

2015 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 Programme¹.

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 methodology². 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:

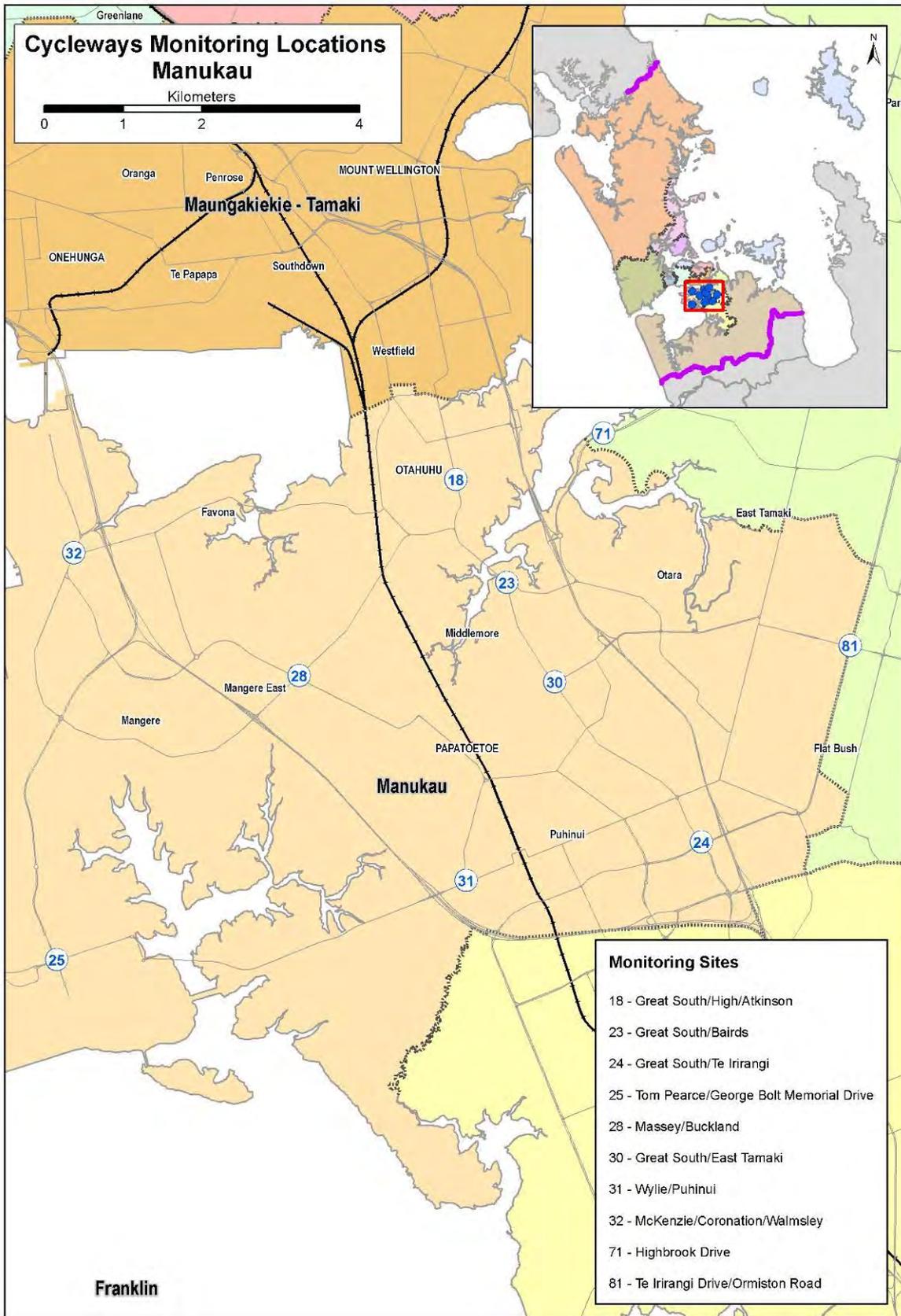
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and 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: 2015 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 3rd of March and be conducted on the first three fine days of the 3rd, 4th, 5th, 10th, 11th or 12th of March.

Counts were conducted on the following days:

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

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

Weather and Daylight Conditions

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



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

Tuesday 3rd March

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

Wednesday 4th March

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

Thursday 5th March

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

Conducting The Manual Counts

Scoping Visit

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

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

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

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



Briefing Session

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

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

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

Conducting The Manual Counts

Each site was assigned to a surveyor, who was issued with a map that showed the range of movements a cyclist could make through that site. In addition to the map, surveyors were issued with a clipboard, a safety vest and a letter identifying them as a member of a Gravitas research team³.

During their shift the surveyor collected data on:

- The total number of cyclists⁴ 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 cycleway⁵.

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 Zealand⁶, 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 ViaStrada⁷.

⁶ <http://www.itsa.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 study⁸.

School Bike Shed Counts

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

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

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

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

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



Methodology

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

1. Gravitas designed an information sheet that was distributed to most full primary, intermediate, secondary and composite (Years 1 to 13) schools in the Auckland region via email (note a small number of schools were omitted due to the special nature of the students e.g. boarding schools, special needs schools). This sheet was designed in consultation with Auckland Transport to ensure all necessary information was collected.
2. This email was then sent to all eligible schools in Auckland region (n=300) to notify them of the bike shed count and to let them know what they would be required to do. Included in this email was a link to an online count form.
3. To enhance the comparability of the school bike shed data with that of the regional cycle monitor, Tuesday 3rd March was designated as the bike shed count day. (Most schools reported that they undertook the count on this day).
4. Once the school bike shed count had been completed, schools completed the online count form and submitted it electronically to Gravitas. Gravitas contacted all participating schools who had not returned their sheets after five working days, first by email (two rounds) and then by telephone. All count forms were checked for completeness before being data-entered into Excel. In 2015, 201 responses were received, a response rate of 64 per cent. (This compares with 88 per cent in 2014.)

Reporting

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

Manual Counts - Site Level Reporting

The following results have been reported for each site:

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



Manual Counts - Aggregated Reporting

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

Bike Shed Counts

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

1.3 Summary of Results

This summary contains the aggregated results of the 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 4th of March 2015⁹. Sunrise was at 7:09am and sunset was at 7:57pm. The highest temperature was 26.0 degrees Celsius.

⁹ Site 18 Great South Road/High Street/Atkinson Avenue had the cycle monitor conducted on Tuesday 10th March 2015.



1.4 Morning Peak

Environmental Conditions

- All monitored sites experienced fine but cloudy weather throughout the morning shift.
- As part of the SH20A to Airport project, an upgrade of George Bolt Memorial Drive began on 12th January 2015. Cyclists heading south towards the airport on SH20A were not affected. However, the northbound cycle lane was closed and cyclists heading north were diverted off SH20A at Montgomerie Road.
- There were no other road works or accidents observed during the morning monitoring period.

Key Points

- Across the seven sites monitored since 2007, the number of cyclist movements has increased (232 this year, compared with 200 in 2014). This represents a 17 per cent increase.
- A total of 284 cyclist movements were recorded across the ten sites in the morning peak period (between 6:30am and 9:00am) in 2015, a 14 per cent increase compared to last year.
- The average volume of morning cyclists across the seven sites monitored since 2007 is 33 cycle movements (up from 29 cycle movements in 2014). The average volume of morning cyclists across all ten sites is 35, up from 25 last year.
- The busiest site in the morning peak was the intersection of Great South/East Tamaki Road (43 movements, up from 30 movements last year), whereas the site at Tom Pearce/George Bolt Memorial Drive had the lowest level of morning cyclist traffic (5 cycle movements, down from 13 movement last year).
- Seven sites have recorded increases this year compared to 2014. The most notable increases occurred at:
 - Wyllie Avenue/Puhinui Road – up 72 per cent;
 - Great South Road/Bairds Road – up 60 per cent; and
 - Te Irirangi Drive/Ormiston Road – up 53 per cent
- Three sites have recorded decreases this year compared to 2014. These decreases have occurred at:
 - Tom Pearce/George Bolt Memorial Drive – down 61 per cent ;
 - McKenzie/Coronation/Walmsley Road – down 38 per cent; and
 - Massey/Buckland Road – down 4 per cent.



**Table 1.1: Summary Of Morning Cyclist Movements
2007 – 2015 (n)**

Site No.	Locations	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15	Change 07-15
30	Great South/East Tamaki Road	36	24	33	25	44	40	49	30	43	43%	19%
23	Great South/Bairds Road	32	27	29	34	40	39	50	25	40	60%	25%
24	Great South Road/ Te Irirangi Dr/ Cavendish Dr	34	25	19	28	41	28	42	26	33	27%	-3%
31	Wyllie Avenue/Puhinui Road	18	8	12	23	13	8	17	18	31	72%	72%
32	McKenzie/Coronation/ Walmsley Road	28	21	22	38	32	19	48	50	31	-38%	11%
18	Great South Road/High Street/ Atkinson Avenue	38	30	21	25	20	34	34	25	30	20%	-21%
28	Massey/Buckland Road	12	11	19	16	18	14	24	26	25	-4%	108%
	Average per site (for 7 sites since 2007)	28	21	22	27	30	26	38	29	33	14%	18%
	Total (for 7 sites since 2007)	194	146	155	189	208	182	264	200	233	17%	20%
81	Te Irirangi Drive/Ormiston Road	-	-	13	25	24	18	31	15	23	53%	-
71	Highbrook Drive	-	13	20	27	23	21	24	20	22	10%	-
25	Tom Pearce/ George Bolt Memorial Drive	-	-	6	5	15	3	4	13	5	-61%	-
	Average per site (all sites)	-	20	19	25	27	22	32	25	35	40%	-
	Total (all sites)	-	159	194	246	270	224	323	248	283	14%	-



- As shown in Table 1.2 below, morning cyclist characteristics this year were similar to those reported in 2014. Overall, over four in five cyclists were adults (87 per cent, down from 92 per cent last year).
- The majority of cyclists were wearing a helmet (84 per cent, up from 79 per cent in 2014).
- Most of the morning cyclists were male (87 per cent).
- Thirty-seven per cent of cyclists were riding on the footpath, stable from 35 per cent in 2014.

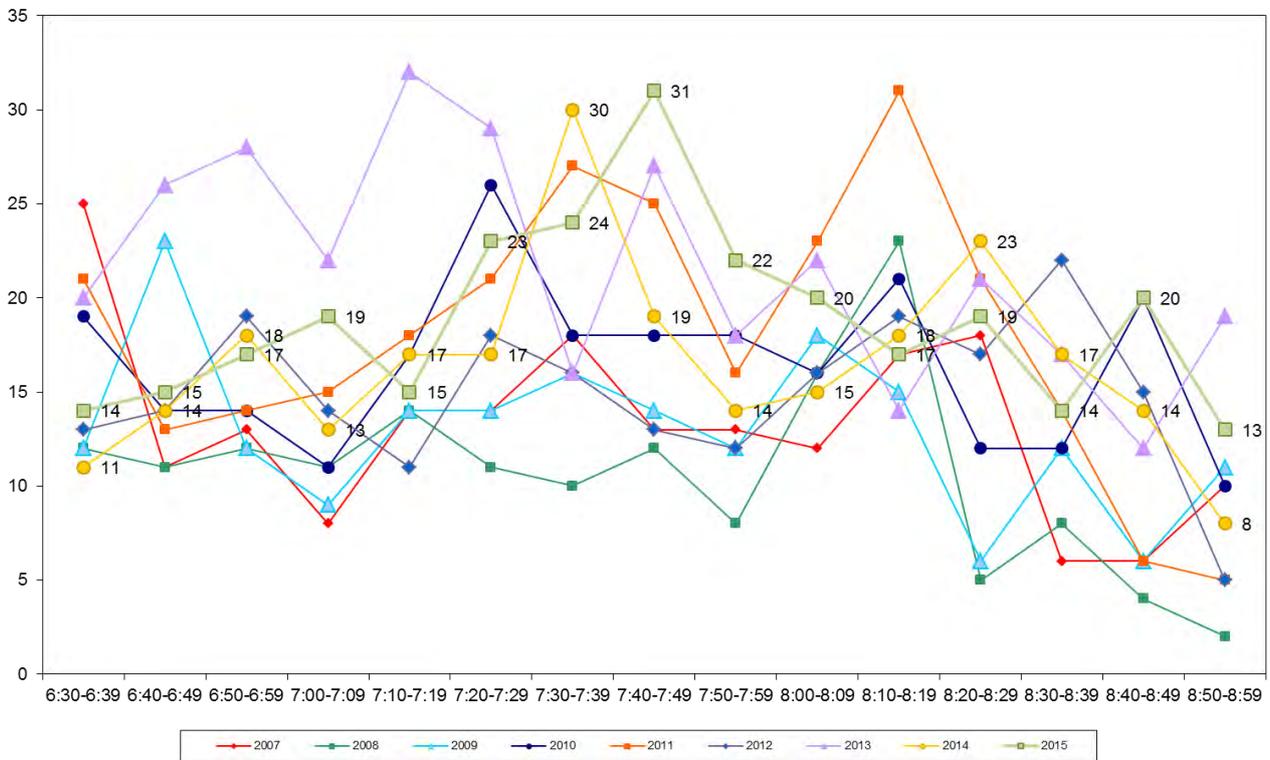
**Table 1.2: Summary of Morning Cyclist Characteristics
2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	86	86	88	90	87	83	89	92	87	-5
School child	14	14	12	10	13	17	11	8	13	5
Helmet Wearing										
Helmet on head	85	79	82	85	87	78	78	79	84	5
No helmet	15	21	18	15	13	22	22	21	16	-5
Gender										
Male	-	-	-	-	85	89	86	94	87	-7
Female	-	-	-	-	12	8	11	4	11	7
Can't tell	-	-	-	-	3	3	3	2	2	0
Where Riding										
Road	73	56	72	64	66	59	52	57	55	-2
Footpath	27	44	20	29	29	38	40	35	37	2
Off-road cycleway	0	0	8	7	5	7	8	8	8	0
Base:	194	159	194	246	270	224	323	248	283	



- Figure 1.2 illustrates the total number of cyclists in the morning by time of movement. This year, cycle traffic peaked between 7:40am and 7:49am (31 movements) and again between 8:40am-8:49am (20 movements).

**Figure 1.2: Total Cyclist Frequency – Morning Peak
2007 – 2015 (n)**





1.5 Evening Peak

Environmental Conditions

- The weather was generally overcast for all the sites throughout the evening shift. Rain of various intensity was recorded at some sites between 6:18pm to the end of the shift (7:00pm).
- As part of the SH20A to Airport project, an upgrade of George Bolt Memorial Drive began on 12th January 2015. Cyclists heading south towards the airport on SH20A were not affected. However, the northbound cycle lane was closed and cyclists heading north were diverted off SH20A at Montgomerie Road.
- 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 7 per cent – from 265 last year to 284 this year.
- A total of 337 cyclist movements were recorded across the ten sites in the evening peak period (between 4:00pm and 7:00pm) in 2015, down from 360 last year.
- The average volume of evening cyclists across the seven sites monitored since 2007 is 41 cycle movements. This compares with an average of 38 movements in 2014. The average volume of evening cyclists across all 10 sites is 33, down from 36 movements last year.
- Great South Road/Bairds Road has been the busiest in terms of the evening cyclists' activity (61 cycle movements). In contrast, Tom Pearce/George Bolt Memorial Drive had the lowest level of evening cyclist traffic (3 cycle movements).
- Four sites have recorded increases this year compared to 2014. The most notable increases occurred at:
 - Great South/Bairds Road – up 74 per cent;
 - McKenzie/Coronation/Walmsley Road – up 53 per cent; and
 - Wyllie Avenue/Puhinui Road – up 24 per cent.
- Five sites have recorded decreases this year compared to 2014. The most notable decreases have occurred at:
 - Tom Pearce/George Bolt Memorial Drive – down 85 per cent;
 - Te Irirangi Drive/Ormiston Road – down 52 per cent; and
 - Great South Road/Te Irirangi Drive/Cavendish Drive – down 41 per cent.



**Table 1.3: Summary of Evening Cyclist Movements
2007 – 2015 (n)**

Site No.	Locations	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15	Change 07-15
23	Great South/Bairds Road	36	29	28	37	49	42	53	35	61	74%	79%
32	McKenzie/Coronation/ Walmsley Road	42	36	30	49	61	29	42	32	49	53%	17%
30	Great South/East Tamaki Road	37	27	30	40	45	46	47	42	42	0%	14%
28	Massey/Buckland Road	31	20	20	29	35	34	34	32	39	22%	26%
18	Great South Road/High Street/ Atkinson Avenue	46	30	28	36	51	41	45	36	34	-6%	-26%
31	Wyllie Avenue/Puhinui Road	20	25	23	34	62	39	78	42	32	24%	60%
24	Great South Road/Te Irirangi Dr/ Cavendish Dr	39	26	22	44	53	50	77	46	27	-41%	-31%
	Average per site (for 7 sites since 2007)	36	28	26	38	51	40	54	38	41	8%	14%
	Total (for 7 sites since 2007)	251	193	181	269	356	281	376	265	284	7%	13%
71	Highbrook Drive	-	16	18	13	30	29	23	29	28	-3%	-
81	Te Irirangi Drive/Ormiston Road	-	-	20	41	32	32	54	46	22	-52%	-
25	Tom Pearce/ George Bolt Memorial Drive	-	-	21	7	39	12	29	20	3	-85%	-
	Average per site (all sites)	-	26	24	33	46	35	48	36	33	-8%	-
	Total (all sites)	-	209	240	330	457	354	482	360	337	-9%	-



- Whilst the majority of evening cyclists in Manukau continue to be adults (84 per cent), the share of children has increased 9 percentage points over the last 12 months.
- Helmet-wearing was less common this year in the evening peak (70 per cent, down from 81 per cent in 2014).
- Most cyclists were male (83 per cent, down from 89 from 2014).
- The share of cyclists riding on the footpath has increased over the last 12 months, up 10 percentage points to 44 per cent.

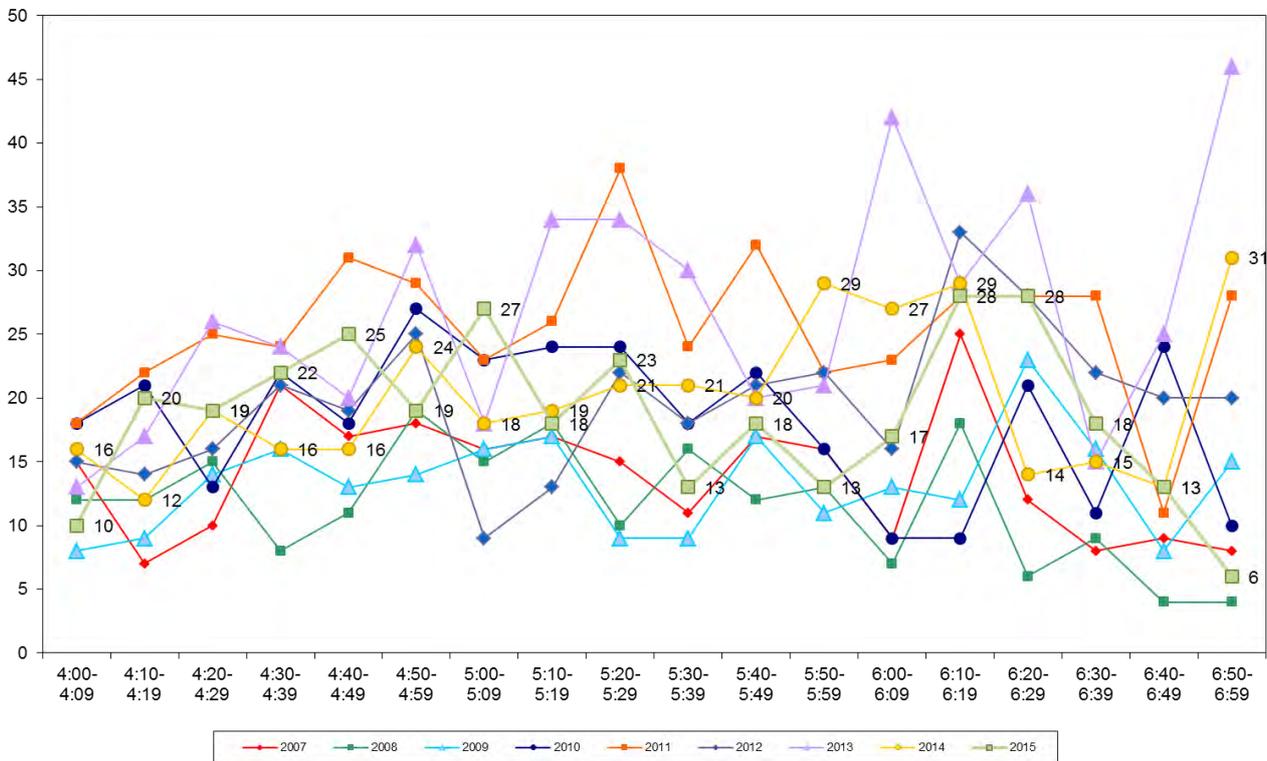
**Table 1.4: Summary of Evening Cyclist Characteristics
2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	83	87	88	91	90	85	90	93	84	-9
School child	17	13	12	9	10	15	10	7	16	9
Helmet Wearing										
Helmet on head	78	74	78	77	79	70	80	81	70	-11
No helmet	22	26	22	23	21	30	20	18	30	12
Don't know	0	0	0	0	0	0	0	1	0	-1
Gender										
Male	-	-	-	-	83	92	90	89	83	-6
Female	-	-	-	-	13	8	9	10	17	7
Can't tell	-	-	-	-	4	0	1	1	0	-1
Where Riding										
Road	64	64	68	66	64	63	65	59	48	-11
Footpath	36	36	27	32	33	30	30	34	44	10
Off-road cycleway	0	0	5	2	3	7	5	6	8	2
Don't know	0	0	0	0	0	0	0	1	0	-1
Base:	251	209	240	330	457	354	483	360	337	



- Cyclist volumes by time of movement in the evening are illustrated in Figure 1.3. Evening cyclist volumes fluctuated throughout the monitoring period. High cycle volumes were recorded during a 20 minute period between 6:10pm-6:29pm with 56 cyclists observed.

