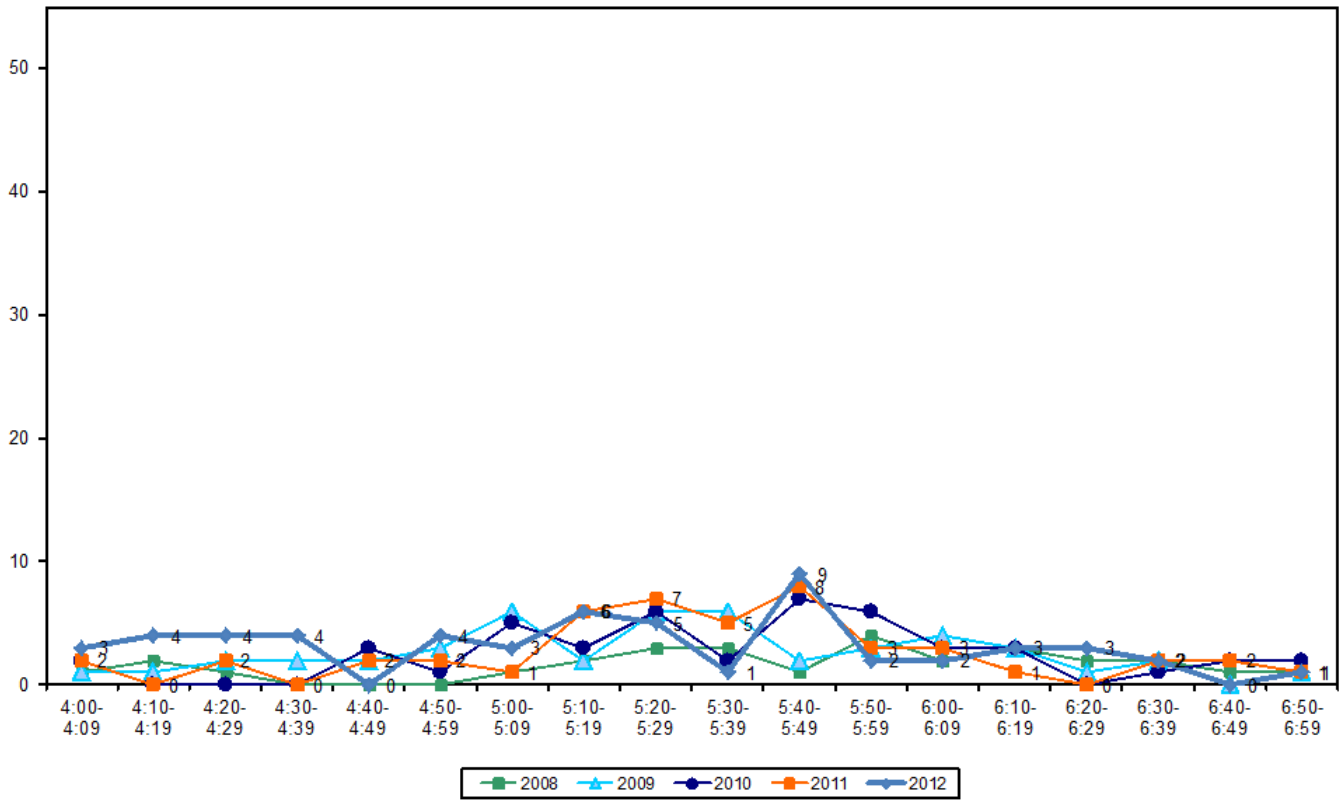
Stanley Street/Grafton Road 2008 – 2012 (%)

	2008	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type						
Adult	100	100	100	100	**100**	**0**
School child	0	0	0	0	**0**	**0**
Helmet Wearing						
Helmet on head	93	96	89	91	**91**	**0**
No helmet	7	4	11	9	**9**	**0**
Gender						
Male	-	-	-	85	**77**	**-8**
Female	-	-	-	15	**23**	**8**
Can't tell	-	-	-	0	**0**	**0**
Where Riding						
Road	66	36	57	64	**56**	**-8**
Footpath	34	64	43	36	**44**	**8**
Base:	***29***	***47***	***46***	***47***	***56***	

- Consistent with 2011, evening cyclist volumes were low throughout the shift with a peak occurring between 5:40pm and 5:49pm (9 movements).

