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Research Report Prepared for
Auckland Transport

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2013 Auckland Region Manual Cycle Monitor

- Manukau Ward -

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1. MANUKAU WARD SUMMARY OF RESULTS

1.1 Introduction

The Need For Reliable Cycle Trip Data

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

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

Manual Cycle Monitoring

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

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

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

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

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

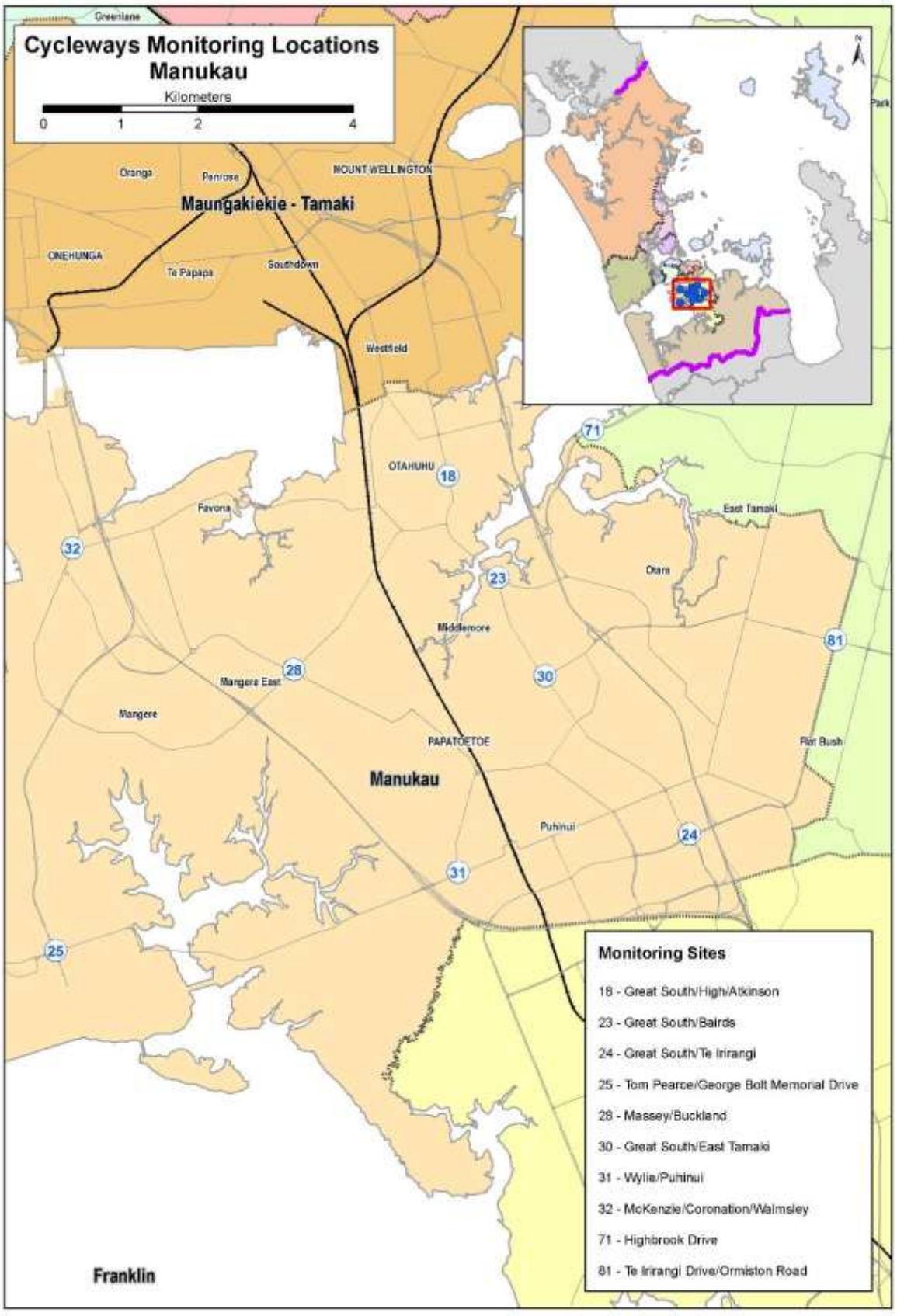
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and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

This report presents results from manual cycle counts conducted at 10 sites in the Manukau ward following a standardised methodology. Results are presented site-by-site, as well as being aggregated to a ward and region level. For sites also monitored in previous years, comparative results are provided.

Important Note: This report provides the results of manual cycle monitoring conducted at 10 pre-determined sites in the Manukau 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 Manukau ward. Note that one site (Te Irirangi Drive/Ormiston Road in Flat Bush - Site 81) lies on the border with the Howick ward. Consequently results for this site have been included in both ward reports.

Figure 1.1: 2013 Cycle Monitoring Locations in Manukau Ward



1.2 Methodology

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

Choice of Sites

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

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

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

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

Monitoring Times

Time Of Day

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

Day Of Week

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

Time Of Year

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

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

It was agreed that manual counts would commence on Tuesday the 5th of March and be conducted on the first three fine days of the 5th, 6th, 7th, 12th, 13th, or 14th of March.

Counts were conducted on the following days:

• Tuesday 5th March	Albany, North Shore, Waitakere
• Wednesday 6th March	Howick, Franklin, Manukau, Waitemata & Gulf
• Thursday 7th March	Whau, Albert-Eden-Roskill, Orakei, Manurewa-Papakura, Maungakiekie-Tamaki

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 four count days in 2013 was as follows:

Tuesday 5th March

- Sunrise: 7:10am; Sunset: 7:55pm.
- Highest temperature: 24.0 degrees Celsius.
- Mostly fine weather with a few sites experiencing light drizzle in the morning and cloud in the evening.

Wednesday 6th March

- Sunrise: 7:11am; Sunset: 7:53pm.
- Highest temperature: 24.0 degrees Celsius.
- Mostly fine weather with clear sky in the morning and evening shifts.

Thursday 7th March

- Sunrise: 7:12am; Sunset: 7:52pm.
- Highest temperature: 26.0 degrees Celsius.
- Mostly fine weather with some clouds for some sites in the morning and evening shifts.

Conducting The Manual Counts

Scoping Visit

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

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

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

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

Briefing Session

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

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

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

Conducting The Manual Counts

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

During their shift the surveyor collected data on:

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

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

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

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

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

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

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

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

Data Analysis

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

Annual Average Daily Traffic (AADT) Analysis

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

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

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

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

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

School Bike Shed Counts

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

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

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

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.

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

2. This email was then sent to all eligible schools in Auckland region (n=306) 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 5th 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 2013, 283 responses were received, a response rate of 92 per cent. (This compares with 74 per cent in 2012).

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 Manukau 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 Manukau ward, they hide much of the specific details of cycling behaviour at individual sites. The site-specific data varies significantly from site to site, and can be found in Sections two to eleven of this report.

Note: Surveying in the Manukau ward was undertaken on Wednesday 6th of March, 2013. Sunrise was at 7:11am and sunset was at 7:53pm. The highest temperature was 24.0 degrees Celsius.

1.4 Morning Peak

Environmental Conditions

- All sites had good weather throughout the morning shift.
- There were no roadwork or accidents observed during the morning monitoring period.

Key Points

- Across the seven sites monitored since 2007, the number of cyclist movements has increased (264 this year, compared with 182 in 2012). This represents a 45 per cent increase. The raw count of 264 movements is the highest recorded since monitoring began in 2007.
- A total of 323 cyclist movements were recorded across the ten sites in the morning peak period (between 6:30am and 9:00am) in 2013, a 44 per cent increase and again the highest raw count recorded.
- Three per cent (n=11) of the morning cycle movements were made by pelotons. This compares with no pelotons in 2012.
- The average volume of morning cyclists across the seven sites monitored since 2007 is 38 cycle movements (up from 26 cycle movements in 2012). The average volume of morning cyclists across all ten sites is 32, up from 22 last year.
- The busiest site in the morning peak was the intersection of Great South Road and Bairds Road (50 movements, up from 39 movements last year), whereas the site at Tom Pearce/George Bolt Memorial Drive had the lowest level of morning cyclist traffic (4 cycle movements).
- All but one site have recorded increases this year compared to 2012. The intersection of Great South Road/High Street/Atkinson Avenue had the same cycle volume as last year.
- The most noticeable increases occurred at:
  - McKenzie/Coronation/Walmsley Road – up 153 per cent
  - Wyllie Avenue/Puhinui Road – up 113 per cent

Table 1.1: Summary Of Morning Cyclist Movements

2007 – 2013 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13	Change 07-13
23	Great South/Bairds Road	32	27	29	34	40	39	**50**	**28%**	**56%**
30	Great South/East Tamaki Road	36	24	33	25	44	40	**49**	**23%**	**36%**
32	McKenzie/Coronation/Walmsley Road	28	21	22	38	32	19	**48**	**153%**	**71%**
24	Great South Road/Te Irirangi Dr/ Cavendish Dr	34	25	19	28	41	28	**42**	**50%**	**24%**
18	Great South Road/High Street/Atkinson Avenue	38	30	21	25	20	34	**34**	**0%**	**-11%**
28	Massey/Buckland Road	12	11	19	16	18	14	**24**	**71%**	**100%**
31	Wyllie Avenue/Puhinui Road	18	8	12	23	13	8	**17**	**113%**	**-6%**
	Average per site (for 7 sites since 2007)	**28**	**21**	**22**	**27**	**30**	**26**	**38**	**46%**	**36%**
	Total (for 7 sites since 2007)	**194**	**146**	**155**	**189**	**208**	**182**	**264**	**45%**	**36%**
81	Te Irirangi Drive/Ormiston Road	-	-	13	25	24	18	**31**	**72%**	**-**
71	Highbrook Drive	-	13	20	27	23	21	**24**	**14%**	**-**
25	Tom Pearce/George Bolt Memorial Drive	-	-	6	5	15	3	**4**	**33%**	**-**
	Average per site (all sites)	**-**	**20**	**19**	**25**	**27**	**22**	**32**	**45%**	**-**
	Total (all sites)	**-**	**159**	**194**	**246**	**270**	**224**	**323**	**44%**	**-**

- As shown in Table 1.2 below, morning cyclist characteristics this year were similar to those reported in 2012. Overall, four in five cyclists were adults (89 per cent, up from 83 per cent last year).
- The majority of cyclists were wearing a helmet (78 per cent, stable from 2012).
- Most of the morning cyclists were male (86 per cent).
- Fifty-two per cent of cyclists were riding on the road, down from 59 per cent in 2012.

Table 1.2: Summary of Morning Cyclist Characteristics

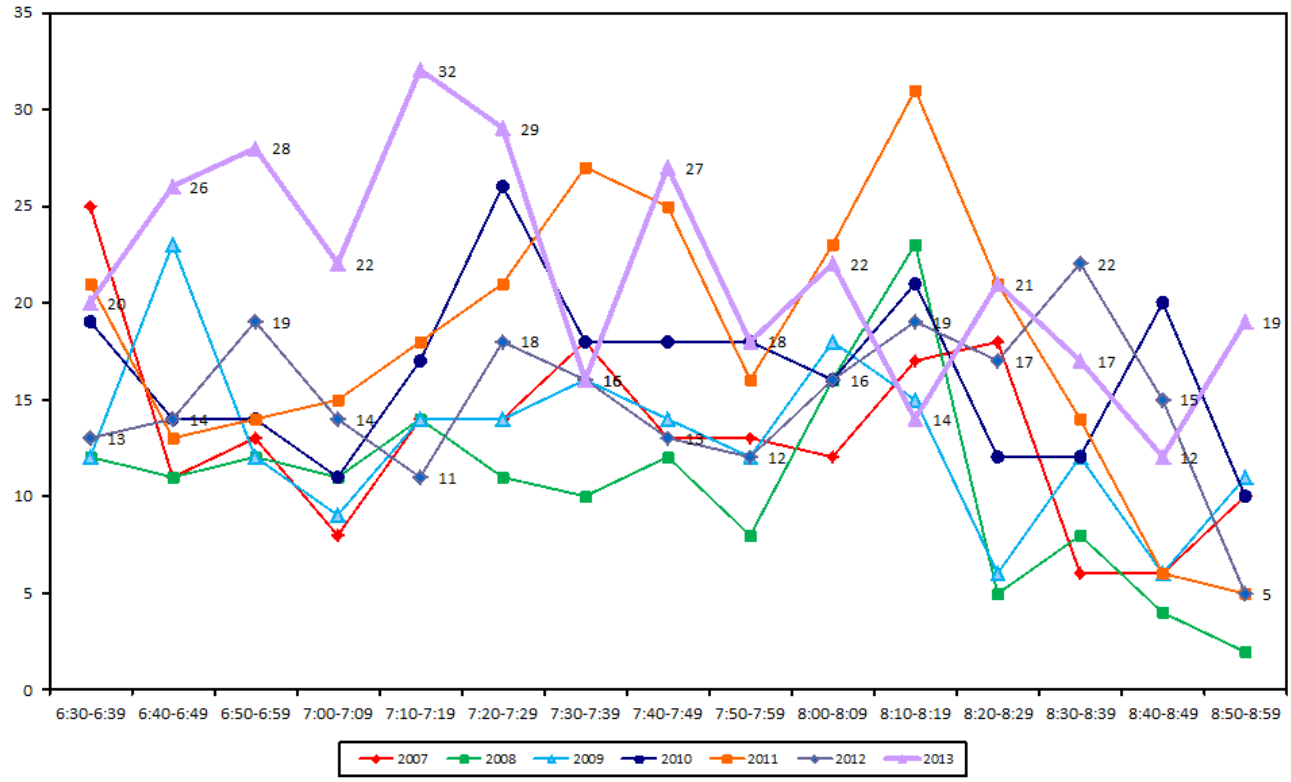
2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	86	86	88	90	87	83	**89**	**6**
School child	14	14	12	10	13	17	**11**	**-6**
Helmet Wearing								
Helmet on head	85	79	82	85	87	78	**78**	**0**
No helmet	15	21	18	15	13	22	**22**	**0**
Gender								
Male	-	-	-	-	85	89	**86**	**-3**
Female	-	-	-	-	12	8	**11**	**3**
Can't tell	-	-	-	-	3	3	**3**	**0**
Where Riding								
Road	73	56	72	64	66	59	**52**	**-7**
Footpath	27	44	20	29	29	30	**40**	**10**
Off-road cycleway	0	0	8	7	5	11	**8**	**-3**
Base:	***194***	***159***	***194***	***246***	***270***	***224***	***323***	

- Figure 1.2 illustrates the total number of cyclists in the morning by time of movement. This year, there has been fluctuations in volumes throughout the monitoring period, several peaks and troughs in the traffic flow clearly evident. Cycle traffic peaked between 7:10am and 7:19am (32 movements), then decreased gradually until the end of the shift. Cycle volumes at the beginning of the morning peak were noticeably higher than in previous years while volumes in the latter part of the period were more consistent with previous years.

Figure 1.2: Total Cyclist Frequency – Morning Peak

2007 – 2013 (n)



1.5 Evening Peak

Environmental Conditions

- The weather was fine for most sites throughout the evening shift.
- At Site 23 Great South/Bairds Road, road work commenced at 6.50pm, blocking one lane and preventing the left turn from Great South Rd into Bairds Rd (Movement 2).
- There were no other road works or accidents at any sites during the evening monitoring period.

Key Points

- Across the seven sites monitored since 2007, the number of cycle movements has increased by 34 per cent – from 281 last year to 376 this year. The raw count of 376 movements is also the highest evening traffic volume recorded in the ward.
- A total of 482 cyclist movements were recorded across the ten sites in the evening peak period (between 4:00pm and 7:00pm) in 2013, up from 354 last year. Again this is the highest raw count of evening traffic in this ward.
- Fifteen per cent (n=73) of the total cycle movements during the evening peak were observed cycling as groups. This compares with 2 per cent (n=7) in 2012.
- The average volume of evening cyclists across the seven sites monitored since 2007 is 54 cycle movements. This compares with an average of 40 movements in 2012. The average volume of evening cyclists across all 10 sites is 48, up from 35 movements last year.
- Wyllie Avenue/Puhinui Road has been the busiest in terms of the evening cyclists' activity (78 cycle movements, the highest count at this site since 2007). In contrast, the Highbrook Drive site had the lowest level of evening cyclist traffic (23 cycle movements).
- Out of the ten sites, only one recorded a decrease this year compared to 2012. Highbrook Drive saw a 21 per cent decline in cycle traffic this year.
- All other sites experienced increases in cycle volume, most significantly at:
  - Tom Pearce/George Bolt Memorial Drive – up 142 per cent; and
  - Wyllie Avenue/Puhinui Road – up 100 per cent.

Table 1.3: Summary of Evening Cyclist Movements

2007 – 2013 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13	Change 07-13
31	Wyllie Avenue/Puhinui Road	20	25	23	34	62	39	**78**	**100%**	**290%**
24	Great South Road/Te Irirangi Dr/ Cavendish Dr	39	26	22	44	53	50	**77**	**54%**	**97%**
23	Great South/Bairds Road	36	29	28	37	49	42	**53**	**26%**	**47%**
30	Great South/East Tamaki Road	37	27	30	40	45	46	**47**	**2%**	**27%**
18	Great South Road/High Street/Atkinson Avenue	46	30	28	36	51	41	**45**	**10%**	**-2%**
32	McKenzie/Coronation/Walmsley Road	42	36	30	49	61	29	**42**	**45%**	**0%**
28	Massey/Buckland Road	31	20	20	29	35	34	**34**	**0%**	**10%**
	Average per site (for 7 sites since 2007)	**36**	**28**	**26**	**38**	**51**	**40**	**54**	**35%**	**50%**
	Total (for 7 sites since 2007)	**251**	**193**	**181**	**269**	**356**	**281**	**376**	**34%**	**50%**
81	Te Irirangi Drive/Ormiston Road	-	-	20	41	32	32	**54**	**69%**	**-**
25	Tom Pearce/George Bolt Memorial Drive	-	-	21	7	39	12	**29**	**142%**	**-**
71	Highbrook Drive	-	16	18	13	30	29	**23**	**-21%**	**-**
	Average per site (all sites)	**-**	**26**	**24**	**33**	**46**	**35**	**48**	**37%**	**-**
	Total (all sites)	**-**	**209**	**240**	**330**	**457**	**354**	**482**	**36%**	**-**

- Evening cyclist characteristics this year were consistent with 2012. In particular, the majority of evening cyclists were adults (90 per cent, up from 85 per cent last year).
- Helmet-wearing was very common this year in the evening (80 per cent, up from 70 per cent in 2012).
- Most cyclists were male (90 per cent, stable from 2012).
- On average, two in three evening cyclists were riding on the road (65 per cent, stable from 63 per cent last year).

Table 1.4: Summary of Evening Cyclist Characteristics

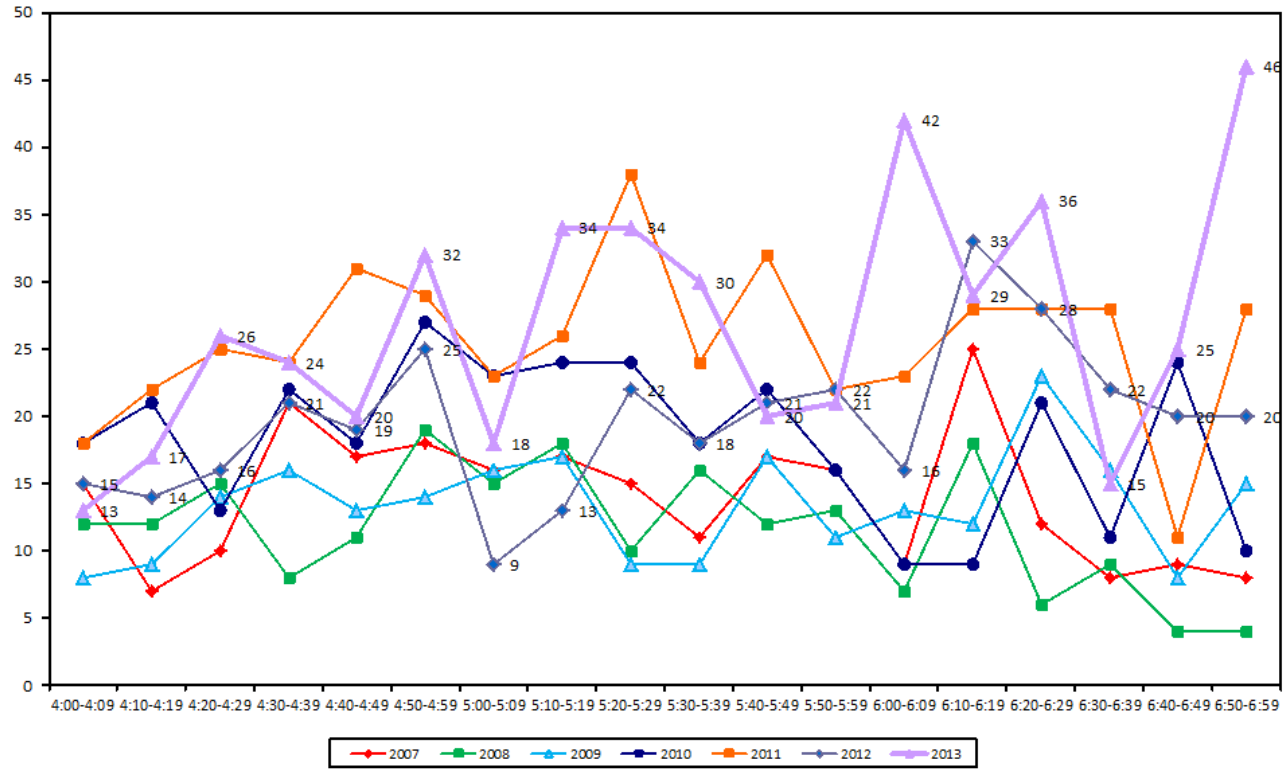
2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	83	87	88	91	90	85	**90**	**5**
School child	17	13	12	9	10	15	**10**	**-5**
Helmet Wearing								
Helmet on head	78	74	78	77	79	70	**80**	**10**
No helmet	22	26	22	23	21	30	**20**	**-10**
Gender								
Male	-	-	-	-	83	92	**90**	**-2**
Female	-	-	-	-	13	8	**9**	**1**
Can't tell	-	-	-	-	4	0	**1**	**1**
Where Riding								
Road	64	64	68	66	64	63	**65**	**2**
Footpath	36	36	27	32	33	28	**30**	**2**
Off-road cycleway	0	0	5	2	3	9	**5**	**-4**
Base:	***251***	***209***	***240***	***330***	***457***	***354***	***483***	

- Cyclist volumes by time of movement in the evening are illustrated in Figure 1.3. Similar to the observations in the morning, evening cyclist volumes fluctuated throughout the monitoring period. Overall, the cycle traffic followed an increasing trend to reach a peak at the end of the monitoring period with 46 movements.

