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Research Report Prepared for
Auckland Transport

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2015 Auckland Region Manual Cycle Monitor

- Howick Ward -

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1.1 Introduction

The Need For Reliable Cycle Trip Data

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

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

Manual Cycle Monitoring

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

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

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

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

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

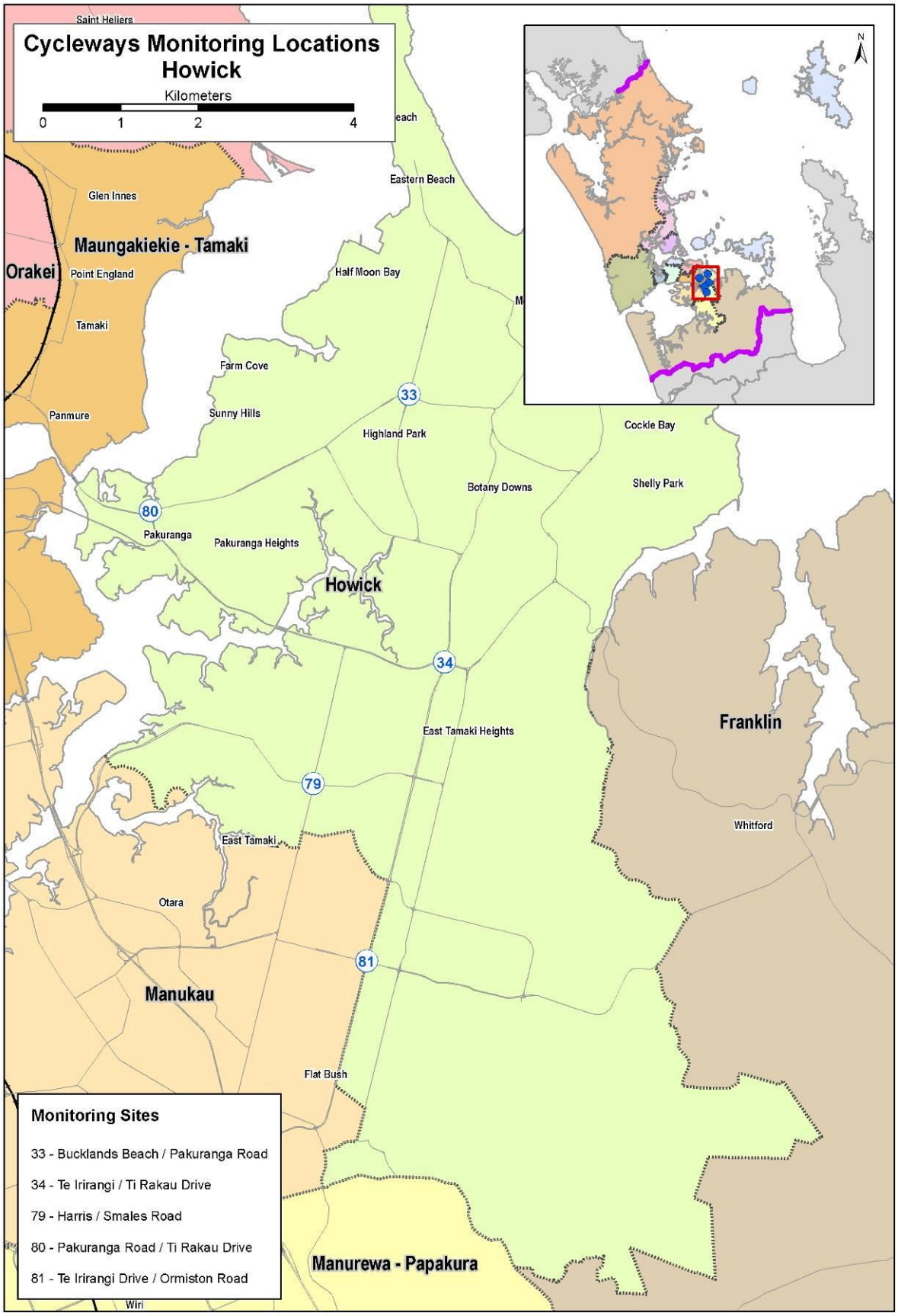
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and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

This report presents results from manual cycle counts conducted at five sites (and one ferry terminal) in the Howick 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 five pre-determined sites in the Howick 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 Howick ward. Note that one site (Te Irirangi Drive/Ormiston Road in Flat Bush – Site 81) lies on the border with the Manukau ward and consequently has been included in both ward reports.