Figure 9.3: Evening Peak Cyclist Frequency

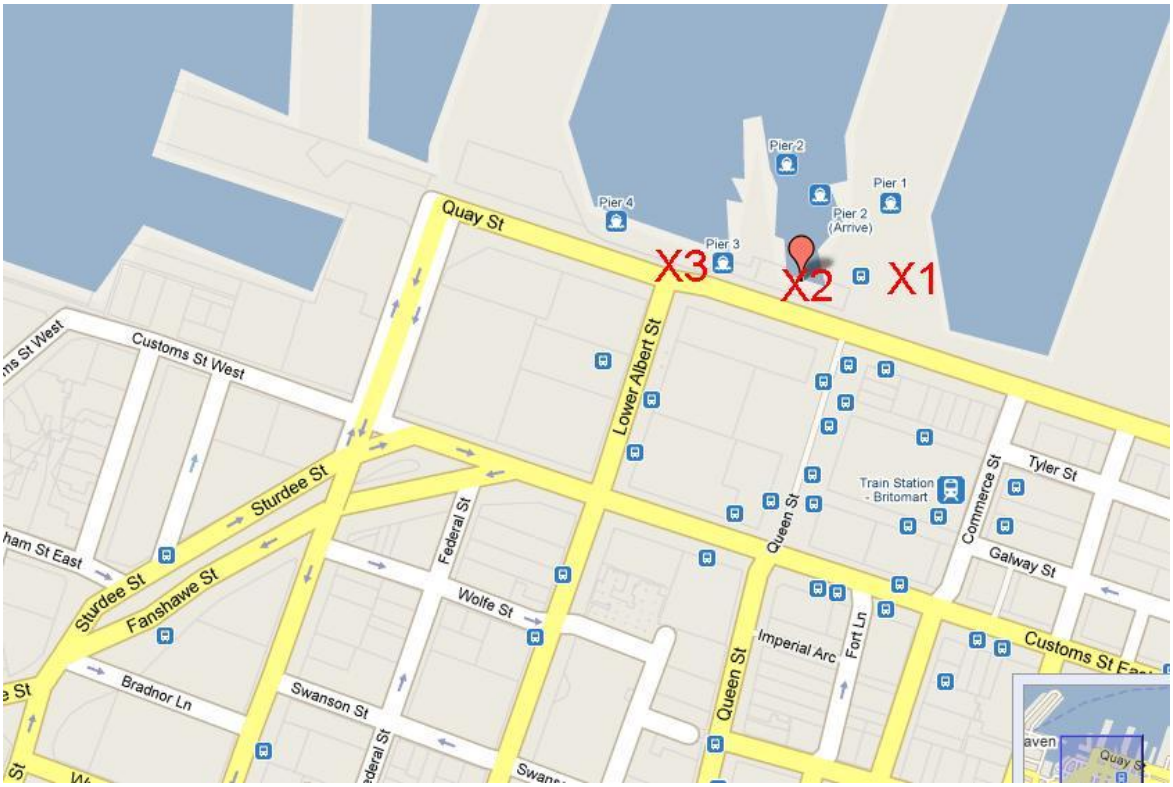
Stanley Street/Grafton Road 2008 – 2012 (n)



10. FERRY TERMINAL, AUCKLAND CENTRAL (SITE 22)

Figure 10.1 shows the possible cyclist movements at this site. *Note: Due to the size of this site, three surveyors were used to conduct the cycle counts. One surveyor counted cycle traffic entering and leaving via the actual ferry terminal (Pier 1). The second surveyor counted cycle traffic using the ferries at Pier 2. The third surveyor counted cycle traffic using ferries at Piers 3 and 4.*

Figure 10.1: Cycle Movements: Ferry Terminal



10.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	195	185	380	553
2008	158	158	316	459
2009	137	111	248	363
2010	198	197	395	574
2011	205	186	391	570
2012	**189**	**200**	**389**	**565**

10.2 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 cyclist movements at the Ferry Terminal site has decreased from last year (189 movements, down from 205 movements in 2011).
- Like last year, the key movement in the morning is disembarking the terminal at Pier One, which provides access to ferry services to and from Birkenhead, Northcote Point, Bayswater and Devonport (128 movements, down from 141 in 2011).
- The most notable change occurred in cyclist movements disembarking from Pier One (down 13 movements).

Table 10.1: Morning Cyclist Movements

Ferry Terminal 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Pier One							
Boarding	18	11	10	24	14	**15**	1
Disembarking	136	127	100	134	141	**128**	-13
Pier Two							
Boarding	8	5	1	0	4	**2**	-2
Disembarking	18	10	16	28	32	**31**	-1
Pier Three							
Boarding	0	0	1	0	0	**3**	3
Disembarking	4	3	3	8	8	**5**	-3
Pier Four							
Boarding	0	0	4	0	1	**1**	0
Disembarking	11	2	2	4	5	**4**	-1
Total	**195**	**158**	**137**	**198**	**205**	**189**	**-16**

Pier 1 – departs for Birkenhead, Northcote Point, Bayswater and Devonport
Pier 2 – departs for Waiheke Island and Half Moon Bay
Pier 3 – departs for West Harbour, Pine Harbour and Coromandel
Pier 4 – departs for Gulf Harbour and Stanley Bay

Table 10.2A: Morning Cyclist Movements – Which Ferry Boarded (n)

Ferry	2009	2010	2011	2012	Change 10-11
Pier Two					
Half Moon Bay	0	0	0	**0**	0
Waiheke	1	0	4	**2**	-2
Pier Three					
Pine Harbour	0	0	0	**0**	0
West Harbour	1	0	0	**0**	0
Coromandel	-	-	-	**3**	3
Pier Four					
Gulf Harbour	0	0	0	**0**	0
Stanley Bay	4	0	1	**1**	0
Total	**6**	**0**	**5**	**6**	**1**

Note: At Pier 1, it is not possible to identify which ferry cyclists are boarding.