**Figure 1.3: Total Cyclist Frequency – Evening Peak
2007 – 2015 (n)**





1.6 Aggregate Total

- Across all ten sites, a total of 620 cyclist movements were recorded (down from 608 movements in 2014; this equates to a 2 per cent increase).
- The busiest site was the intersection of Great South/Bairds Road with a total of 101 movements (up from 60 movements in 2014), while Tom Pearce/George Bolt Memorial Drive intersection had the lowest volumes (8 movements, a 76 per cent decrease from 2014).
- Six sites recorded an increase in total cyclist numbers this year compared to 2014. The most notable increase occurred at:
 - Great South/Bairds Road – up 68 per cent.
- Four sites recorded a decrease in total cyclist numbers this year compared to 2014. The most notable decreases in traffic volume occurred at:
 - Tom Pearce Drive/George Bolt Memorial Drive – down 76 per cent; and
 - Te Irirangi Drive/Ormiston Road – down 26 per cent.



**Table 1.5: Summary of Total Cyclist Movements
2007 – 2015 (n)**

Site No.	Locations	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15	Change 07-15
23	Great South/Bairds Road	68	56	57	71	89	81	103	60	101	68%	49%
30	Great South/East Tamaki Road	73	51	63	65	89	86	97	72	85	18%	18%
32	McKenzie/Coronation/ Walmsley Road	70	57	52	87	93	48	90	82	80	-2%	14%
18	Great South Road/High Street/ Atkinson Avenue	84	60	49	61	71	75	79	61	64	5%	-24%
28	Massey/Buckland Road	43	31	39	45	53	48	58	58	64	10%	49%
31	Wyllie Avenue/Puhinui Road	38	33	35	57	75	47	95	60	63	5%	66%
24	Great South Road/Te Irirangi Dr/ Cavendish Dr	73	51	41	72	94	78	119	72	60	-17%	-18%
	Average per site (for 7 sites since 2007)	64	48	48	65	81	66	92	66	74	12%	16%
	Total (for 7 sites since 2007)	449	339	336	458	564	463	641	465	517	11%	15%
71	Highbrook Drive	-	29	38	40	53	50	47	49	50	2%	-
81	Te Irirangi Drive/Ormiston Road	-	-	33	66	56	50	85	61	45	-26%	-
25	Tom Pearce Drive/ George Bolt Memorial Drive	-	-	27	12	54	15	33	33	8	-76%	-
	Average per site (all sites)	-	46	43	58	73	58	81	61	62	2%	-
	Total (all sites)	-	368	434	576	727	578	806	608	620	2%	-



- The overall cyclist characteristics are illustrated in Table 1.6. In total, 86 per cent of cyclists were adults, down from 92 per cent in 2014.
- Most cyclists were wearing a helmet (76 per cent, down slightly from 80 per cent last year).
- Eighty-five per cent of the riders were male, down 6 percentage points from last year.
- Forty-one per cent of cyclists were riding on the footpath, up from 35 per cent last year. The number of cyclists using the off-road cycleway has remained stable.

**Table 1.6: Summary of Total Cyclist Characteristics
2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	84	86	88	91	89	84	90	92	86	-6
School child	16	14	12	9	11	16	10	8	14	6
Helmet Wearing										
Helmet on head	81	76	79	81	82	73	79	80	76	-4
No helmet	19	24	21	19	18	27	21	19	24	5
Don't know	0	0	0	0	0	0	0	1	0	-1
Gender										
Male	-	-	-	-	83	90	88	91	85	-6
Female	-	-	-	-	12	8	10	8	14	6
Can't tell	-	-	-	-	5	2	2	1	1	0
Where Riding										
Road	68	60	70	65	65	61	60	58	51	-7
Footpath	32	40	23	31	31	29	34	35	41	6
Off-road cycleway	0	0	6	4	4	10	6	7	8	1
Base:	449	368	434	576	727	578	806	608	620	



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/Bairds Road (145 daily movements, up by 69 per cent from last year) and the lowest is at the Tom Pearce/George Bolt Memorial Drive intersection (12 daily movements).
- Six sites recorded an increase in total AADT estimates this year.
- The most significant changes relative to last year are at:
 - Tom Pearce Drive/George Bolt Memorial Drive – down 74 per cent; and
 - Great South Road/Bairds Road – up 69 per cent;

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

Site No.	Locations	2007 AADT	2008 AADT	2009 AADT	2010 AADT	2011 AADT	2012 AADT	2013 AADT	2014 AADT	2015 AADT	Change 14-15	Change 07-15
23	Great South/Bairds Road	99	81	83	103	129	118	150	86	145	69%	46%
30	Great South/East Tamaki Road	106	74	92	93	129	125	140	104	124	19%	17%
32	McKenzie/Coronation/ Walmsley Road	101	82	75	126	133	69	131	121	115	-5%	14%
24	Great South Road/Te Irirangi Drive/ Cavendish Drive	106	74	59	103	136	112	170	103	88	-15%	-17%
18	Great South Road/High Street/ Atkinson Avenue	121	87	71	88	101	108	114	88	93	6%	-23%
31	Wyllie Avenue/Puhinui Road	55	47	50	82	105	66	133	85	92	8%	67%
28	Massey/Buckland Road	61	44	57	64	76	68	84	84	92	10%	51%
71	Highbrook Drive	-	42	55	59	77	72	68	71	72	1%	-
81	Te Irirangi Drive/Ormiston Road	-	-	47	95	81	72	122	86	65	-24%	-
25	Tom Pearce Drive/ George Bolt Memorial Drive	-	-	38	17	77	21	46	47	12	-74%	-



1.8 School Bike Shed Count Summary

Cycle Counts

- Among the surveyed schools, of those eligible to cycle to school, on average, less than one per cent of students are cycling to their schools. This share is stable from 2014.
- The Rise Up Academy reported the highest share of cyclists – 4 per cent of all eligible students currently cycling to school.
- In total, n=34 students from the responding schools were reported to be cycling to school.
- Of the 25 schools that responded, 17 (68 per cent) had no students cycling to school.
- Of the 22 schools that participated in the count in both 2014 and 2015, 6 (27 per cent) reported an increase in the share of students cycling.
- Of the 22 schools that participated in the count in both 2014 and 2015, 1 (5 per cent) reported a decrease in the share of students cycling.

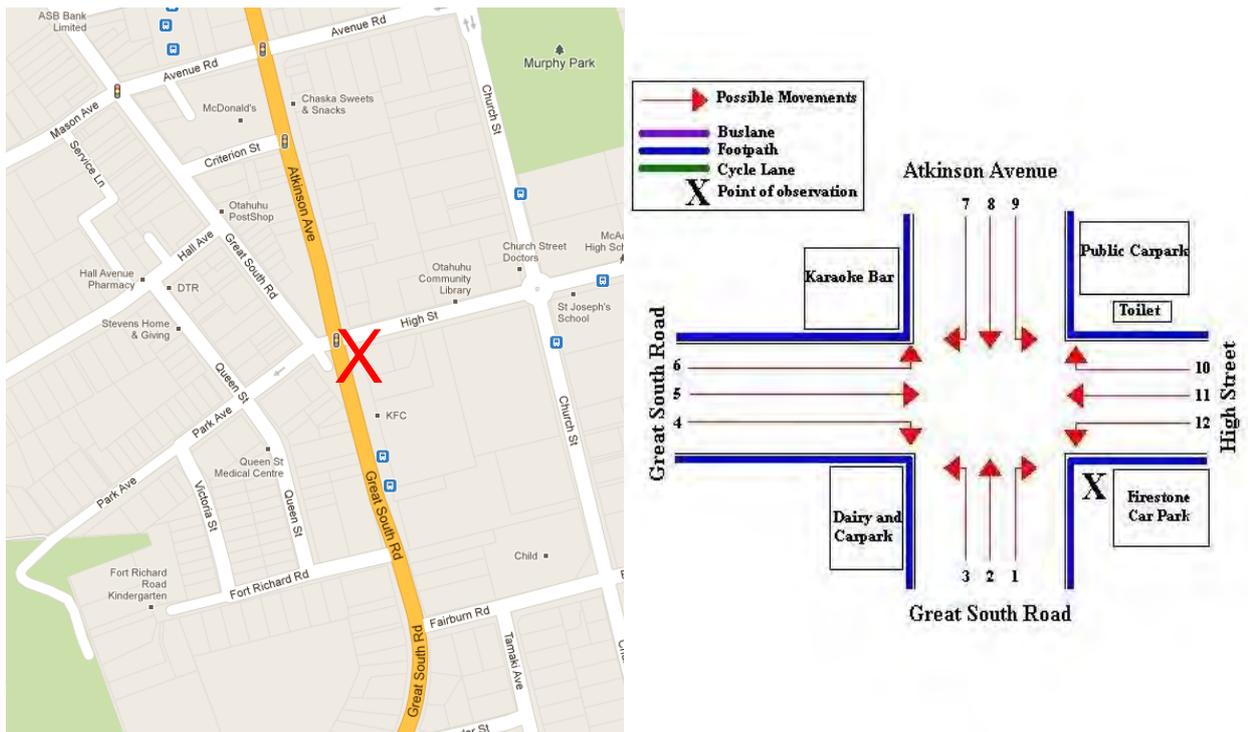
Scooter Counts

- Among the surveyed schools, of those eligible to scooter, on average, less than one per cent of students are scooting to their schools. This share is unchanged from last year.
- Kedgley Intermediate and The Rise Up Academy were the only schools to report students scooting to school – each with 1 per cent of all eligible students currently scooting to school.
- In total, n=6 students from the responding schools were reported to be scooting to school.

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
2014	25	36	61	88
2015	30	34	64	93



2.2 Morning Peak

Environmental Conditions

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

Key Points

- Morning cyclist volumes at the Great South Road/High Street intersection have increased to 30 movements (up 5 from last year).
- The two most common movements were turning left from Great South Road (Movement 3 = 8 cyclists) and turning right from Great South Road (Movement 4 = 8 cyclists).
- Across the 12 movements possible at this intersection, the most notable change was at Movement 4 (up 5 from last year).

**Table 2.1: Morning Cyclist Movements
Great South Road/High Street 2007 – 2015 (n)**

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	0	0	2	0	0	1	0	1	0	-1
2	7	8	6	2	2	6	2	2	3	1
3	11	11	4	10	5	16	14	9	8	-1
4	7	7	3	6	9	6	10	3	8	5
5	0	1	2	1	1	3	3	3	4	1
6	1	0	0	0	0	0	0	0	0	0
7	1	0	0	0	1	0	0	0	0	0
8	11	2	3	4	2	1	3	2	2	0
9	0	0	1	0	0	0	0	2	0	-2
10	0	0	0	1	0	0	0	0	0	0
11	0	1	0	1	0	1	1	2	5	3
12	0	0	0	0	0	0	1	1	0	-1
Total	38	30	21	25	20	34	34	25	30	5



- Over the morning peak in 2015, almost all cyclists were adults (97 per cent, stable from 96 per cent in 2014).
- The majority of the cyclists were wearing a helmet (83 per cent, up from 64 per cent last year).
- The majority of cyclists were recorded as male (down 6 percentage points from 2014).
- Twenty-three per cent of cyclists were riding on the footpath, down from 56 per cent the previous measure.

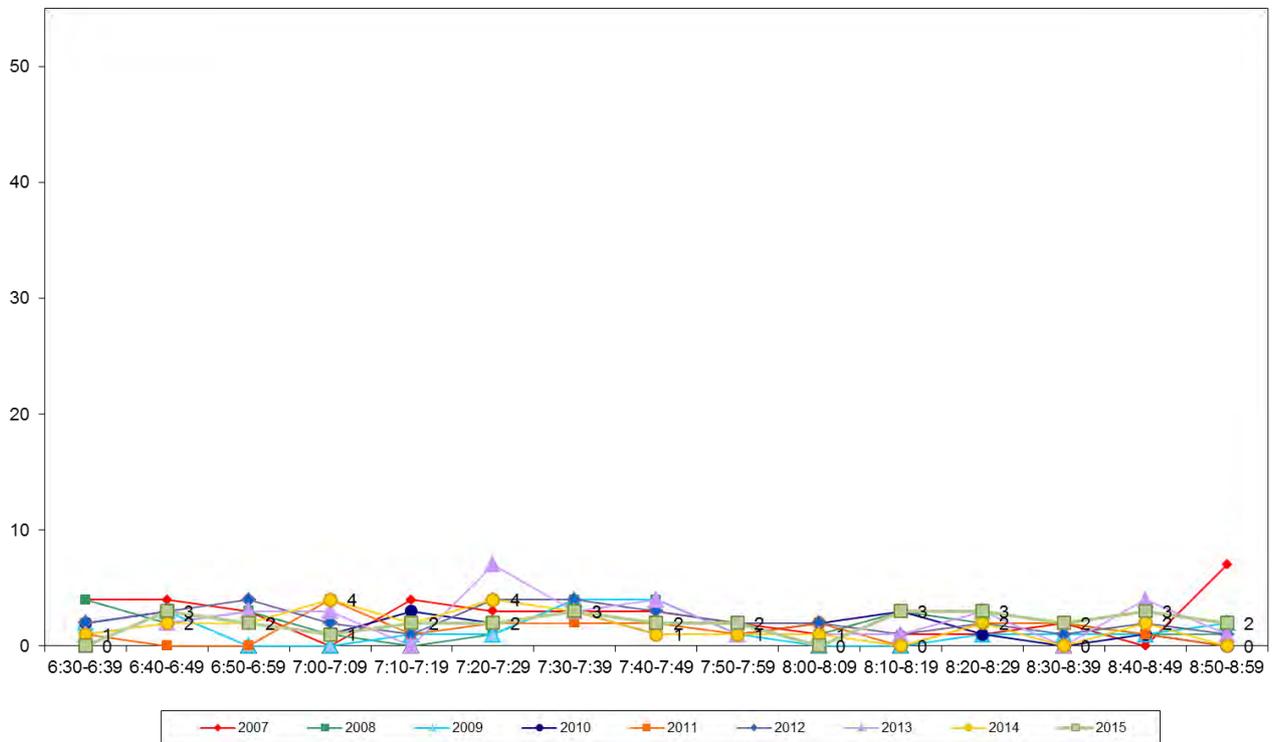
**Table 2.2: Morning Cyclist Characteristics
Great South Road/High Street 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	97	100	95	96	85	100	97	96	97	1
School child	3	0	5	4	15	0	3	4	3	-1
Helmet Wearing										
Helmet on head	89	77	95	92	95	82	85	64	83	19
No helmet	11	23	5	8	5	18	15	36	17	-19
Gender										
Male	-	-	-	-	100	94	91	100	94	-6
Female	-	-	-	-	0	3	9	0	3	3
Can't tell	-	-	-	-	0	3	0	0	3	3
Where Riding										
Road	89	70	86	76	75	71	68	44	74	30
Footpath	11	30	14	24	25	29	32	56	23	-33
Don't know	-	-	-	-	-	-	-	-	3	3
Base:	38	30	21	25	20	34	34	25	30	



- The volume of morning cycle movements was low during the entire morning shift. There was 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 – 2015 (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 2015 was 34 movements, stable from last year (36 movements).
- The key movement was travelling along Great South Road (Movement 4 = 12 cyclists, down 3 from last year).

Table 2.3: Evening Cyclist Movements
Great South Road/High Street 2007 – 2015 (n)

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	0	2	1	0	1	2	1	1	2	1
2	8	4	3	7	5	3	3	1	3	2
3	6	7	4	7	6	6	9	4	6	2
4	13	3	7	9	11	12	16	15	12	-3
5	1	4	2	0	4	7	3	1	2	1
6	0	0	0	0	0	0	0	1	0	-1
7	1	0	1	0	2	0	0	0	0	0
8	13	8	9	9	9	9	5	4	3	-1
9	2	1	0	2	1	1	0	2	0	-2
10	1	0	0	2	2	0	2	1	0	-1
11	1	1	1	0	10	1	4	6	3	-3
12	0	2	0	0	0	0	2	0	3	3
Total	46	30	28	36	51	41	45	36	34	-2



- Over the evening peak, most cyclists were adults (88 per cent, a decrease from 100 per cent in 2014).
- Over three-quarters of cyclists were wearing a helmet (82 per cent, an increase from 64 per cent the previous year).
- Just over four in five cyclists were male (82 per cent, down from 89 per cent in 2014).
- This year, just over half of all cyclists are riding on the road (59 per cent up from 50 per cent in 2014).

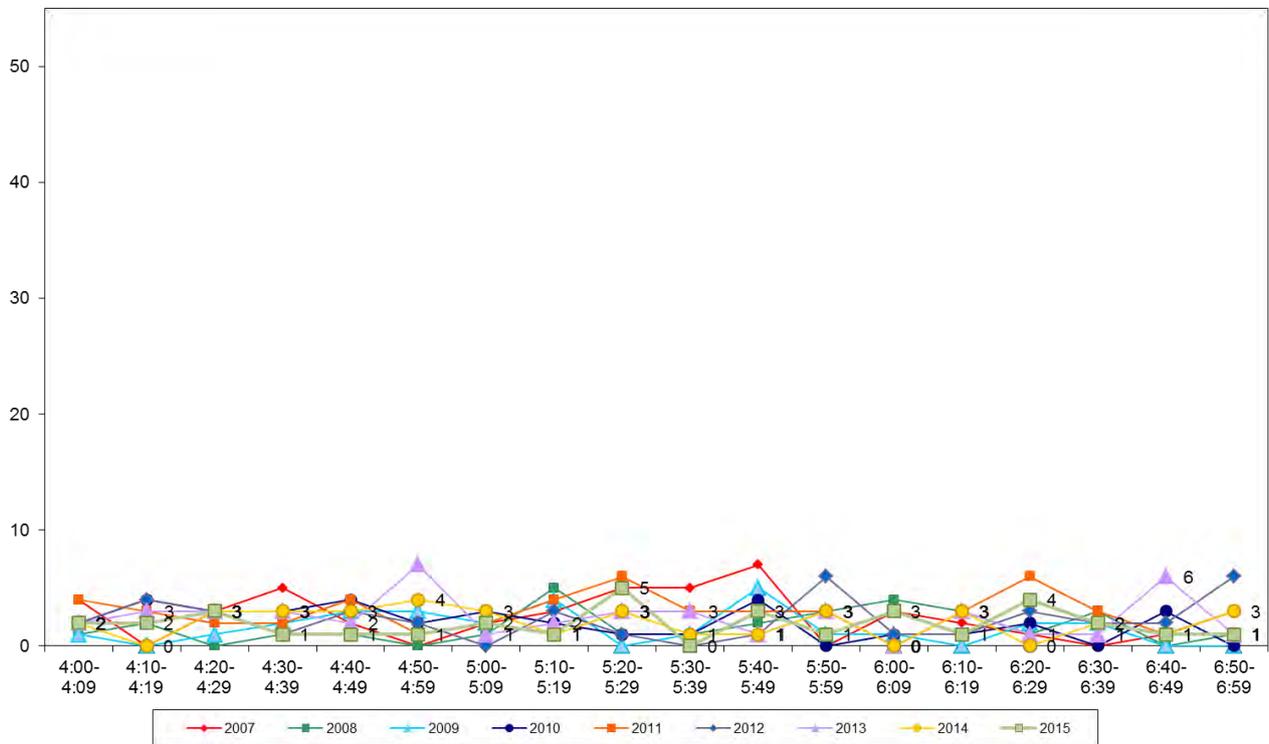
**Table 3.4: Evening Cyclist Characteristics
Great South Road/High Street 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	83	87	100	92	78	80	82	100	88	-12
School child	17	13	0	8	22	20	18	0	12	12
Helmet Wearing										
Helmet on head	74	77	75	69	71	71	73	64	82	18
No helmet	26	23	25	31	29	29	27	36	18	-18
Gender										
Male	-	-	-	-	84	93	96	89	82	-7
Female	-	-	-	-	14	7	4	11	18	7
Can't tell	-	-	-	-	2	0	0	0	0	0
Where Riding										
Road	57	53	75	69	45	56	59	50	59	9
Footpath	43	47	25	31	55	44	41	50	41	-9
Base:	46	30	28	36	51	41	45	36	34	



- The volume of evening cycle movements was low during the entire evening shift. There was no more than five cyclists recorded over any ten minute interval. The trend was consistent with previous years.

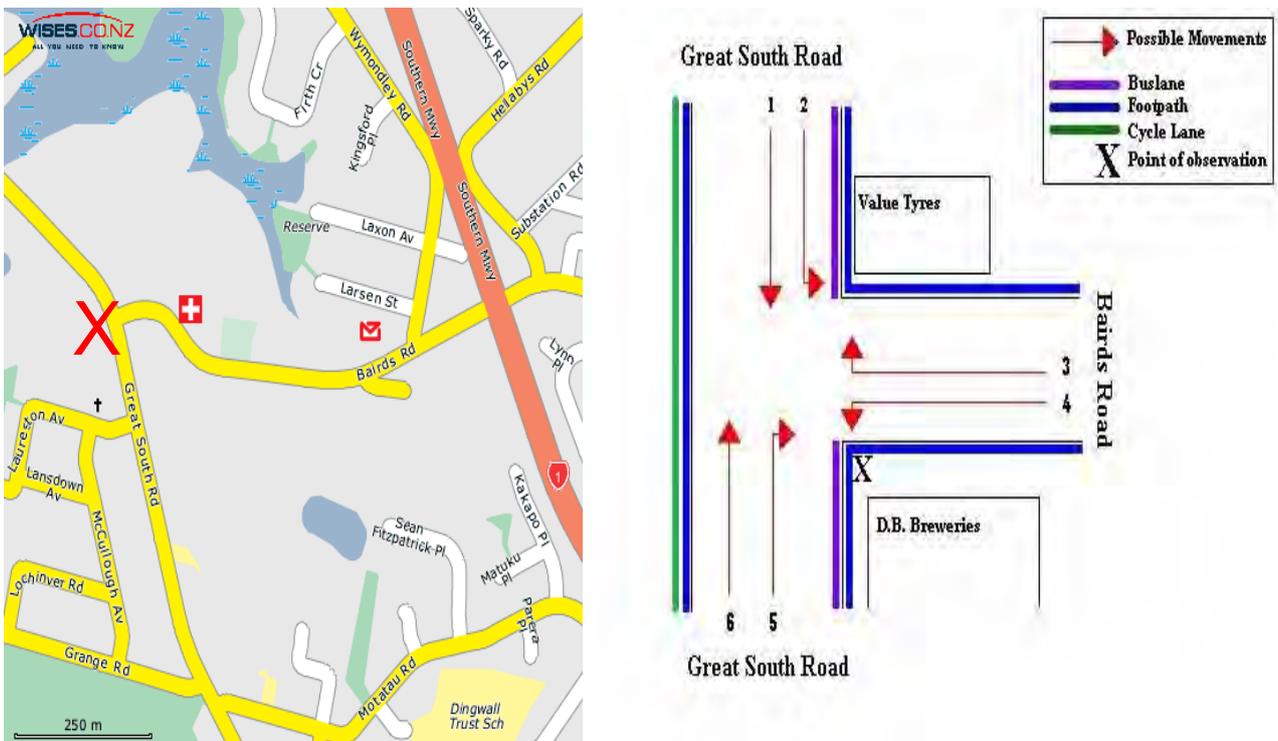
**Figure 3.3: Evening Peak Cyclist Frequency
Great South Road/High Street 2007 – 2015 (n)**



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
2014	25	35	60	86
2015	40	61	101	145



3.2 Morning Peak

Environmental Conditions

- The weather was overcast 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 Great South/Bairds Road intersection has increased (40 movements in 2014, compared with 25 movements last year).
- The most common movement in the morning was straight along Great South Road heading south (Movement 1 = 13 cyclists).
- Across the six movements possible at this intersection, the most notable change was at Movement 1 (up 4 from last year).