Figure 1.3: Total Cyclist Frequency – Evening Peak

2007 – 2013 (n)



1.6 Aggregate Total

- In 2013, cycle volume in this ward has been the heaviest since the ward was first monitored in 2007. Across the seven older sites, the number of cycle movements has increased by 38 per cent over the last 12 months, to a total of 641.
- Across all ten sites, a total of 806 cyclist movements were recorded (up from 578 movements in 2012; this equates to a 39 per cent increase). One per cent (n=84) of the total cycle movements were observed cycling as pelotons.
- The busiest site was the intersection of Great South Road/Te Irirangi Dr/ Cavendish Dr with a total of 119 movements (up from 78 movements in 2012), while the Tom Pearce/George Bolt Memorial Drive intersection had the lowest volumes (33 movements, up from 15 movements in 2012).
- All but one site recorded increases in total cyclist numbers this year compared with 2012. Cycle volumes at Highbrook Drive have decreased by six per cent over the last 12 months.
- The most significant increases in traffic volume occurred at:
  - Tom Pearce/George Bolt Memorial Drive – up 120 per cent
  - Wyllie Avenue/Puhinui Road – up 102 per cent

Table 1.5: Summary of Total Cyclist Movements

2007 – 2013 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13	Change 07-13
24	Great South Road/Te Irirangi Dr/ Cavendish Dr	73	51	41	72	94	78	**119**	**53%**	**63%**
23	Great South/Bairds Road	68	56	57	71	89	81	**103**	**27%**	**51%**
30	Great South/East Tamaki Road	73	51	63	65	89	86	**97**	**13%**	**33%**
31	Wyllie Avenue/Puhinui Road	38	33	35	57	75	47	**95**	**102%**	**150%**
32	McKenzie/Coronation/Walmsley Road	70	57	52	87	93	48	**90**	**88%**	**29%**
18	Great South Road/High Street/Atkinson Avenue	84	60	49	61	71	75	**79**	**5%**	**-6%**
28	Massey/Buckland Road	43	31	39	45	53	48	**58**	**21%**	**35%**
	Average per site (for 7 sites since 2007)	**64**	**48**	**48**	**65**	**81**	**66**	**92**	**39%**	**44%**
	Total (for 7 sites since 2007)	**449**	**339**	**336**	**458**	**564**	**463**	**641**	**38%**	**43%**
81	Te Irirangi Drive/Ormiston Road	-	-	33	66	56	50	**85**	**70%**	-
71	Highbrook Drive	-	29	38	40	53	50	**47**	**-6%**	-
25	Tom Pearce/George Bolt Memorial Drive	-	-	27	12	54	15	**33**	**120%**	-
	Average per site (all sites)	**-**	**46**	**43**	**58**	**73**	**58**	**81**	**40%**	-
	Total (all sites)	**-**	**368**	**434**	**576**	**727**	**578**	**806**	**39%**	-

- The overall cyclist characteristics are illustrated in Table 1.6. In total, 90 per cent of cyclists were adults, up from 84 per cent in 2012.
- Most cyclists were wearing a helmet (79 per cent, up from 73 per cent last year).
- Eighty-eight per cent of the riders were male, stable from last year.
- Sixty per cent of cyclists were riding on the road, stable from last year. There has been a slight decrease in the use of cycleway, and a small increase in riding on footpath.

Table 1.6: Summary of Total Cyclist Characteristics

2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	84	86	88	91	89	84	**90**	**6**
School child	16	14	12	9	11	16	**10**	**-6**
Helmet Wearing								
Helmet on head	81	76	79	81	82	73	**79**	**6**
No helmet	19	24	21	19	18	27	**21**	**-6**
Gender								
Male	-	-	-	-	83	90	**88**	**-2**
Female	-	-	-	-	12	8	**10**	**2**
Can't tell	-	-	-	-	5	2	**2**	**0**
Where Riding								
Road	68	60	70	65	65	61	**60**	**-1**
Footpath	32	40	23	31	31	29	**34**	**5**
Off-road cycleway	0	0	6	4	4	10	**6**	**-4**
Base:	***449***	***368***	***434***	***576***	***727***	***578***	***806***	

1.7 Average Annual Daily Traffic (AADT) Estimate

AADT Estimate

- 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 Great South/Te Irirangi Drive/Cavendish Drive (170 daily movements, the highest count of this site since it was first monitored in 2007) and the lowest is at the Tom Pearce/George Bolt Memorial Drive intersection (46 daily movements).
- All but one site has recorded increases in total AADT estimates this year. Highbrook Drive experienced a six per cent decrease in cycle movements over the last 12 months.
- The most significant changes relative to last year are at:
  - Tom Pearce/George Bolt Memorial Drive – up 119 per cent
  - Wyllie Avenue/Puhinui Road – up 102 per cent
  - McKenzie/Coronation/Walmsley Road – 90 per cent

Table 1.7: AADT Estimates Based on Morning and Evening Cyclist Movements

2007 – 2013 (n)

Site No.	*Locations*	*2007 AADT*	*2008 AADT*	*2009 AADT*	*2010 AADT*	*2011 AADT*	*2012 AADT*	*2013 AADT*	Change 12-13	Change 07-13
24	Great South Road/Te Irirangi Drive/Cavendish Drive	106	74	59	103	136	112	**170**	**52%**	**64%**
23	Great South/Bairds Road	99	81	83	103	129	118	**150**	**27%**	**52%**
30	Great South/East Tamaki Road	106	74	92	93	129	125	**140**	**12%**	**32%**
31	Wyllie Avenue/Puhinui Road	55	47	50	82	105	66	**133**	**102%**	**142%**
32	McKenzie/Coronation/Walmsley Road	101	82	75	126	133	69	**131**	**90%**	**30%**
81	Te Irirangi Drive/Ormiston Road	-	-	47	95	81	72	**122**	**69%**	**-**
18	Great South Road/High Street/Atkinson Avenue	121	87	71	88	101	108	**114**	**6%**	**-6%**
28	Massey/Buckland Road	61	44	57	64	76	68	**84**	**24%**	**38%**
71	Highbrook Drive	-	42	55	59	77	72	**68**	**-6%**	**-**
25	Tom Pearce/George Bolt Memorial Drive	-	-	38	17	77	21	**46**	**119%**	**-**

1.8 School Bike Shed Count Summary

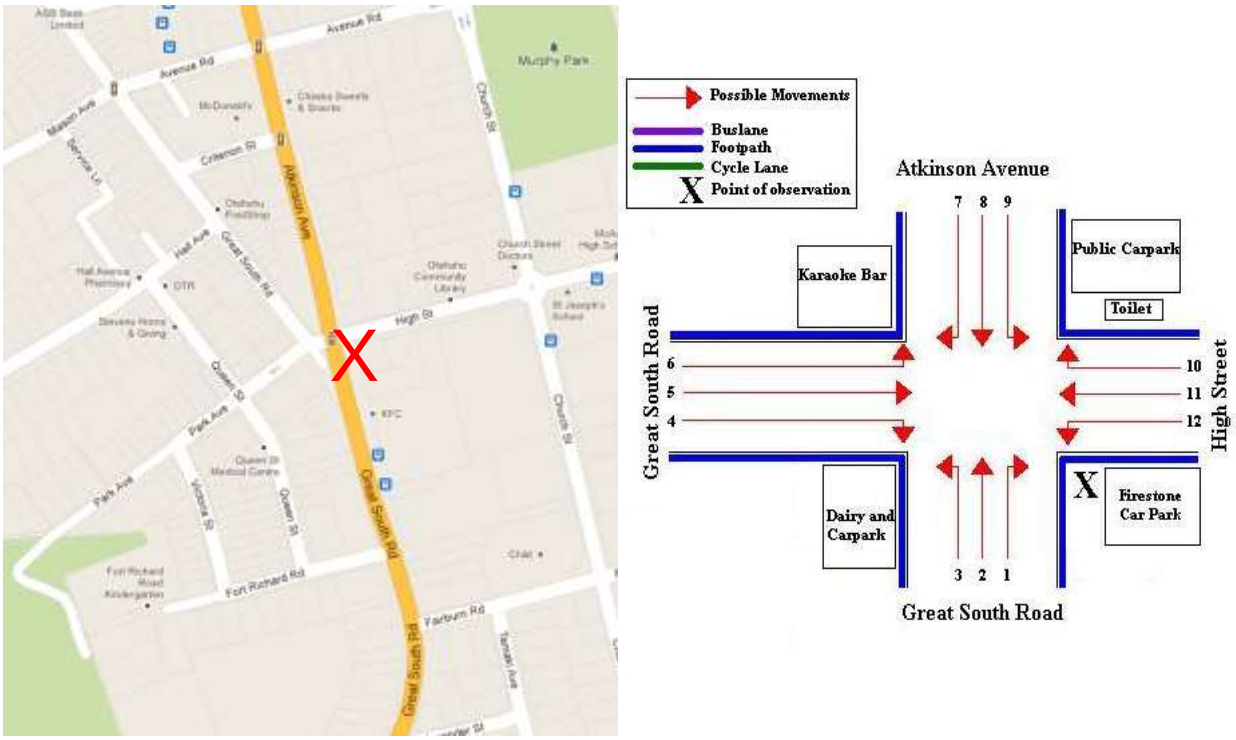
Key Points

- Among the surveyed schools, of those eligible to cycle, on average, less than one per cent of students are cycling to their schools (unchanged from 2012).
- Across the 36 schools that responded, 48 students were reported to cycle to school.
- This year, Papatoetoe Intermediate School reported the highest share of cyclists – 3 per cent of all eligible students currently cycling. This is stable from 2 per cent in 2012.
- Of the 36 schools that responded, 24 (67 per cent) had no students cycling to school.
- Rates of cycling to school are highest among intermediate schools (1 per cent, unchanged from last year).

2. GREAT SOUTH ROAD/HIGH STREET/ATKINSON AVENUE, OTAHUHU (SITE 18)

Figure 2.1 shows the possible cyclist movements at this intersection.

Figure 2.1: Cycle Movements: Great South Road/High Street



2.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	38	46	84	121
2008	30	30	60	87
2009	21	28	49	71
2010	25	36	61	88
2011	20	51	71	101
2012	34	41	75	108
2013	**34**	**45**	**79**	**114**

2.2 Morning Peak

Environmental Conditions

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

Key Points

- Morning cyclist volumes at the Great South Road/High Street intersection have remained unchanged (34 movements).
- The most common movement was travelling along Great South Road in a north-westerly direction (Movement 3 = 14 cyclists).
- Across the 12 movements possible at this intersection, the most notable changes were at Movement 2 (down 4 from last year) and at Movement 4 (up 4 from last year).

Table 2.1: Morning Cyclist Movements

Great South Road/High Street 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	0	2	0	0	1	**0**	**-1**
2	7	8	6	2	2	6	**2**	**-4**
3	11	11	4	10	5	16	**14**	**-2**
4	7	7	3	6	9	6	**10**	**4**
5	0	1	2	1	1	3	**3**	**0**
6	1	0	0	0	0	0	**0**	**0**
7	1	0	0	0	1	0	**0**	**0**
8	11	2	3	4	2	1	**3**	**2**
9	0	0	1	0	0	0	**0**	**0**
10	0	0	0	1	0	0	**0**	**0**
11	0	1	0	1	0	1	**1**	**0**
12	0	0	0	0	0	0	**1**	**1**
Total	**38**	**30**	**21**	**25**	**20**	**34**	**34**	**0**

- Over the morning peak in 2013, almost all cyclists were adults (97 per cent, down slightly from 100 per cent in 2012).
- The majority of the cyclists were wearing a helmet (85 per cent, slightly up from 82 per cent last year).
- Almost all cyclists were recorded as male (91 per cent).
- Sixty-eight per cent of cyclists were riding on the road, down from 71 per cent the previous measure.

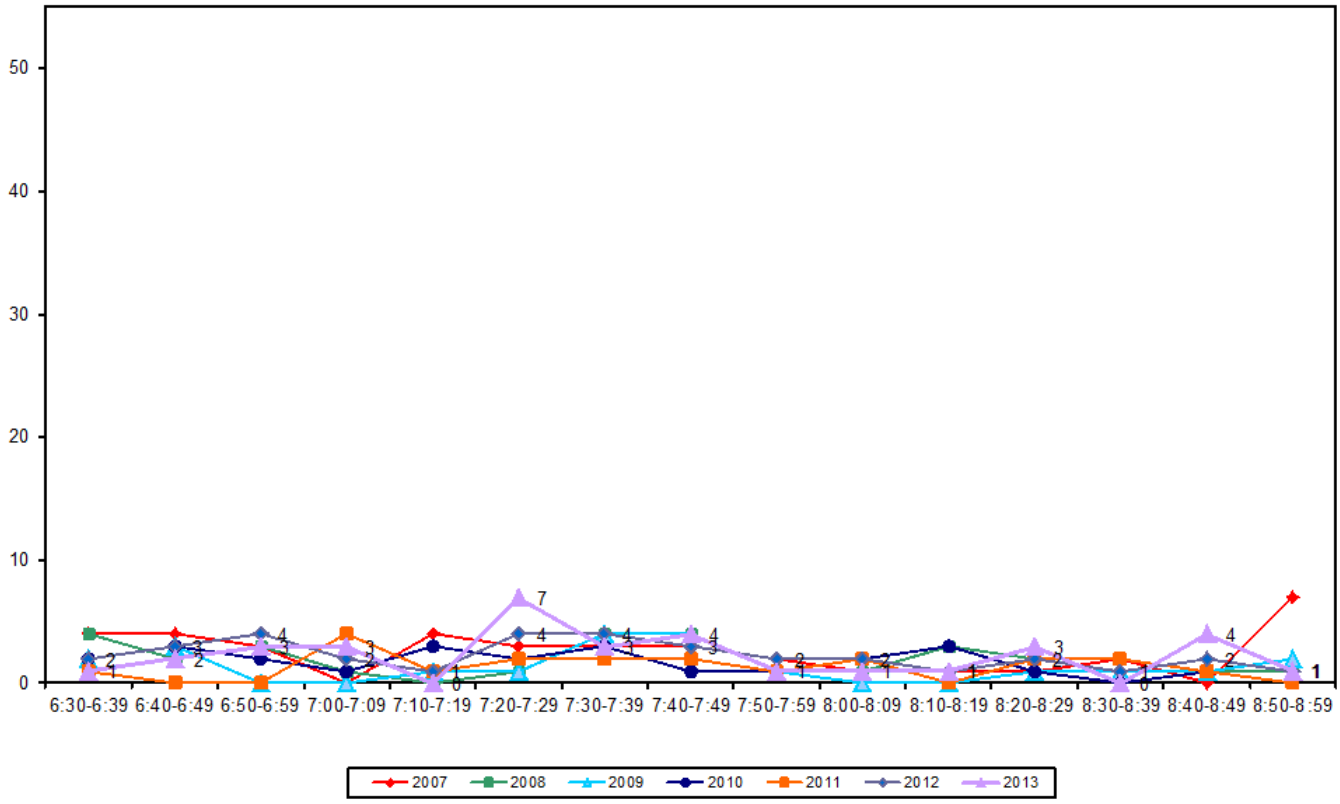
Table 2.2: Morning Cyclist Characteristics

Great South Road/High Street 2007 – 2013 (%)

	2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	**Change 12-13**
Cyclist Type								
Adult	97	100	95	96	85	100	**97**	**-3**
School child	3	0	5	4	15	0	**3**	**3**
Helmet Wearing								
Helmet on head	89	77	95	92	95	82	**85**	**3**
No helmet	11	23	5	8	5	18	**15**	**-3**
Gender								
Male	-	-	-	-	100	94	**91**	**-3**
Female	-	-	-	-	0	3	**9**	**6**
Can't tell	-	-	-	-	0	3	**0**	**-3**
Where Riding								
Road	89	70	86	76	75	71	**68**	**-3**
Footpath	11	30	14	24	25	29	**32**	**3**
Base:	***38***	***30***	***21***	***25***	***20***	***34***	***34***	

- The volume of morning cycle movements was low during the entire morning shift. There was peak between 7:20am and 7:29am (7 cyclist movements), otherwise there are no more than four cyclists recorded over any ten minute interval. The trend was consistent with previous years.

Figure 2.2: Morning Peak Cyclist Frequency
Great South Road/High Street 2007 – 2013 (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 total number of evening cycle movements recorded at the Great South Road/High Street intersection in 2013 (45 movements) represented an increase from last year's result (41 movements).
- The key movement was travelling along Great South Road in a south easterly direction (Movement 4 = 16 cyclists, the highest count since the site was first monitored in 2007).
- Across the 12 possible movements at this intersection, the most notable changes were at Movement 4 (up 4 from last year), Movement 5 (down 4 from last year) and Movement 8 (down 4 from last year).

Table 2.3: Evening Cyclist Movements

Great South Road/High Street 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	2	1	0	1	2	**1**	**-1**
2	8	4	3	7	5	3	**3**	**0**
3	6	7	4	7	6	6	**9**	**3**
4	13	3	7	9	11	12	**16**	**4**
5	1	4	2	0	4	7	**3**	**-4**
6	0	0	0	0	0	0	**0**	**0**
7	1	0	1	0	2	0	**0**	**0**
8	13	8	9	9	9	9	**5**	**-4**
9	2	1	0	2	1	1	**0**	**-1**
10	1	0	0	2	2	0	**2**	**2**
11	1	1	1	0	10	1	**4**	**3**
12	0	2	0	0	0	0	**2**	**2**
Total	**46**	**30**	**28**	**36**	**51**	**41**	**45**	**4**

- Over the evening peak, four out of every five cyclists were adults (82 per cent, stable from 80 per cent in 2012).
- Approximately two-thirds of cyclists were wearing a helmet (73 per cent, stable from last year).
- Almost all of the cyclists were male (96 per cent, up from 93 per cent in 2012).
- This year, 59 per cent of cyclists are riding on the road (up from 56 per cent in 2012).

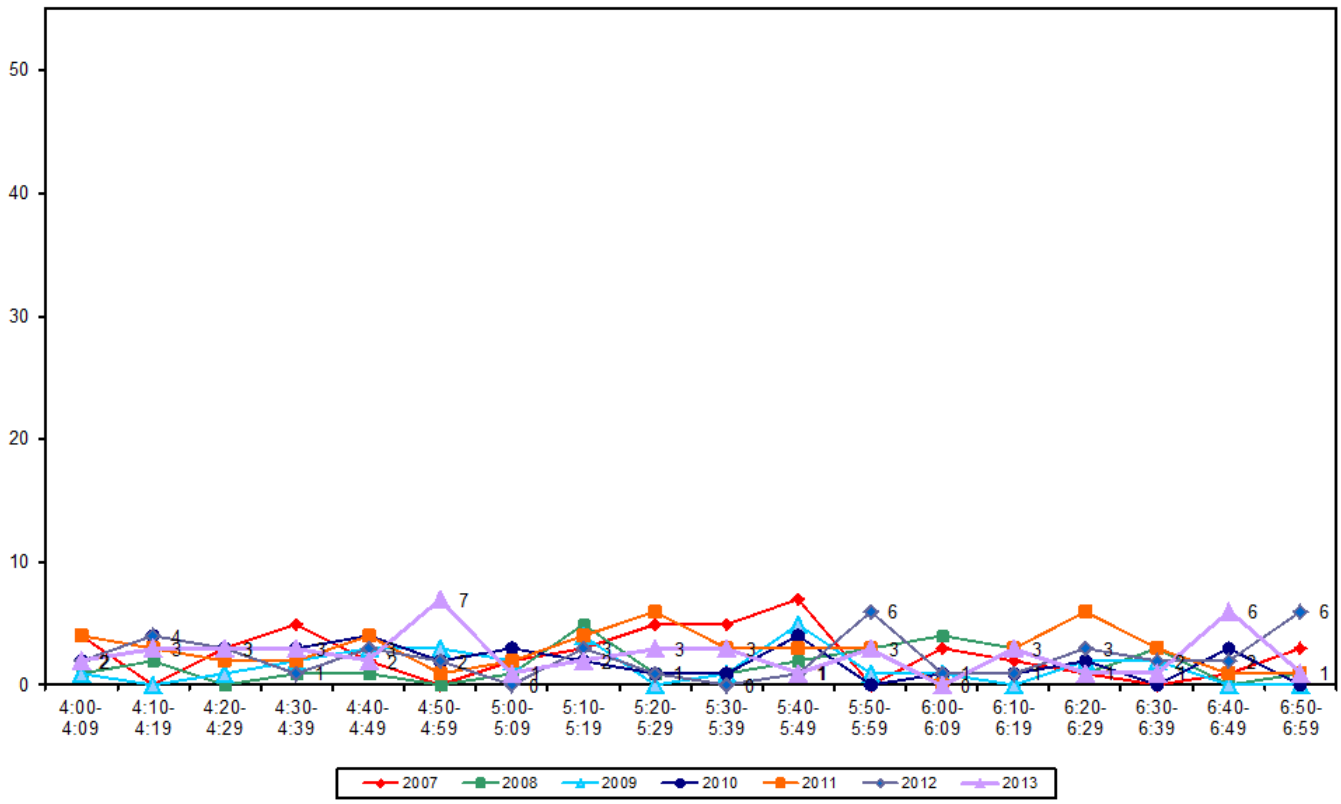
Table 3.4: Evening Cyclist Characteristics

Great South Road/High Street 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	83	87	100	92	78	80	**82**	**2**
School child	17	13	0	8	22	20	**18**	**-2**
Helmet Wearing								
Helmet on head	74	77	75	69	71	71	**73**	**2**
No helmet	26	23	25	31	29	29	**27**	**-2**
Gender								
Male	-	-	-	-	84	93	**96**	**3**
Female	-	-	-	-	14	7	**4**	**-3**
Can't tell	-	-	-	-	2	0	**0**	**0**
Where Riding								
Road	57	53	75	69	45	56	**59**	**3**
Footpath	43	47	25	31	55	44	**41**	**-3**
Base:	***46***	***30***	***28***	***36***	***51***	***41***	***45***	

- The volume of cycle movements in 2013 peaked twice, first between 4:50pm to 4:59pm with seven movements, and then at 6:40pm to 6:49pm with six movements. There were no more than three cyclists recorded over any other ten minute interval.