Table 10.2B: Morning Cyclist Movements – Which Ferry Disembarked (n)

Ferry	2009	2010	2011	2012	Change 11-12
Pier One					
Bayswater	22	-	35	**12**	-23
Birkenhead	34	-	28	**14**	-14
Devonport	44	-	78	**40**	-38
Don't know	-	-	-	**62**	62
Pier Two					
Half Moon Bay	4	10	7	**-**	-7
Waiheke	12	18	25	**-**	-25
Pier Three					
Pine Harbour	2	8	8	**5**	-3
West Harbour	1	0	0	**0**	0
Pier Four					
Gulf Harbour	1	1	1	**3**	2
Stanley Bay	1	3	4	**1**	-3
Total	**121**	**40**	**186**	**137**	**-49**

- Almost all cyclists using this site in the morning are adults (99 per cent, stable from 98 per cent in 2011).
- Seventy per cent of cyclists were wearing a helmet (stable from 68 per cent last year).
- The majority of cyclists were male (83 per cent, unchanged from 2011).

Table 10.3: Morning Cyclist Characteristics

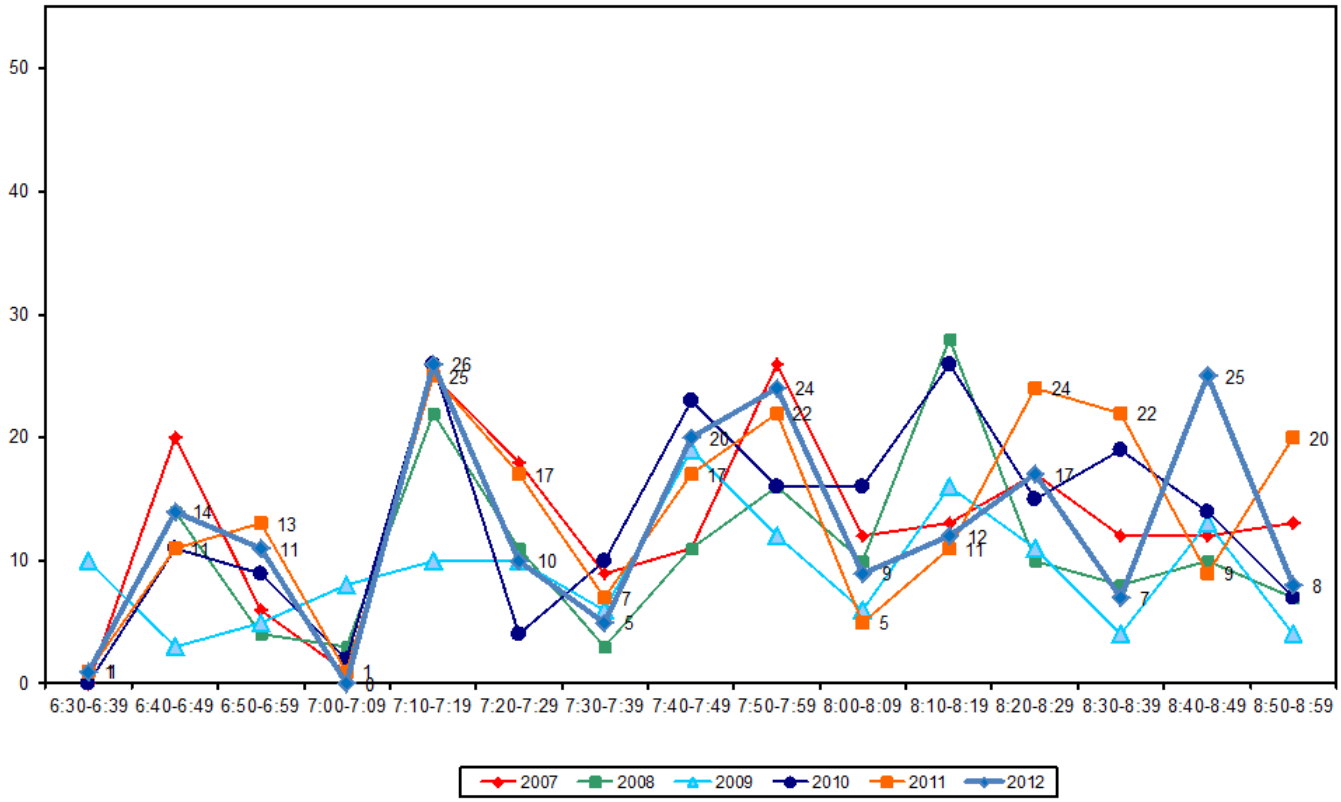
Ferry Terminal 2007 – 2012 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Cyclist Type							
Adult	98	96	100	99	98	**99**	**1**
School child	2	4	0	1	2	**1**	**-1**
Helmet Wearing							
Helmet on head	87	70	80	69	68	**70**	**2**
No helmet	13	30	20	31	32	**30**	**-2**
Gender							
Male	-	-	-	-	83	**83**	**0**
Female	-	-	-	-	17	**13**	**-4**
Can't tell	-	-	-	-	0	**4**	**4**
Base:	***195***	***158***	***137***	***198***	***205***	***189***	

- Morning cyclist volumes vary throughout the shift, with peaks at ten past and twenty to the hour across the morning peak.