**Table 3.1: Morning Cyclist Movements
Great South/Bairds Road 2007 – 2015 (n)**

<i>Movement</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>Change 14-15</i>
1	5	7	5	5	7	11	12	9	13	4
2	7	3	4	7	6	3	8	2	4	2
3	4	4	3	6	2	2	9	1	3	2
4	0	1	3	0	1	1	2	2	9	7
5	0	1	3	6	4	6	2	5	3	-2
6	16	11	11	10	20	16	17	6	8	2
Don't know	0	0	0	0	0	0	0	0	0	0
Total	32	27	29	34	40	39	50	25	40	15



- Over the morning peak, 77 per cent of the cyclists using the Great South/Bairds Road intersection were adults. The remaining 23 per cent were school children, an increase of 7 percentage points from 2014 and the highest percentage recorded at this site since 2007.
- The majority of the cyclists were wearing a helmet (78 per cent, up from 68 per cent in 2014).
- Ten percent of cyclists recorded were female.
- Fifty-eight per cent of the cyclists were riding on the footpath, an increase from 48 per cent last year.

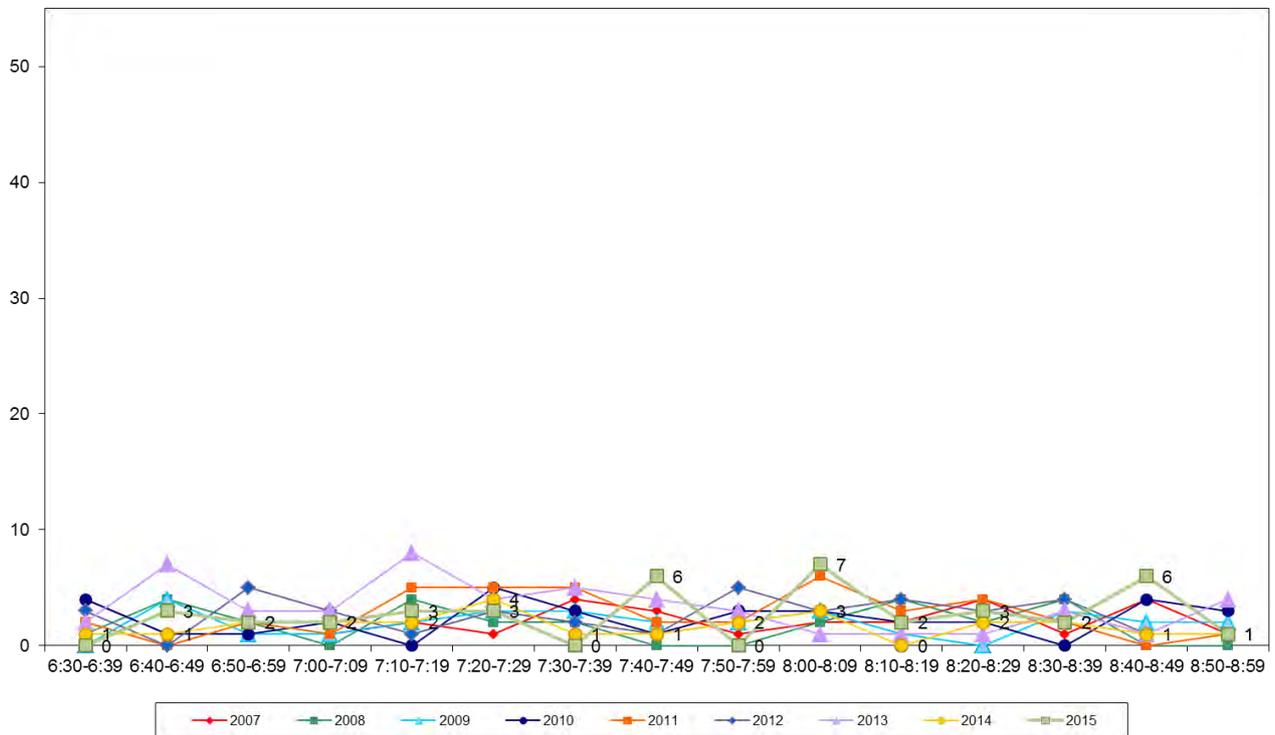
**Table 3.2: Morning Cyclist Characteristics
Great South/Bairds Road 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	100	89	90	97	100	100	90	84	77	-7
School child	0	11	10	3	0	0	10	16	23	7
Helmet Wearing										
Helmet on head	91	67	83	94	80	77	87	68	78	10
No helmet	9	33	17	6	20	23	13	32	23	-10
Gender										
Male	-	-	-	-	88	97	98	100	88	-12
Female	-	-	-	-	10	3	0	0	10	10
Can't tell	-	-	-	-	3	0	2	0	2	2
Where Riding										
Road	72	63	69	76	75	59	50	52	42	-10
Footpath	28	37	31	24	25	41	50	48	58	10
Base:	32	27	29	34	40	39	50	25	40	



- The volume of morning cycle movements was low throughout the morning period. The two peaks were at 7:40am-7:49am with 6 movements, followed by 7 movements at 8:00am -8:10am. Later in the shift a peak of 6 movements occurred during the time period of 8:40am – 8:49am.

**Figure 2.2: Morning Peak Cyclist Frequency
Great South/Bairds Road 2007 – 2015 (n)**





3.3 Evening Peak

Environmental Conditions

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

Key Points

- In the evening, the total number of cycle movements recorded at the Great South/Bairds Road intersection has increased notably, with 61 movements observed this year compared with 35 in 2014.
- The key evening movement has continued to be traveling straight along Great South Road heading south (Movement 1 = 17 cyclists).
- Across the six movements possible at this intersection, the most notable change is the number of cyclists recorded for Movement 6 – traveling north on Great South Road (up 9 from last year).

**Table 3.3: Evening Cyclist Movements
Great South/Bairds Road 2007 – 2015 (n)**

<i>Movement</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>Change 14-15</i>
1	17	14	10	16	17	15	21	16	17	1
2	5	5	3	6	3	7	14	7	7	0
3	5	1	6	4	6	4	10	1	4	3
4	1	2	3	6	7	6	0	6	13	7
5	1	0	2	1	3	0	0	1	7	6
6	7	7	4	4	13	10	8	4	13	9
Total	36	29	28	37	49	42	53	35	61	26



- Despite a 12 percentage point increase in the share of school children, the greatest share of cyclists at this site continues to be adults (74 per cent).
- Sixty-four per cent of cyclists at this site were wearing a helmet (down from 80 per cent in 2014).
- Eighteen per cent of cyclists were recorded as female, the highest recorded since 2011.
- Fifty-two per cent of all cyclists were riding on the road, up 6 per cent from last year. No cyclists made use of the off-road cycleway, unchanged from 2013.

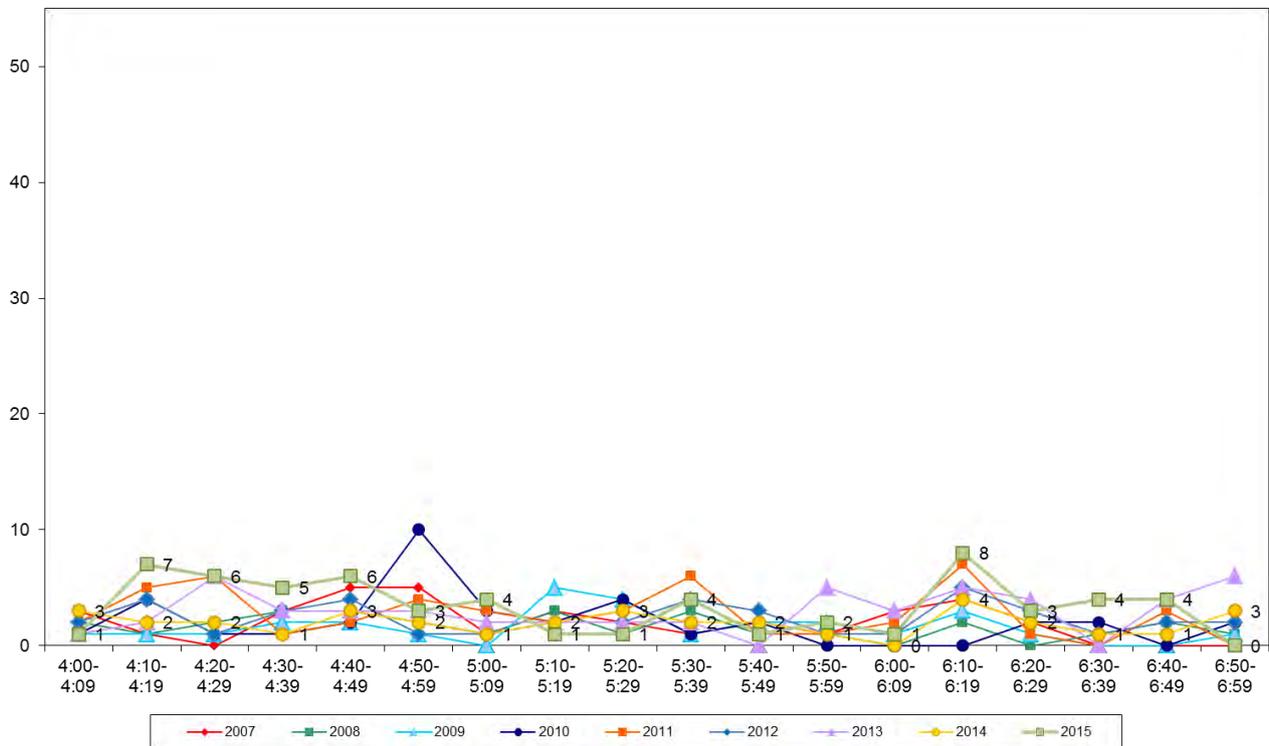
**Table 3.4: Evening Cyclist Characteristics
Great South/Bairds Road 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	100	93	93	100	100	98	87	86	74	-12
School child	0	7	7	0	0	2	13	14	26	12
Helmet Wearing										
Helmet on head	86	66	79	92	84	64	70	80	64	-16
No helmet	14	34	21	8	16	36	30	20	36	16
Gender										
Male	-	-	-	-	88	95	98	100	82	-18
Female	-	-	-	-	12	5	2	0	18	10
Can't tell	-	-	-	-	0	0	0	0	0	0
Where Riding										
Road	67	72	54	86	71	55	55	46	52	6
Footpath	33	28	46	14	29	45	45	54	48	-6
Base:	36	29	28	37	49	42	53	35	61	



- The volume of cycle movements in the evening peak was relatively low throughout the evening monitoring period. The largest number of cyclists present at any 10 minute interval was eight (between 6:10pm to 6:19pm).

**Figure 3.3: Evening Peak Cyclist Frequency
Great South/Bairds Road 2007 – 2015 (n)**

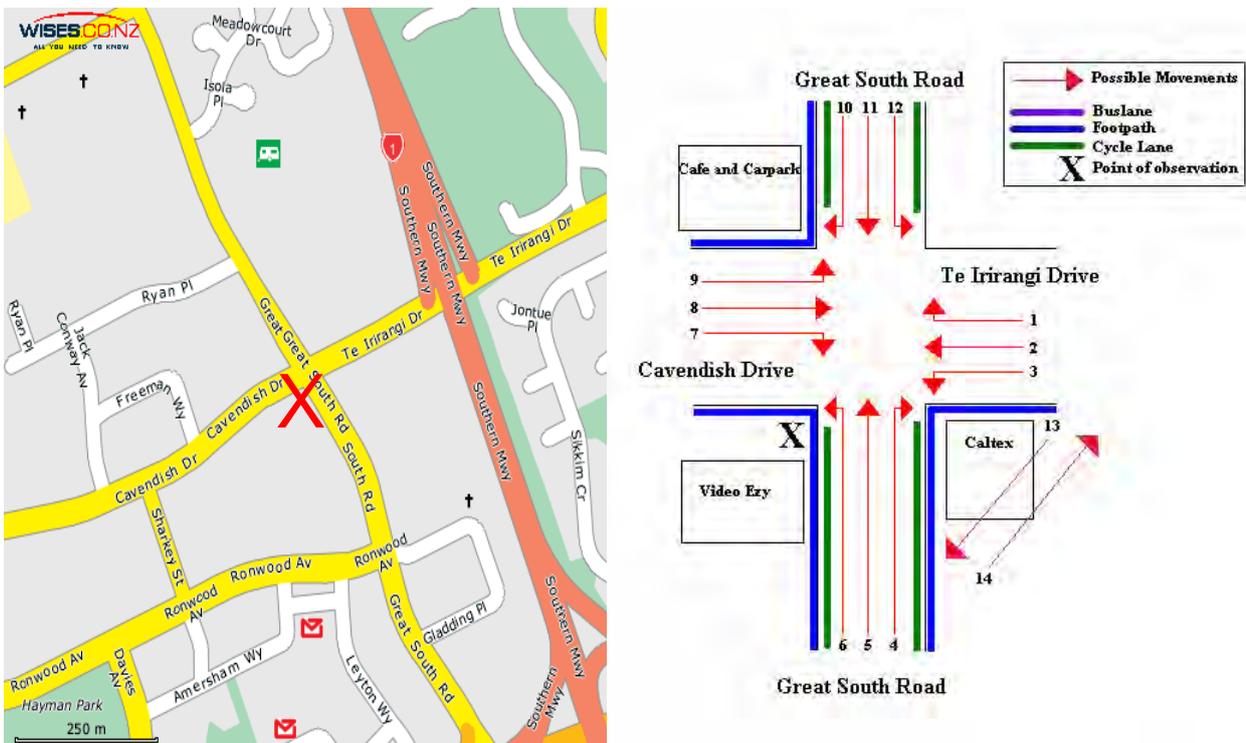


Note: In 2015, a group of three cyclists rode past this site together at 4:14pm (5% of the site’s evening cycle volume).

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
2014	26	46	72	103
2015	33	27	60	88



4.2 Morning Peak

Environmental Conditions

- The weather was partly cloudy with light breeze 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 26 in 2014 to 33 movements this year.
- The key morning movements were straight through Te Irirangi Drive into Cavendish Drive (Movement 2 = 10 cyclists) and heading north along Great South Road (Movement 5 = 10 cyclists).
- Across the 14 movements possible at this intersection, the most notable increase in the number of cyclists recorded was at Movement 2 – heading straight on Te Irirangi Drive through to Cavendish Drive (up 4 from last year).

**Table 4.1: Morning Cyclist Movements
Great South Road/Te Irirangi Drive 2007 – 2015 (n)**

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	1	1	0	2	5	2	5	2	1	-1
2	6	2	5	10	13	7	8	6	10	4
3	1	3	0	1	1	0	1	1	0	-1
4	1	2	2	1	0	0	1	1	1	0
5	13	8	7	7	12	12	5	10	10	0
6	0	0	1	1	0	1	4	0	1	1
7	1	0	0	0	0	1	0	0	0	0
8	1	1	0	2	1	0	0	1	2	1
9	2	0	0	0	1	0	3	0	0	0
10	1	0	1	2	2	2	6	1	2	1
11	7	8	2	1	6	3	8	3	5	2
12	1	0	1	1	0	0	1	0	1	1
13	-	-	-	-	-	-	-	1	0	-1
14	-	-	-	-	-	-	-	0	0	0
Total	34	25	19	28	41	28	42	26	33	7



- Over the morning peak, all cyclists using this intersection were adults (unchanged from the last two years).
- Almost all cyclists were wearing helmets (88 per cent, unchanged from last year).
- Seventy-six per cent of cyclists were male, down 12 percentage points from last year.
- Approximately four-fifths of the morning peak cyclists were riding on the road (82 per cent, stable from last year).

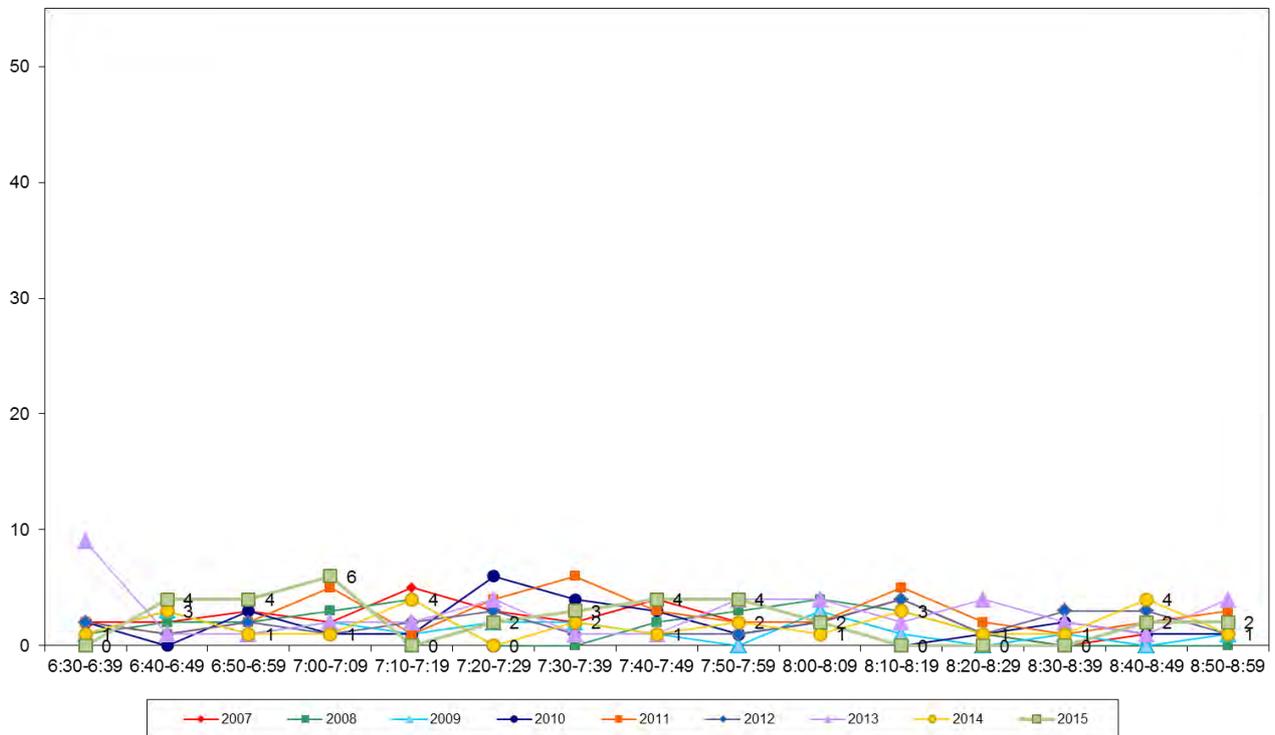
Table 4.2: Morning Cyclist Characteristics
Great South Road/Te Irirangi Drive 2007 – 2015 (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	100	76	100	96	90	39	100	100	100	0
School child	0	24	0	4	10	61	0	0	0	0
Helmet Wearing										
Helmet on head	85	96	100	93	88	81	71	88	88	0
No helmet	15	4	0	7	12	19	29	12	12	0
Gender										
Male	-	-	-	-	76	82	86	88	76	-12
Female	-	-	-	-	20	14	14	8	18	10
Can't tell	-	-	-	-	5	4	0	4	6	2
Where Riding										
Road	85	76	79	75	95	93	52	81	82	1
Footpath	15	24	21	25	5	7	48	19	18	-1
Base:	34	25	19	28	41	28	42	26	33	



- The volume of morning cycle movements remained low throughout the morning peak. No more than six cyclists were recorded at any ten minute interval. 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 – 2015 (n)**





4.3 Evening Peak

Environmental Conditions

- The weather was fine and sunny at the start of the shift. Light rain came at 6:00pm, which turned into heavy rain from 6:20pm till the end of the evening shift.
- 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 27, a decrease from the 46 recorded the previous year.
- The key evening movement at this site was heading straight along Great South Road heading south (Movement 11 = 9 cyclists).
- The most notable change was recorded at Movement 2, heading west on Te Irirangi Drive onto Cavendish Drive, down 11 from last year.

**Table 4.3: Evening Cyclist Movements
Great South Road/Te Irirangi Drive 2007 – 2015 (n)**

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	0	5	0	1	1	1	1	0	1	1
2	3	1	3	4	2	6	20	14	3	-11
3	1	0	2	0	0	2	2	0	0	0
4	2	2	2	2	3	2	1	2	0	-2
5	5	6	2	4	8	10	11	6	4	-2
6	5	0	2	2	1	1	1	1	0	-1
7	1	1	0	0	1	0	0	1	3	2
8	3	0	1	5	14	6	10	6	6	0
9	1	0	1	5	2	1	6	0	1	1
10	2	0	2	2	5	1	6	0	0	0
11	15	9	7	18	13	19	15	12	9	-3
12	1	2	0	1	3	1	4	3	0	-3
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	1	0	-1
Total	39	26	22	44	53	50	77	46	27	-19



- Over the evening peak, almost all cyclists using the Great South Road/Te Irirangi Drive intersection were adults (96 per cent, down from 100 per cent last year).
- The majority of cyclists at this site were wearing a helmet (85 per cent, stable from 87 per cent last year).
- Eighty-one per cent of cyclists were male (down from 89 per cent last year).
- Thirty-seven per cent of the evening peak cyclists were riding on the footpath (up from 26 per cent in 2014).