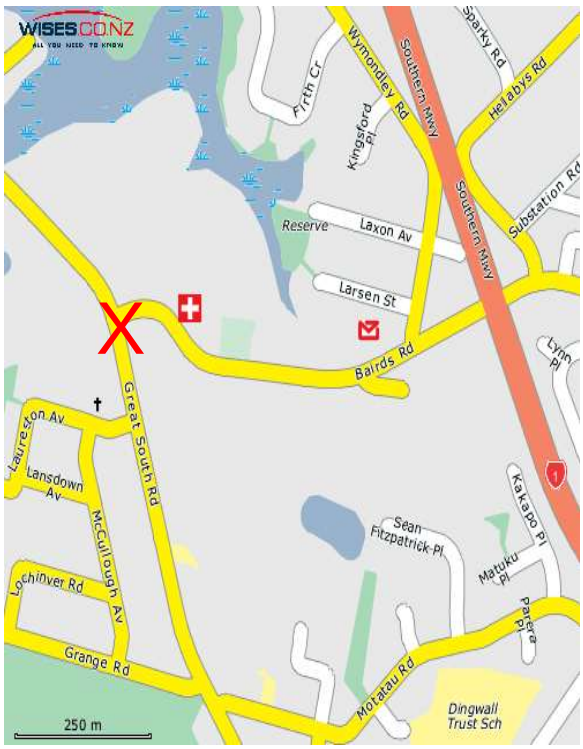
Figure 3.3: Evening Peak Cyclist Frequency
Great South Road/High Street 2007 – 2013 (n)

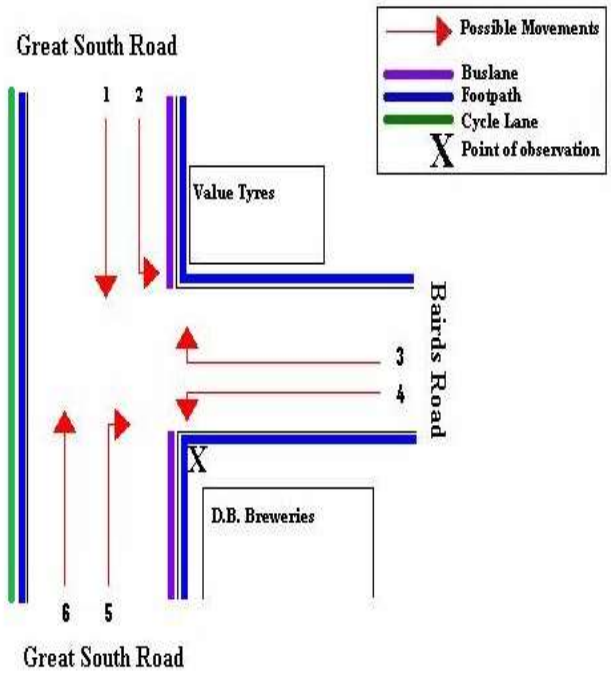


3. GREAT SOUTH ROAD/BAIRDS ROAD, OTARA (SITE 23)

Figure 3.1 shows the possible cyclist movements at this intersection.

Figure 3.1: Cycle Movements: Great South/Bairds Road





3.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	32	36	68	99
2008	27	29	56	81
2009	29	28	57	83
2010	34	37	71	103
2011	40	49	89	129
2012	39	42	81	118
2013	**50**	**53**	**103**	**150**

3.2 Morning Peak

Environmental Conditions

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

Key Points

- Compared with last year, the volume of morning cyclists at the Great South/Bairds Road intersection has increased (39 movements in 2012, compared with 50 movements this year).
- The most common movement in the morning was straight along Great South Road heading north (Movement 6 = 17 cyclists).
- Across the six movements possible at this intersection, the most notable change was at Movement 3 (up 7 from last year).

Table 3.1: Morning Cyclist Movements

Great South/Bairds Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	5	7	5	5	7	11	**12**	**1**
2	7	3	4	7	6	3	**8**	**5**
3	4	4	3	6	2	2	**9**	**7**
4	0	1	3	0	1	1	**2**	**1**
5	0	1	3	6	4	6	**2**	**-4**
6	16	11	11	10	20	16	**17**	**1**
Total	**32**	**27**	**29**	**34**	**40**	**39**	**50**	**11**

- Over the morning peak, almost all the cyclists using the Great South/Bairds Road intersection were adults (90 per cent, down 10 percentage points from last year).
- Most cyclists were wearing a helmet (87 per cent, up from 77 per cent in 2012).
- Almost all cyclists were recorded as male (98 per cent).
- Half of all cyclists were riding on the road and the other half were on the footpath. No cyclist made use of the off-road cycleway.

Table 3.2: Morning Cyclist Characteristics
Great South/Bairds Road 2007 – 2013 (%)

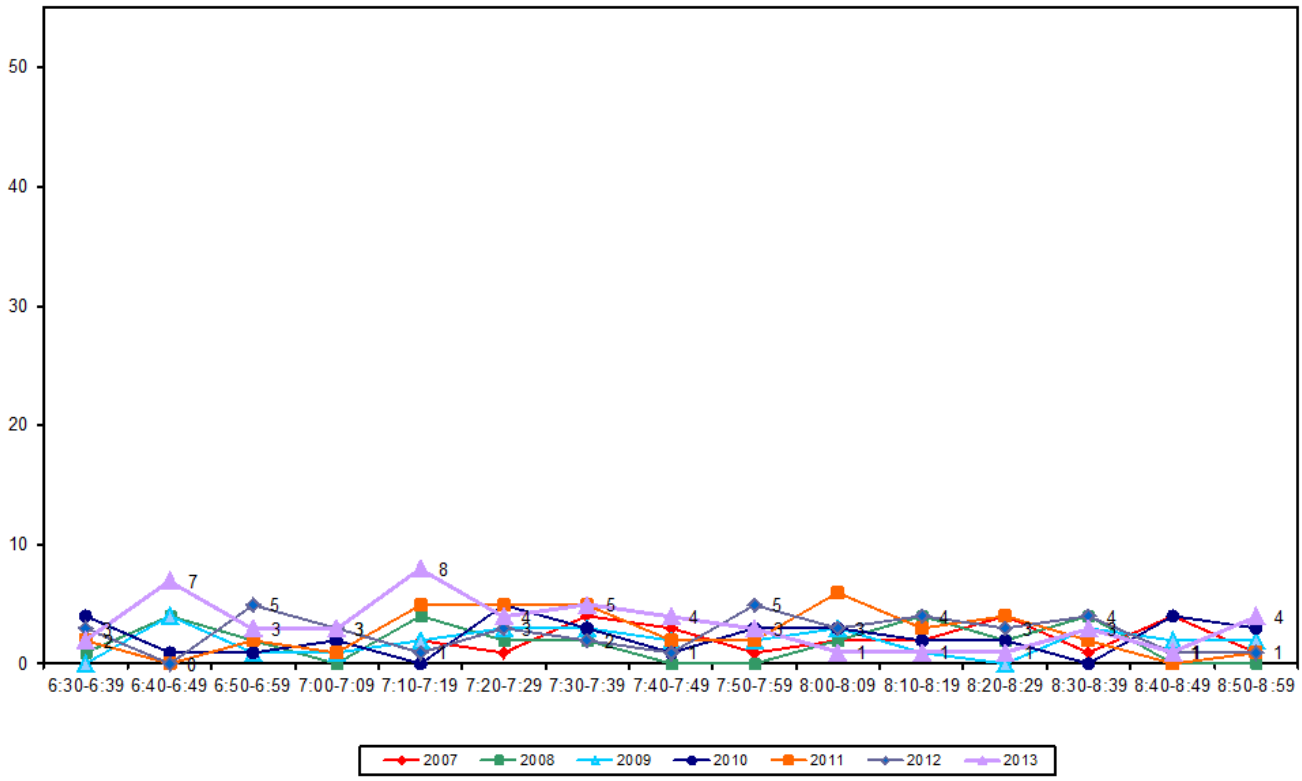
	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	100	89	90	97	100	100	**90**	**-10**
School child	0	11	10	3	0	0	**10**	**10**
Helmet Wearing								
Helmet on head	91	67	83	94	80	77	**87**	**10**
No helmet	9	33	17	6	20	23	**13**	**-10**
Gender								
Male	-	-	-	-	88	97	**98**	**1**
Female	-	-	-	-	10	3	**0**	**-3**
Can't tell	-	-	-	-	3	0	**2**	**2**
Where Riding								
Road	72	63	69	76	75	59	**50**	**-9**
Footpath	28	37	31	24	25	23	**50**	**27**
Off-road cycleway	-	-	-	-	-	18	**0**	**-18**
Base:	***32***	***27***	***29***	***34***	***40***	***39***	***50***	

Note: In 2012 a new off-road cycle way was established at the Great South Road and Bairds Road intersection; this has been noted on the site map.

- The volume of morning cycle movements was low throughout the morning period. There were two peaks. The first occurred between 6:40am and 6:49am with seven movements recorded and again between 7:10am and 7:19am with eight cyclists.

Figure 2.2: Morning Peak Cyclist Frequency

Great South/Bairds Road 2007 – 2013 (n)



3.3 Evening Peak

Environmental Conditions

- The weather was fine throughout the evening monitoring period.
- Road work commenced at the site at 6.50pm, blocking one lane and preventing turning left from Great South Rd into Bairds Rd (Movement 2)

Key Points

- In the evening, the total number of cycle movements recorded at the Great South/Bairds Road intersection has increased, with 53 movements this year compared with 42 in 2012.
- As in the previous years, the key evening movement was straight along Great South Road heading south (Movement 1 = 21 cyclists).
- Across the six movements possible at this intersection, the most notable change is the number of cyclists recorded for Movement 2 – turning left from Great South Road onto Bairds Road (up 7 from last year).

Table 3.3: Evening Cyclist Movements

Great South/Bairds Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	17	14	10	16	17	15	**21**	**6**
2	5	5	3	6	3	7	**14**	**7**
3	5	1	6	4	6	4	**10**	**6**
4	1	2	3	6	7	6	**0**	**-6**
5	1	0	2	1	3	0	**0**	**0**
6	7	7	4	4	13	10	**8**	**-2**
Total	**36**	**29**	**28**	**37**	**49**	**42**	**53**	**11**

- The share of children using this intersection during the evening period has increased by 11 percentage points to 13 per cent this year.
- Seventy per cent of cyclists at this site were wearing a helmet (up from 64 per cent in 2012).
- The majority of cyclists were male (98 per cent).
- Fifty-five per cent of all cyclists were riding on the road, unchanged since last year. No cyclists made use of the off-road cycleway (from 7 per cent last year to 0 per cent this year).

Table 3.4: Evening Cyclist Characteristics

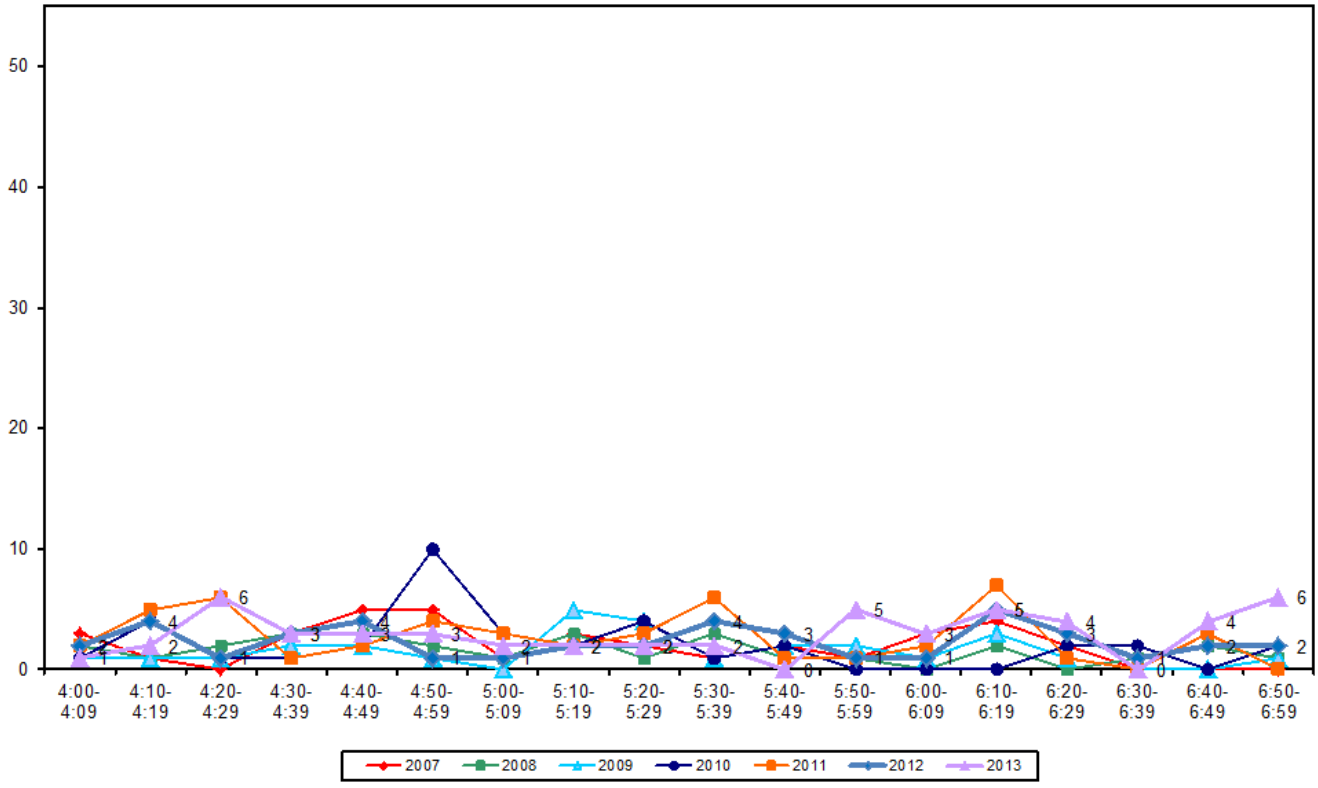
Great South/Bairds Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	100	93	93	100	100	98	**87**	**-11**
School child	0	7	7	0	0	2	**13**	**11**
Helmet Wearing								
Helmet on head	86	66	79	92	84	64	**70**	**6**
No helmet	14	34	21	8	16	36	**30**	**-6**
Gender								
Male	-	-	-	-	88	95	**98**	**3**
Female	-	-	-	-	12	5	**2**	**-3**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Road	67	72	54	86	71	55	**55**	**0**
Footpath	33	28	46	14	29	38	**45**	**7**
Off-road cycleway	-	-	-	-	-	7	**0**	**-7**
Base:	***36***	***29***	***28***	***37***	***49***	***42***	***53***	

- The volume of cycle movements in the evening peak was relatively variable, fluctuating between a maximum of six movements and a minimum of zero movements throughout the monitoring period. There were three slight peaks that occurred between 4:20pm to 4:29pm (6 cyclists), 5:50pm to 6:29pm (a total of 14 cyclists), and 6:50pm to 6:59pm (6 cyclists).

Figure 3.3: Evening Peak Cyclist Frequency

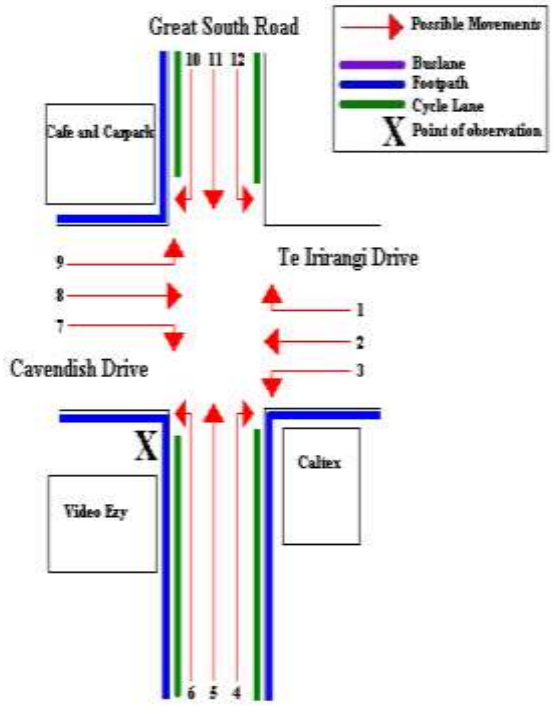
Great South/Bairds Road 2007 – 2013 (n)



4. GREAT SOUTH ROAD/TE IRIRANGI DRIVE/ CAVENDISH DRIVE, MANUKAU (SITE 24)

Figure 4.1 shows the possible cyclist movements at this intersection.

Figure 4.1: Cycle Movements: Great South Road/Te Irirangi Drive



4.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	34	39	73	106
2008	25	26	51	74
2009	19	22	41	59
2010	28	44	72	103
2011	41	53	94	136
2012	28	50	78	112
2013	**42**	**77**	**119**	**170**

4.2 Morning Peak

Environmental Conditions

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

Key Points

- The volume of morning cyclists at the intersection of Great South Road and Te Irirangi Drive was up from 28 in 2012 to 42 movements this year.
- The key morning movements were straight through Te Irirangi Drive into Cavendish Drive (Movement 2 = 8 cyclists) and heading southeast along Great South Road (Movement 11 = 8 cyclists).
- Across the 12 movements possible at this intersection, the most notable change is the number of cyclists recorded at Movement 5 – going north along Great South Road (down 7 from last year).

Table 4.1: Morning Cyclist Movements

Great South Road/Te Irirangi Drive 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	1	1	0	2	5	2	**5**	**3**
2	6	2	5	10	13	7	**8**	**1**
3	1	3	0	1	1	0	**1**	**1**
4	1	2	2	1	0	0	**1**	**1**
5	13	8	7	7	12	12	**5**	**-7**
6	0	0	1	1	0	1	**4**	**3**
7	1	0	0	0	0	1	**0**	**-1**
8	1	1	0	2	1	0	**0**	**0**
9	2	0	0	0	1	0	**3**	**3**
10	1	0	1	2	2	2	**6**	**4**
11	7	8	2	1	6	3	**8**	**5**
12	1	0	1	1	0	0	**1**	**1**
Total	**34**	**25**	**19**	**28**	**41**	**28**	**42**	**14**

- Over the morning peak, all cyclists using this intersection were adults (a 61 percentage point increase since 2012).
- Three-quarters of cyclists were wearing helmets (71 per cent, down from 81 per cent last year).
- Eighty-six per cent of cyclists were male.
- Approximately half of the morning peak cyclists were riding on the footpath (48 per cent, a 31 percentage point increase from last year).

Table 4.2: Morning Cyclist Characteristics

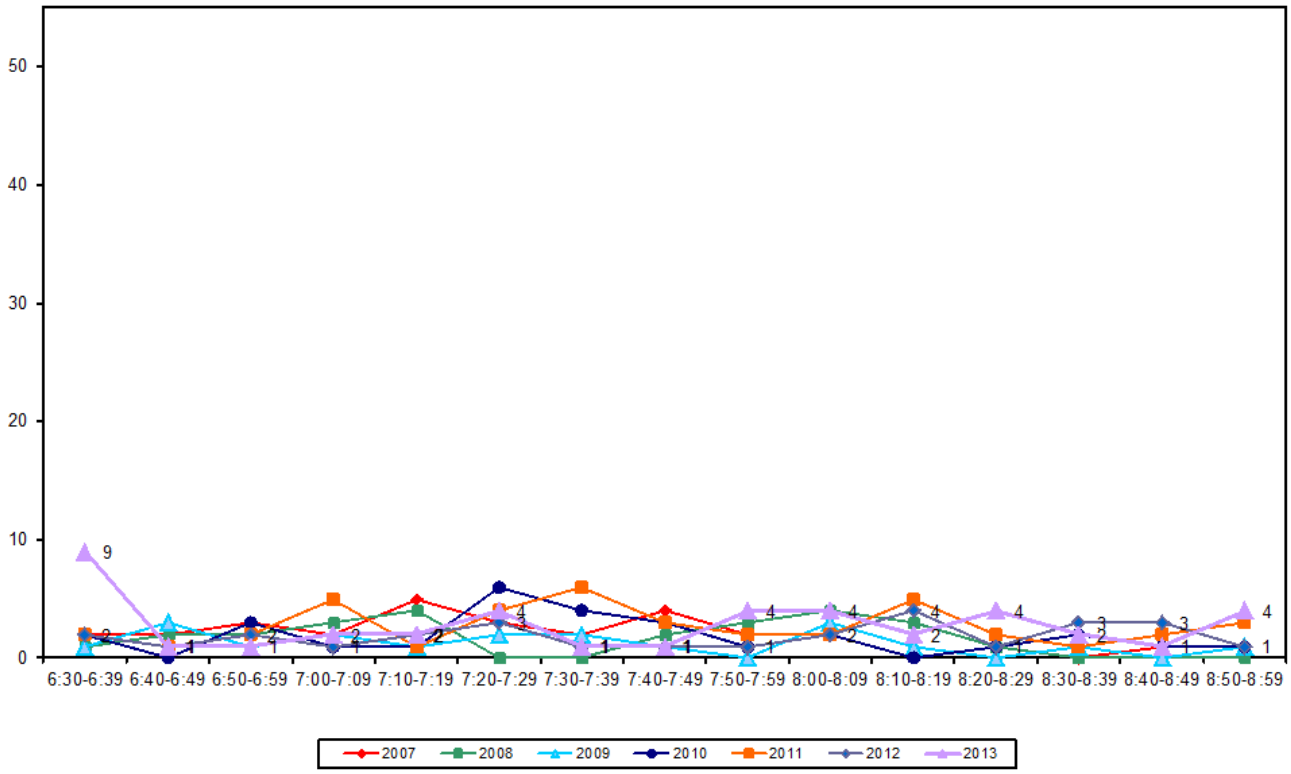
Great South Road/Te Irirangi Drive 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	100	76	100	96	90	39	**100**	**61**
School child	0	24	0	4	10	61	**0**	**-61**
Helmet Wearing								
Helmet on head	85	96	100	93	88	81	**71**	**-10**
No helmet	15	4	0	7	12	19	**29**	**10**
Gender								
Male	-	-	-	-	76	82	**86**	**4**
Female	-	-	-	-	20	14	**14**	**0**
Can't tell	-	-	-	-	5	4	**0**	**-4**
Where Riding								
Road	85	76	79	75	95	93	**52**	**-31**
Footpath	15	24	21	25	5	7	**48**	**31**
Base:	***34***	***25***	***19***	***28***	***41***	***28***	***42***	

- The volume of morning cycle movements started off with a peak (9 movements), then dropped to fewer than five movements per ten minute interval throughout the rest of the monitoring period. The low traffic volume was consistent with the results from previous years.

Figure 4.2: Morning Peak Cyclist Frequency

Great South Road/Te Irirangi Drive 2007 – 2013 (n)



4.3 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 total number of evening cycle movements observed at the Great South Road/Te Irirangi Drive intersection was 77, the highest count since monitoring began in 2007.
- The key evening movements at this site were riding from Te Irirangi Drive to Cavendish Drive (Movement 2 = 20 cyclists) and straight along Great South Road heading south (Movement 11 = 15 cyclists).
- The most noticeable change was reported at Movement 2 (up 14 cyclists).

Table 4.3: Evening Cyclist Movements

Great South Road/Te Irirangi Drive 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	5	0	1	1	1	**1**	**0**
2	3	1	3	4	2	6	**20**	**14**
3	1	0	2	0	0	2	**2**	**0**
4	2	2	2	2	3	2	**1**	**-1**
5	5	6	2	4	8	10	**11**	**1**
6	5	0	2	2	1	1	**1**	**0**
7	1	1	0	0	1	0	**0**	**0**
8	3	0	1	5	14	6	**10**	**4**
9	1	0	1	5	2	1	**6**	**5**
10	2	0	2	2	5	1	**6**	**5**
11	15	9	7	18	13	19	**15**	**-4**
12	1	2	0	1	3	1	**4**	**3**
Total	**39**	**26**	**22**	**44**	**53**	**50**	**77**	**27**

- Over the evening peak, nearly all cyclists using the Great South Road/Te Irirangi Drive intersection were adults (96 per cent, up from 76 per cent last year).
- The majority of cyclists at this site were wearing a helmet (86 per cent, up slightly from 82 per cent last year).
- Eighty-two per cent of cyclists were male (down from 94 per cent last year).
- Three quarters of the evening peak cyclists were riding on the road (68 per cent, down from 92 per cent in 2012). As in the morning peak, the share cycling on the footpath has increased (up 24 percentage points over the last 12 months).