Figure 23.2: Morning Peak Cyclist Frequency

Ferry Terminal 2007 – 2012 (n)



10.3 Evening Peak

Environmental Conditions

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

Key Points

- The volume of evening cycle movements at the Ferry Terminal site has increased from last year (200 movements, up from 186 in 2011).
- In contrast to the morning shift, the key movement in the evening is boarding the ferries at Pier One (128 movements, down from 135 in 2011).
- Compared with last year, the most notable change is boarding the ferry at Pier Two (up 13 movements).

Table 10.4: Evening Cyclist Movements

Ferry Terminal 2007 – 2012 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	Change 11-12
Pier One							
Boarding	131	122	88	137	135	**128**	-7
Disembarking	15	13	5	25	15	**22**	7
Pier Two							
Boarding	7	15	10	21	19	**32**	13
Disembarking	16	6	0	3	5	**4**	-1
Pier Three							
Boarding	0	2	5	6	6	**4**	-2
Disembarking	0	0	0	0	0	**1**	1
Pier Four							
Boarding	0	0	3	3	5	**7**	2
Disembarking	16	0	0	2	1	**2**	1
Total	**185**	**158**	**111**	**197**	**186**	**200**	**14**

Pier 1 – departs for Birkenhead, Northcote Point, Bayswater and Devonport
Pier 2 – departs for Waiheke Island and Half Moon Bay
Pier 3 – departs for West Harbour, Pine Harbour and Coromendel
Pier 4 – departs for Gulf Harbour and Stanley Bay

Table 10.5A: Evening Cyclist Movements – Which Ferry to Board (n)

Ferry	*2009*	*2010*	*2011*	*2012*	Change 11-12
Pier Two					
Half Moon Bay	3	4	6	**7**	1
Waiheke	7	17	13	**25**	12
Pier Three					
Pine Harbour	4	6	6	**4**	-2
West Harbour	1	0	0	**0**	0
Pier Four					
Gulf Harbour	0	0	0	**5**	5
Stanley Bay	3	3	5	**2**	-3
Total	**18**	**30**	**30**	**43**	**13**

Note: At Pier 1 it is not possible to identify which ferry cyclists are boarding

Table 10.5B: Evening Cyclist Movements – Which Ferry to Disembark (n)

Ferry	*2009*	*2010*	*2011*	*2012*	Change 11-12
Pier One					
Bayswater	0	-	0	**0**	0
Birkenhead	0	-	2	**0**	-2
Devonport	5	-	13	**2**	-11
Don't know				**20**	20
Pier Two					
Half Moon Bay	0	0	0	**-**	-
Waiheke	0	3	5	**-**	-
Pier Three					
Pine Harbour	0	0	0	**1**	1
West Harbour	0	0	0	**0**	0
Pier Four					
Gulf Harbour	0	1	0	**0**	0
Stanley Bay	0	1	1	**2**	1
Total	**5**	**5**	**21**	**25**	**4**

- Over the evening peak, almost all cyclists using this site were adults (99 per cent, stable from 98 per cent in 2011).
- Seventy-two per cent of cyclists were wearing a helmet (up from 68 per cent last year).
- The majority of cyclists were male (87 per cent, up from 83 per cent 12 months ago).