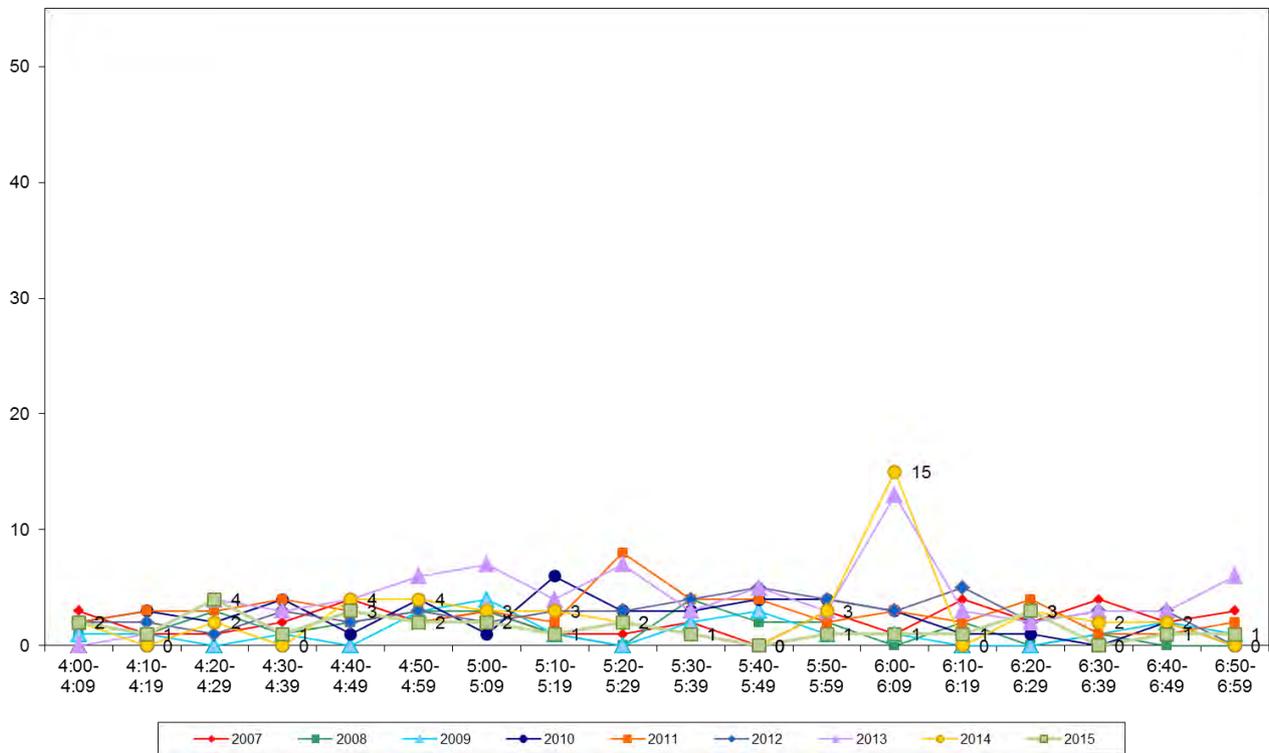
Table 4.4: Evening Cyclist Characteristics
Great South Road/Te Irirangi Drive 2007 – 2015 (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	95	88	73	95	96	76	96	100	96	-4
School child	5	12	27	5	4	24	4	0	4	4
Helmet Wearing										
Helmet on head	97	88	68	77	89	82	86	87	85	-2
No helmet	3	12	32	23	11	18	14	13	15	2
Gender										
Male	-	-	-	-	87	94	82	89	81	-8
Female	-	-	-	-	11	6	18	7	19	12
Can't tell	-	-	-	-	2	0	0	4	0	-4
Where Riding										
Road	79	92	73	73	87	92	68	74	63	-11
Footpath	21	8	27	27	13	8	32	26	37	11
Base:	39	26	22	44	53	50	77	46	27	



- The volume of cycle traffic remained low throughout the majority of the evening monitoring period. There were no obvious peaks observed as no more than four cyclists were recorded during any ten minute interval.

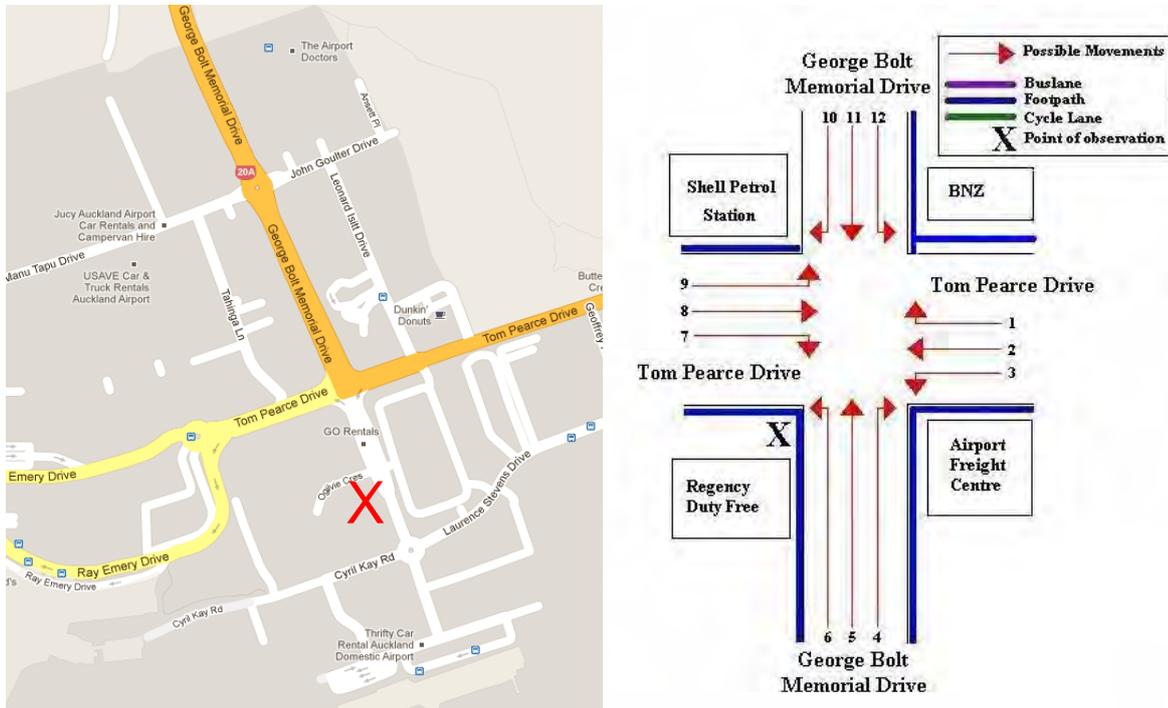
Figure 4.3: Evening Peak Cyclist Frequency
Great South Road/Te Irirangi Drive 2007 – 2015 (n)



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
2014	13	20	33	47
2015	5	3	8	12



5.2 Morning Peak

Environmental Conditions

- The weather was fine with light breeze throughout the morning monitoring period.
- As part of the SH20A to Airport project, an upgrade of George Bolt Memorial Drive began on 12th January 2015. Cyclists heading south towards the airport on SH20A were not affected. However, the northbound cycle lane was closed and cyclists heading north were diverted off SH20A at Montgomerie Road.
- There were no other road works or accidents observed during the morning monitoring period.

Key Points

- The intersection of George Bolt Memorial Drive and Tom Pearce Drive had 5 cycle movements recorded over the monitoring period. This compares with the 13 movements recorded last year.
- The most notable changes were reported at Movements 1 (down 4 cyclists) and Movement 12 (down 4 cyclists).

**Table 5.1: Morning Cyclist Movements
Tom Pearce/George Bolt Memorial Drive 2009 – 2015 (n)**

<i>Movement</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>Change 14-15</i>
1	3	3	2	1	0	5	1	-4
2	0	0	0	0	0	1	0	-1
3	0	1	0	0	0	0	1	1
4	0	0	0	0	0	0	0	0
5	1	0	2	0	1	1	0	-1
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	1	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	1	0	1	1	1	0
11	0	0	3	0	1	1	2	1
12	2	1	7	2	0	4	0	-4
Total	6	5	15	3	4	13	5	-8



- Consistent with previous monitoring results over the morning peak, no school children are riding through the Tom Pearce/George Bolt Memorial Drive intersection.
- Consistent with previous periods, all cyclists were wearing a helmet.
- Four-fifths of the cyclists were recorded as male (80 per cent, down from 92 per cent the previous year).
- All of the cyclists were riding on the road (a decrease of 15 percentage points from 2014).

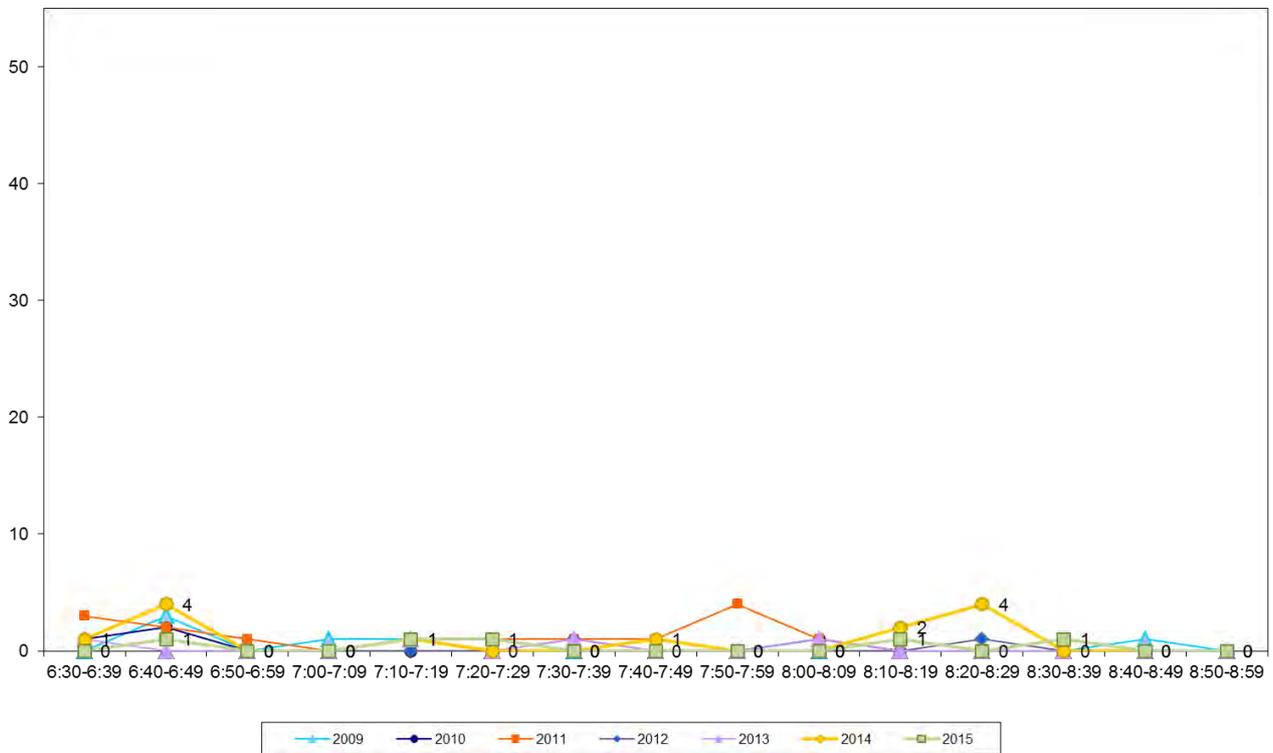
Table 5.2: Morning Cyclist Characteristics
Tom Pearce/George Bolt Memorial Drive 2009 – 2015 (%)

	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type								
Adult	100	100	100	100	100	100	100	0
School child	0	0	0	0	0	0	0	0
Helmet Wearing								
Helmet on head	100	100	100	100	100	100	100	0
No helmet	0	0	0	0	0	0	0	0
Gender								
Male	-	-	73	33	75	92	80	-12
Female	-	-	0	0	25	8	20	12
Can't tell	-	-	27	67	0	0	0	0
Where Riding								
Road	100	100	80	100	100	85	100	15
Footpath	0	0	20	0	0	15	0	-15
Base:	6	5	15	3	4	13	5	



- Consistent with previous years, the volume of morning cycle movements was low over the entire monitoring period, with no evident peaks. No more than two cyclists were recorded passing during any ten minute interval.

Figure 5.2: Morning Peak Cyclist Frequency
Tom Pearce/George Bolt Memorial Drive 2009 – 2015 (n)





5.3 Evening Peak

Environmental Conditions

- The weather was cloudy throughout most of the evening, with light rain at the end of the shift.
- As part of the SH20A to Airport project, an upgrade of George Bolt Memorial Drive began on 12th January 2015. Cyclists heading south towards the airport on SH20A were not affected. However, the northbound cycle lane was closed and cyclists heading north were diverted off SH20A at Montgomerie Road.
- There were no other road works or accidents observed during the morning monitoring period.
-

Key Points

- Evening cyclist volumes at Tom Pearce/George Bolt Memorial Drive intersection have decreased over the last 12 months, with only 3 cycle movements recorded over the monitoring period. This is a decrease from 20 movements recorded in 2014. Note that in 2014,13 cycle movements were made by pelotons.
- Cyclists were only recorded at Movement 1, 2 and 4.
- The most notable decrease in cyclist volume this year is Movement 5 (down 11 cycle movements).

Table 5.3: Evening Cyclist Movements
Tom Pearce/George Bolt Memorial Drive 2009 – 2015 (n)

Movement	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	4	1	14	4	16	4	1	-3
2	0	0	0	0	0	0	1	1
3	1	1	2	3	0	0	0	0
4	0	0	0	0	0	0	1	1
5	13	3	2	1	1	11	0	-11
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	2	2	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	0	5	0	0	4	0	-4
12	3	2	14	2	12	1	0	-1
Total	21	7	39	12	29	20	3	-17



- All cyclists using this site were adults, unchanged since 2009.
- Helmet-wearing has remained unchanged at 100 per cent this year.
- All cyclists were male, unchanged from 2011.
- All cyclists were riding on the road (unchanged from 2014).

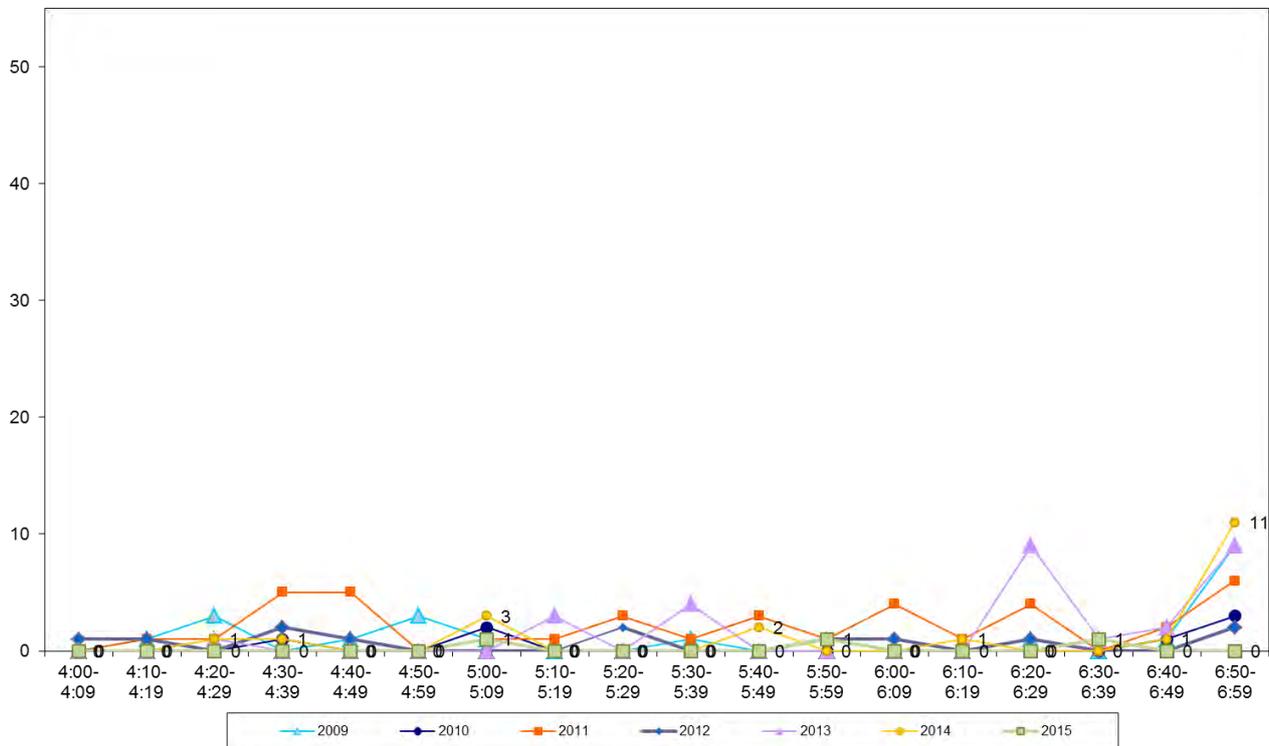
Table 5.4: Evening Cyclist Characteristics
Tom Pearce/George Bolt Memorial Drive 2009 – 2015 (%)

	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type								
Adult	100	100	100	100	100	100	100	0
School child	0	0	0	0	0	0	0	0
Helmet Wearing								
Helmet on head	100	100	62	83	100	100	100	0
No helmet	0	0	38	17	0	0	0	0
Gender								
Male	-	-	67	100	100	100	100	0
Female	-	-	5	0	0	0	0	0
Can't tell	-	-	28	0	0	0	0	0
Where Riding								
Road	100	100	95	100	97	100	100	0
Footpath	0	0	5	0	3	0	0	0
Base:	21	7	39	12	29	20	3	



- Cycle volumes remained low throughout the evening monitoring period. No more than 1 cycle movement was recorded at any ten minute interval.

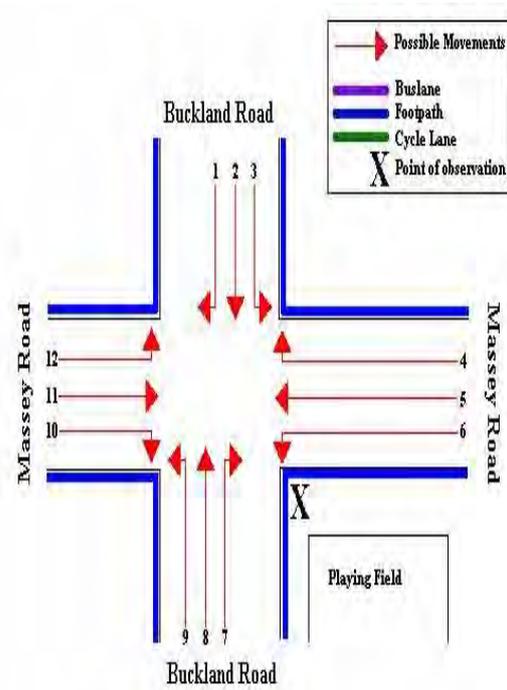
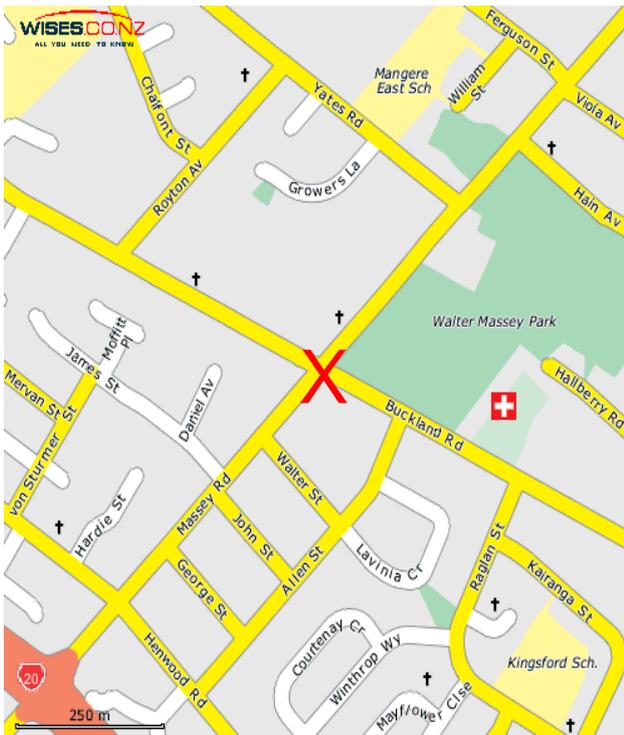
Figure 5.3: Evening Cyclist Frequency
Tom Pearce/George Bolt Memorial Drive 2009 – 2015 (n)



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
2014	26	32	58	84
2015	25	39	64	92



6.2 Morning Peak

Environmental Conditions

- The weather was fine but turned cloudy later in the morning.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of morning cyclist traffic at this intersection has remained stable from last year (26 cycle movements in 2014, 25 movements this year).
- Consistent with last year, the key cycle movements were straight along Massey Road heading southwest (Movement 5 = 7 cyclists, down from 10 cyclists in 2014), and heading south along Buckland Road (Movement 2 = 7 cyclists).
- The most notable change has been at Movement 2 (up five cyclists from 2014). Cycle volumes for other movements have remained stable.

**Table 6.1: Morning Cyclist Movements
Massey/Buckland Road 2007 – 2015 (n)**

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	0	0	0	0	0	0	0	0	1	1
2	3	1	2	1	3	2	1	2	7	5
3	2	5	2	3	0	0	2	4	2	-2
4	0	0	0	2	3	2	2	2	1	-1
5	1	0	6	3	3	2	11	10	7	-3
6	1	2	0	2	0	1	0	0	1	1
7	0	0	1	1	1	0	1	0	1	1
8	1	1	3	3	4	3	2	2	1	-1
9	1	0	2	0	0	2	1	2	2	0
10	2	1	0	1	2	1	3	0	1	1
11	1	1	3	0	2	1	1	4	1	-3
12	0	0	0	0	0	0	0	0	0	0
Total	12	11	19	16	18	14	24	26	25	-1



- Over the morning peak, adults comprised most of the cycle movements (92 per cent, unchanged from last year).
- Helmet-wearing has decreased over the last 12 months (60 per cent, down from 65 per cent in 2014).
- Most of the cyclists were male (96 per cent), unchanged from 2014.
- Fifty-two per cent of cyclists were riding on the footpath at this site (down from 62 per cent in 2014).