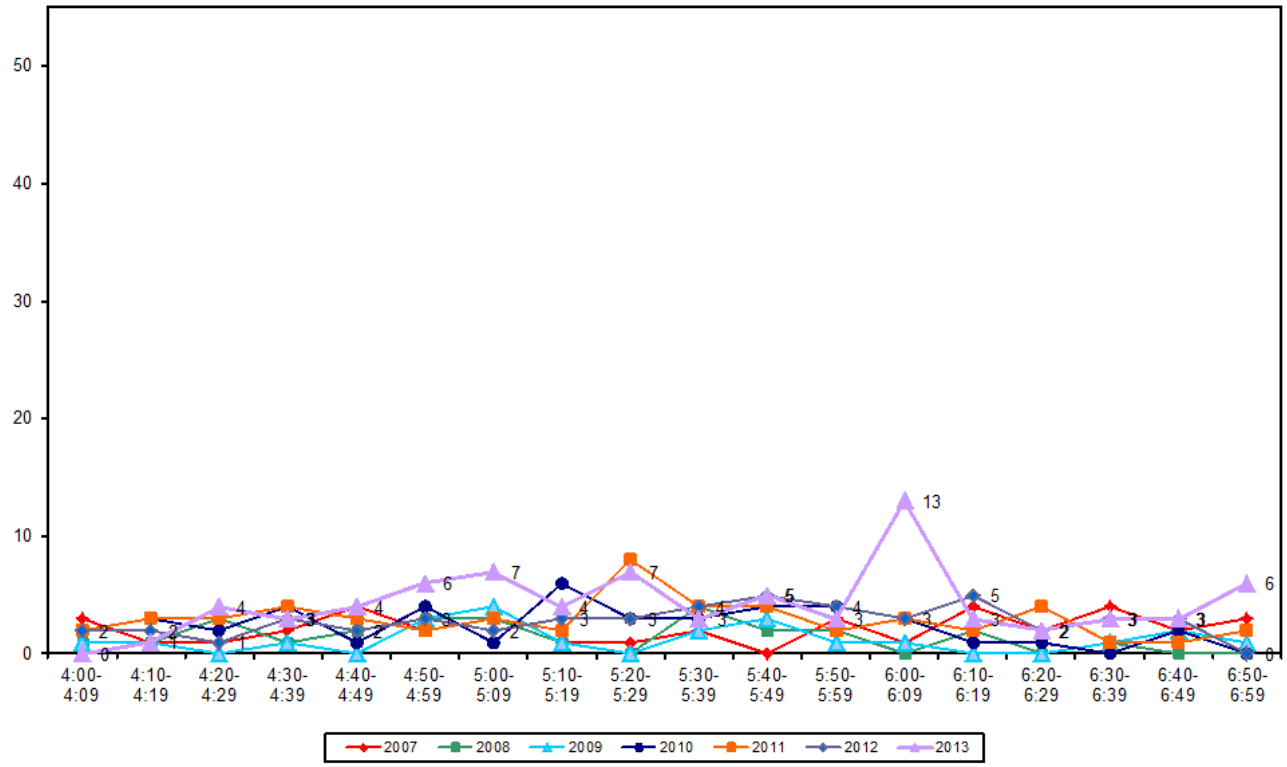
Table 4.4: Evening Cyclist Characteristics

Great South Road/Te Irirangi Drive 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	95	88	73	95	96	76	**96**	**20**
School child	5	12	27	5	4	24	**4**	**-20**
Helmet Wearing								
Helmet on head	97	88	68	77	89	82	**86**	**4**
No helmet	3	12	32	23	11	18	**14**	**-4**
Gender								
Male	-	-	-	-	87	94	**82**	**-12**
Female	-	-	-	-	11	6	**18**	**12**
Can't tell	-	-	-	-	2	0	**0**	**0**
Where Riding								
Road	79	92	73	73	87	92	**68**	**-24**
Footpath	21	8	27	27	13	8	**32**	**24**
Base:	***39***	***26***	***22***	***44***	***53***	***50***	***77***	

- Cycle traffic first came to a slight peak at 5:00pm (7 movements). It remained stable for an hour, then peaked again between 6:00pm to 6:09pm (13 movements, of which 10 movements were made by a peloton).

Figure 4.3: Evening Peak Cyclist Frequency
Great South Road/Te Irirangi Drive 2007 – 2013 (n)

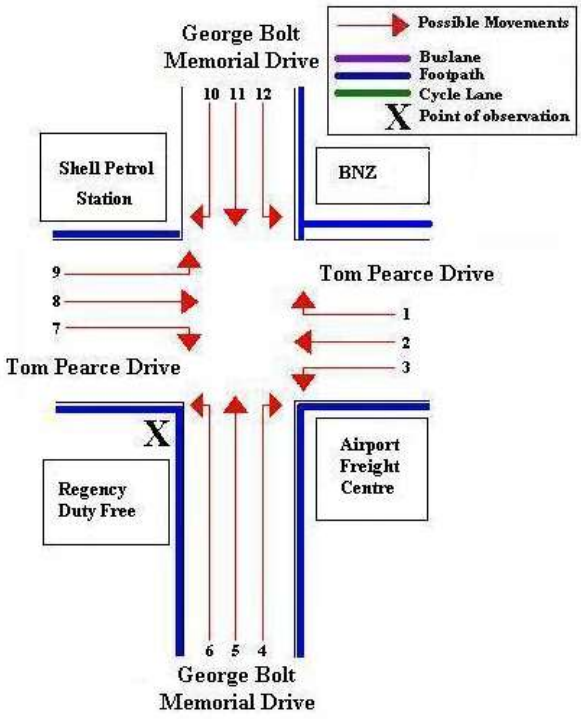


Note: A group of ten cyclists (13 per cent of the evening cycle volume at this site) rode past at 6:06pm.

5. TOM PEARCE/GEORGE BOLT MEMORIAL DRIVE, MANGERE (SITE 25)

Figure 5.1 shows the possible cyclist movements at this intersection.

Figure 5.1: Cycle Movements: Tom Pearce/George Bolt Memorial Drive



5.1 Site Summary

	Raw Counts			*AADT*
	Morning Peak	***Evening Peak***	***Total***	***Total***
2009	6	21	27	38
2010	5	7	12	17
2011	15	39	54	77
2012	3	12	15	21
2013	**4**	**29**	**33**	**46**

5.2 Morning Peak

Environmental Conditions

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

Key Points

- The intersection of George Bolt Memorial Drive and Tom Pearce Drive had 4 cycle movements recorded over the monitoring period. This result is consistent with last year (3 movements).
- There has been no significant change in cyclist volume for all 12 movements.

Table 5.1: Morning Cyclist Movements

Tom Pearce/George Bolt Memorial Drive 2009 – 2013 (n)

Movement	2009	2010	2011	2012	2013	Change 12-13
1	3	3	2	1	**0**	**-1**
2	0	0	0	0	**0**	**0**
3	0	1	0	0	**0**	**0**
4	0	0	0	0	**0**	**0**
5	1	0	2	0	**1**	**1**
6	0	0	0	0	**0**	**0**
7	0	0	0	0	**0**	**0**
8	0	0	0	0	**1**	**1**
9	0	0	0	0	**0**	**0**
10	0	0	1	0	**1**	**1**
11	0	0	3	0	**1**	**1**
12	2	1	7	2	**0**	**-2**
Total	**6**	**5**	**15**	**3**	**4**	**1**

- Consistent with previous monitoring results over the morning peak, no school children are riding through the Tom Pearce/George Bolt Memorial Drive intersection.
- All cyclists were wearing a helmet, as was found in previous monitoring.
- Three quarters of the cyclists were recorded as male.
- All cyclists were riding on the road (100 per cent, the same as in 2012).

Table 5.2: Morning Cyclist Characteristics

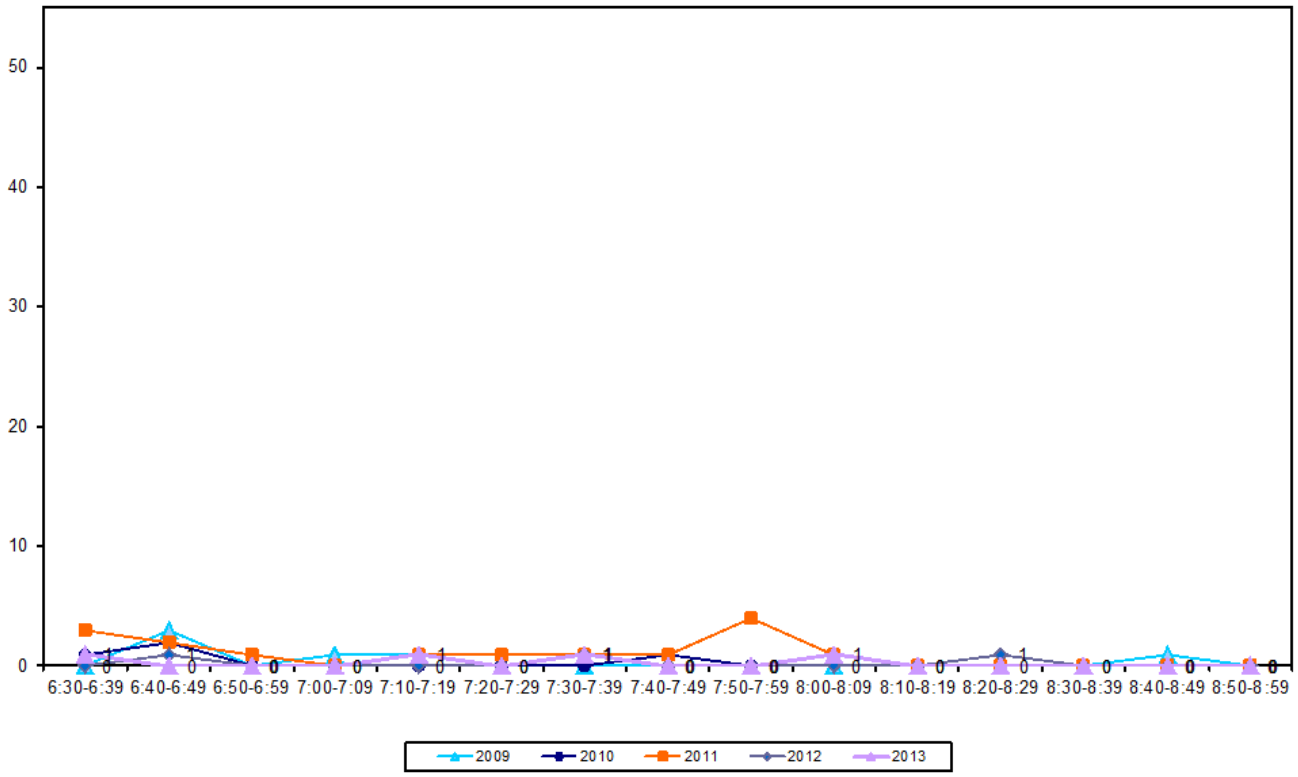
Tom Pearce/George Bolt Memorial Drive 2009 – 2013 (%)

	2009	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type						
Adult	100	100	100	100	**100**	**0**
School child	0	0	0	0	**0**	**0**
Helmet Wearing						
Helmet on head	100	100	100	100	**100**	**0**
No helmet	0	0	0	0	**0**	**0**
Gender						
Male	-	-	73	33	**75**	**42**
Female	-	-	0	0	**25**	**25**
Can't tell	-	-	27	67	**0**	**-67**
Where Riding						
Road	100	100	80	100	**100**	**0**
Footpath	0	0	20	0	**0**	**0**
Base:	***6***	***5***	***15***	***3***	***4***	

- Consistent with previous years, the volume of morning cycle movements was very low over the entire monitoring period, with no more than one cyclist recorded passing during any ten minute interval.

Figure 5.2: Morning Peak Cyclist Frequency

Tom Pearce/George Bolt Memorial Drive 2009 – 2013 (n)



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

- Evening cyclist volumes at Tom Pearce/George Bolt Memorial Drive intersection have more than doubled since 2012, with 29 cycle movements recorded over the monitoring period. Eighty-three per cent of these cycle movements (n=24) were made by pelotons.
- The most common movements in the evening were heading west along Tom Pearce Drive then turning right onto George Bolt Memorial Drive (Movement 1 = 16 cyclists) and turning left from George Bolt Memorial Drive into Tom Pearce Drive (Movement 12 = 12 cyclists).
- The most notable increases in cyclist volume this year are Movement 1 (up 12) and Movement 12 (up 10).

Table 5.3: Evening Cyclist Movements

Tom Pearce/George Bolt Memorial Drive 2009 – 2013 (n)

Movement	2009	2010	2011	2012	2013	Change 12-13
1	4	1	14	4	**16**	**12**
2	0	0	0	0	**0**	**0**
3	1	1	2	3	**0**	**-3**
4	0	0	0	0	**0**	**0**
5	13	3	2	1	**1**	**0**
6	0	0	0	0	**0**	**0**
7	0	0	0	0	**0**	**0**
8	0	0	2	2	**0**	**-2**
9	0	0	0	0	**0**	**0**
10	0	0	0	0	**0**	**0**
11	0	0	5	0	**0**	**0**
12	3	2	14	2	**12**	**10**
Total	**21**	**7**	**39**	**12**	**29**	**17**

- All cyclists using this site were adults (100 per cent), consistent with the results since 2009.
- Helmet-wearing has increased from 83 per cent to 100 per cent this year.
- All cyclists were male, unchanged from last year.
- Nearly all cyclists were riding on the road (97 per cent).

Table 5.4: Evening Cyclist Characteristics

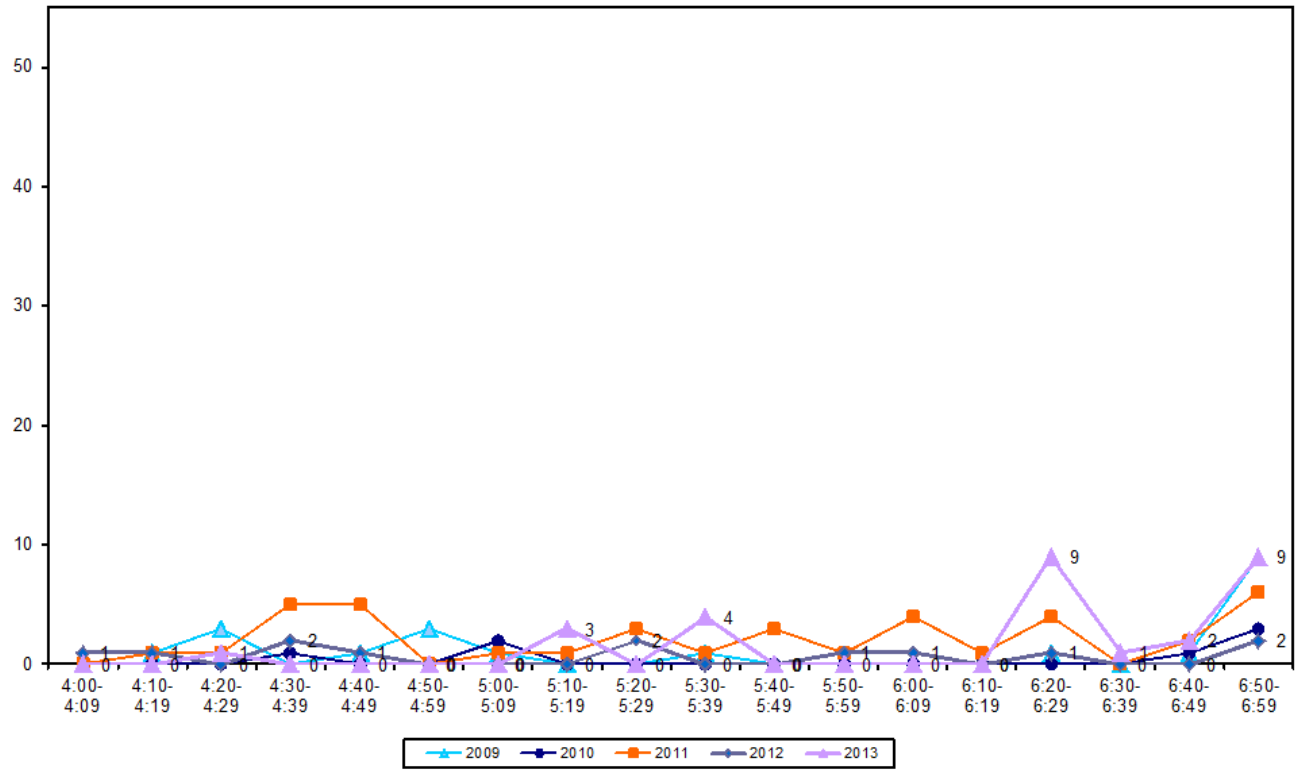
Tom Pearce/George Bolt Memorial Drive 2009 – 2013 (%)

	2009	2010	2011	2012	2013	Change 12-13
Cyclist Type						
Adult	100	100	100	100	**100**	**0**
School child	0	0	0	0	**0**	**0**
Helmet Wearing						
Helmet on head	100	100	62	83	**100**	**17**
No helmet	0	0	38	17	**0**	**-17**
Gender						
Male	-	-	67	100	**100**	**0**
Female	-	-	5	0	**0**	**0**
Can't tell	-	-	28	0	**0**	**0**
Where Riding						
Road	100	100	95	100	**97**	**-3**
Footpath	0	0	5	0	**3**	**3**
Base:	***21***	***7***	***39***	***12***	***29***	

- Two peaks are shown in the graph. The first one occurred from 6:20pm to 6:49pm, the second one occurred at the end of the shift from 6:50pm to 6:59pm. Nine movements were recorded during each peak.

Figure 5.3: Evening Cyclist Frequency

Tom Pearce/George Bolt Memorial Drive 2009 – 2013 (n)



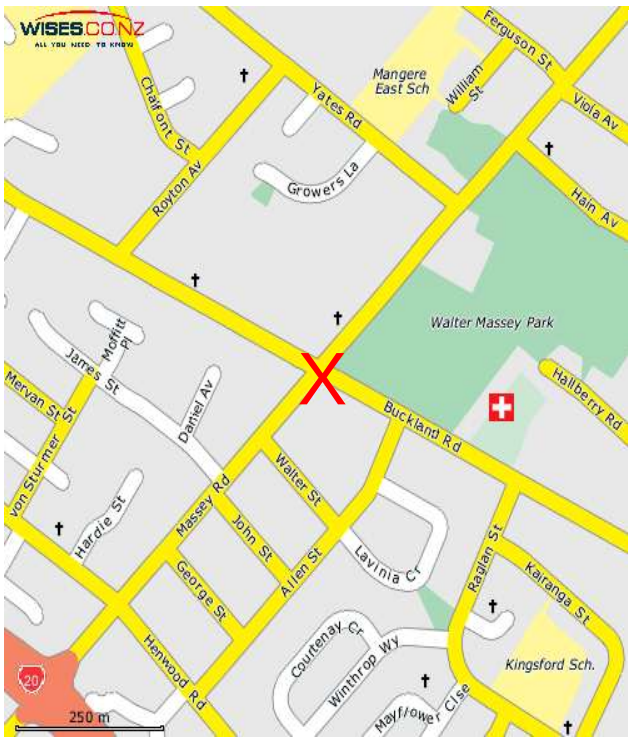
Note: In 2013, 83 per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

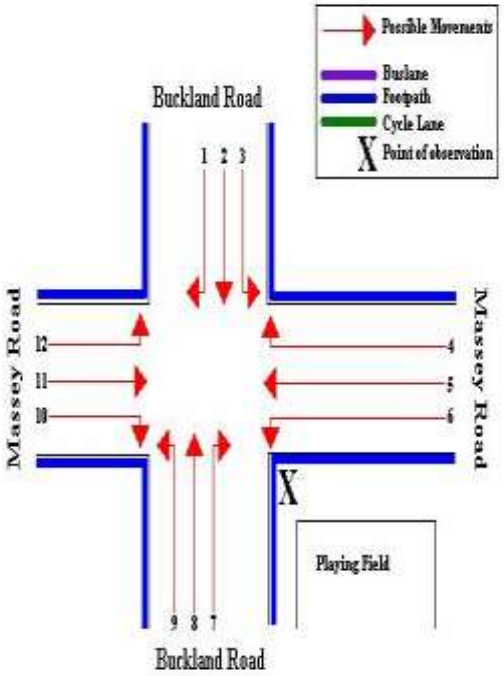
- *Three cyclists at 5:10pm*
- *Three cyclists at 5:32pm*
- *Nine cyclists at 6:28pm*
- *Nine cyclists at 6:56pm.*

6. MASSEY ROAD/BUCKLAND ROAD, MANGERE (SITE 28)

Figure 6.1 shows the possible cyclist movements at this intersection.

Figure 6.1: Cycle Movements: Massey/Buckland Road





6.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	12	31	43	61
2008	11	20	31	44
2009	19	20	39	57
2010	16	29	45	64
2011	18	35	53	76
2012	14	34	48	68
2013	**24**	**34**	**58**	**84**

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

- The volume of morning cyclist traffic at this intersection has increased, from 14 cycle movements in 2012 to 24 movements this year.
- The key cycle movement was straight along Massey Road heading southwest (Movement 5 = 11 cyclists).
- The most notable change has been at Movement 5, up nine cyclists from 2012. Cycle volumes for other movements have remained stable.

Table 6.1: Morning Cyclist Movements

Massey/Buckland Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 11-12
1	0	0	0	0	0	0	**0**	**0**
2	3	1	2	1	3	2	**1**	**-1**
3	2	5	2	3	0	0	**2**	**2**
4	0	0	0	2	3	2	**2**	**0**
5	1	0	6	3	3	2	**11**	**9**
6	1	2	0	2	0	1	**0**	**-1**
7	0	0	1	1	1	0	**1**	**1**
8	1	1	3	3	4	3	**2**	**-1**
9	1	0	2	0	0	2	**1**	**-1**
10	2	1	0	1	2	1	**3**	**2**
11	1	1	3	0	2	1	**1**	**0**
12	0	0	0	0	0	0	**0**	**0**
Total	**12**	**11**	**19**	**16**	**18**	**14**	**24**	**10**

- Over the morning peak, adults comprised most of the cycle movements (96 per cent, up from 86 per cent last year).
- Helmet-wearing has declined noticeably over the last 12 months (54 per cent, down from 79 per cent in 2012).
- Most of the cyclists were male (87 per cent).
- Fifty-eight per cent of cyclists were riding on the footpath at this site (up from 36 per cent in 2012).