Table 10.6: Evening Cyclist Characteristics

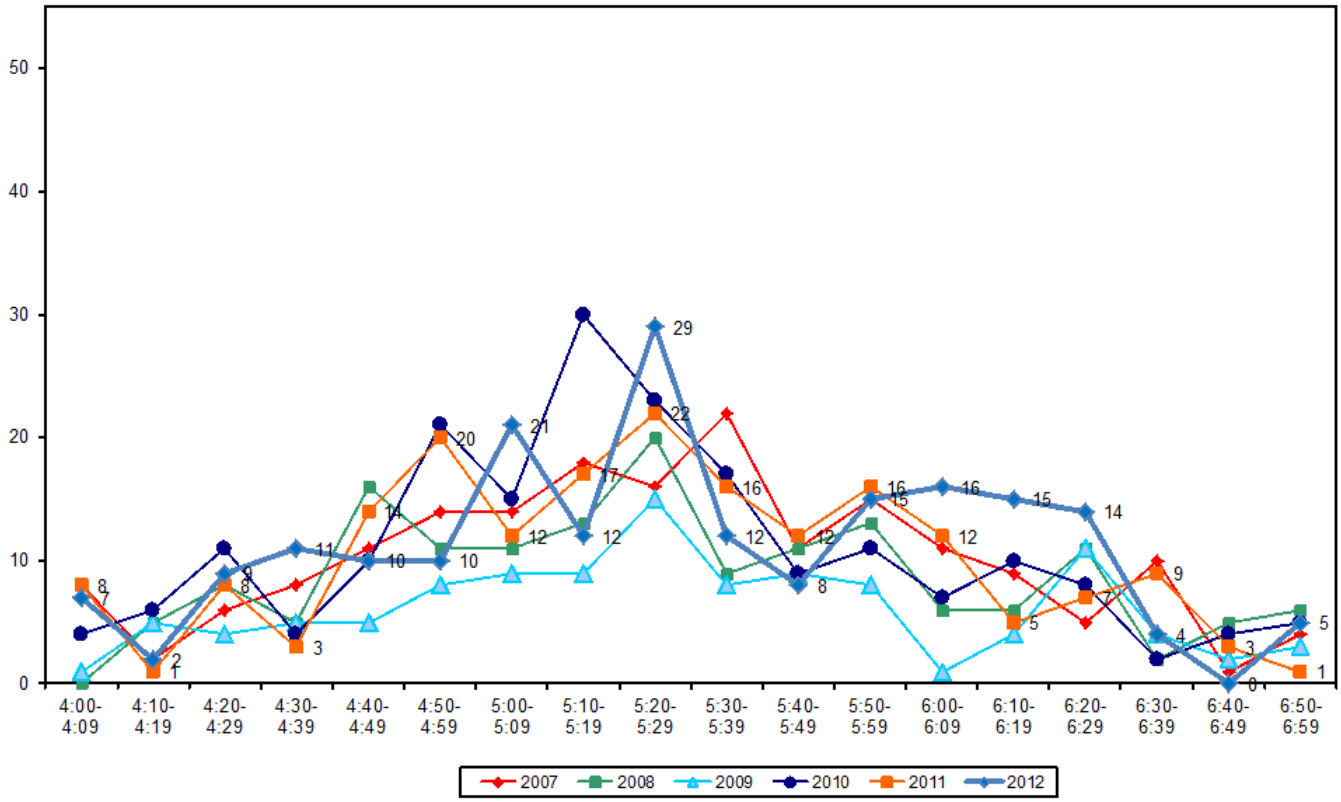
Ferry Terminal 2007 – 2012 (%)

	2007	2008	2009	2010	2011	2012	Change 11-12
Cyclist Type							
Adult	99	98	100	100	98	**99**	**1**
School child	1	2	0	0	2	**1**	**-1**
Helmet Wearing							
Helmet on head	85	69	80	71	68	**72**	**4**
No helmet	15	31	20	29	32	**28**	**-4**
Gender							
Male	-	-	-	-	83	**87**	**4**
Female	-	-	-	-	17	**13**	**-4**
Can't tell	-	-	-	-	0	**0**	**0**
Base:	***185***	***158***	***111***	***198***	***186***	***200***	

- Evening cyclist movement volumes vary throughout the shift, increasing from the beginning of the shift and peaking between 5:20 and 5:29 (29 movements).

Figure 10.6: Evening Peak Cyclist Frequency

Ferry Terminal 2007 – 2012 (n)