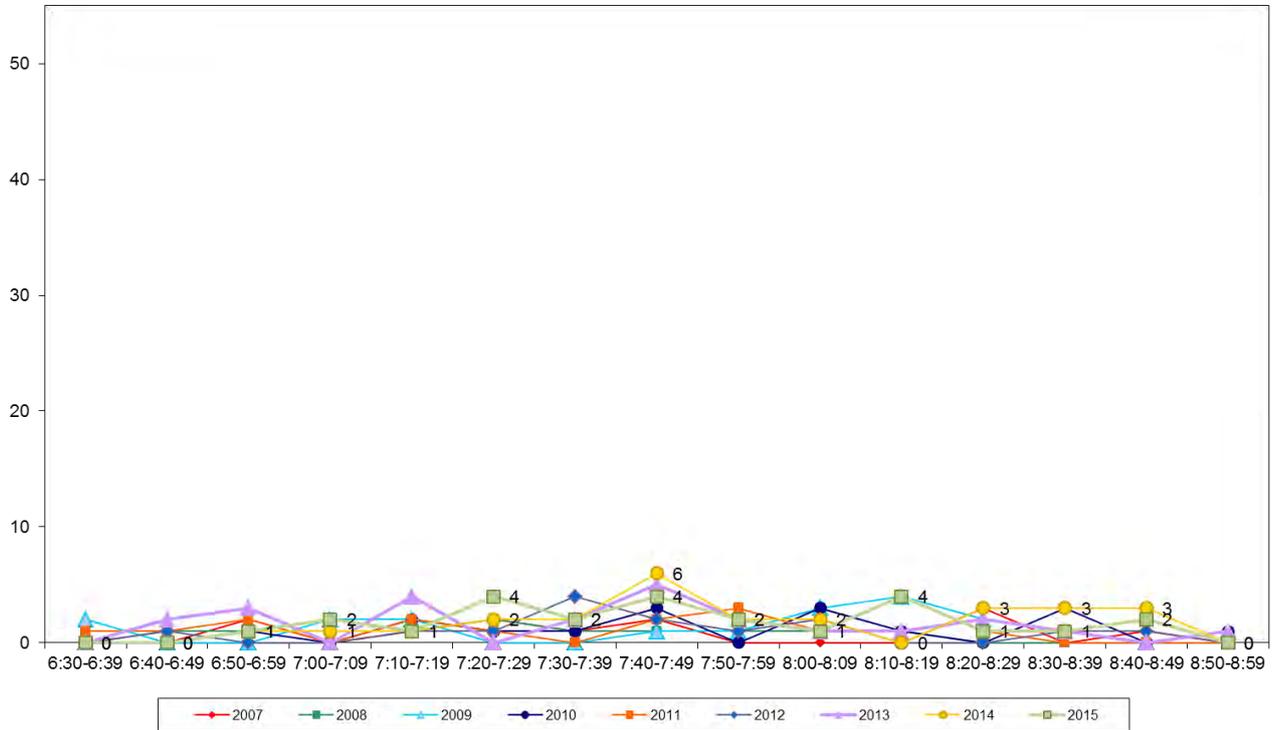
**Table 6.2: Morning Cyclist Characteristics
Massey/Buckland Road 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	42	73	95	94	67	86	96	92	92	0
School child	58	27	5	6	33	14	4	8	8	0
Helmet Wearing										
Helmet on head	58	55	47	69	83	79	54	65	60	-5
No helmet	42	45	53	31	17	21	46	35	40	5
Gender										
Male	-	-	-	-	89	79	87	96	96	0
Female	-	-	-	-	6	21	13	4	4	0
Can't tell	-	-	-	-	6	0	0	0	0	0
Where Riding										
Road	33	30	63	56	50	64	42	38	48	10
Footpath	67	70	37	44	50	36	58	62	52	-10
Base:	12	11	19	16	18	14	24	26	25	



- Morning cyclist volumes were low over the entire monitoring period. There were three peaks of 4 movements recorded - between 7:20am and 7:29am, 7:40am to 7:49am and 8.10am to 8.19am.

**Figure 6.2: Morning Peak Cyclist Frequency
Massey/Buckland Road 2007 – 2015 (n)**





6.3 Evening Peak

Environmental Conditions

- The weather was overcast throughout the evening, with light rain from 6:28pm till the end of the 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 increased since last year, with 39 movements recorded this year (32 movements in 2014).
- Consistent with the last two years, the most common movement in the evening was straight along Massey Road heading northeast (Movement 11 = 11 cyclists).
- Movement 7 experienced the biggest change in cycle volume (up 4 movements since 2014)

**Table 6.3: Evening Cyclist Movements
Massey/Buckland Road 2007 – 2015 (n)**

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	2	0	0	0	2	0	0	1	0	-1
2	3	4	3	4	8	4	2	0	3	3
3	4	2	1	1	3	3	2	3	1	-2
4	5	5	2	4	2	2	6	3	5	2
5	1	1	2	4	3	2	3	3	4	1
6	3	1	5	3	2	2	1	3	4	1
7	1	1	2	0	0	7	1	1	5	4
8	5	3	0	2	3	7	5	4	4	0
9	0	2	0	1	4	2	0	1	1	0
10	0	0	3	4	3	0	2	1	1	0
11	5	1	2	6	4	2	12	12	11	-1
12	2	0	0	0	1	3	0	0	0	0
Total	31	20	20	29	35	34	34	32	39	7



- Despite a 22 percentage point increase in the share of children using this site, adults continued to comprise the largest share of evening cyclists (69 per cent, down from 91 per cent in 2014).
- Thirty-eight per cent of cyclists were wearing a helmet (down from 41 per cent last year).
- Majority of cyclists were male (84 per cent, a decrease of 7 percentage points from 2014).
- The proportion of cyclists riding on the footpath has increased for the third consecutive year, (77 per cent, compared with 72 per cent in 2014).

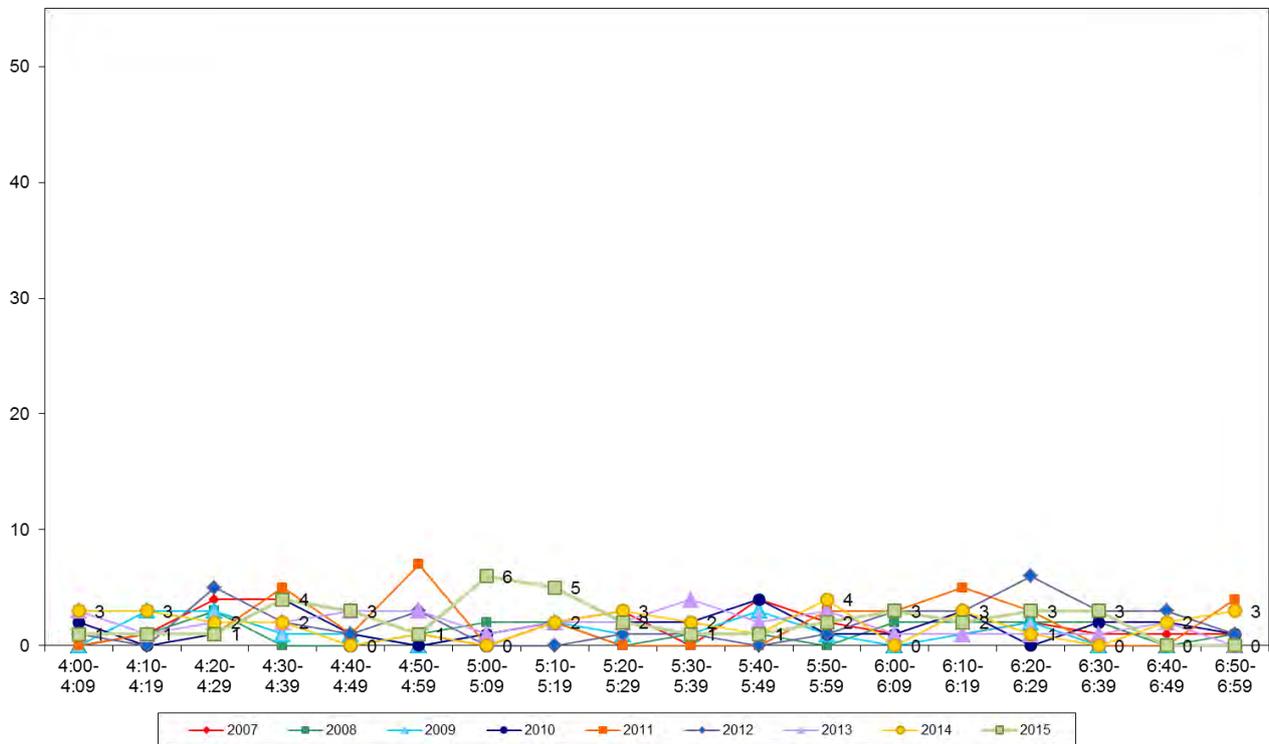
**Table 6.4: Evening Cyclist Characteristics
Massey/Buckland Road 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	61	80	65	90	77	76	85	91	69	-22
School child	39	20	35	10	23	24	15	9	31	22
Helmet Wearing										
Helmet on head	55	65	35	62	51	38	59	41	38	-3
No helmet	45	35	65	38	49	62	41	59	62	3
Gender										
Male	-	-	-	-	83	91	97	91	84	-7
Female	-	-	-	-	17	9	3	6	13	7
Can't tell	-	-	-	-	0	0	0	3	3	0
Where Riding										
Road	39	60	30	38	29	42	41	28	23	-5
Footpath	61	40	70	62	71	58	59	72	77	5
Base:	31	20	20	29	35	34	34	32	39	



- Consistent with previous years, the volume of cycle movements was low during the evening monitoring period. The largest volume of cyclists traveling through occurred between 5:00pm and 5:19pm (6 cyclists at 5:00pm- 5:09pm, 5 cyclists at 5:10pm-5:19pm)

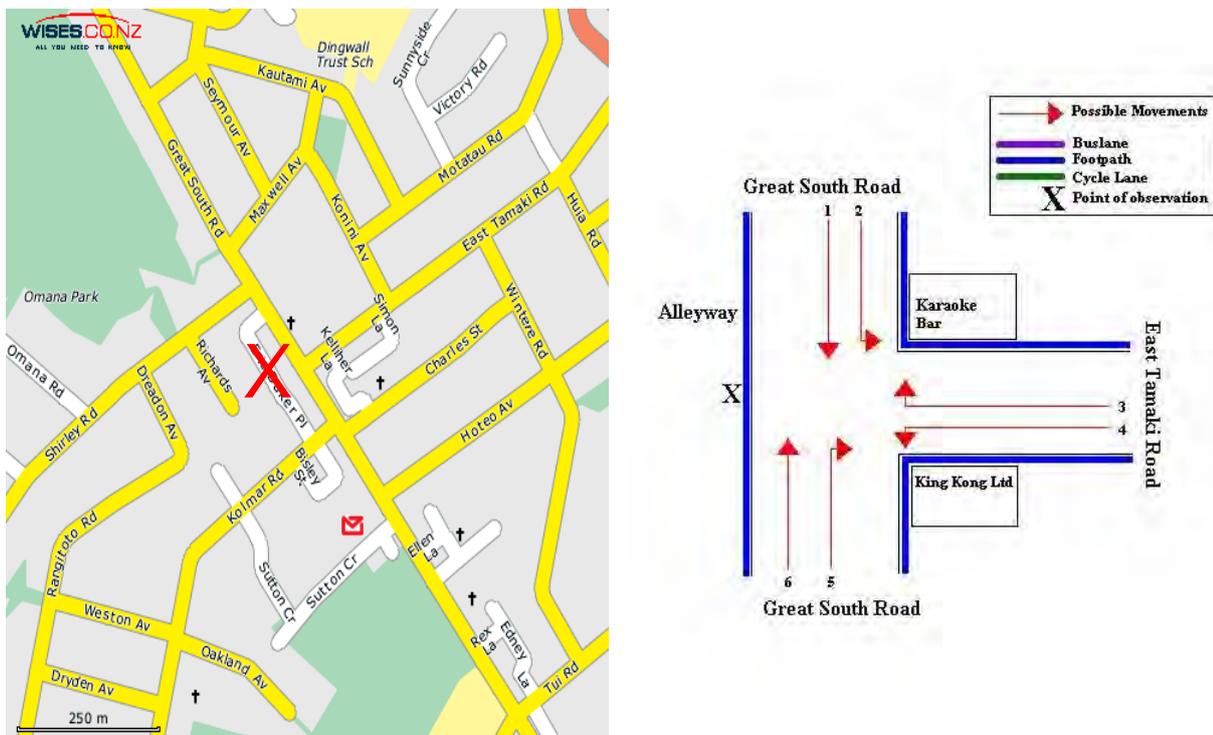
**Figure 6.3: Evening Peak Cyclist Frequency
Massey/Buckland Road 2007 – 2015 (n)**



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
2014	30	42	72	104
2015	43	42	85	124



7.2 Morning Peak

Environmental Conditions

- The weather was cloudy 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 30 movements in 2014 to 43 movements in 2015.
- The most common movement was straight along Great South Road heading north (Movement 6 = 13 cyclists).
- The most notable change since 2014 has been at Movement 1 (down 7 cycle movements).

Table 7.1: Morning Cyclist Movements
Great South/East Tamaki Road 2007 – 2015 (n)

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	4	4	3	4	8	8	8	5	12	7
2	2	3	3	1	5	5	5	5	5	0
3	2	1	6	2	3	2	4	5	2	-3
4	0	1	3	3	0	1	0	0	1	1
5	2	2	3	0	4	3	2	2	4	2
6	26	12	15	15	21	19	26	12	13	1
7	-	1	0	0	3	2	-	-	-	0
1A	-	-	-	-	-	-	1	0	1	1
2A	-	-	-	-	-	-	1	1	3	2
3A	-	-	-	-	-	-	2	0	1	1
6A	-	-	-	-	-	-	-	-	1	1
Total	36	24	33	25	44	40	49	30	43	13

Note: From 2013, 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.



- The majority of the morning cyclists were adults (81 per cent, stable from last year’s 83 per cent)
- The majority of the cyclists were wearing a helmet (77 per cent, up from 67 per cent last year).
- Ninety-five per cent of the cyclists were male (a 5 percentage point increase from 2014).
- The proportion of cyclists riding on the footpath has decreased this year (53 per cent down from 63 in 2014).

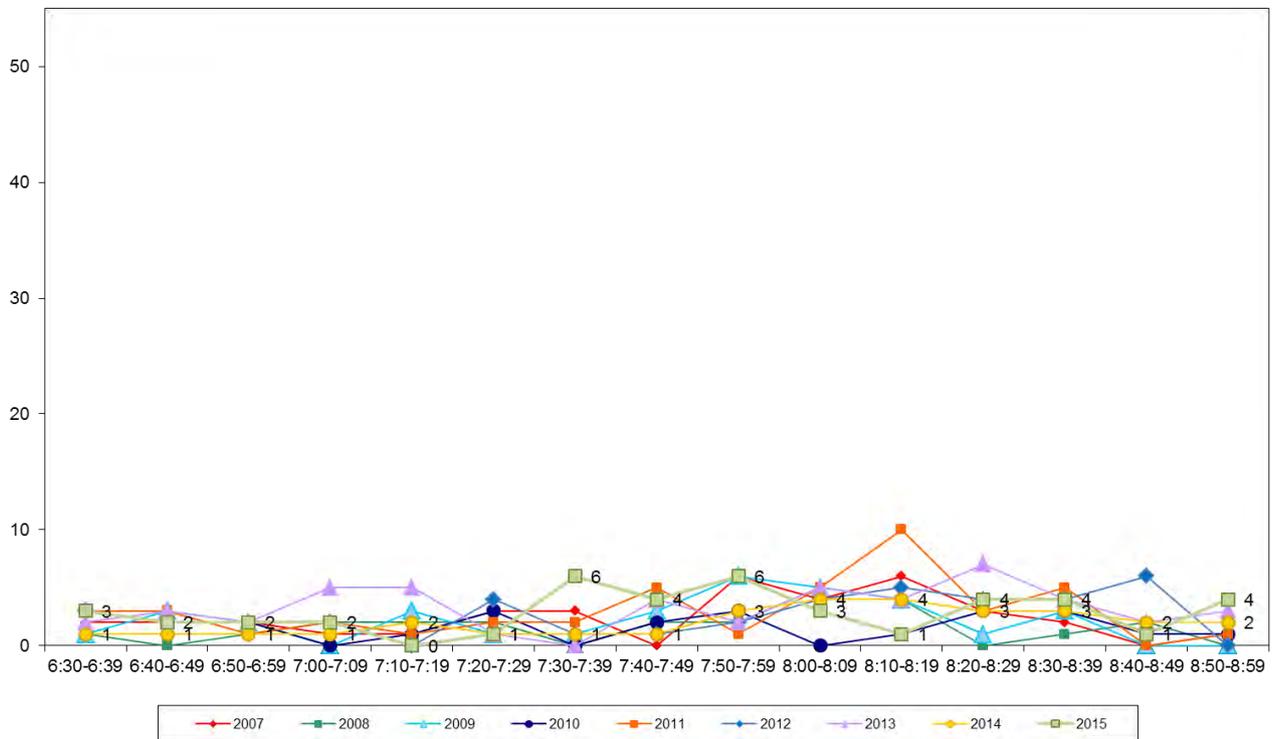
**Table 7.2: Morning Cyclist Characteristics
Great South/East Tamaki Road 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	67	67	64	72	80	63	67	83	81	-2
School child	33	33	36	28	20	37	33	17	19	2
Helmet Wearing										
Helmet on head	89	88	73	84	86	70	76	67	77	10
No helmet	11	12	27	16	14	30	24	33	23	-10
Gender										
Male	-	-	-	-	89	88	80	90	95	5
Female	-	-	-	-	11	12	18	7	5	-2
Can’t tell	-	-	-	-	0	0	2	3	0	-3
Where Riding										
Road	50	25	82	60	52	38	38	37	47	10
Footpath	50	75	18	40	48	62	62	63	53	-10
Base:	36	24	33	25	44	40	49	30	43	



- The volume of morning cycle movements started off low in the beginning of the shift, then increased to a peak between 7:30am and 7:59am, where a total number of 16 cyclists were recorded.

**Figure 7.2: Morning Peak Cyclist Frequency
Great South/East Tamaki Road 2007 – 2015 (n)**





7.3 Evening Peak

Environmental Conditions

- The weather was overcast throughout the evening monitoring period. Showers were observed from 6:18pm to 6:22pm, which then reduced to drizzle until 6:50pm.
- 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 was 42, unchanged from last year.
- The key movement in the evening continued to be straight along Great South Road heading south (Movement 1 = 15 cyclists).
- Compared with last year, the most notable changes were Movement 1 (down 5 cycle movements) and Movement 6 (up 5 movements).

**Table 7.3: Evening Cyclist Movements
Great South/East Tamaki Road 2007 – 2015 (n)**

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	13	10	13	14	17	19	24	20	15	-5
2	2	2	3	1	5	2	4	4	1	-3
3	8	1	3	5	3	9	4	4	7	3
4	3	1	6	5	2	3	3	5	4	-1
5	2	0	1	3	1	2	2	3	3	0
6	9	10	4	9	15	10	9	4	9	5
7	-	3	0	3	2	1	-	-	0	0
3A	-	-	-	-	-	-	0	1	3	2
6A	-	-	-	-	-	-	1	0	0	0
Don't know	-	-	-	-	-	-	0	1	0	-1
Total	37	27	30	40	45	46	47	42	42	0

Note: From 2013, 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 (88 per cent, down 5 percentage points last year).
- Sixty-seven per cent of cyclists at this site were wearing a helmet, down from 90 per cent in 2014.
- The greatest share of evening cyclists were male (90 per cent, up from 79 per cent in 2014).
- Half of the cyclists recorded were riding on the footpath.