Table 6.2: Morning Cyclist Characteristics

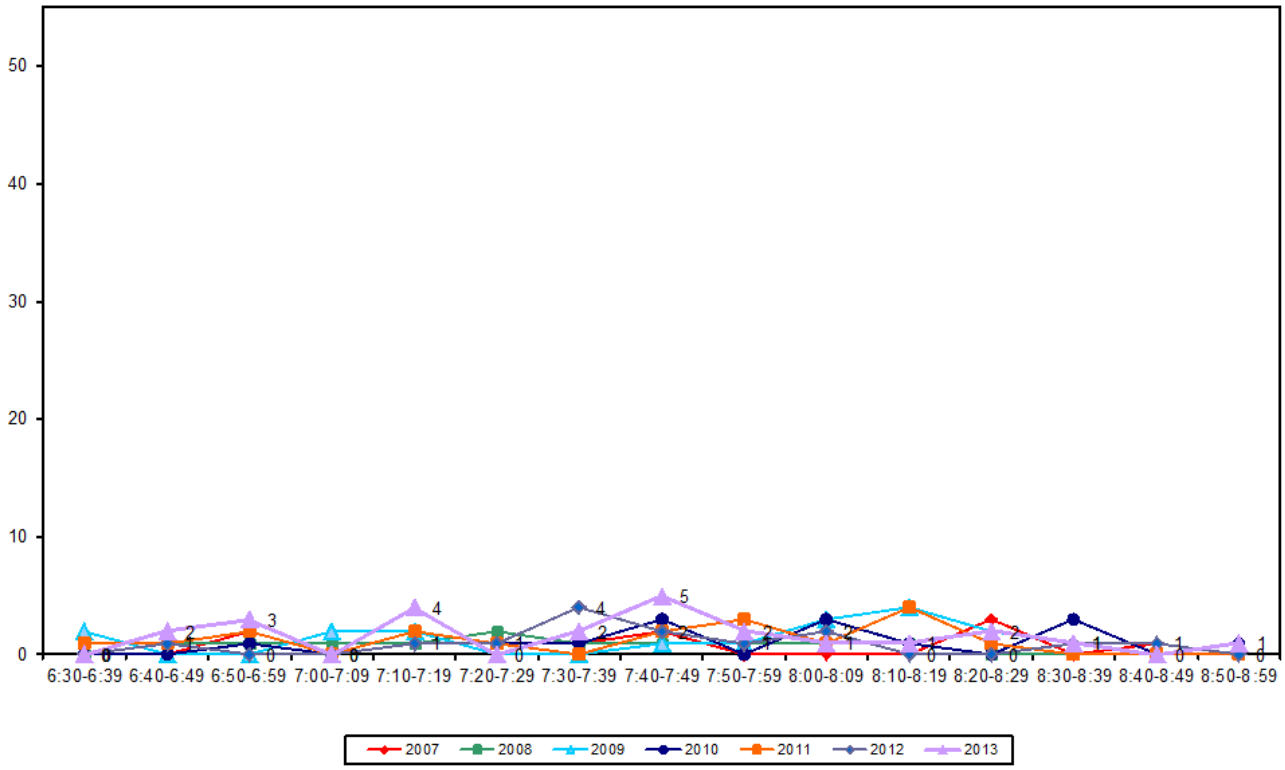
Massey/Buckland Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	42	73	95	94	67	86	**96**	**10**
School child	58	27	5	6	33	14	**4**	**-10**
Helmet Wearing								
Helmet on head	58	55	47	69	83	79	**54**	**-25**
No helmet	42	45	53	31	17	21	**46**	**25**
Gender								
Male	-	-	-	-	89	79	**87**	**8**
Female	-	-	-	-	6	21	**13**	**-8**
Can't tell	-	-	-	-	6	0	**0**	**0**
Where Riding								
Road	33	30	63	56	50	64	**42**	**-22**
Footpath	67	70	37	44	50	36	**58**	**22**
Base:	***12***	***11***	***19***	***16***	***18***	***14***	***24***	

- Morning cyclist volumes were low over the entire monitoring period. The traffic increased slowly to a peak of 5 movements at 7:40am to 7:49am, then continued to decrease until the end of the shift. This resembled the trend from last year, but the peak occurred slightly earlier (between 7:30am and 7:39am with 4 cyclists).

Figure 6.2: Morning Peak Cyclist Frequency

Massey/Buckland Road 2007 – 2013 (n)



6.3 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 total number of cycle movements recorded in the evening at the Massey/Buckland Road intersection has remained unchanged since last year, with 34 movements recorded.
- The most common movement in the evening was straight along Massey Road heading northeast (Movement 11 = 12 cyclists).
- Movement 11 experienced the biggest increase in cycle volume (up 10 movements) while Movement 7 had the biggest decrease (down 6 movements).

Table 6.3: Evening Cyclist Movements

Massey/Buckland Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 11-12
1	2	0	0	0	2	0	**0**	**0**
2	3	4	3	4	8	4	**2**	**-2**
3	4	2	1	1	3	3	**2**	**-1**
4	5	5	2	4	2	2	**6**	**4**
5	1	1	2	4	3	2	**3**	**1**
6	3	1	5	3	2	2	**1**	**-1**
7	1	1	2	0	0	7	**1**	**-6**
8	5	3	0	2	3	7	**5**	**-2**
9	0	2	0	1	4	2	**0**	**-2**
10	0	0	3	4	3	0	**2**	**2**
11	5	1	2	6	4	2	**12**	**10**
12	2	0	0	0	1	3	**0**	**-3**
Total	**31**	**20**	**20**	**29**	**35**	**34**	**34**	**0**

- Adults continued to comprise the largest share of evening cyclists (85 per cent, up from 76 per cent in 2012).
- Fifty-nine per cent of cyclists were wearing a helmet (up from 38 per cent last year).
- Almost all cyclists were male (97 per cent, an increasing trend since 2011).
- The proportion of cyclists riding on the footpath has remained stable this year (59 per cent, compared with 58 per cent in 2012).

Table 6.4: Evening Cyclist Characteristics

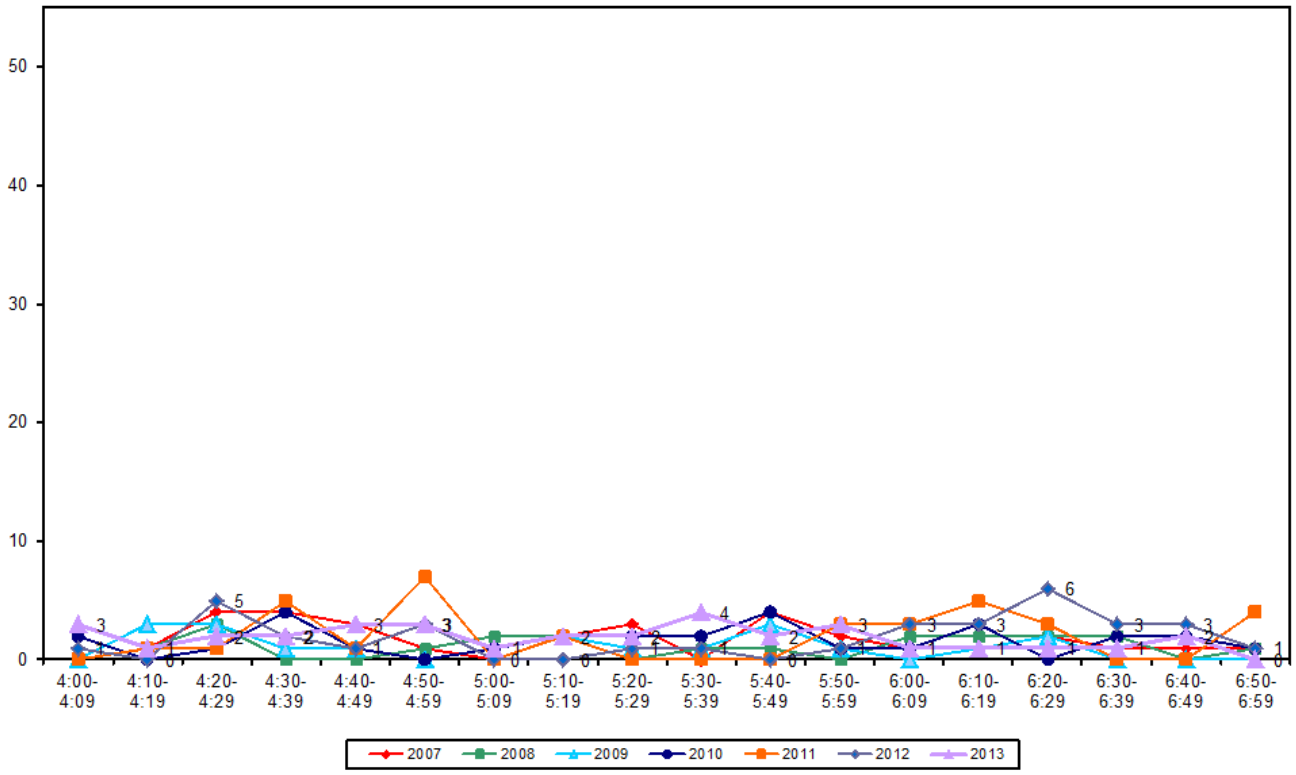
Massey/Buckland Road 2007 – 2013 (%)

	2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	**Change 12-13**
Cyclist Type								
Adult	61	80	65	90	77	76	**85**	**9**
School child	39	20	35	10	23	24	**15**	**-9**
Helmet Wearing								
Helmet on head	55	65	35	62	51	38	**59**	**21**
No helmet	45	35	65	38	49	62	**41**	**-21**
Gender								
Male	-	-	-	-	83	91	**97**	**6**
Female	-	-	-	-	17	9	**3**	**-6**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Road	39	60	30	38	29	42	**41**	**-1**
Footpath	61	40	70	62	71	58	**59**	**1**
Base:	***31***	***20***	***20***	***29***	***35***	***34***	***34***	

- Consistent with previous years, the volume of cycle movements was low during the evening monitoring period. There were no obvious peaks observed, but traffic seemed to be slightly heavier between 4:20pm to 5:00pm and between 5:30pm to 5:59pm.

Figure 6.3: Evening Peak Cyclist Frequency

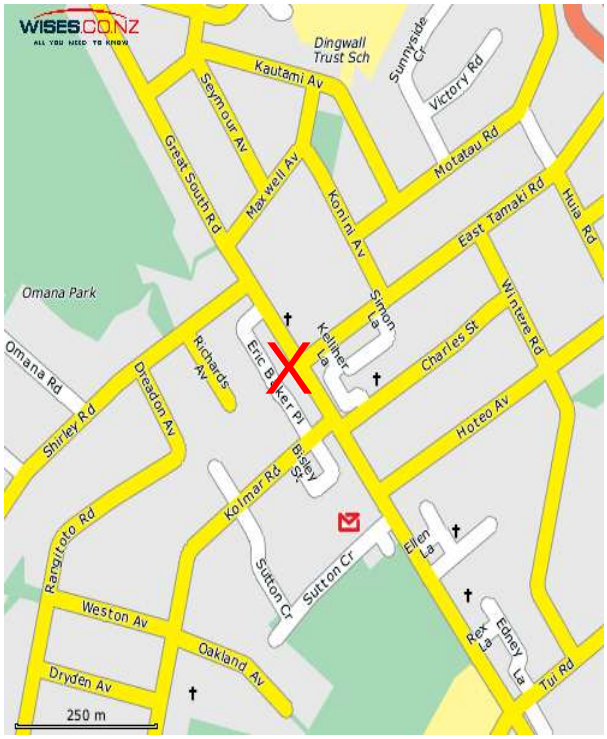
Massey/Buckland Road 2007 – 2013 (n)

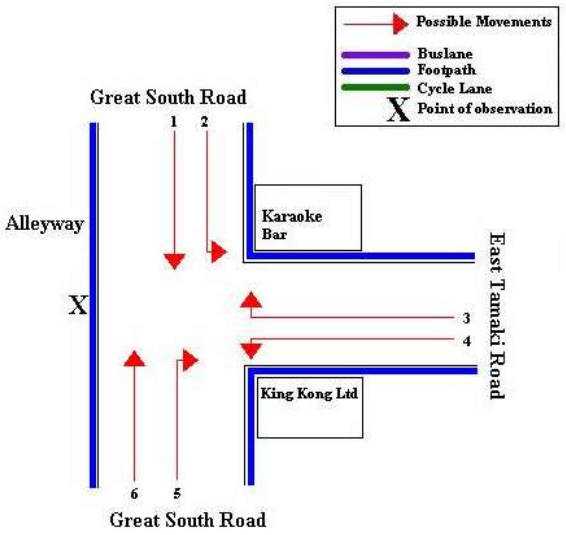


7. GREAT SOUTH ROAD/EAST TAMAKI ROAD, PAPATOETOE (SITE 30)

Figure 7.1 shows the possible cyclist movements at this intersection.

Figure 7.1: Cycle Movements: Great South/East Tamaki Road





7.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	36	37	73	106
2008	24	27	51	74
2009	33	30	63	92
2010	25	40	65	93
2011	44	45	89	129
2012	40	46	86	125
2013	**49**	**47**	**96**	**140**

7.2 Morning Peak

Environmental Conditions

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

Key Points

- Compared with last year, the volume of morning cyclists at the Great South/East Tamaki Road intersection has increased, from 40 movements in 2012 to 49 movements in 2013.
- The most common movement was straight along Great South Road heading northwest (Movement 6 = 26 cyclists).
- The most notable change since 2012 has been at Movement 6 (up 7 cyclists).

Table 7.1: Morning Cyclist Movements

Great South/East Tamaki Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	4	4	3	4	8	8	**8**	**0**
2	2	3	3	1	5	5	**5**	**0**
3	2	1	6	2	3	2	**4**	**2**
4	0	1	3	3	0	1	**0**	**-1**
5	2	2	3	0	4	3	**2**	**-1**
6	26	12	15	15	21	19	**26**	**7**
7	-	1	0	0	3	2	**0**	**-2**
1A	-	-	-	-	-	-	**1**	**-**
2A	-	-	-	-	-	-	**1**	**-**
3A	-	-	-	-	-	-	**2**	**-**
Total	**36**	**24**	**33**	**25**	**44**	**40**	**49**	**9**

Note: This year, cyclists were recorded cycling into/out of the alleyway on the western side of Great South Road. These movements have the suffix 'A' in the table above, so for example, Movement 1A is heading south down Great South Road then turning into the alleyway.

- Two-thirds of the evening cyclists were adults (67 per cent, up from 63 per cent in 2012).
- Three-quarters of cyclists were wearing a helmet (76 per cent, up from 70 per cent last year).
- The majority of the cyclists were male (80 per cent, a decreasing trend since 2011).
- The proportion of cyclists riding on the footpath has remained unchanged over the last 12 months (62 per cent).

Table 7.2: Morning Cyclist Characteristics

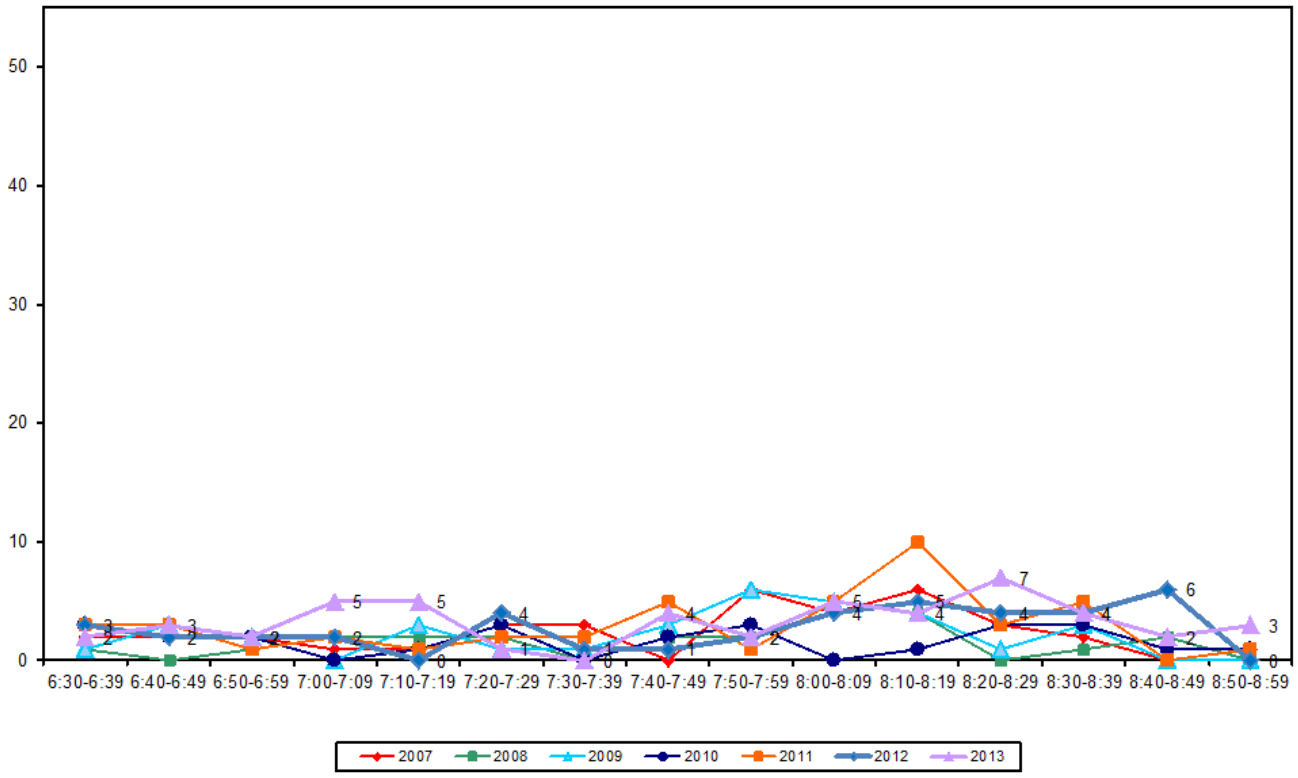
Great South/East Tamaki Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	67	67	64	72	80	63	**67**	**4**
School child	33	33	36	28	20	37	**33**	**-4**
Helmet Wearing								
Helmet on head	89	88	73	84	86	70	**76**	**6**
No helmet	11	12	27	16	14	30	**24**	**-6**
Gender								
Male	-	-	-	-	89	88	**80**	**-8**
Female	-	-	-	-	11	12	**18**	**6**
Can't tell	-	-	-	-	0	0	**2**	**2**
Where Riding								
Road	50	25	82	60	52	38	**38**	**0**
Footpath	50	75	18	40	48	62	**62**	**0**
Base:	***36***	***24***	***33***	***25***	***44***	***40***	***49***	

- The volume of morning cycle movements started off low in the beginning of the shift, then increased to a slight peak between 7:00am to 7:19am. The traffic volume dropped again before gradually increasing to a second peak at 8:20am to 8:29am (7 movements).

Figure 7.2: Morning Peak Cyclist Frequency

Great South/East Tamaki Road 2007 – 2013 (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 total number of evening cycle movements recorded at the Great South/East Tamaki Road intersection has been stable (47 movements in 2013, compared with 46 movements in 2012).
- The key movement in the evening continued to be straight along Great South Road heading south (Movement 1 = 25 cyclists, the highest count since monitoring began in 2007).
- Compared with last year, the most notable increase was at Movement 1 (up 5 movements), while the biggest decrease was at Movement 3 (down 5 cyclists).

Table 7.3: Evening Cyclist Movements

Great South/East Tamaki Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	13	10	13	14	17	19	**24**	**5**
2	2	2	3	1	5	2	**4**	**2**
3	8	1	3	5	3	9	**4**	**-5**
4	3	1	6	5	2	3	**3**	**0**
5	2	0	1	3	1	2	**2**	**0**
6	9	10	4	9	15	10	**9**	**-1**
7	-	3	0	3	2	1	**-**	**-1**
6A	-	-	-	-	-	-	**1**	**1**
Total	**37**	**27**	**30**	**40**	**45**	**46**	**47**	**1**

Note: This year, cyclists were recorded cycling into/out of the alleyway on the western side of Great South Road. These movements have the suffix 'A' in the table above, so for example, Movement 1A is heading south down Great South Road then turning into the alleyway. Consequently, Movement 7 (which represented any movements through the alleyway in previous years), is no longer applicable at this site.

- Over the evening peak, most of the cyclists using the Great South/East Tamaki Road intersection were adults (77 per cent, down from 89 per cent last year). However, there has been an increasing share of school children cycling through this site since 2011.
- Sixty per cent of cyclists at this site were wearing a helmet (stable from 59 per cent in 2012).
- The greatest share of evening cyclists were male (77 per cent, down 16 percentage points from last year).
- Just over half of the cyclists at this site were riding on the road (52 per cent, down from 65 per cent last year).

Table 7.4: Evening Cyclist Characteristics

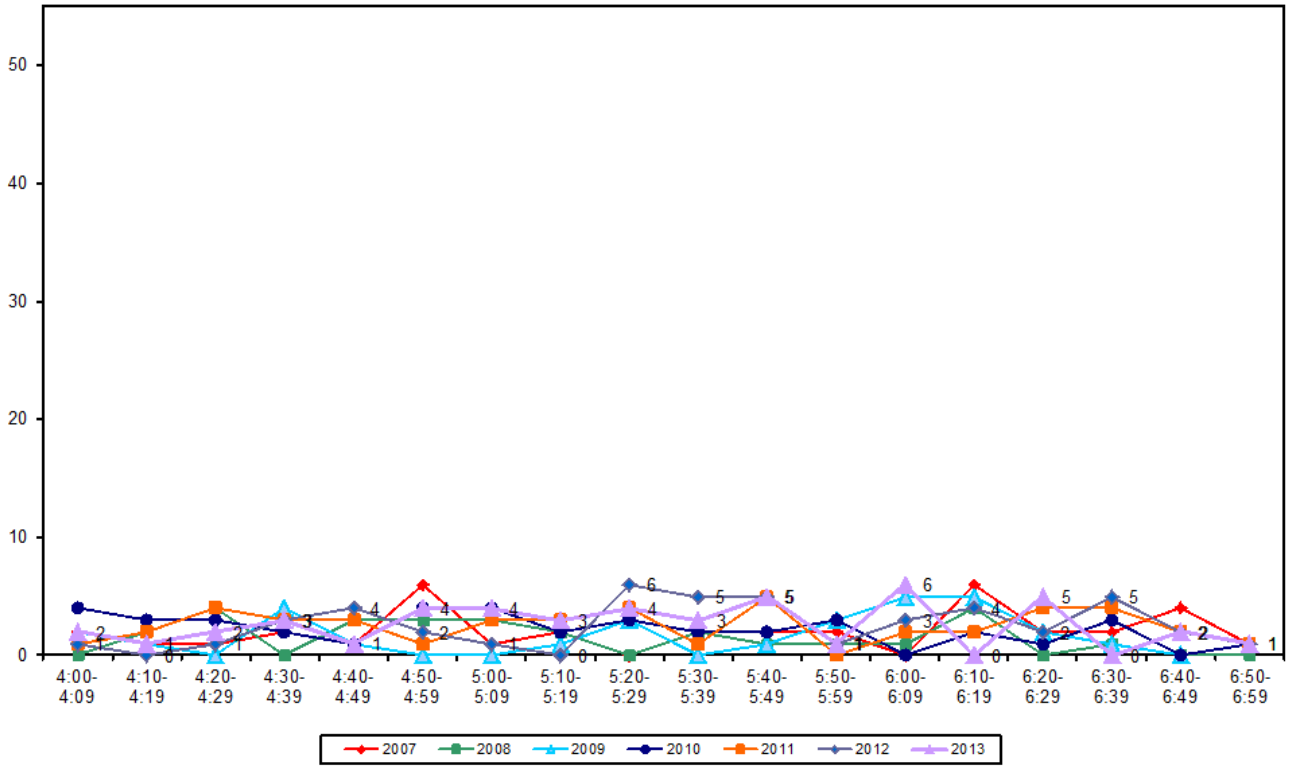
Great South/East Tamaki Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	84	74	77	80	93	89	**77**	**-12**
4School child	16	26	23	20	7	11	**23**	**12**
Helmet Wearing								
Helmet on head	84	56	73	68	71	59	**60**	**1**
No helmet	16	44	27	33	29	41	**40**	**-1**
Gender								
Male	-	-	-	-	84	93	**77**	**-16**
Female	-	-	-	-	16	7	**17**	**10**
Can't tell	-	-	-	-	0	0	**6**	**6**
Where Riding								
Road	54	44	70	43	56	65	**52**	**-13**
Footpath	46	56	30	57	44	35	**48**	**13**
Base:	***37***	***27***	***30***	***40***	***45***	***46***	***47***	

- The volume of cycle movements was low throughout the evening. Volumes fluctuated between a maximum of six movements to a minimum of no movements over each ten minute interval.