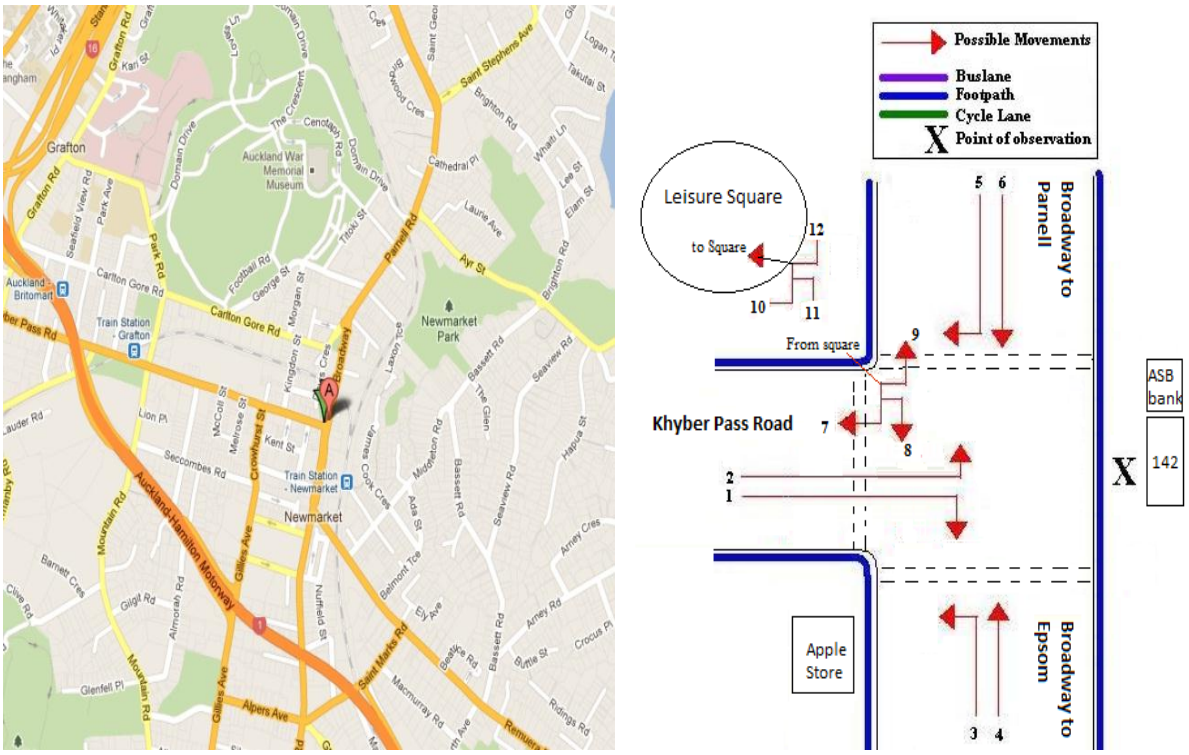
10.4 Waiheke Island Ferry Terminal

- A count was conducted on the morning of Friday the 30th of March 2012 at the Waiheke Island ferry wharf. Twelve parked cycles were observed.

11. BROADWAY/KHYBER PASS ROAD, NEWMARKET (SITE 90)

Figure 11.1 shows the possible cyclist movements at this intersection.

Figure 11.1: Cycle Movements: Broadway/Khyber Pass Road



Note: This site was monitored for the first time in 2012. Consequently no comparative results are available.

11.1 Site Summary

	Raw Counts			AADT
	Morning Peak	Evening Peak	Total	Total
2012	**292**	**285**	**577**	**839**

11.2 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

- Two hundred and ninety-two cyclist movements were recorded at the Broadway/Khyber Pass Road site in 2012.
- The key morning movements are heading north on Broadway (Movement 4 = 81 movements) and going in the opposite direction (Movement 6 = 76 movements).
- As this is a new site in 2011, comparisons with previous years cannot be made.

Table 11.1: Morning Cyclist Movements

Broadway/Khyber Pass Road 2012 (n)

Movement	*2012*
1	**64**
2	**2**
3	**23**
4	**81**
5	**4**
6	**76**
7	**0**
8	**1**
9	**1**
10	**1**
11	**36**
12	**3**
Total	**292**

- Over the morning peak, the majority of cyclists were adults (98 per cent).
- Almost all cyclists were wearing a helmet (98 per cent).
- Two-thirds of the cyclists were male (67 per cent).
- Almost all cyclists were riding on the road (95 per cent).

Table 11.2: Morning Cyclist Characteristics

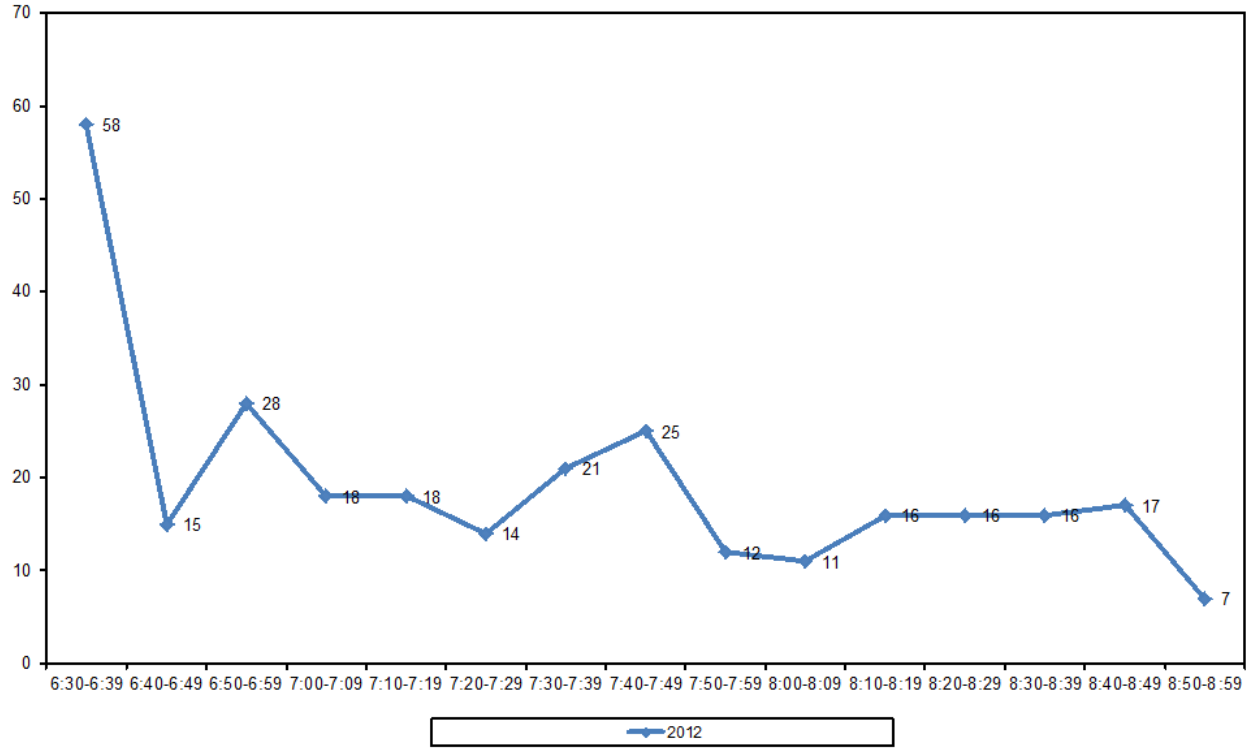
Broadway/Khyber Pass Road 2012 (%)