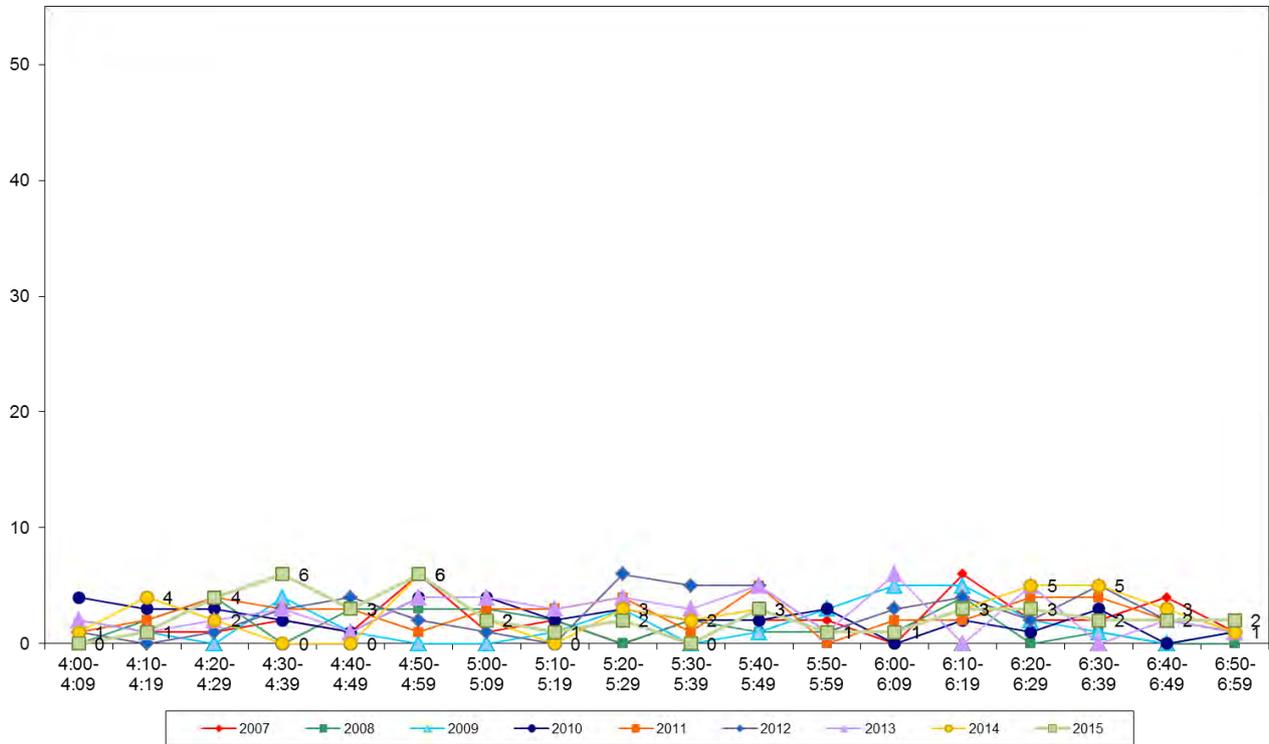
**Table 7.4: Evening Cyclist Characteristics
Great South/East Tamaki Road 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	84	74	77	80	93	89	77	93	88	-5
School child	16	26	23	20	7	11	23	7	12	5
Helmet Wearing										
Helmet on head	84	56	73	68	71	59	60	90	67	-23
No helmet	16	44	27	33	29	41	40	10	33	23
Gender										
Male	-	-	-	-	84	93	77	79	90	11
Female	-	-	-	-	16	7	17	21	10	-11
Can't tell	-	-	-	-	0	0	6	0	0	0
Where Riding										
Road	54	44	70	43	56	65	52	38	50	12
Footpath	46	56	30	57	44	35	48	62	50	-12
Base:	37	27	30	40	45	46	47	42	42	



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

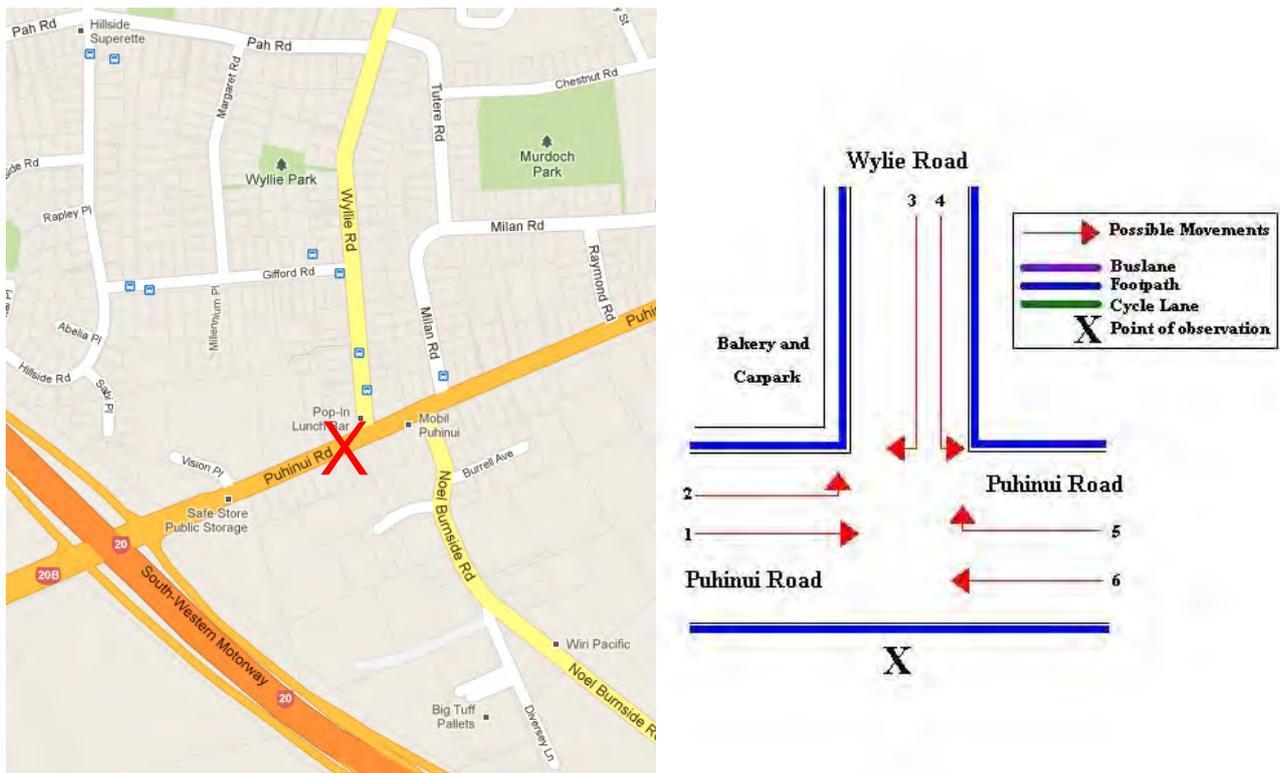
Figure 7.3: Evening Peak Cyclist Frequency
Great South/East Tamaki Road 2007 – 2015 (n)



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
2014	18	42	60	85
2015	31	32	63	92



8.2 Morning Peak

Environmental Conditions

- The weather was cloudy throughout the morning, with strong winds developing towards the end of the shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of morning cyclists at Wylie Avenue/Puhinui Road has increased this year with 31 cycle movements recorded (up from 18 movements in 2014).
- Key movements were Movement 6 (heading West along Puhinui Road) with ten cyclists and Movement 2 (turning left onto Wylie Road from Puhinui Roach) with eight cyclists.
- Movement 2 also had the greatest change in cycle volumes (8 more movements than last year).

Table 8.1: Morning Cyclist Movements
Wylie Avenue/Puhinui Road 2007 – 2015 (n)

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	0	2	1	11	3	2	2	3	1	-2
2	0	0	1	0	1	1	3	0	8	8
3	0	1	3	2	2	2	6	1	0	-1
4	1	1	0	2	1	1	0	8	6	-2
5	0	0	0	1	1	0	0	1	6	5
6	17	4	7	7	5	2	6	5	10	5
Total	18	8	12	23	13	8	17	18	31	13



- Seventy-four per cent of cyclists riding past this site were adults (a decrease from 94 per cent last year).
- Almost all cyclists were wearing a helmet (97 per cent, a notable increase from 78 per cent in 2014).
- The majority of the cyclists using this site were male (87 per cent, down from 94 per cent in 2014).
- More cyclists were riding on the footpath than the road (55 per cent of cyclists were traveling on the footpath, up from 22 per cent in 2014).

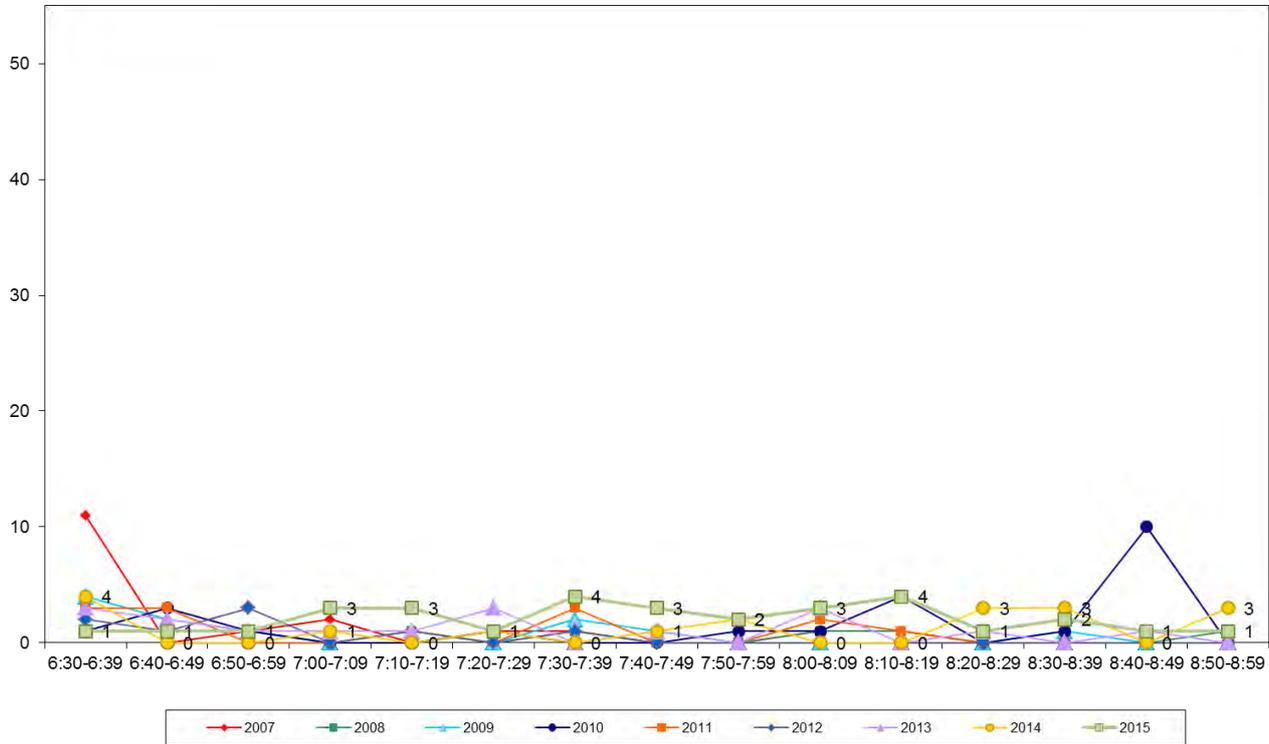
**Table 8.2: Morning Cyclist Characteristics
Wyllie Avenue/Puhinui Road 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	100	100	100	91	85	100	76	94	74	-20
School child	0	0	0	9	15	0	24	6	26	20
Helmet Wearing										
Helmet on head	100	88	100	87	92	88	76	78	97	19
No helmet	0	12	0	13	8	12	24	22	3	-19
Gender										
Male	-	-	-	-	100	100	76	94	87	-7
Female	-	-	-	-	0	0	12	6	13	7
Can't tell	-	-	-	-	0	0	12	0	0	0
Where Riding										
Road	100	100	100	87	77	75	59	78	45	-33
Footpath	0	0	0	13	23	25	41	22	55	33
Base:	18	8	12	23	13	8	17	18	31	



- In 2015, cyclist volumes were low throughout the morning period. Only two 10 minute intervals recorded more than 3 movements (7:30am- 7:39am and 8:10am – 8.19am).

Figure 8.2: Morning Peak Cyclist Frequency
Wyllie Avenue/Puhinui Road 2007 – 2015 (n)



Note: In 2015, a group of three cyclists rode past this site together at 7:34am (10% of the site’s morning cycle volume).



8.3 Evening Peak

Environmental Conditions

- The weather was cloudy 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 decreased, from 42 movements in 2014 to 32 movements.
- The key evening movements were straight along Puhinui Road heading northeast (Movement 1 = 10 cyclists) and travelling west along Puhinui Road (Movement 6 = 8 cyclists).
- Movement 6 experienced the greatest decrease in cyclist volume (down 12 movements).

Table 8.3: Evening Cyclist Movements
Wyllie Avenue/Puhinui Road 2007 – 2015 (n)

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	7	11	6	7	24	13	29	10	10	0
2	3	3	1	2	6	6	9	4	5	1
3	2	0	0	0	1	1	6	2	2	0
4	3	2	1	3	5	7	3	1	3	2
5	3	5	2	3	7	3	2	5	4	-1
6	2	4	13	19	19	9	29	20	8	-12
Total	20	25	23	34	62	39	78	42	32	-10



- Nearly all the cyclists over the evening peak were adults (94 per cent, stable from the previous two years).
- Three quarters of cyclists at this site were wearing a helmet (75 per cent, down from 93 per cent in 2014).
- Ninety-seven per cent of cyclists were male, an increasing trend since 2011.
- Forty-seven per cent of cyclists were using the footpath, up 28 percentage points from 2014.

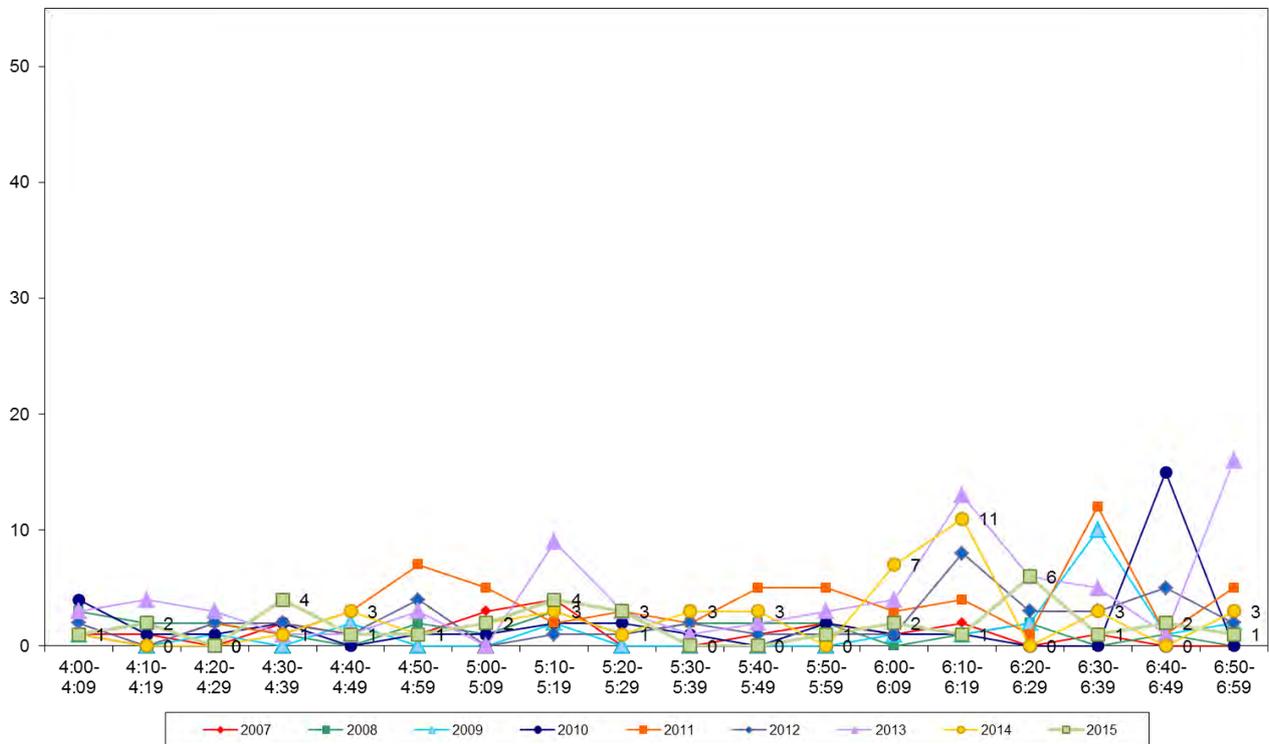
**Table 8.4: Evening Cyclist Characteristics
Wyllie Avenue/Puhinui Road 2007 – 2015 (%)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	75	88	87	100	84	74	94	93	94	1
School child	25	12	13	0	16	26	6	7	6	-1
Helmet Wearing										
Helmet on head	70	79	91	97	84	72	86	93	75	-18
No helmet	30	21	9	3	16	28	14	7	25	18
Gender										
Male	-	-	-	-	76	85	88	93	97	4
Female	-	-	-	-	23	15	12	7	3	-4
Can't tell	-	-	-	-	2	0	0	0	0	0
Where Riding										
Road	70	84	91	88	76	82	82	79	53	-26
Footpath	30	16	9	12	24	18	18	19	47	28
Can't tell	0	0	0	0	0	0	0	2	0	-2
Base:	20	25	23	34	62	39	78	42	32	



- This year, the volume of cycle movements was low throughout the majority of the evening monitoring period. The maximum number of movements was 6, recorded between 6:20pm to 6:29pm.

Figure 8.3: Evening Peak Cyclist Frequency
Wyllie Avenue/Puhinui Road 2007 – 2015 (n)

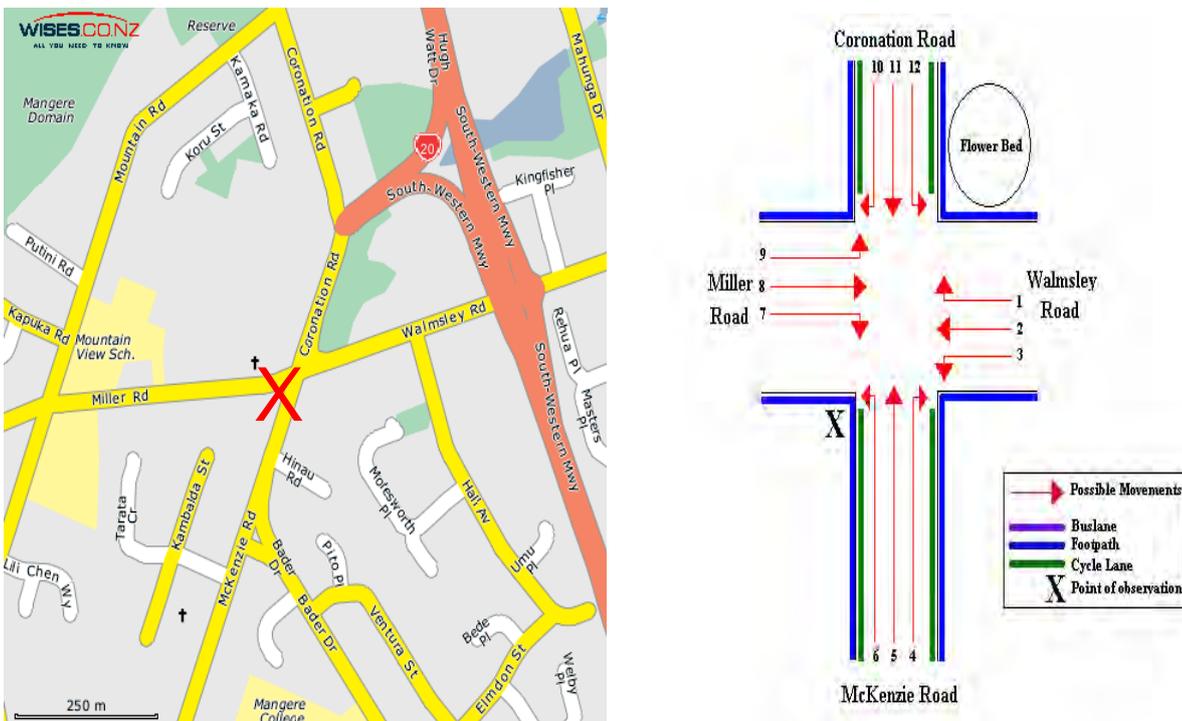


Note: In 2015, a group of four cyclists rode past this site together at 6:25pm (13% of the site's evening cycle volume).

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
2014	50	32	82	121
2015	31	49	80	115



9.2 Morning Peak

Environmental Conditions

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

Key Points

- In 2015, the volume of morning cyclists recorded at the McKenzie/Coronation/Walmsley Road intersection has decreased (from 50 in 2014 to 31 movements this year).
- The most common movement in the morning was south down Coronation Road into McKenzie Road (Movement 11 = 15 cyclists).
- Of the 12 movements possible at this intersection, the most notable changes were at Movement 5 (down 12 cyclists) and at Movement 11 (down 11 cyclists).

Table 9.1: Morning Cyclist Movements
McKenzie/Coronation/Walmsley Road 2007 – 2015 (n)

Movement	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	1	0	1	2	1	0	2	2	1	-1
2	2	3	0	4	2	0	2	2	4	2
3	3	0	2	3	1	3	2	1	2	1
4	1	0	0	1	2	0	0	1	0	-1
5	8	2	3	7	5	7	4	14	2	-12
6	2	1	0	0	0	0	0	0	4	4
7	2	1	1	3	0	0	1	0	1	1
8	0	0	2	3	2	2	13	1	1	0
9	0	0	0	0	0	0	3	1	0	-1
10	0	0	0	2	0	0	1	1	0	-1
11	9	14	11	12	16	7	19	26	15	-11
12	0	0	2	1	3	0	1	1	1	0
Total	28	21	22	38	32	19	48	50	31	-19



- Over the morning peak, adults comprised the greatest share of the cycle movements (81 per cent, down from 88 per cent last year).
- Almost all of the cyclists were wearing a helmet (97 per cent, up from 88 per cent in 2014).
- Eighty-one per cent of cyclists were male, down 9 percentage points from last year.
- Seventy-one per cent of cyclists were riding on the road (down from 76 per cent last year).

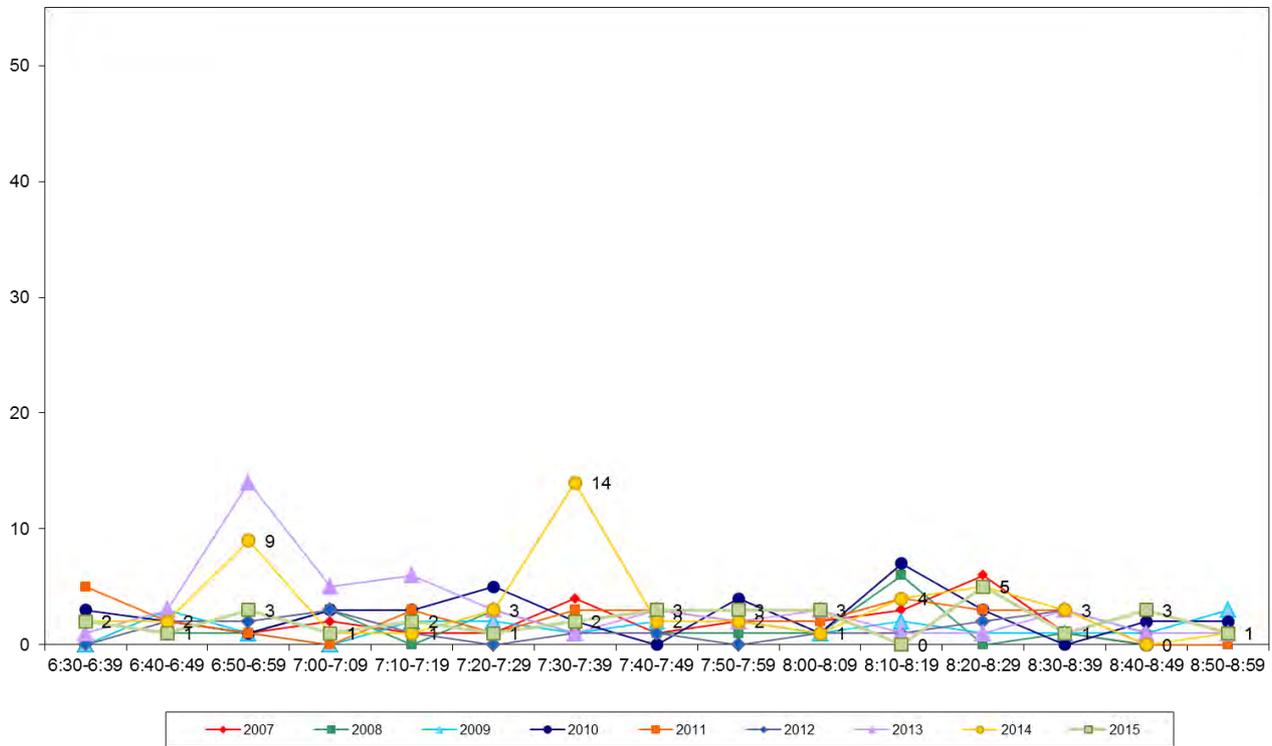
Table 9.2: Morning Cyclist Characteristics
McKenzie/Coronation/Walmsley Road 2007 – 2015 (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	71	86	91	84	78	84	87	88	81	-7
School child	29	14	9	16	22	16	13	12	19	7
Helmet Wearing										
Helmet on head	71	71	86	71	78	79	79	88	97	9
No helmet	29	29	14	29	22	21	21	10	3	-7
Don't know	0	0	0	0	0	0	0	2	0	-2
Gender										
Male	-	-	-	-	88	84	90	90	81	-9
Female	-	-	-	-	13	5	10	8	19	11
Can't tell	-	-	-	-	0	11	0	2	0	-2
Where Riding										
Road	64	67	82	66	66	74	74	76	71	-5
Footpath	36	33	18	34	34	26	26	22	29	7
Don't know	0	0	0	0	0	0	0	2	0	-2
Base:	28	21	22	38	32	19	48	50	31	



- The volume of cyclists remained low throughout the morning period. The highest volume of cyclists was recorded at 8:20am – 8:29am with 5 cycle movements.