Figure 7.3: Evening Peak Cyclist Frequency

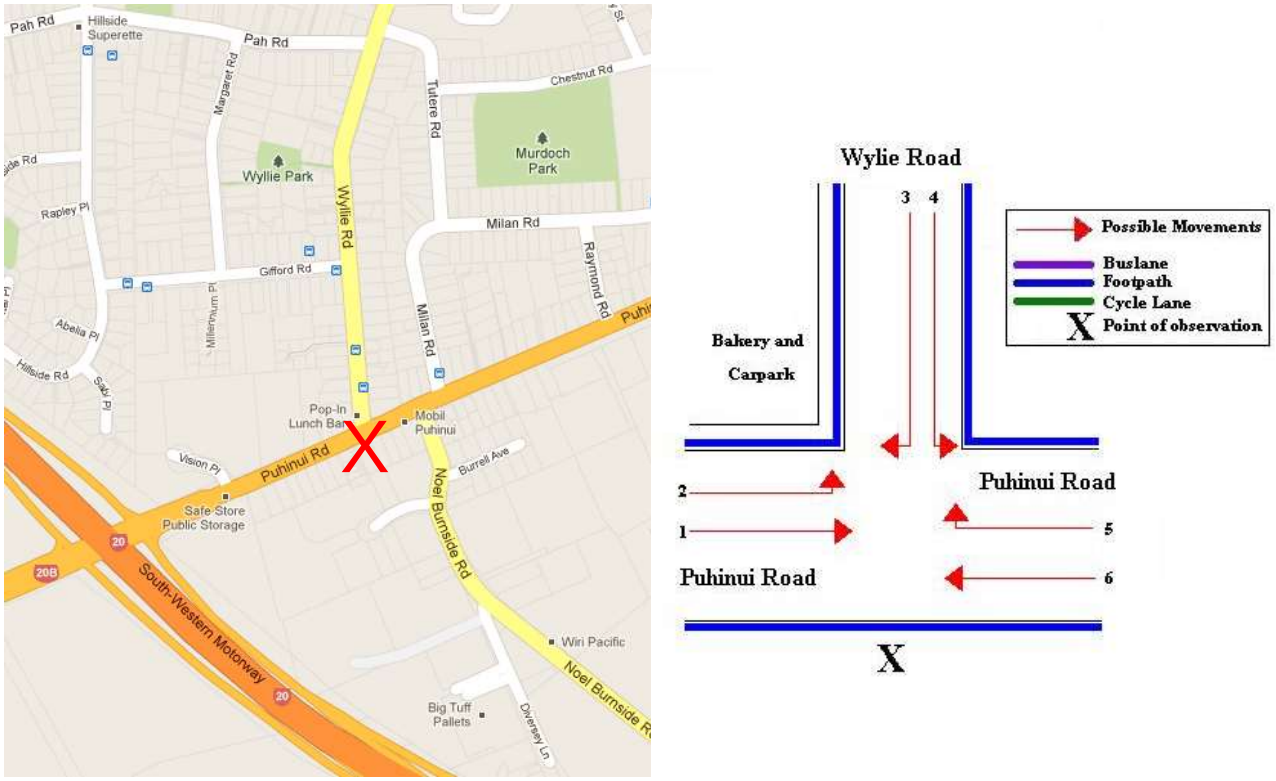
Great South/East Tamaki Road 2007 – 2013 (n)



8. WYLLIE AVENUE/PUHINUI ROAD, PAPATOETOE (SITE 31)

Figure 8.1 shows the possible cyclist movements at this intersection.

Figure 8.1: Cycle Movements: Wyllie Avenue/Puhinui Road



8.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	18	20	38	55
2008	8	25	33	47
2009	12	23	35	50
2010	23	34	57	82
2011	13	62	75	105
2012	8	39	47	66
2013	**17**	**78**	**95**	**133**

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 volume of morning cyclists at Wyllie Avenue/Puhinui Road has increased this year with 17 cycle movements recorded (up from 8 movements in 2012).
- Key movements were Movement 3 (right hand turn from Wylie Road into Puhinui Road), and Movement 6 (travelling west along Puhinui Road). Both had six movements recorded this year.
- Movement 3 and Movement 6 also had the greatest changes in cycle volumes (4 more movements than last year)

Table 8.1: Morning Cyclist Movements

Wyllie Avenue/Puhinui Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	2012	2013	Change 12-13
1	0	2	1	11	3	2	**2**	**0**
2	0	0	1	0	1	1	**3**	**2**
3	0	1	3	2	2	2	**6**	**4**
4	1	1	0	2	1	1	**0**	**-1**
5	0	0	0	1	1	0	**0**	**0**
6	17	4	7	7	5	2	**6**	**4**
Total	**18**	**8**	**12**	**23**	**13**	**8**	**17**	**9**

- Twenty-four per cent of cyclists riding past this site were school children (a significant increase from zero per cent last year).
- Most cyclists were wearing a helmet (76 per cent, down from 88 per cent in 2012).
- The majority of the cyclists using this site were male (76 per cent, down from 100 per cent in 2012).
- Approximately two-thirds of cyclists were riding on the road (59 per cent, down 16 per cent from 2012).

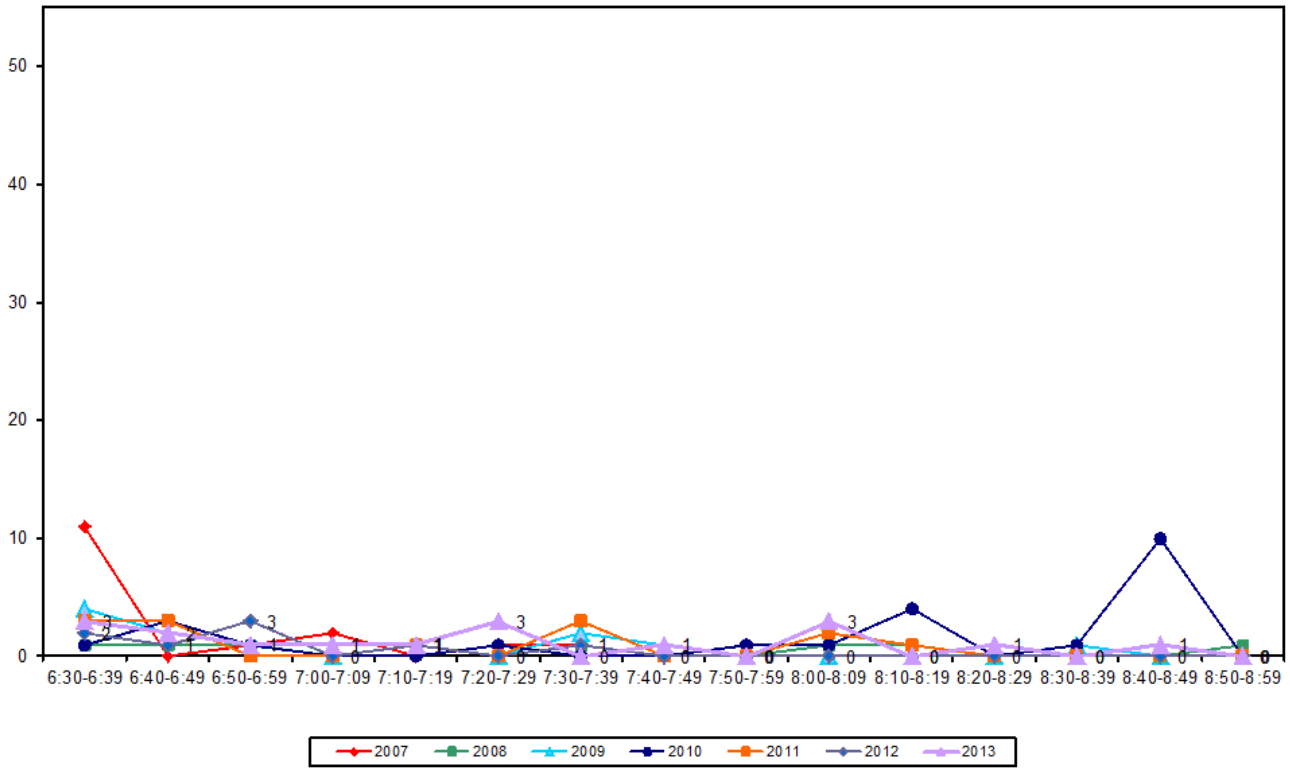
Table 8.2: Morning Cyclist Characteristics

Wyllie Avenue/Puhinui Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	100	100	100	91	85	100	**76**	**-24**
School child	0	0	0	9	15	0	**24**	**24**
Helmet Wearing								
Helmet on head	100	88	100	87	92	88	**76**	**-12**
No helmet	0	12	0	13	8	12	**24**	**12**
Gender								
Male	-	-	-	-	100	100	**76**	**-24**
Female	-	-	-	-	0	0	**12**	**12**
Can't tell	-	-	-	-	0	0	**12**	**12**
Where Riding								
Road	100	100	100	87	77	75	**59**	**-16**
Footpath	0	0	0	13	23	25	**41**	**16**
Base:	***18***	***8***	***12***	***23***	***13***	***8***	***17***	

- In 2012, cyclist volumes were very low throughout the morning period. Two very small peaks occurred between 7:20am and 7:29am (3 movements) and between 8:00am to 8:09am (3 movements). This was similar to last year when no 10 minute interval recorded more than 3 movements.

Figure 8.2: Morning Peak Cyclist Frequency
Wyllie Avenue/Puhinui Road 2007 – 2013 (n)



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

- This year, the number of evening cycle movements recorded at the Wyllie Avenue/Puhinui Road intersection has increased, from 39 movements in 2012 to 78 this year.
- The key evening movements were straight along Puhinui Road heading northeast (Movement 1 = 29 cyclists) and travelling west along Puhinui Road (Movement 6 = 29 cyclists).
- Movement 1 and Movement 6 also experienced the greatest increase in cyclist volume (up 16 and 20 movements respectively).

Table 8.3: Evening Cyclist Movements

Wyllie Avenue/Puhinui Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	7	11	6	7	24	13	**29**	**16**
2	3	3	1	2	6	6	**9**	**3**
3	2	0	0	0	1	1	**6**	**5**
4	3	2	1	3	5	7	**3**	**-4**
5	3	5	2	3	7	3	**2**	**-1**
6	2	4	13	19	19	9	**29**	**20**
Total	**20**	**25**	**23**	**34**	**62**	**39**	**78**	**39**

- Nearly all the cyclists over the evening peak were adults (94 per cent, up from 74 per cent last year).
- The majority of cyclists at this site were wearing a helmet (86 per cent, up from 72 per cent in 2011).
- Eighty-eight per cent of cyclists were male, an increasing trend since 2011.
- Four out of five cyclists using this site were riding on the road this year (82 per cent, unchanged from 2012).

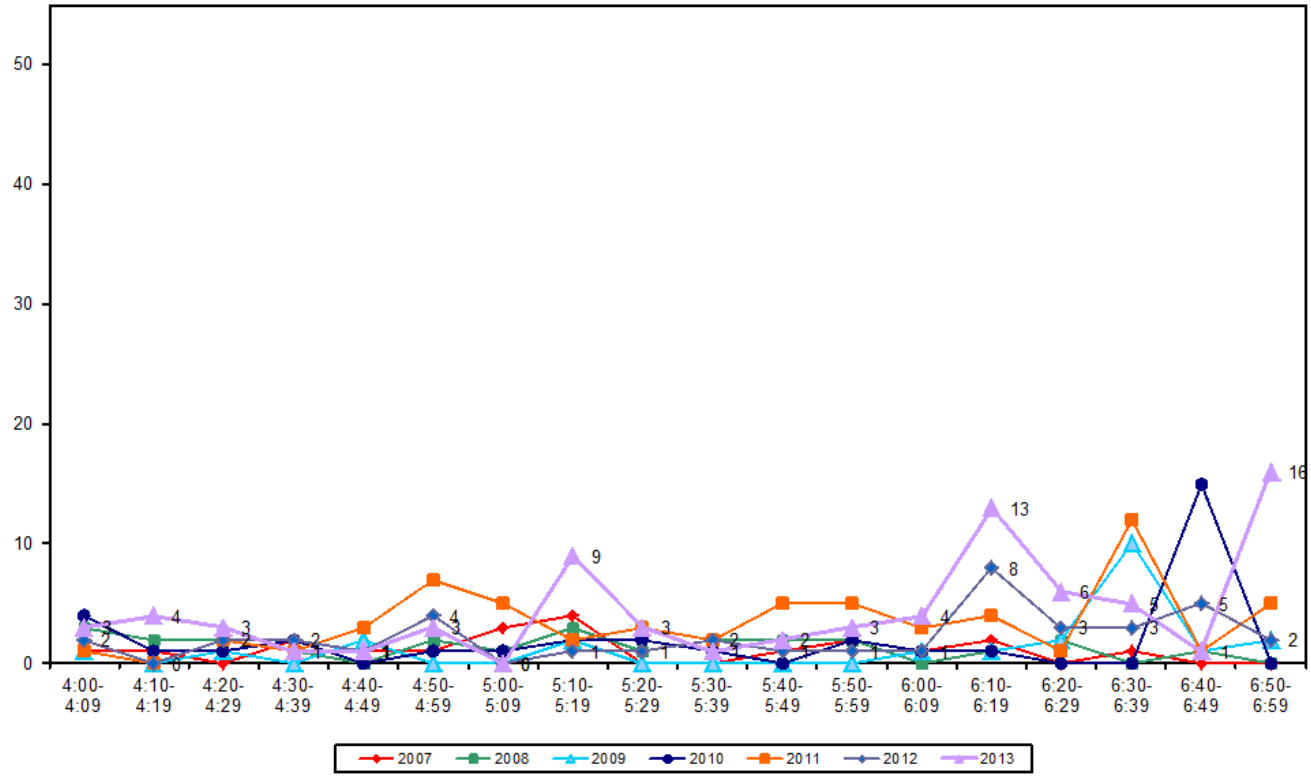
Table 8.4: Evening Cyclist Characteristics

Wyllie Avenue/Puhinui Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	75	88	87	100	84	74	**94**	**20**
School child	25	12	13	0	16	26	**6**	**-20**
Helmet Wearing								
Helmet on head	70	79	91	97	84	72	**86**	**14**
No helmet	30	21	9	3	16	28	**14**	**-14**
Gender								
Male	-	-	-	-	76	85	**88**	**3**
Female	-	-	-	-	23	15	**12**	**-3**
Can't tell	-	-	-	-	2	0	**0**	**0**
Where Riding								
Road	70	84	91	88	76	82	**82**	**0**
Footpath	30	16	9	12	24	18	**18**	**0**
Base:	***20***	***25***	***23***	***34***	***62***	***39***	***78***	

- This year, the volume of cycle movements was low throughout the monitoring period, with the exception of the interval between 5:10pm to 5:19pm and between 6:10pm to 7:00pm. The maximum number of movements was 16, recorded from 6:50pm to 6:59pm.

Figure 8.3: Evening Peak Cyclist Frequency
Wyllie Avenue/Puhinui Road 2007 – 2013 (n)



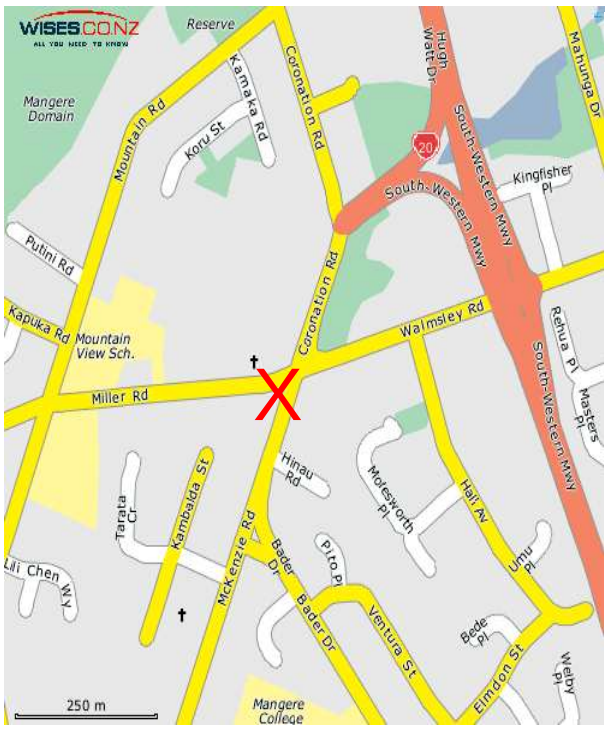
Note: In 2013, 28 cyclists (36 per cent of the total cycle movements in the evening peak) were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

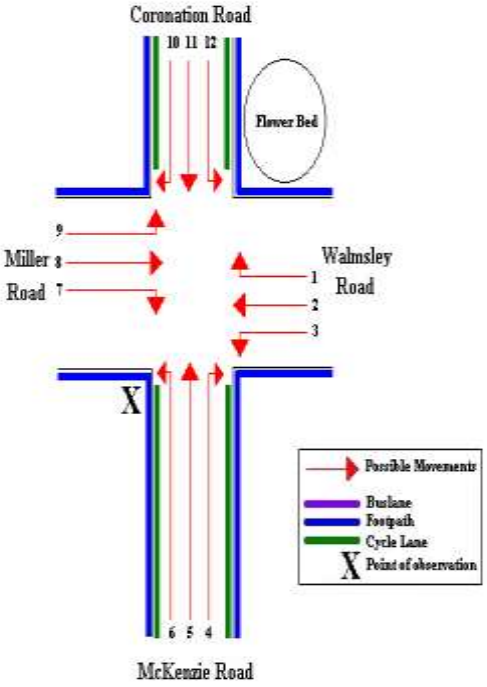
- *Four cyclists at 5:14pm*
- *Three cyclists at 5:19pm*
- *Nine cyclists at 6:15pm*
- *Three cyclists at 6:30pm*
- *Nine cyclists at 6:58pm.*

9. MCKENZIE ROAD/CORONATION ROAD/WALMSLEY ROAD, MANGERE (SITE 32)

Figure 9.1 shows the possible cyclist movements at this intersection.

Figure 9.1: Cycle Movements: McKenzie/Coronation/Walmsley Road





9.1 Site Summary

	Raw Counts			*AADT*
	Morning Peak	***Evening Peak***	***Total***	***Total***
2007	28	42	70	101
2008	21	36	57	82
2009	22	30	52	75
2010	38	49	87	126
2011	32	61	93	133
2012	19	29	48	69
2013	**48**	**42**	**90**	**131**

9.2 Morning Peak

Environmental Conditions

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

Key Points

- In 2013, the volume of morning cyclists recorded at the McKenzie/Coronation/Walmsley Road intersection has increased notably (from 19 in 2012 to 48 movements this year).
- The most common movements in the morning were south down Coronation Road into McKenzie Road (Movement 11 = 19 cyclists) and travelling from Miller Road to Walmsley Road (Movement 8 = 13 cyclists).
- Of the 12 movements possible at this intersection, the most noticeable changes were at Movement 11 (up 12 cyclists) and at Movement 8 (up 11 cyclists).

Table 9.1: Morning Cyclist Movements

McKenzie/Coronation/Walmsley Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	1	0	1	2	1	0	**2**	**2**
2	2	3	0	4	2	0	**2**	**2**
3	3	0	2	3	1	3	**2**	**-1**
4	1	0	0	1	2	0	**0**	**0**
5	8	2	3	7	5	7	**4**	**-3**
6	2	1	0	0	0	0	**0**	**0**
7	2	1	1	3	0	0	**1**	**1**
8	0	0	2	3	2	2	**13**	**11**
9	0	0	0	0	0	0	**3**	**3**
10	0	0	0	2	0	0	**1**	**1**
11	9	14	11	12	16	7	**19**	**12**
12	0	0	2	1	3	0	**1**	**1**
Total	**28**	**21**	**22**	**38**	**32**	**19**	**48**	**29**

- Over the morning peak, adults comprised the greatest share of the cycle movements (87 per cent, slightly up from 84 per cent last year).
- The majority of cyclists were wearing a helmet (79 per cent, unchanged from last year).
- Ninety per cent of cyclists were male.
- Three-quarters of cyclists were riding on the road (74 per cent, unchanged from last year).