	2012
Cyclist Type	
Adult	**98**
School child	**2**
Helmet Wearing	
Helmet on head	**98**
No helmet	**2**
Gender	
Male	**67**
Female	**11**
Can't tell	**22**
Where Riding	
Road	**95**
Footpath	**5**
Base:	***292***

- Morning cyclist volumes peak at the start of the observation period between 6:30am and 6:39am (58 movements), decline, then remain steady throughout the rest of the monitoring period

Figure 11.2: Morning Peak Cyclist Frequency

Broadway/Khyber Pass Road 2012 (n)



Note: In 2012, 17 per cent of the total cycle movements in the morning peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *Eleven cyclists at 6.34am*
- *Nine cyclists at 6:35am*
- *Seven cyclists at 6:37am*
- *Seventeen cyclists at 6:37am*
- *Three cyclists at 6:40am*
- *Three cyclists at 7:03am*

11.3 Evening Peak

Environmental Conditions

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

Key Points

- Two hundred and eighty-five cyclist movements were recorded during the evening shift at the Broadway/Khyber Pass Road site in 2012.
- The key morning movements are heading south on Broadway (Movement 6 = 100 movements), turning right from Khyber Pass onto Broadway (Movement 1 = 55 movements) and north along Broadway (Movement 4 = 53 movements).
- As this is a new site in 2011, comparisons with previous years cannot be made.

Table 11.3: Evening Cyclist Movements
Broadway/Khyber Pass Road 2012 (n)

Movement	*2012*
1	**55**
2	**12**
3	**11**
4	**53**
5	**8**
6	**100**
7	**1**
8	**36**
9	**0**
10	**2**
11	**7**
12	**0**
Total	**285**

- Over the morning peak, the majority of cyclists were adults (95 per cent).
- Almost all cyclists were wearing a helmet (95 per cent).
- Eighty-one per cent of the cyclists were male.
- Almost all cyclists were riding on the road (93 per cent).

Table 11.4: Evening Cyclist Characteristics

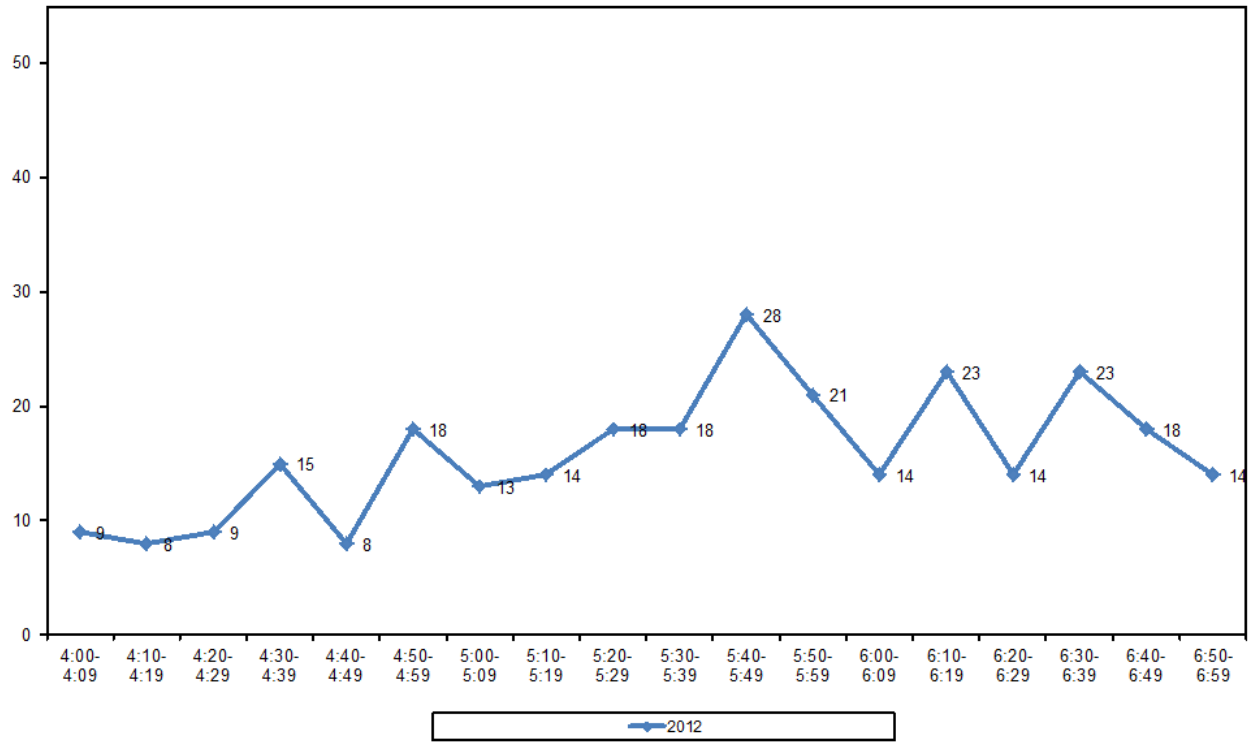
Broadway/Khyber Pass Road 2012 (%)