Figure 9.2: Morning Peak Cyclist Frequency
McKenzie/Coronation/Walmsley Road 2007 – 2015 (n)





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 49 movements from 32 movements last year.
- Consistent with last year, the most common movement in the evening was northbound from McKenzie Road to Coronation Road (Movement 5 = 13 movements).
- Movement 6 saw the most notable change this year, up 8 movements.

Table 9.3: Evening Cyclist Movements

McKenzie/Coronation/Walmsley Road 2007 – 2015 (n)

<i>Movement</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>Change 14-15</i>
1	2	4	0	4	2	2	1	2	2	0
2	1	3	1	3	5	2	2	4	5	1
3	1	3	2	4	3	1	2	0	1	1
4	0	0	1	2	1	2	2	1	1	0
5	14	14	15	18	21	9	17	14	13	-1
6	3	3	1	2	2	0	1	1	9	8
7	2	0	1	1	2	3	2	0	3	3
8	0	1	1	1	2	0	1	1	5	4
9	3	0	1	0	7	0	1	1	1	0
10	0	0	1	2	2	0	0	0	1	1
11	11	6	5	9	13	9	10	4	7	3
12	5	2	1	3	1	1	3	4	1	-3
Total	42	36	30	49	61	29	42	32	49	17



- Almost all cyclists using this intersection over the evening peak were adults (76 per cent, an 8 percentage point decrease from last year).
- Sixty-three per cent of cyclists at this site were wearing a helmet (down from 84 per cent in 2014).
- Thirty-nine per cent of cyclists were female, the highest recorded since 2011 (and up from 9 per cent in 2014)
- Just over half of the cyclists were riding on the footpath (51 per cent, up from 22 per cent in 2014).

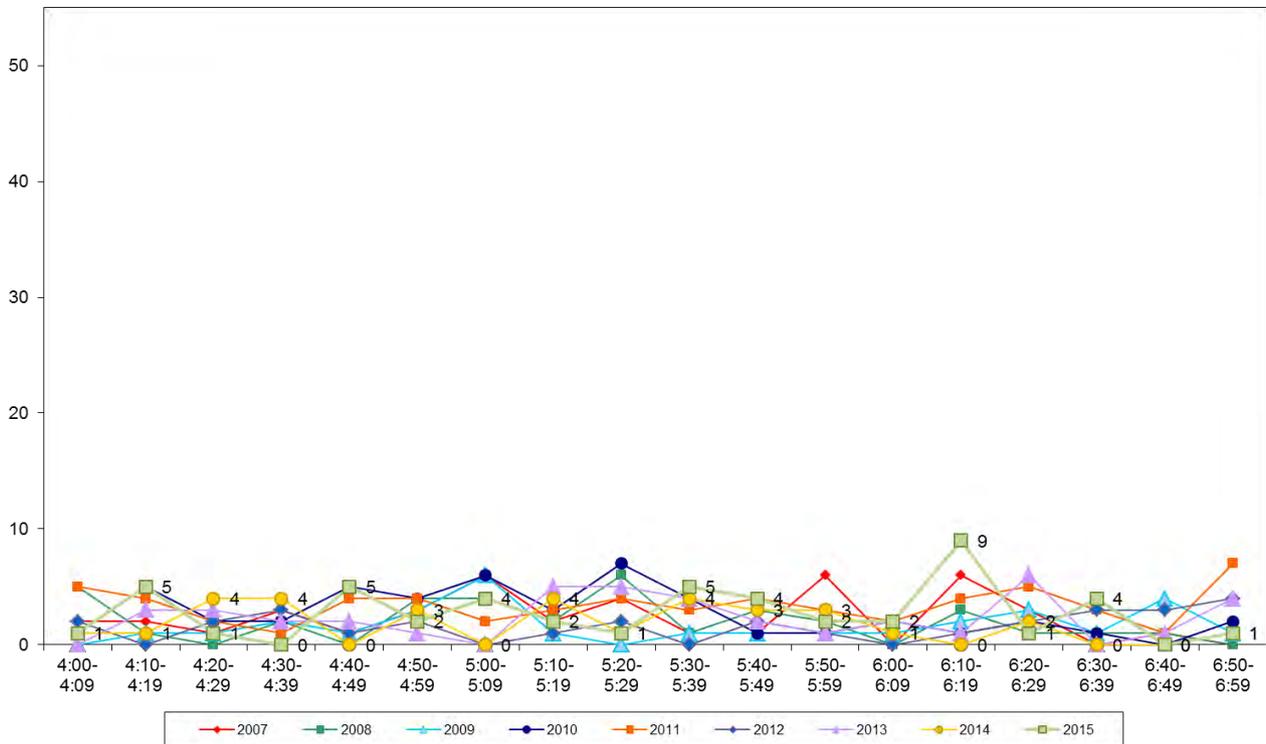
Table 9.4: Evening Cyclist Characteristics
McKenzie/Coronation/Walmsley Road 2007 – 2015 (%)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type										
Adult	76	89	87	86	84	76	98	84	76	-8
School child	24	11	13	14	16	24	2	16	24	8
Helmet Wearing										
Helmet on head	74	78	73	76	87	83	90	84	63	-21
No helmet	26	22	27	24	13	17	10	16	37	21
Gender										
Male	-	-	-	-	90	79	93	91	61	-30
Female	-	-	-	-	7	21	7	9	39	30
Can't tell	-	-	-	-	3	0	0	0	0	0
Where Riding										
Road	81	71	73	65	59	63	81	78	49	-29
Footpath	19	29	27	35	41	37	19	22	51	29
Base:	42	36	30	49	61	29	42	32	49	



- This year, the volume of evening cycle movements was steady throughout majority of the evening period. There was a clear peak of 9 cycle movements recorded at 6:10pm-6:19pm.

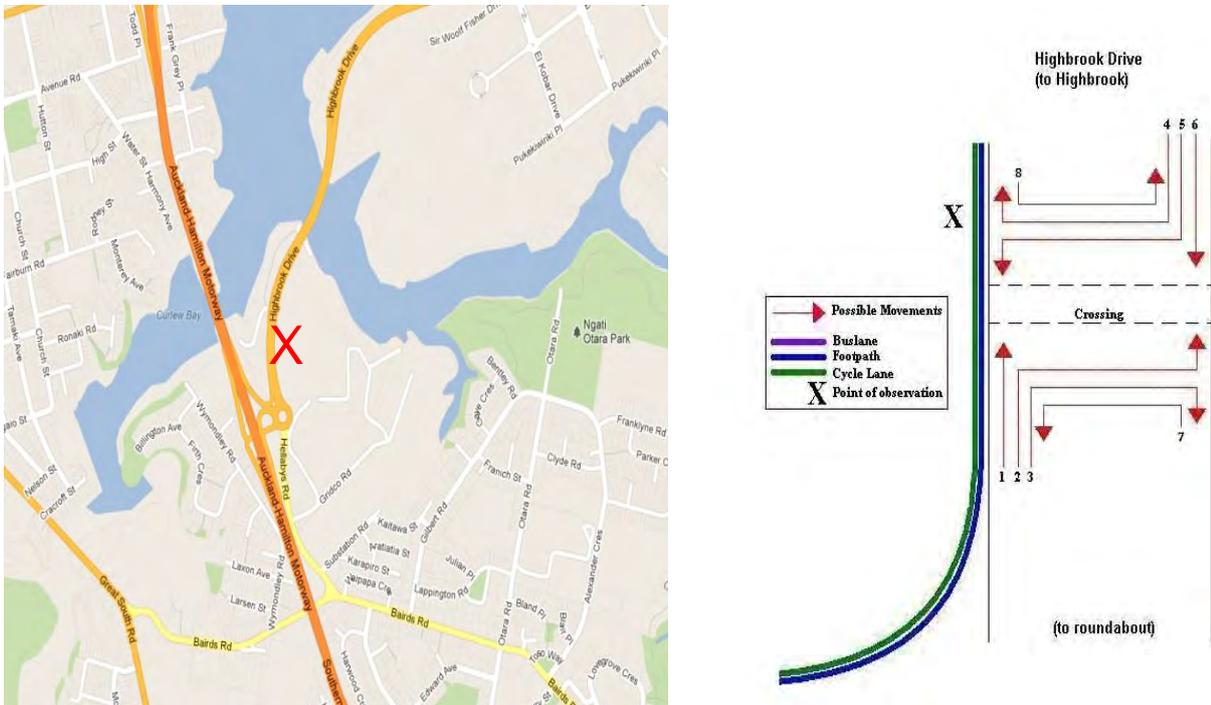
Figure 9.3: Evening Peak Cyclist Frequency
McKenzie/Coronation/Walmsley Road 2007 – 2015 (n)



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



In 2014, Movements 7 and 8 were added in order to count cyclists who used the crossing then exited the intersection in the same direction as they entered. Cyclists are forced to cross at the crossing as the off-road cycle lane is now fenced off from the road, preventing access at other points on 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
2014	20	29	49	71
2015	22	28	50	72



10.2 Morning Peak

Environmental Conditions

- The weather was fine but cloudy during the morning monitoring period.
- 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 20 movements last year to 22 this year.
- Consistent with previous years, the most common movement in the morning was along the cycle lane heading north (Movement 1 = 15 cyclists).
- Movements remain stable from 2014.

**Table 10.1: Morning Cyclist Movements
Highbrook Drive 2008 – 2015 (n)**

<i>Movement</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>Change 14-15</i>
1	5	5	8	13	15	9	12	15	3
2	2	2	4	2	0	1	1	1	0
3	2	0	1	2	1	7	1	3	2
4	0	2	5	0	0	0	0	0	0
5	3	2	4	1	2	1	0	0	0
6	1	9	5	5	3	6	4	3	-1
7	-	-	-	-	-	-	1	0	-1
8	-	-	-	-	-	-	0	0	0
Don't know	0	0	0	0	0	0	1	0	-1
Total	13	20	27	23	21	24	20	22	2

Note: Movements 7 and 8 were introduced in 2014.



- Over the morning peak, all cyclists were adults (a 10 percentage point increase from last year).
- Helmet-wearing has decreased this year (82 per cent, down from 90 per cent last year)
- Almost all cyclists were male (95 per cent, down up from 100 per cent in 2014).
- All cyclists were riding on the off-road cycleway (unchanged from 2013).

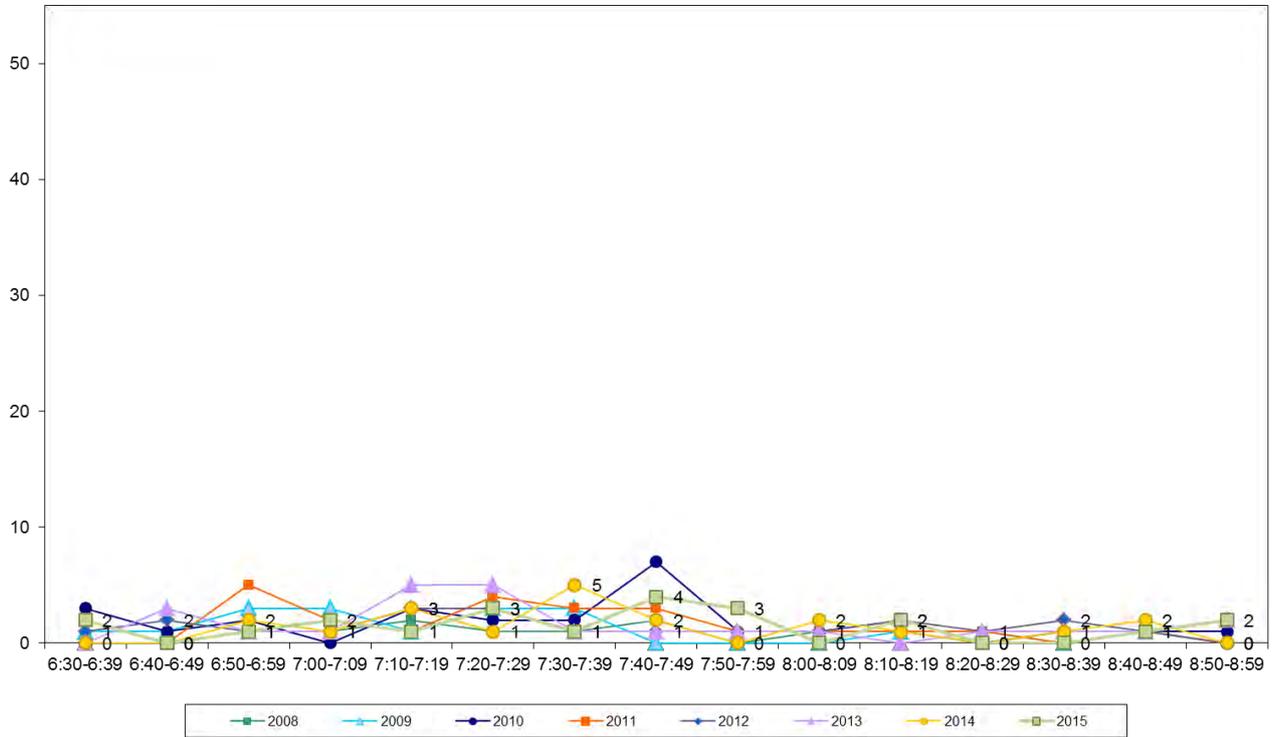
**Table 10.2: Morning Cyclist Characteristics
Highbrook Drive 2008 – 2015 (%)**

	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type									
Adult	100	100	100	96	100	96	90	100	10
School child	0	0	0	4	0	4	10	0	-10
Helmet Wearing									
Helmet on head	85	75	78	78	71	83	90	82	-8
No helmet	15	25	22	22	29	17	10	18	8
Gender									
Male	-	-	-	91	90	92	100	95	-5
Female	-	-	-	4	10	8	0	5	5
Can't tell	-	-	-	4	0	0	0	0	0
Where Riding									
Road	8	15	7	13	14	0	0	0	0
Footpath	92	5	33	26	0	0	0	0	0
Off-road cycleway	-	80	60	61	86	100	100	100	0
Base:	13	20	27	23	21	24	20	22	



- The volume of cycle movements was low throughout the morning shift. There was a slight peak that occurred between 7:40pm and 7:49pm (4 cycle movements recorded).

Figure 12.2: Morning Peak Cyclist Frequency
Highbrook Drive 2008 – 2015 (n)





10.3 Evening Peak

Environmental Conditions

- The weather was cloudy throughout the evening, with light showers at the end of the 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 28, stable from last year.
- The most common movement in the evening was down Highbrook Drive towards the roundabout (Movement 6 = 13 cyclists).
- The most notable change was at Movement 6 (down 3 cyclists from 2014).

Table 10.3: Evening Cyclist Movements
Highbrook Drive 2008 – 2015 (n)

Movement	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	3	5	2	11	8	7	5	4	-1
2	2	0	3	0	0	0	0	0	0
3	0	6	0	4	5	3	0	2	2
4	0	0	0	0	0	0	0	0	0
5	8	0	3	4	4	4	5	5	0
6	3	7	5	11	12	9	16	13	-3
7	-	-	-	-	-	-	3	4	1
8	-	-	-	-	-	-	0	0	0
Total	16	18	13	30	29	23	29	28	-1

Note: Movements 7 and 8 have been introduced in 2014.



- Consistent with the morning peak, all of the cyclists using this intersection were adults.
- Eighty-six per cent of cyclists were wearing a helmet this year (up from 83 per cent in 2014).
- The majority of cyclists at this site were male (93 per cent).
- The majority of cyclists were using the cycleway (93 per cent, up from 72 per cent last year). There were no cyclists recorded on the footpath, a notable change from last year (24 per cent in 2014).

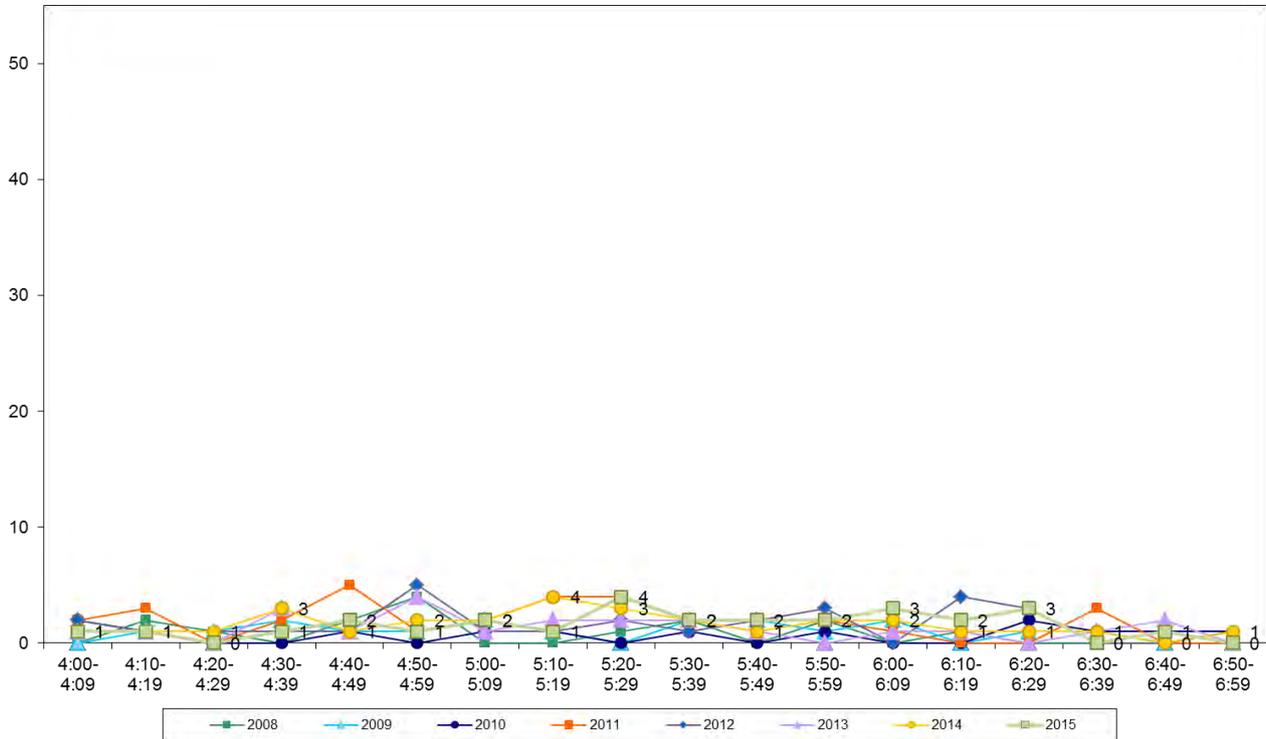
**Table 10.4: Evening Cyclist Characteristics
Highbrook Drive 2008 – 2015 (%)**

	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type									
Adult	100	100	100	100	100	96	100	100	0
School child	0	0	0	0	0	4	0	0	0
Helmet Wearing									
Helmet on head	81	89	62	83	69	78	83	86	3
No helmet	19	11	38	17	31	22	14	14	0
Don't know	0	0	0	0	0	0	3	0	-3
Gender									
Male	-	-	-	87	93	96	97	93	-4
Female	-	-	-	7	7	4	3	7	4
Can't tell	-	-	-	7	0	0	0	0	0
Where Riding									
Road	6	11	0	17	7	0	4	7	3
Footpath	94	22	54	37	0	0	24	0	-24
Off-road cycleway	-	67	46	47	93	100	72	93	21
Base:	16	18	13	30	29	23	29	28	



- 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.

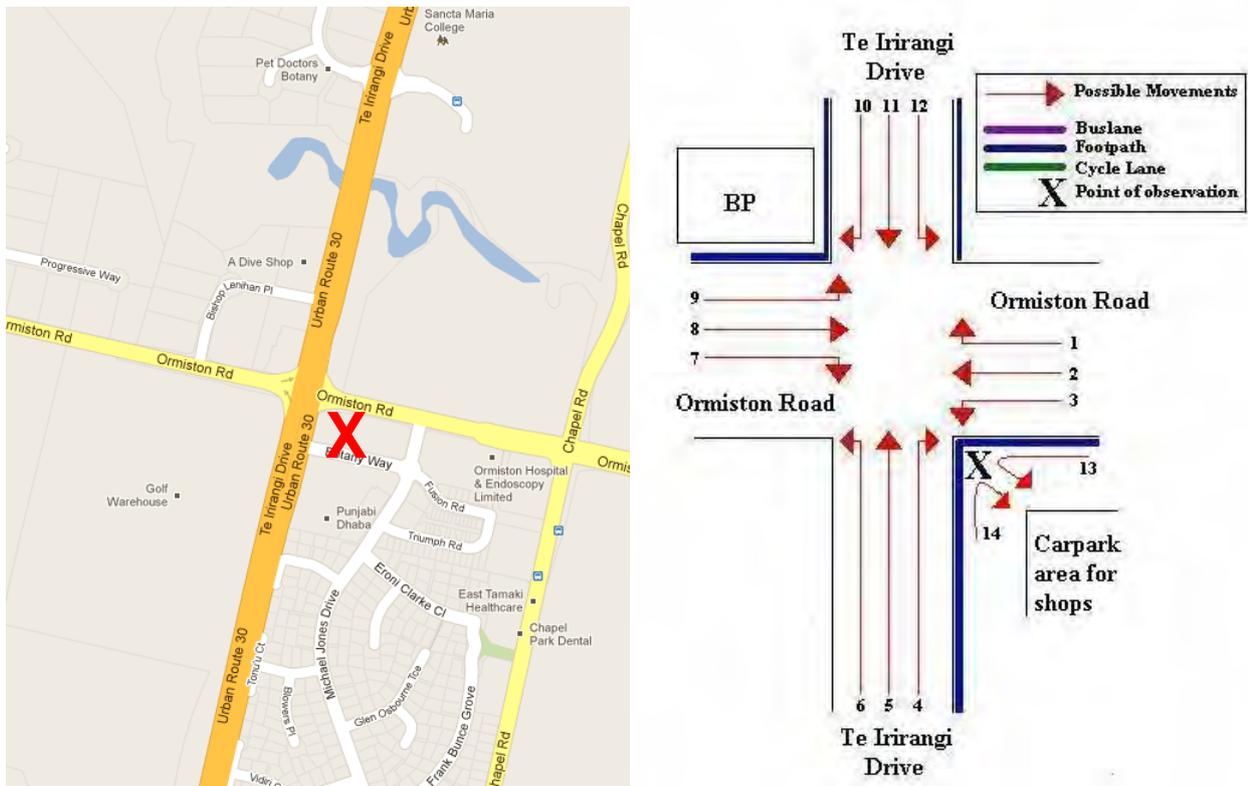
Figure 10.3: Evening Peak Cyclist Frequency
Highbrook Drive 2008 – 2015 (n)



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
2014	15	46	61	86
2015	23	22	45	65



11.2 Morning Peak

Environmental Conditions

- The weather was fine at the beginning of the shift but became cloudy towards the end.
- 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 to 23 cycle movements from 15 movements since last year.
- The key movement 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 6 cyclists from last year).