Table 9.2: Morning Cyclist Characteristics

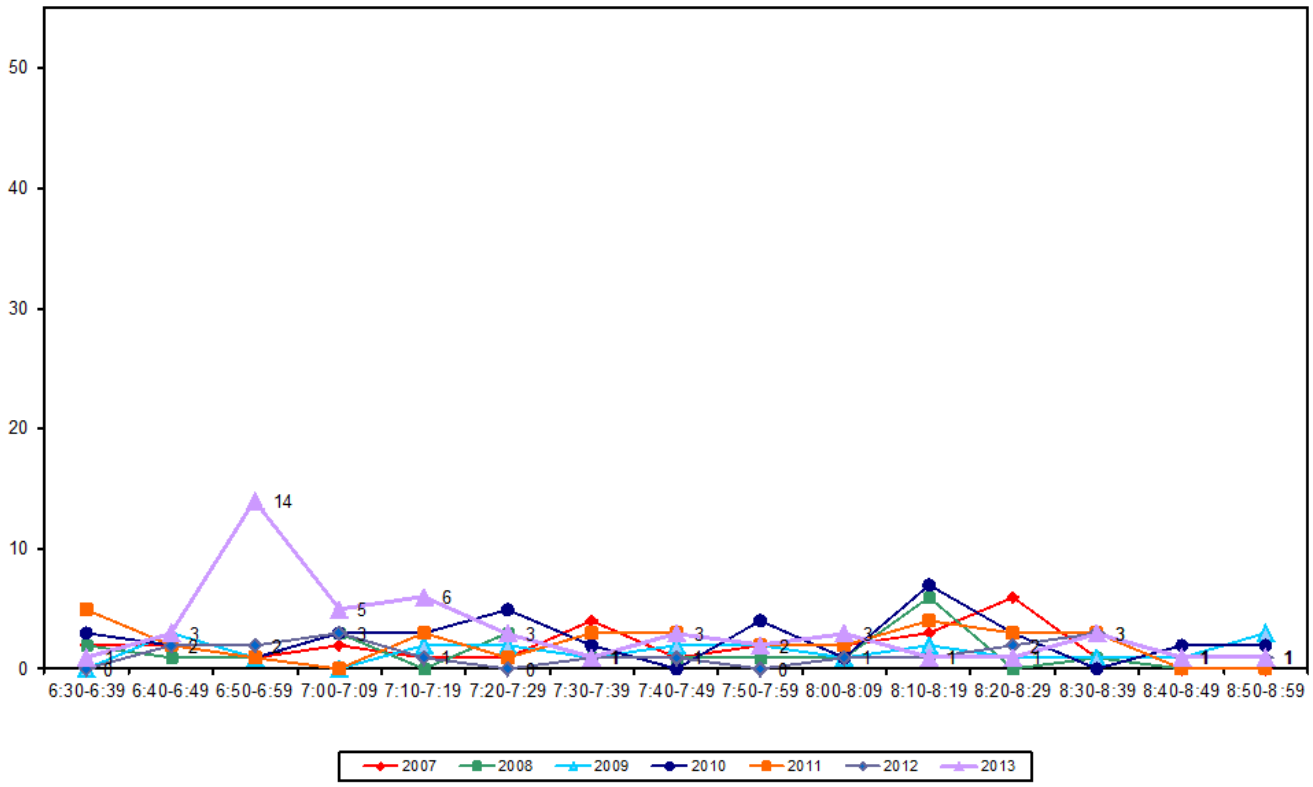
McKenzie/Coronation/Walmsley Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	71	86	91	84	78	84	**87**	**3**
School child	29	14	9	16	22	16	**13**	**-3**
Helmet Wearing								
Helmet on head	71	71	86	71	78	79	**79**	**0**
No helmet	29	29	14	29	22	21	**21**	**0**
Gender								
Male	-	-	-	-	88	84	**90**	**6**
Female	-	-	-	-	13	5	**10**	**5**
Can't tell	-	-	-	-	0	11	**0**	**-11**
Where Riding								
Road	64	67	82	66	66	74	**74**	**0**
Footpath	36	33	18	34	34	26	**26**	**0**
Base:	***28***	***21***	***22***	***38***	***32***	***19***	***48***	

- The volume of morning cyclists reached a sharp peak from 6:50am to 6:59am (14 cyclists), then was low for the remaining part of the monitoring period. With the exception of the peak, the trend was consistent with previous years.

Figure 9.2: Morning Peak Cyclist Frequency

McKenzie/Coronation/Walmsley Road 2007 – 2013 (n)



Note: A group of 11 cyclists (23 per cent of the site's morning traffic) rode past at 6:59am.

9.3 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 total number of cycle movements recorded at the McKenzie/Coronation/Walmsley Road intersection has increased to 42 movements from 29 movements last year.
- The most common movements in the evening were northbound from McKenzie Road to Coronation Road (Movement 5 = 17 movements) and heading south down Coronation Road into McKenzie Road (Movement 11 = 10 cyclists).
- Movement 5 saw the most noticeable increase this year, up eight movements.

Table 9.3: Evening Cyclist Movements

McKenzie/Coronation/Walmsley Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	2	4	0	4	2	2	**1**	**-1**
2	1	3	1	3	5	2	**2**	**0**
3	1	3	2	4	3	1	**2**	**1**
4	0	0	1	2	1	2	**2**	**0**
5	14	14	15	18	21	9	**17**	**8**
6	3	3	1	2	2	0	**1**	**1**
7	2	0	1	1	2	3	**2**	**-1**
8	0	1	1	1	2	0	**1**	**1**
9	3	0	1	0	7	0	**1**	**1**
10	0	0	1	2	2	0	**0**	**0**
11	11	6	5	9	13	9	**10**	**1**
12	5	2	1	3	1	1	**3**	**2**
Total	**42**	**36**	**30**	**49**	**61**	**29**	**42**	**13**

- Almost all cyclists using this intersection over the evening peak were adults (98 per cent, a 22 percentage point increase from last year).
- Ninety per cent of cyclists at this site were wearing a helmet (up from 83 per cent in 2012).
- Most of the cyclists using this site were male (93 per cent).
- Riding on the road was favoured over riding on the footpath (81 per cent on the road, 19 per cent on the footpath). The share of road riders has increased from 2012 (up 18 percentage points).

Table 9.4: Evening Cyclist Characteristics

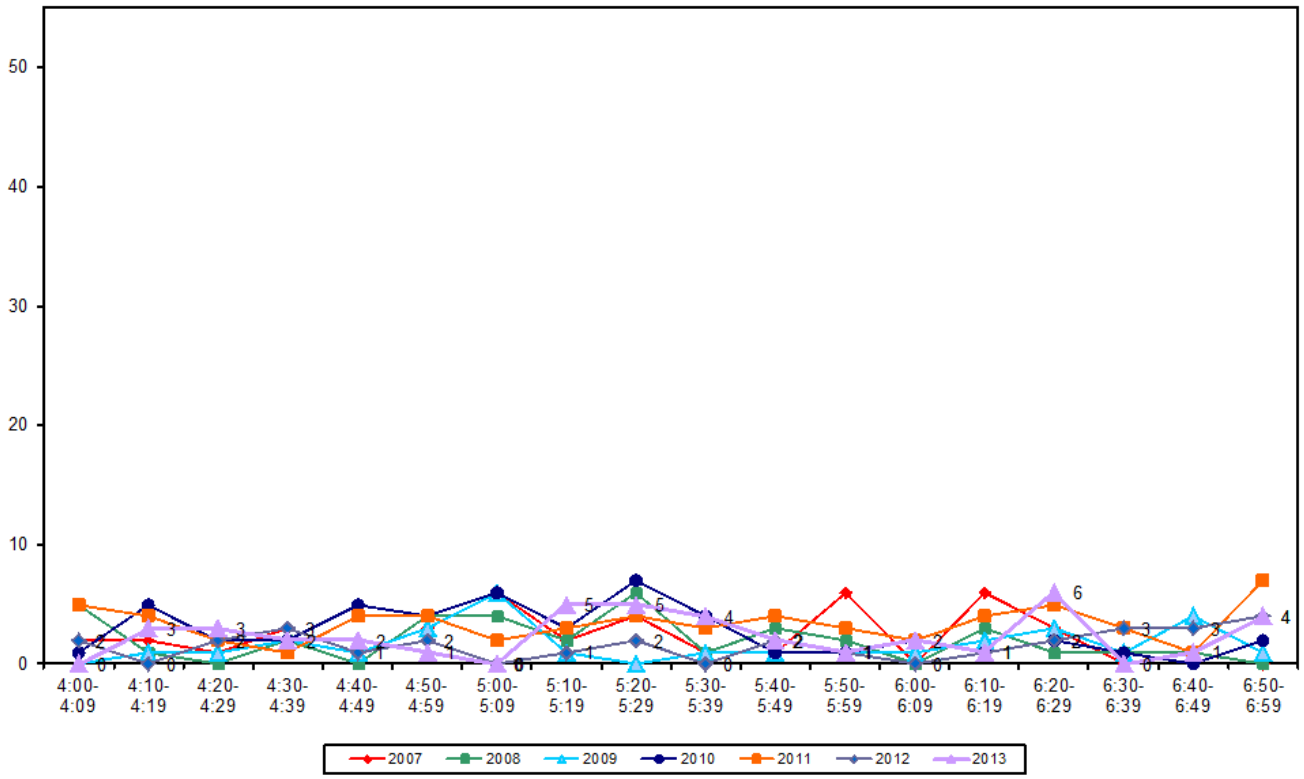
McKenzie/Coronation/Walmsley Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	2012	2013	Change 12-13
Cyclist Type								
Adult	76	89	87	86	84	76	**98**	**22**
School child	24	11	13	14	16	24	**2**	**-22**
Helmet Wearing								
Helmet on head	74	78	73	76	87	83	**90**	**7**
No helmet	26	22	27	24	13	17	**10**	**-7**
Gender								
Male	-	-	-	-	90	79	**93**	**14**
Female	-	-	-	-	7	21	**7**	**-14**
Can't tell	-	-	-	-	3	0	**0**	**0**
Where Riding								
Road	81	71	73	65	59	63	**81**	**18**
Footpath	19	29	27	35	41	37	**19**	**-18**
Base:	***42***	***36***	***30***	***49***	***61***	***29***	***42***	

- This year, the volume of evening cycle movements was low throughout the evening period. There were no more than six cycle movements recorded during any ten minute interval. Two small peaks occurred - between 5:10pm to 5:39pm (a total of 14 movements over 30 minutes) and between 6:20pm to 6:29pm (6 cyclists).

Figure 9.3: Evening Peak Cyclist Frequency

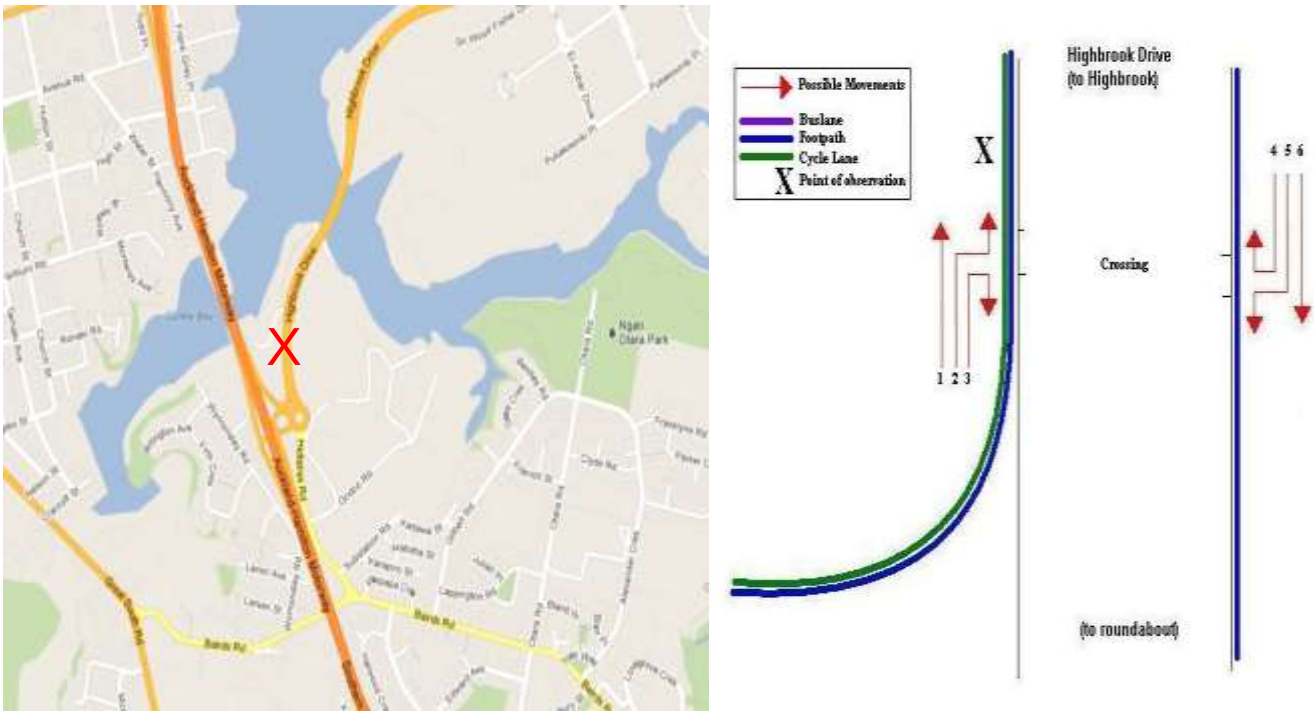
McKenzie/Coronation/Walmsley Road 2007 – 2013 (n)



10. HIGHBROOK DRIVE, EAST TAMAKI (SITE 71)

Figure 10.1 shows the possible cyclist movements at this intersection.

Figure 10.1: Cycle Movements: Highbrook Drive



10.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2008	13	16	29	42
2009	20	18	38	55
2010	27	13	40	59
2011	23	30	53	77
2012	21	29	50	72
2013	**24**	**23**	**47**	**68**

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 level of morning cyclist traffic at the Highbrook Drive site has increased, from 21 movements last year to 24 this year.
- The most common movement in the morning was along the cycle lane heading north (Movement 1 = 9 cyclists).
- Movement 3 experienced the biggest increase of six movements this year, while the cycle volume for Movement 1 had decreased by the same amount.

Table 10.1: Morning Cyclist Movements

Highbrook Drive 2008 – 2013 (n)

Movement	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	5	5	8	13	15	**9**	**-6**
2	2	2	4	2	0	**1**	**1**
3	2	0	1	2	1	**7**	**6**
4	0	2	5	0	0	**0**	**0**
5	3	2	4	1	2	**1**	**-1**
6	1	9	5	5	3	**6**	**3**
Total	**13**	**20**	**27**	**23**	**21**	**24**	**3**

- Over the morning peak, almost all cyclists were adults (96 per cent, slightly down from 100 per cent in 2012).
- Helmet-wearing has been more widespread this year (83 per cent, a 12 percentage point increase from last year).
- The majority of cyclists were male (92 per cent, stable from last year).
- All cyclists were riding on the off-road cycleway (the highest count since 2009).

Table 10.2: Morning Cyclist Characteristics

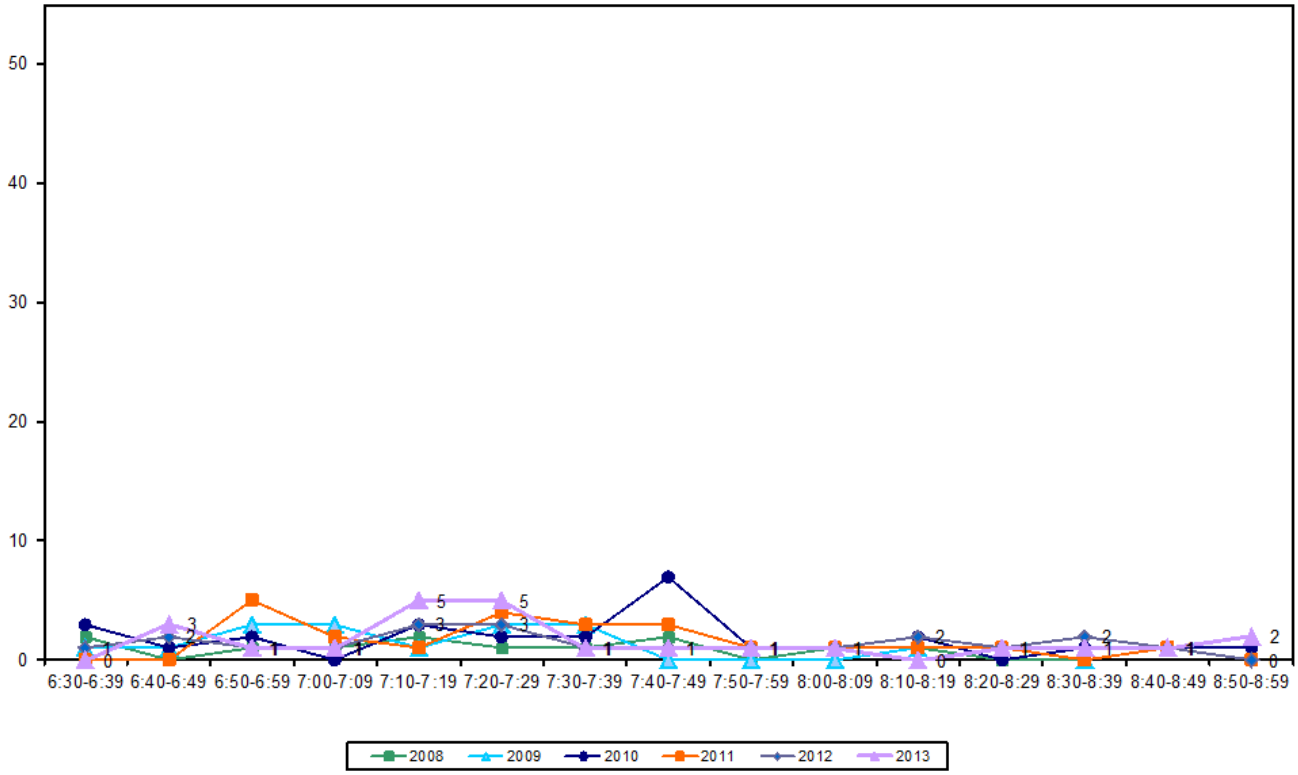
Highbrook Drive 2008 – 2013 (%)

	2008	*2009*	*2010*	*2011*	*2012*	*2013*	Change 11-12
Cyclist Type							
Adult	100	100	100	96	100	**96**	**-4**
School child	0	0	0	4	0	**4**	**4**
Helmet Wearing							
Helmet on head	85	75	78	78	71	**83**	**12**
No helmet	15	25	22	22	29	**17**	**-12**
Gender							
Male	-	-	-	91	90	**92**	**2**
Female	-	-	-	4	10	**8**	**-2**
Can't tell	-	-	-	4	0	**0**	**0**
Where Riding							
Road	8	15	7	13	14	**0**	**-14**
Footpath	92	5	33	26	0	**0**	**0**
Off-road cycleway	-	80	60	61	86	**100**	**14**
Base:	***13***	***20***	***27***	***23***	***21***	***24***	

- The volume of cycle movements was low over almost the entire morning shift. There was, however, a slight peak that occurred between 7:10pm and 7:29pm (5 cyclists in each 10 minute interval).

Figure 12.2: Morning Peak Cyclist Frequency

Highbrook Drive 2008 – 2013 (n)



10.3 Evening Peak

Environmental Conditions

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

Key Points

- The total number of cycle movements observed at the Highbrook Drive intersection was 23, down from 29 movements last year.
- The most common movement in the evening was down Highbrook Drive towards the roundabout (Movement 6 = 9 cyclists).
- The most noticeable change was at Movement 6 (down 3 cyclists from 2012).

Table 10.3: Evening Cyclist Movements

Highbrook Drive 2008 – 2013 (n)

Movement	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	3	5	2	11	8	**7**	**-1**
2	2	0	3	0	0	**0**	**0**
3	0	6	0	4	5	**3**	**-2**
4	0	0	0	0	0	**0**	**0**
5	8	0	3	4	4	**4**	**0**
6	3	7	5	11	12	**9**	**-3**
Total	**16**	**18**	**13**	**30**	**29**	**23**	**-6**

- Consistent with the morning peak, nearly all the cyclists using this intersection were adults (96 per cent, slightly down from previous records).
- A greater share of cyclists at this site were wearing a helmet this year (78 per cent, up from 69 per cent in 2012).
- The majority of cyclists at this site were male (96 per cent).
- All cyclists were using the cycleway.

Table 10.4: Evening Cyclist Characteristics

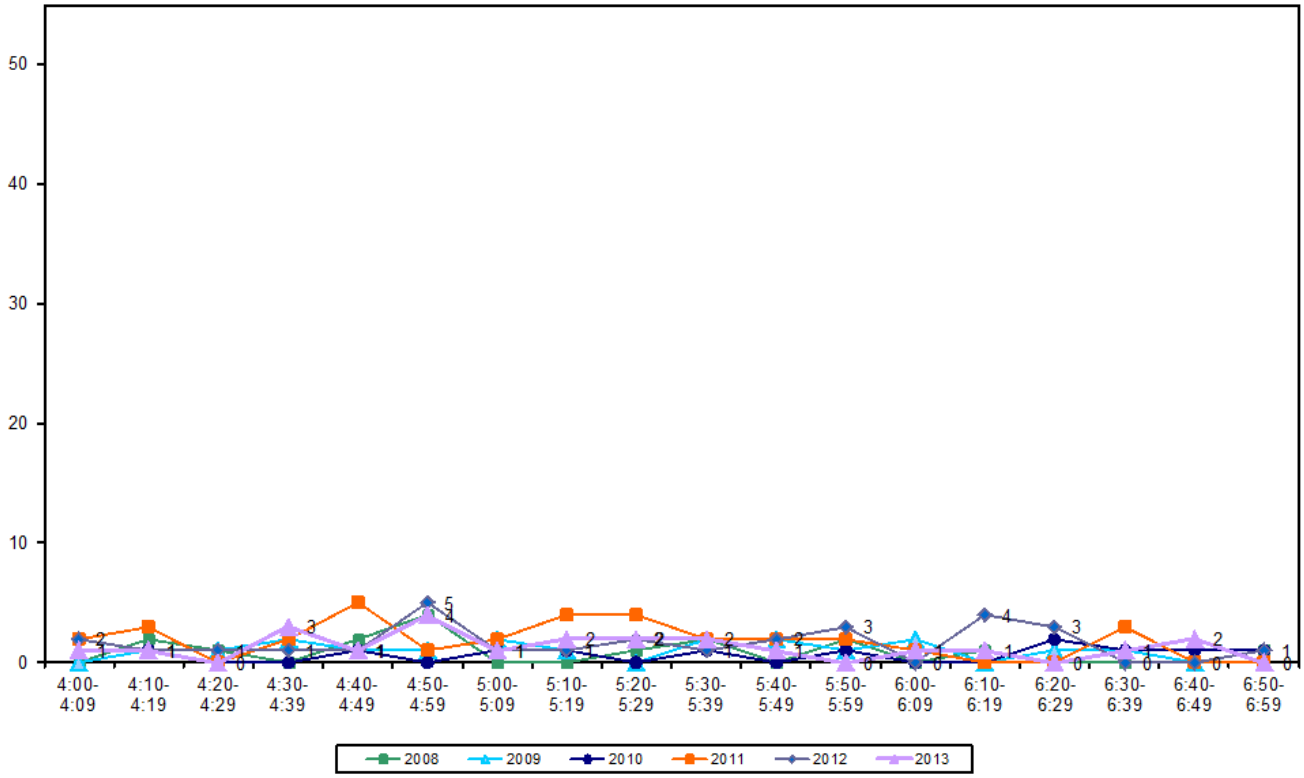
Highbrook Drive 2008 – 2013 (%)

	2008	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type							
Adult	100	100	100	100	100	**96**	**-4**
School child	0	0	0	0	0	**4**	**4**
Helmet Wearing							
Helmet on head	81	89	62	83	69	**78**	**9**
No helmet	19	11	38	17	31	**22**	**-9**
Gender							
Male	-	-	-	87	93	**96**	**3**
Female	-	-	-	7	7	**4**	**-3**
Can't tell	-	-	-	7	0	**0**	**0**
Where Riding							
Road	6	11	0	17	7	**0**	**-7**
Footpath	94	22	54	37	0	**0**	**0**
Off-road cycleway	-	67	46	47	93	**100**	**7**
Base:	***16***	***18***	***13***	***30***	***29***	***23***	

- Consistent with previous years, the volume of cycle movements was very low over the evening period. There were no more than four cyclists recorded over any ten minute interval.