	2012
Cyclist Type	
Adult	**95**
School child	**5**
Helmet Wearing	
Helmet on head	**95**
No helmet	**5**
Gender	
Male	**81**
Female	**14**
Can't tell	**5**
Where Riding	
Road	**93**
Footpath	**7**
Base:	***285***

- Evening cyclist volumes were relatively stable throughout the shift, peaking between 5:40pm and 5:49pm (28 movements).

Figure 11.3: Evening Peak Cyclist Frequency

Broadway/Khyber Pass Road 2008 – 2012 (n)



Note: In 2012, ten cyclists were observed riding together at this site at 6:38pm. This equates to four per cent of all evening peak cyclists at this site.

12. SCHOOL BIKE SHED COUNT

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

Background Information

- A total of 12 schools in the Waitemata and Gulf ward took part in the school bike shed count.
- Of the schools who participated, most do not have policies that restrict students cycling to school[10].
- The designated count day was Tuesday 6th of March 2012[11].

Key Points

- Of those eligible to cycle, on average two per cent of students are cycling to their schools (unchanged from last year).
- Across the 12 eligible schools that responded, n=168 students were reported to cycle to school.
- Waiheke High School reported the highest share of cyclists – 6 per cent of all eligible students currently cycling.
- Of the 10 schools that participated in the count in both 2011 and 2012, five (Waiheke High School, ACG Senior College, Parnell District School, Marist College and St Mary's College Ponsonby) reported an increase in the share of students cycling to school.
- Three schools (25 per cent) had no students cycling to school (down from 38 per cent in 2011).

[10] The following schools have policies surrounding the riding of bicycles to school:
- Kadimah School "permits years 6 to 8"
- ACG Senior College *"permits middle school and above"*
- Mulberry Grove School "*Students from year 6 may ride provided they have completed a bike safety course and their bike is of an appropriate standard"*

[11] Ponsonby Intermediate conducted their count on Thursday 10th March 2012

Table 12.1 shows the results of the 12 schools surveyed in the Waitemata and Gulf ward.

Table 12.1: Summary Table of School Bike Count

2007 – 2012 (n)

School Name	*School Type*	*School Roll Eligible To Cycle*	*No. of Cycles Counted*	*Cyclists as share of those eligible[1]*					
				2012	*2011*	*2010*	*2009*	*2008*	*2007*
Waiheke High School	Intermediate/Secondary	480	31	**6%**	4%	4%	3%	2%	3%
ACG Senior College	Composite	779	28	**4%**	0%	1%	-	0%	-
Ponsonby Intermediate	Intermediate	525	20	**4%**	5%	6%	5%	4%	6%
Auckland Grammar	Secondary	2500	68	**3%**	4%	4%	4%	3%	2%
Parnell District School	Full Primary	459	14	**3%**	1%	-	-	-	-
Kadimah School	Full Primary	130	3	**2%**	8%	-	-	-	-
Auckland Girls Grammar School	Secondary	1450	2	**<1%**	<1%	0%	0%	0%	<1%
Marist College	Intermediate/Secondary	750	1	**<1%**	0%	<1%	0%	-	-
St Marys College Ponsonby	Intermediate/Secondary	872	1	**<1%**	0%	0%	0%	-	-
Auckland International College	Secondary	380	0	**0%**	0%	0%	0%	0%	-
MindAlive	Composite	47	0	**0%**	-	-	-	-	-
Mulberry Grove School	Full Primary	31	0	**0%**	-	-	-	-	-
Total		**8403**	**168**	**2%**	**2%**	**-**	**-**	**-**	**-**

Table 12.2 illustrate the rates of cycling to school at different school levels. Rates of cycling to school are highest among intermediate schools (4 per cent, stable from 5 per cent in 2011), while combined intermediate and secondary schools have the lowest rates in this ward (2 per cent).

Table 12.2: Summary Table of School Bike Count by School Type

2007 – 2012 (%)

School Type	***Number of Schools Responded in 2011***	***Cyclists as share of those eligible***						
		2007	**2008**	**2009**	**2010**	**2011**	**2012**	**Change 11-12**
Intermediate	1	6%	4%	5%	6%	5%	**4%**	**-1**
Composite	2	-	0%	-	1%	1%	**3%**	**-2**
Full primary	3	-	-	-	-	2%	**3%**	**1**
Intermediate/Secondary	3	-	-	0%	0%	0%	**2%**	**2**
Secondary	3	2%	1%	2%	2%	2%	**2%**	**0**

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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[12] 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)[13], 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.

[12] Annual average daily traffic

[13] 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.

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%