**Table 11.1: Morning Cyclist Movements
Te Irirangi Drive/Ormiston Road 2009 – 2015 (n)**

Movement	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	4	1	1	4	2	0	3	3
2	1	2	4	4	4	4	3	-1
3	0	3	1	1	1	2	1	-1
4	0	0	0	0	0	0	0	0
5	4	3	8	6	5	2	1	-1
6	0	0	1	0	2	1	0	-1
7	0	0	0	0	1	0	0	0
8	0	3	0	0	2	0	1	1
9	0	0	0	0	1	0	0	0
10	0	1	1	0	0	1	3	2
11	4	12	8	3	11	5	11	6
12	0	0	0	0	2	0	0	0
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
Total	13	25	24	18	31	15	23	8



- Over the morning peak, almost all cyclists riding through this intersection were adults (91 per cent, down from 100 per cent last year).
- The majority of cyclists were wearing a helmet (91 per cent, stable from 2014).
- There has been a 26 percentage point increase for the share of female cyclists riding through this site (compared with none in 2014).
- The majority of cyclists were riding on the road (70 per cent). However, the share riding on the footpath has increased 10 percentage points from last year.

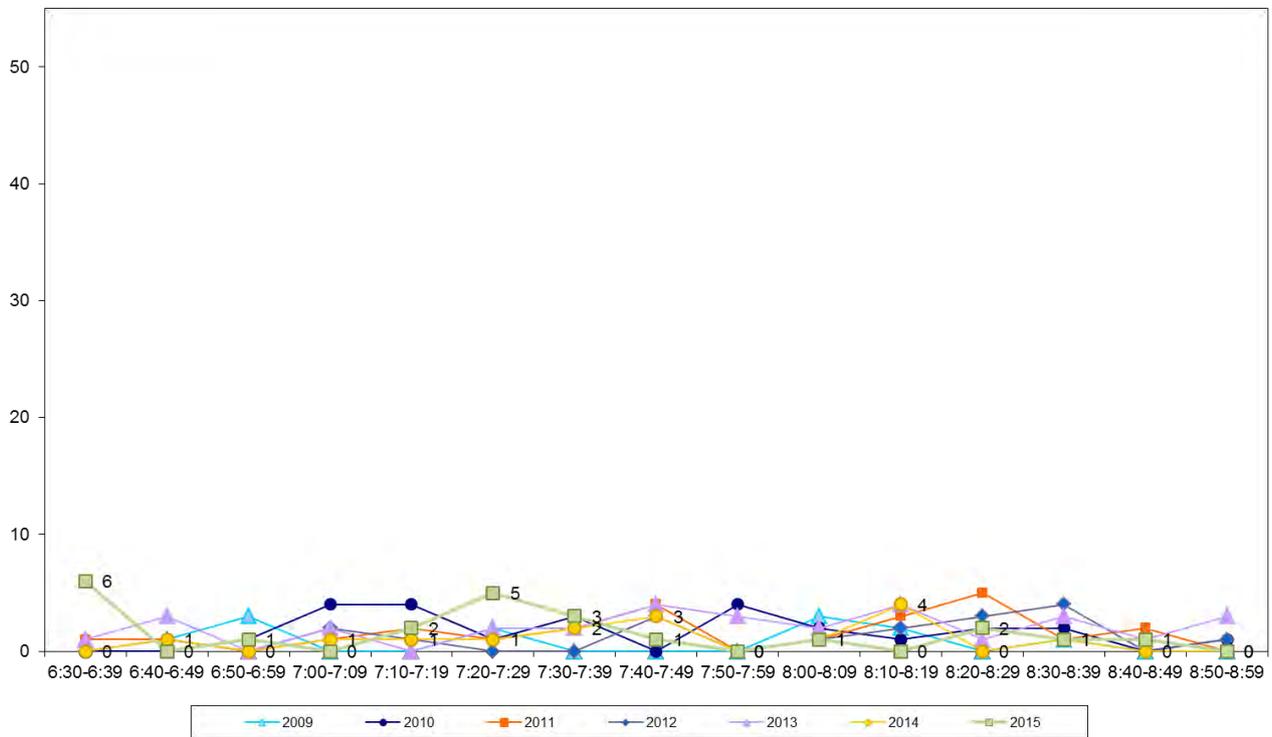
**Table 11.2: Morning Cyclist Characteristics
Te Irirangi Drive/Ormiston Road 2009 – 2015 (%)**

	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type								
Adult	69	80	83	89	94	100	91	-9
School child	31	20	17	11	6	0	9	9
Helmet Wearing								
Helmet on head	85	92	100	83	79	93	91	-2
No helmet	15	8	0	17	21	7	9	2
Gender								
Male	-	-	75	89	68	93	70	-23
Female	-	-	25	11	16	0	26	26
Can't tell	-	-	0	0	16	7	4	-3
Where Riding								
Road	69	64	67	56	65	80	70	-10
Footpath	31	36	33	44	35	20	30	10
Base:	13	25	24	18	31	15	23	



- The volume of morning cycle movements was relatively low over the entire monitoring period, with one peak between 6:30am and 6:39am (6 movements) and another between 7:20am and 7:29am (5 movements).

Figure 11.2: Morning Peak Cyclist Frequency
Te Irirangi Drive/Ormiston Road 2009 – 2015 (n)





11.3 Evening Peak

Environmental Conditions

- The weather was overcast with a light drizzle during the evening shift.
- 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 more than halved over the last 12 months, from 46 movements in 2014 to 22 movements this year.
- The most common movement in the evening was riding straight along Te Irirangi Drive heading south (Movement 11 = 5 cyclists).
- Movement 11 also experienced a notable change in cycle traffic (down 9 cyclists).
- Movement 3, which is a left-hand turn from Ormiston Road onto Te Irirangi Drive heading south, was the only movement to have an increase in cycle traffic this year (up 2 movements).

**Table 11.3: Evening Cyclist Movements
Te Irirangi Drive/Ormiston Road 2009 – 2015 (n)**

Movement	2009	2010	2011	2012	2013	2014	2015	Change 14-15
1	0	1	1	0	0	0	0	0
2	1	4	2	2	3	3	1	-2
3	0	0	3	1	0	0	2	2
4	0	0	1	1	0	2	0	-2
5	2	8	11	5	13	5	4	-1
6	0	0	0	0	0	1	0	-1
7	1	0	2	1	2	5	3	-2
8	1	6	1	4	5	7	2	-5
9	1	1	1	3	4	5	4	-1
10	0	0	0	0	0	0	0	0
11	13	20	9	10	23	14	5	-9
12	1	1	1	5	4	1	1	0
13	0	0	0	0	0	1	0	-1
14	0	0	0	0	0	2	0	-2
Total	20	41	32	32	54	46	22	-24



- Almost all evening cyclists using this site were adults (95 per cent, up from 85 per cent in 2014).
- For the first time since cycle monitoring began at this site, all cyclists were wearing a helmet.
- Eighty-two per cent of cyclists at this site were male (stable from the previous measure).
- While cycling on the road remained more popular (77 per cent), there has been a notable 14 percentage point increase in the share of cyclists riding on the footpath (from 9 per cent to 23 per cent).

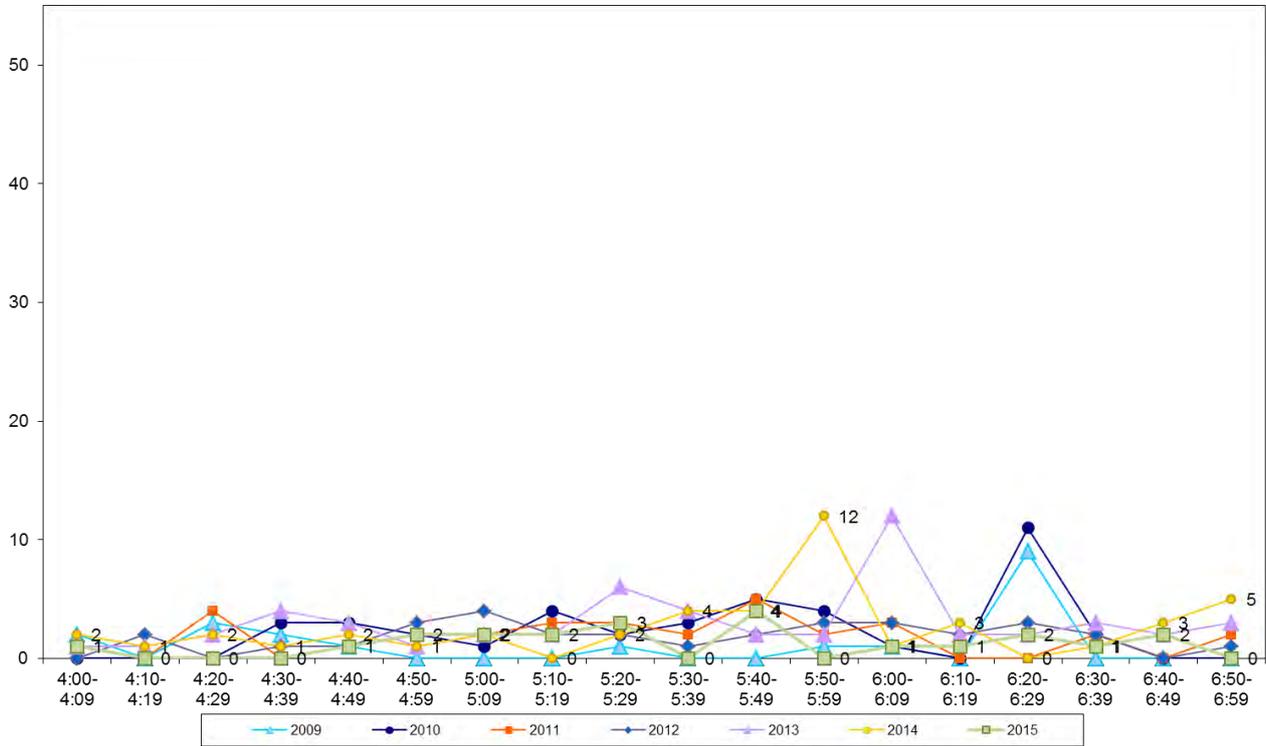
Table 11.4: Evening Cyclist Characteristics
Te Irirangi Drive/Ormiston Road 2009 – 2015 (%)

	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Cyclist Type								
Adult	95	83	97	94	91	85	95	10
School child	5	17	3	6	9	13	5	-8
Don't know	0	0	0	0	0	2	0	-2
Helmet Wearing								
Helmet on head	95	78	97	88	89	85	100	15
No helmet	5	22	3	12	11	9	0	-9
Don't know	0	0	0	0	0	6	0	-6
Gender								
Male	-	-	78	94	87	83	82	-1
Female	-	-	16	6	9	17	18	1
Can't tell	-	-	6	0	4	0	0	0
Where Riding								
Road	95	76	88	72	78	89	77	-12
Footpath	5	24	12	28	22	9	23	14
Don't know	0	0	0	0	0	2	0	-2
Base:	20	41	32	32	54	46	22	



- Evening cyclist volumes were generally stable and low throughout the monitoring period this year, with no more than four cycle movements in any ten minute interval.

Figure 11.3: Evening Peak Cyclist Frequency
Te Irirangi Drive/Ormiston Road 2009 – 2015 (n)





12. SCHOOL BIKE SHED COUNT

12.1 Cycle Count Background Information

- A total of 25 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 school¹⁰.
- No schools surveyed reported any events or issues that may affect the cycle counts.
- The designated count day was Tuesday 3rd of March 2015¹¹.

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

12.2 Cycle Count Key Points

- Among the surveyed schools, of those eligible to cycle to school, on average, less than one per cent of students are cycling to their schools. This share is stable from 2014.
- The Rise Up Academy reported the highest share of cyclists – 4 per cent of all eligible students currently cycling to school.
- In total, n=34 students from the responding schools were reported to be cycling to school.
- Of the 25 schools that responded, 17 (68 per cent) had no students cycling to school.
- Of the 22 schools that participated in the count in both 2014 and 2015, 6 (27 per cent) reported an increase in the share of students cycling.
- Of the 22 schools that participated in the count in both 2014 and 2015, 1 (5 per cent) reported a decrease in the share of students cycling.

Table 12.1 shows the results of the 25 schools surveyed in the Manukau ward.

¹⁰ The following schools have policies surrounding cycling to school:

- Holy Cross School (Papatoetoe) “Years 6-8”
- Pacific Christian School “Years 5 and below not advised”

¹¹ The following schools conducted their counts on alternative days:

- Al-Madinah School – 4th March 2015
- Aorere College – 17th March 2015
- Ferguson Intermediate – 6th March 2015
- Holy Cross School (Papatoetoe) – 6th March 2015
- Koru School – 9th March 2015
- Mangere East School – 9th March 2015
- Pacific Christian School – 4th March 2015
- Papatoetoe High School – 17th March 2015
- Redoubt North School – 4th March 2015
- Robertson Road School – 19th March 2015
- Sir Edmund Hillary Collegiate – 4th March 2015
- Tangaroa College – 5th March 2015
- Te Kura Kaupapa Maori o Mangere – 5th March 2015
- Viscount School – 5th March 2015
- Zayed College For Girls – 5th March 2015



**Table 12.1: Summary Table of School Bike Count
2007 – 2015 (n)**

School Name	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹²									
				2015	2014	2013	2012	2011	2010	2009	2008	2007	
The Rise Up Academy	Full Primary	70	3	4%	-	-	-	-	-	-	-	-	-
Holy Cross School (Papatoetoe)	Full Primary	154	3	2%	1%	1%	0%	-	-	-	-	-	-
Papatoetoe High School	Secondary	1550	17	1%	1%	-	-	-	-	-	-	-	-
Kedgley Intermediate	Intermediate	711	5	1%	1%	1%	1%	1%	2%	2%	-	-	-
Al-Madinah School	Composite	540	1	<1%	0%	0%	0%	0%	0%	0%	0%	0%	-
Mangere Central School	Full Primary	714	2	<1%	0%	0%	0%	-	-	-	-	-	-
Otahuhu College	Secondary	1200	2	<1%	0%	0%	0%	0%	-	0%	0%	0%	0%
Te Kura Kaupapa Māori o Rohe o Mangere	Composite	210	1	<1%	0%	1%	0%	1%	-	-	-	-	-
Aorere College	Secondary	1498	0	0%	0%	0%	0%	0%	0%	0%	-	-	-
Auckland Seventh Day Adventist High School	Secondary	202	0	0%	1%	0%	1%	<1%	-	-	-	-	-
Ferguson Intermediate School	Intermediate	447	0	0%	0%	0%	0%	0%	-	-	0%	-	-
Kia Aroha College	Intermediate/Secondary	311	0	0%	0%	<1%	1%	0%	-	-	0%	-	-
Koru School	Full Primary	545	0	0%	0%	0%	0%	-	-	-	-	-	-
Mangere East School	Full Primary	524	0	0%	-	-	-	-	-	-	-	-	-
McAuley High School	Secondary	775	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mt Richmond School	Composite	136	0	0%	-	-	-	-	-	-	-	-	-
Pacific Christian School	Full Primary	31	0	0%	0%	0%	-	0%	-	-	-	-	-
Redoubt North School	Full Primary	700	0	0%	0%	0%	-	0%	-	-	-	-	-
Robertson Road School	Full Primary	531	0	0%	0%	0%	-	-	-	-	-	-	-

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



School Name	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹²								
				2015	2014	2013	2012	2011	2010	2009	2008	2007
Sir Edmund Hillary Collegiate	Composite	1200	0	0%	0%	-	0%	0%	-	-	-	-
South Auckland SDA School	Composite	292	0	0%	0%	0%	0%	-	-	-	-	-
Tangaroa College	Secondary	900	0	0%	0%	<1%	-	0%	0%	-	0%	-
Viscount School	Full Primary	640	0	0%	0%	0%	-	-	-	-	-	-
Westmount School	Composite	176	0	0%	0%	-	-	-				
Zayed College for Girls	Intermediate/Secondary	108	0	0%	0%	0%	0%	0%	-	-	-	-
Total		14165	34	<1%	<1%	<1%	<1%	-	-	-	-	-



Table 12.2 illustrates the rates of cycling to school at different school levels. Rates are similar to last year.

**Table 12.2: Summary Table of School Bike Count by School Type
2007 – 2015 (%)**

Year Levels	Number of Schools Responded in 2015	Cyclists as share of those eligible									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	Change 14-15
Intermediate	2	<1%	<1%	1%	1%	1%	1%	1%	1%	<1%	<1%
Full Primary	9	-	-	-	-	0%	0%	<1%	<1%	<1%	0%
Secondary	6	0%	0%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	0%
Composite	6	-	0%	0%	0%	1%	1%	<1%	0%	<1%	<1%
Intermediate/Secondary	2	-	0%	-	-	0%	1%	<1%	1%	0%	-1%



12.3 Scooter Count Background Information

- A total of 23 schools in the Manukau ward participated in the school bike shed scooter count, none of which had a policy that restricted students scooting to school.
- No schools surveyed reported any events or issues that may affect the scooter counts.
- The designated count day was Tuesday 3rd of March 2015¹³.

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

12.4 Scooter Count Key Points

- Among the surveyed schools, of those eligible to scooter, on average, less than one per cent of students are scooting to their schools. This is unchanged from 2014.
- Kedgley Intermediate and The Rise Up Academy were the only schools to report students scooting to school – each with 1 per cent of all eligible students currently scooting to school.
- In total, n=6 students from the responding schools were reported to be scooting to school.

¹³ The following schools conducted their counts on alternative days:

- Al-Madinah School – 4th March 2015
- Aorere College – 17th March 2015
- Ferguson Intermediate – 6th March 2015
- Holy Cross School (Papatoetoe) – 6th March 2015
- Koru School – 9th March 2015
- Mangere East School – 9th March 2015
- Pacific Christian School – 4th March 2015
- Redoubt North School – 4th March 2015
- Robertson Road School – 19th March 2015
- Sir Edmund Hillary Collegiate – 4th March 2015
- Tangaroa College – 5th March 2015
- Te Kura Kaupapa Maori o Mangere – 5th March 2015
- Viscount School – 5th March 2015
- Zayed College For Girls – 5th March 2015



Table 12.3 shows the results of the 23 schools surveyed in the Manukau ward.

**Table 12.3: Summary Table of School Scooter Count
2014 – 2015 (n)**

School Name	School Type	School Roll Eligible To Scooter	No. of Scooters Counted	Scooters as share of those eligible ¹⁴	
				2015	2014
Kedgley Intermediate	Intermediate	711	5	1%	1%
The Rise Up Academy	Full Primary	70	1	1%	-
Al-Madinah School	Composite	540	0	0%	0%
Aorere College	Secondary	1498	0	0%	0%
Auckland Seventh Day Adventist High School	Secondary	202	0	0%	0%
Ferguson Intermediate School	Intermediate	447	0	0%	0%
Holy Cross School (Papatoetoe)	Full Primary	154	0	0%	0%
Kia Aroha College	Intermediate/ Secondary	311	0	0%	0%
Koru School	Full Primary	545	0	0%	0%
Mangere East School	Full Primary	524	0	0%	-
Mangere Central School	Full Primary	714	0	0%	1%
McAuley High School	Secondary	775	0	0%	0
Mt Richmond School	Composite	136	0	0%	-
Otahuhu College	Secondary	1200	0	0%	0%
Pacific Christian School	Full Primary	31	0	0%	0%
Papatoetoe High School	Secondary	1550	0	0%	0%
Redoubt North School	Full Primary	700	0	0%	0%
Robertson Road School	Full Primary	531	0	0%	0%
Sir Edmund Hillary Collegiate	Composite	1200	0	0%	0%
South Auckland SDA School	Composite	292	0	0%	0%
Tangaroa College	Secondary	900	0	0%	0%
Te Kura Kaupapa Māori o Rohe o Mangere	Composite	210	0	0%	0%
Viscount School	Full Primary	640	0	0%	0%
Westmount School	Composite	176	0	0%	0%
Zayed College for Girls	Intermediate/ Secondary	108	0	0%	0%
Total		14671	6	<1%	<1%

¹⁴ This share is calculated by averaging the number of scooters counted over the total number of students eligible to scooter. The figure obtained is rounded to zero decimal places.



Table 12.4 illustrates the rates of scooting to school at different school levels. Rates of scooting to school are highest for the full primary and intermediate schools (less than 1 per cent).

**Table 12.4: Summary Table of School Scooter Count by School Type
2007 – 2015 (%)**

<i>School Type</i>	<i>Number of Schools Responded in 2015 (n)</i>	<i>Scooter riders as share of those eligible</i>		<i>Change 14-15</i>
		<i>2014</i>	<i>2015</i>	
Full Primary	6	<1%	<1%	0%
Intermediate	2	1%	<1%	<1%
Intermediate/Secondary	1	2%	0%	-2%
Composite	7	0%	0%	0%
Secondary	7	0%	0%	0%



gravitas

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 AADT¹⁵ 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)¹⁶, 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.

¹⁵ Annual average daily traffic

¹⁶ LTSA, 2004



For the Gravitas counts, the following factors apply:

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

$$D = 14$$

$$W = 0.9$$

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

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 $3.06 \times 102 = 312$.
- The AADT from the afternoon survey is estimated as $2.78 \times 130 = 359$.
- 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}		H _{Weekend}	
			Mon to Fri		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%