Figure 10.3: Evening Peak Cyclist Frequency

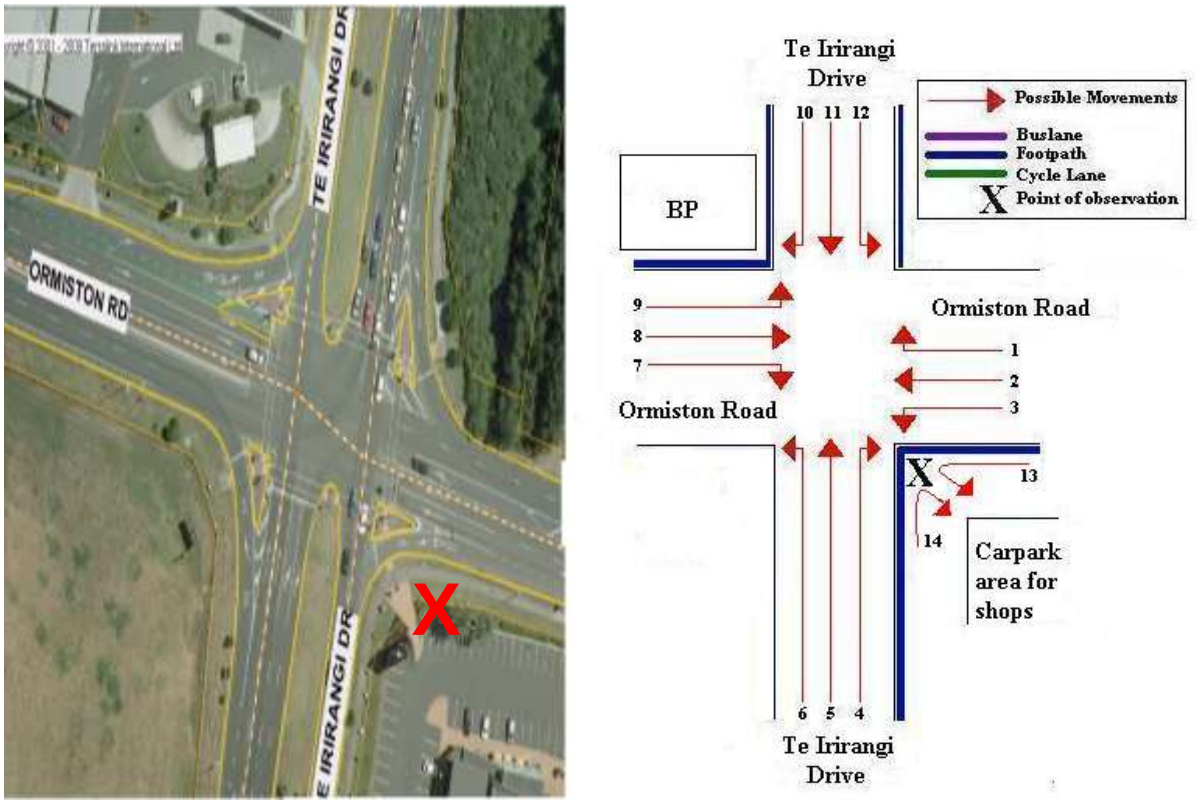
Highbrook Drive 2008 – 2013 (n)



11. TE IRIRANGI DRIVE/ORMISTON ROAD, EAST TAMAKI (SITE 81)

Figure 11.1 shows the possible cyclist movements at this intersection.

Figure 11.1: Cycle Movements: Te Irirangi Drive/Ormiston Road



11.1 Site Summary

	Raw Counts			*AADT*
	Morning Peak	*Evening Peak*	*Total*	*Total*
2009	13	20	33	47
2010	25	41	66	95
2011	24	32	56	81
2012	18	32	50	72
2013	**31**	**54**	**85**	**122**

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

- Morning cyclist traffic at the intersection of Te Irirangi Drive and Ormiston Road has increased this year, with 31 cycle movements recorded (up from 18 movements in 2012).
- The key movements in the morning at this site was heading south straight along Te Irirangi Drive (Movement 11 = 11 cyclists).
- Movement 11 also experienced the greatest increase in cycle volume (up 8 cyclists).

Table 11.1: Morning Cyclist Movements

Te Irirangi Drive/Ormiston Road 2009 – 2013 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	4	1	1	4	**2**	**-2**
2	1	2	4	4	**4**	**0**
3	0	3	1	1	**1**	**0**
4	0	0	0	0	**0**	**0**
5	4	3	8	6	**5**	**-1**
6	0	0	1	0	**2**	**2**
7	0	0	0	0	**1**	**1**
8	0	3	0	0	**2**	**2**
9	0	0	0	0	**1**	**1**
10	0	1	1	0	**0**	**0**
11	4	12	8	3	**11**	**8**
12	0	0	0	0	**2**	**2**
13	-	-	-	-	**0**	**0**
14	-	-	-	-	**0**	**0**
Total	**13**	**25**	**24**	**18**	**31**	**13**

- Over the morning peak, the majority of cyclists riding through this intersection were adults (94 per cent, up from 89 per cent last year).
- The majority of cyclists were wearing a helmet (79 per cent, down slightly from 83 per cent in 2012).
- About two-thirds of the cyclists using this site (68 per cent) were male, down from 89 per cent in 2012.
- The majority of cyclists were riding on the road (65 per cent, up from 56 per cent last year).

Table 11.2: Morning Cyclist Characteristics

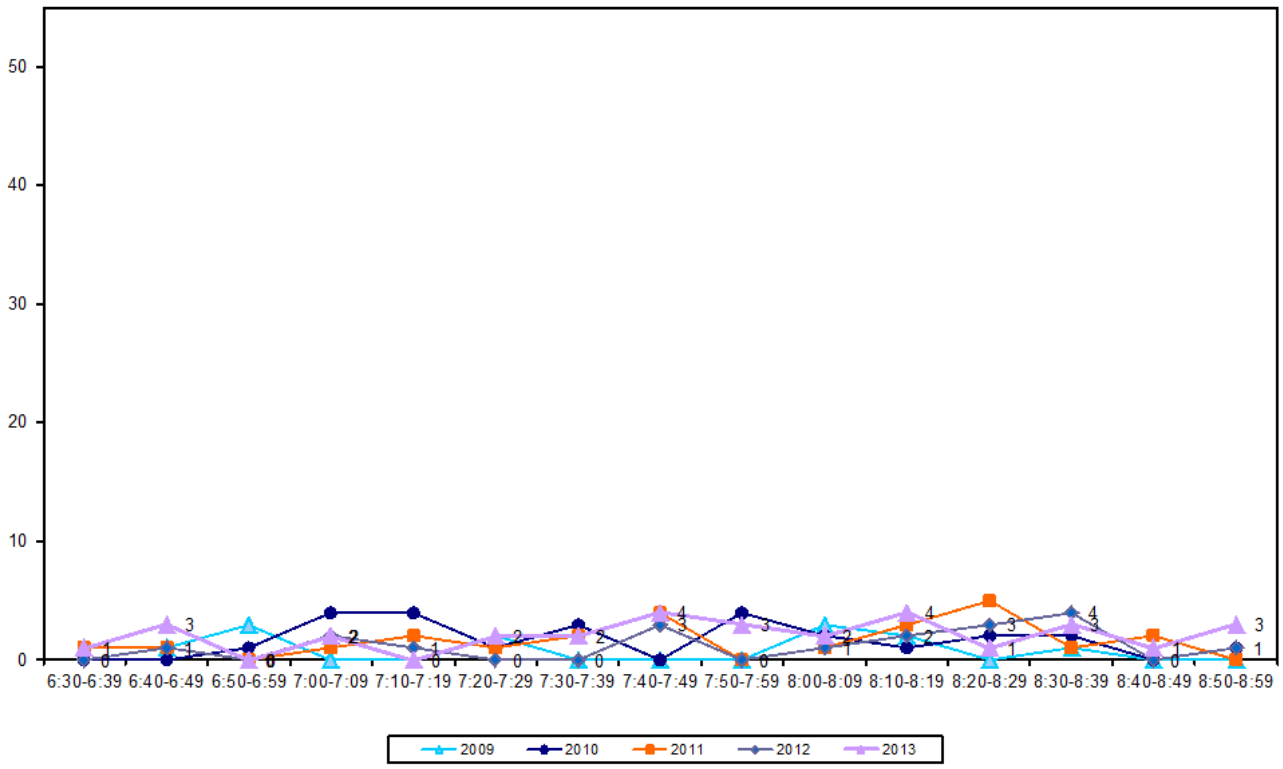
Te Irirangi Drive/Ormiston Road 2009 – 2013 (%)

	2009	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type						
Adult	69	80	83	89	**94**	**5**
School child	31	20	17	11	**6**	**-5**
Helmet Wearing						
Helmet on head	85	92	100	83	**79**	**-4**
No helmet	15	8	0	17	**21**	**4**
Gender						
Male	-	-	75	89	**68**	**-21**
Female	-	-	25	11	**16**	**5**
Can't tell	-	-	0	0	**16**	**16**
Where Riding						
Road	69	64	67	56	**65**	**9**
Footpath	31	36	33	44	**35**	**-9**
Base:	***13***	***25***	***24***	***18***	***31***	

- The volume of morning cycle movements was relatively low and was fluctuating over the entire monitoring period, with no more than four cyclists recorded passing during any ten minute interval.

Figure 11.2: Morning Peak Cyclist Frequency

Te Irirangi Drive/Ormiston Road 2009 – 2013 (n)



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

- Evening cyclist volume at the Te Irirangi Drive/Ormiston Road intersection has increased, from 32 movements in 2012 to 54 movements this year.
- The most popular movements in the evening were riding straight along Te Irirangi Drive heading south (Movement 11 = 23 cyclists) and in the opposite direction (Movement 5 = 13 cyclists).
- Since 2012, evening cyclist volumes have most noticeably increased at Movement 11 (up 13 cyclists) and at Movement 5 (up 8 cyclists).

Table 11.3: Evening Cyclist Movements

Te Irirangi Drive/Ormiston Road 2009 – 2013 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	1	1	0	**0**	**0**
2	1	4	2	2	**3**	**1**
3	0	0	3	1	**0**	**-1**
4	0	0	1	1	**0**	**-1**
5	2	8	11	5	**13**	**8**
6	0	0	0	0	**0**	**0**
7	1	0	2	1	**2**	**1**
8	1	6	1	4	**5**	**1**
9	1	1	1	3	**4**	**1**
10	0	0	0	0	**0**	**0**
11	13	20	9	10	**23**	**13**
12	1	1	1	5	**4**	**-1**
13	-	-	-	-	**0**	**0**
14	-	-	-	-	**0**	**0**
Total	**20**	**41**	**32**	**32**	**54**	**22**

- Most evening cyclists using this site were adults (91 per cent, down from 94 per cent in 2012).
- Most cyclists were wearing a helmet (89 per cent, stable from 88 per cent last year).
- Eighty-seven per cent of cyclists at this site were male (down from 94 per cent in 2012).
- The majority of cyclists were riding on the road (78 per cent, up from 72 per cent in 2012).

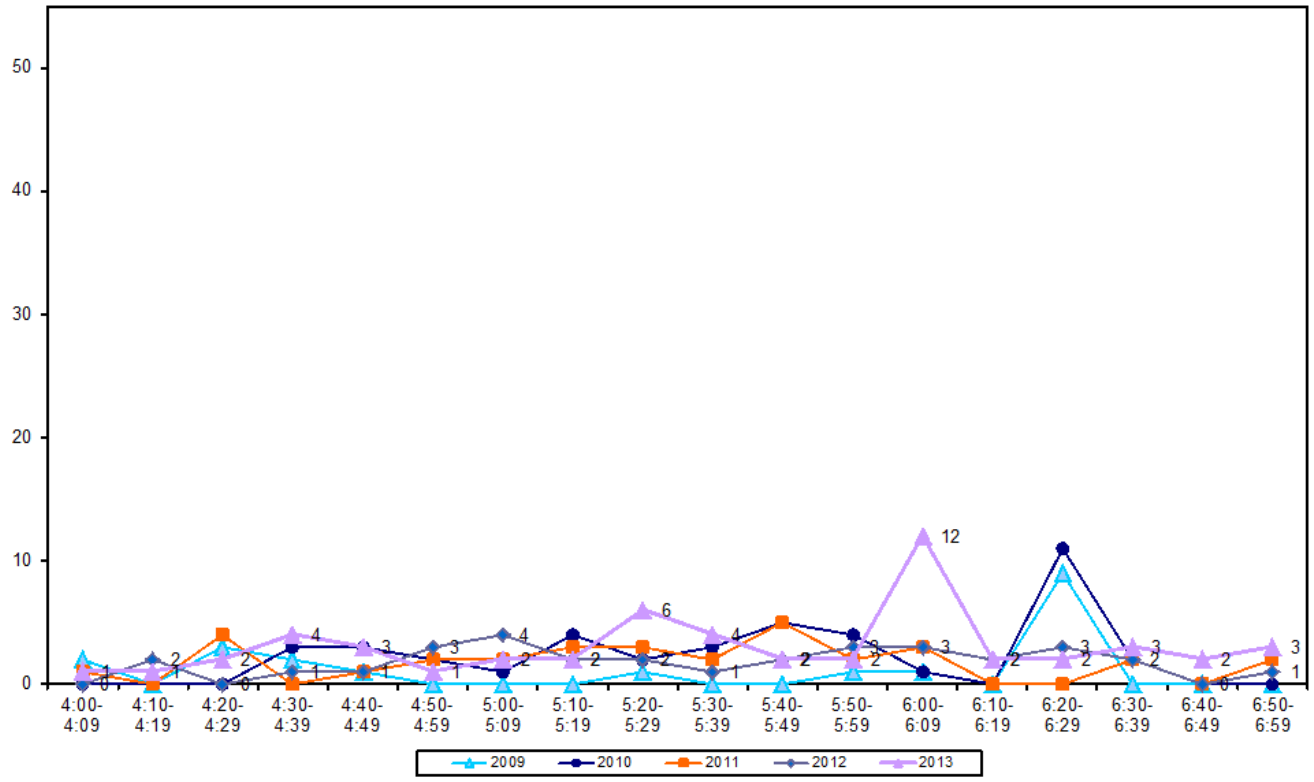
Table 11.4: Evening Cyclist Characteristics

Te Irirangi Drive/Ormiston Road 2009 – 2013 (%)

	2009	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type						
Adult	95	83	97	94	91	**-3**
School child	5	17	3	6	9	**3**
Helmet Wearing						
Helmet on head	95	78	97	88	89	**1**
No helmet	5	22	3	12	11	**-1**
Gender						
Male	-	-	78	94	87	**-7**
Female	-	-	16	6	9	**3**
Can't tell	-	-	6	0	4	**4**
Where Riding						
Road	95	76	88	72	78	**6**
Footpath	5	24	12	28	22	**-6**
Base:	***20***	***41***	***32***	***32***	***54***	

- Evening cyclist volumes were generally stable and low throughout the monitoring period this year, with no more than six cycle movements in any ten minute interval. A sharp peak was observed between 6:00pm and 6:09pm (12 movements) with a smaller peak observed between 5:20pm and 5:29pm (6 movements).

Figure 11.3: Evening Peak Cyclist Frequency
Te Irirangi Drive/Ormiston Road 2009 – 2013 (n)



Note: A group of 11 cyclists (20 per cent of the evening cycle movements at this site) rode past at 6:05pm.

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 36 schools in the Manukau ward participated in the school bike shed count.
- Of the schools that responded to the survey, most had no policies that restrict students cycling to school[9].
- Of the schools that responded to the survey, no school reported any events or issues that may affect cycle counts.
- Although the designated count day was Tuesday 5th of March 2013, most schools in the Manukau ward completed their count on an alternative day[10].

Key Points

- Among the surveyed schools, of those eligible to cycle, on average, less than one per cent of students are cycling to their schools (unchanged from 2012).
- Across the 36 schools that responded, 48 students were reported to cycle to school.

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[9] The following schools have policies surrounding cycling to school:
- Holy Cross School (Papatoetoe) *"Years 5 and up are allowed to cycle to school"*
- Mangere Central School *"No one is allowed to bike - the school is on a very main road"*
- Southern Cross Campus *"Years 7 and up are allowed to cycle to school"*
- Sutton Park School *"Travelwise Programme"*

[10] The following schools conducted their counts on alternative days:
- Al-Madinah School – 13th March 2013
- Aorere College – 13th March 2013
- Auckland SDA High School – 12th March 2013
- De La Salle College – 13th March 2013
- Ferguson Intermediate – 13th March 2013
- Holy Cross School (Papatoetoe) – 13th March 2013
- Koru School – 13th March 2013
- Mangere Central School – 13th March 2013
- Otahuhu College – 13th March 2013
- Pacific Christian School – 14th March 2013
- Redoubt North School – 14th March 2013
- Robertson Road School – 14th March 2013
- Sir Douglas Bader Intermediate School – 14th March 2013
- Sir Edmund Hillary Collegiate – 13th March 2013
- Sir Keith Park School – 13th March 2013
- Southern Cross Campus – 13th March 2013
- South Auckland SDA School – 13th March 2013
- St Mary MacKillop Catholic School – 14th March 2013
- Sutton Park School – 13th March 2013
- Tangaroa College – 13th March 2013
- Te Kura Kaupapa Māori o Otara/o Piripono – 13th March 2013
- Viscount School – 14th March 2013
- Wiri Central School – 28th February 2013

- This year, Papatoetoe Intermediate School reported the highest share of cyclists – 3 per cent of all eligible students currently cycling. This is stable from 2 per cent in 2012.
- Of the 23 schools that participated in the count in both 2012 and 2013, four schools (Papatoetoe Intermediate School, Holy Cross School, Te Kura Kaupapa Māori a Rohe o Mangere, and Southern Cross Campus) reported an increase in the share of students cycling to school.
- Of the 23 schools that participated in the count in both 2012 and 2013, 4 (17 per cent) reported a decrease in the share of students cycling.
- Of the 36 schools that responded, 24 (67 per cent) had no students cycling to school.

Table 12.1 shows the results of the 36 schools surveyed in the Manukau ward.

Table 12.1: Summary Table Of School Bike Count

2007 – 2013 (n)

School Name	*School Type*	*School Roll Eligible To Cycle*	*No. of Cycles Counted*	*Cyclists as share of those eligible*[11]						
				2013	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
Papatoetoe Intermediate School	Intermediate	803	23	**3%**	2%	2%	2%	1%	-	-
Holy Cross School (Papatoetoe)	Full Primary	200	2	**1%**	0%	-	-	-	-	-
Kedgley Intermediate	Intermediate	779	6	**1%**	1%	1%	2%	2%	-	-
Sir Douglas Bader Intermediate School	Intermediate	200	2	**1%**	-	<1%	<1%	0%	<1%	0%
Te Kura Kaupapa Māori a Rohe o Mangere	Composite	187	1	**1%**	0%	1%	-	-	-	-
Te Kura Māori o Ngā Tapuwae	Composite	277	4	**1%**	2%	-	-	-	-	-
De La Salle College	Intermediate/Secondary	987	1	**<1%**	-	-	-	<1%	<1%	0%
Kia Aroha College	Intermediate/Secondary	285	1	**<1%**	1%	0%	-	-	0%	-
Mangere College	Secondary	830	3	**<1%**	<1%	1%	1%	1%	-	-
Southern Cross Campus	Composite	1047	2	**<1%**	-	-	0%	0%	0%	-
Sutton Park School	Full Primary	496	2	**<1%**	0%	0%	-	-	-	-
Tangaroa College	Secondary	1000	1	**<1%**	-	0%	0%	-	0%	-
Al-Madinah School	Composite	505	0	**0%**	0%	0%	0%	0%	0%	-
Aorere College	Secondary	1600	0	**0%**	0%	0%	0%	0%	-	-
Auckland Seventh Day Adventist High School	Secondary	192	0	**0%**	1%	<1%	-	-	-	-
Ferguson Intermediate School	Intermediate	480	0	**0%**	0%	0%	-	-	0%	-
King's College	Secondary	913	0	**0%**	0%	-	-	-	-	-

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

School Name	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible[11]						
				2013	2012	2011	2010	2009	2008	2007
Koru School	Full Primary	550	0	**0%**	0%	-	-	-	-	-
Mangere Central School	Full Primary	0	0	**0%**	0%	-	-	-	-	-
St Mary MacKillop Catholic School	Full Primary	327	0	**0%**	0%	0%	-	-	-	-
McAuley High School	Secondary	710	0	**0%**	0%	0%	0%	0%	0%	0%
Mission Heights Junior College	Composite	668	0	**0%**	2%	1%	5%	3%	-	-
Otahuhu College	Secondary	1500	0	**0%**	0%	0%	-	0%	0%	0%
Otahuhu Intermediate School	Intermediate	347	0	**0%**	2%	0%	0%	-	1%	1%
Pacific Christian School	Full Primary	85	0	**0%**	-	0%	-	-	-	-
Redoubt North School	Full Primary	642	0	**0%**	-	0%	-	-	-	-
Robertson Road School	Full Primary	475	0	**0%**	-	-	-	-	-	-
Sir Edmund Hillary Collegiate	Intermediate	1200	0	**0%**	-	-	-	-	-	-
Sir Keith Park School	Composite	138	0	**0%**	0%	-	-	-	-	-
South Auckland SDA School	Full Primary	297	0	**0%**	0%	-	-	-	-	-
St Joseph's School (Onehunga)	Full Primary	274	0	**0%**	-	0%	-	-	-	-
St Joseph's Otahuhu	Full Primary	297	0	**0%**	-	0%	-	-	-	-
Te Kura Kaupapa Māori o Otara/o Piripono	Full Primary	45	0	**0%**	-	4%	-	-	-	-
Viscount School	Full Primary	690	0	**0%**	-	-	-	-	-	-
Wiri Central School	Full Primary	426	0	**0%**	-	0%	-	-	-	-
Zayed College for Girls	Intermediate/Secondary	93	0	**0%**	0%	0%	-	-	-	-
Total		**19545**	**48**	**<1%**	<1%	**-**	**-**	**-**	**-**	**-**

Table 12.2 illustrates the rates of cycling to school at different school levels. Rates of cycling to school are highest among intermediate schools (1 per cent, unchanged from last year).

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

2007 – 2013 (%)

Year Levels	***Number of Schools Responded in 2013***	***Cyclists as share of those eligible***							
		2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	**Change 12-13**
Intermediate	5	<1%	<1%	1%	1%	1%	1%	**1%**	0%
Composite	6	-	0%	0%	0%	1%	1%	**<1%**	0%
Intermediate/Secondary	4	-	0%	-	-	0%	1%	**<1%**	0%
Secondary	7	0%	0%	<1%	<1%	<1%	<1%	**<1%**	0%
Full Primary	14	-	-	-	-	0%	0%	**<1%**	0%

APPENDICES

Appendix One: Annual Average Daily Traffic (AADT) Calculation

APPENDIX ONE: ANNUAL AVERAGE DAILY TRAFFIC (AADT) CALCULATION

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

Purpose

The purpose of this appendix is to document the recommended procedure for estimating a cycling AADT[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%