Figure 1.1: 2015 Cycle Monitoring Locations in Howick Ward



1.2 Methodology

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

Choice of Sites

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

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

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

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

Monitoring Times

Time Of Day

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

Day Of Week

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

Time Of Year

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

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

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

Counts were conducted on the following days:

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

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

Weather and Daylight Conditions

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

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

Tuesday 3rd March

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

Wednesday 4th March

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

Thursday 5th March

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

Conducting The Manual Counts

Scoping Visit

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

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

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

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

Briefing Session

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

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

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

Conducting The Manual Counts

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

During their shift the surveyor collected data on:

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

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

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

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

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

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

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

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

Data Analysis

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

Annual Average Daily Traffic (AADT) Analysis

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

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

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

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

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

School Bike Shed Counts

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

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

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

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

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

Methodology

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

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

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

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

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

Reporting

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

Manual Counts - Site Level Reporting

The following results have been reported for each site:

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

Manual Counts - Aggregated Reporting

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

Bike Shed Counts

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

1.3 Summary of Results

This summary contains the aggregated results of the five sites surveyed in the Howick 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 Howick ward, they hide much of the specific details of cycling behaviour at individual sites. The site-specific data varies significantly from site to site, and can be found in Sections Two and Six of this report.

Note: Surveying in the Howick ward was undertaken on Wednesday 4th of March, 2014. Sunrise was at 7:09am and sunset at 7:57pm. The highest temperature was 26 degrees Celsius.

1.4 Morning Peak

Environmental Conditions

- All sites in the Howick ward experienced cloudy weather in the morning peak.
- There were no road works or accidents that may affect cycle counts in the morning.

Key Points

- Across the five sites monitored in the Howick ward, the number of cyclist movements has increased by 18 per cent (161 movements, compared with 137 in 2014).
- The average volume of morning cyclists across the five sites monitored was 32 cycle movements, up from 27 cycle movements in 2014.
- Three morning cyclists were riding as a group, which comprised 2% of the morning cycle traffic of Howick ward. There were no pelotons recorded last year.
- The busiest site in the morning peak was the intersection of Pakuranga Road/ Ti Rakau Drive (53 movements). This was also the busiest site in 2014.
- The site at Te Irirangi Drive/ Ti Rakau Drive had the lowest level of morning cyclist traffic (22 cycle movements).
- All sites except one have experienced increases over the last 12 months, with the percentage increase ranging from 8 per cent at the Bucklands Beach/Pakuranga Road intersection to 53 per cent at the Te Irirangi Drive/Ormiston Road intersection
- The site that recorded a decrease in cycle volumes from last year was the Harris/Smales Road intersection (down 27 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
33	Bucklands Beach/Pakuranga Road	68	53	51	45	43	40	26	31	**39**	**8%**	**-43%**
34	Te Irirangi Drive/Ti Rakau Drive	36	36	30	30	37	30	41	19	**22**	**16%**	**-39%**
	Average per site (for 2 sites since 2007)	**52**	**45**	**41**	**37**	**40**	**35**	**34**	**25**	**31**	**24%**	**-40%**
	Total (for 2 sites since 2007)	**104**	**89**	**81**	**75**	**80**	**70**	**67**	**50**	**61**	**22%**	**41%**
80	Pakuranga Road/Ti Rakau Drive	-	-	46	70	59	51	55	39	**53**	**36%**	**-**
79	Harris/Smales Road	-	-	35	25	35	20	27	33	**24**	**-27%**	**-**
81	Te Irirangi Drive/Ormiston Road	-	-	13	25	24	18	31	15	**23**	**53%**	**-**
	Average per site (all sites)	**-**	**-**	***35***	***39***	***40***	***32***	***36***	***27***	***32***	**19%**	**-**
	Total (all sites)	**-**	**-**	**175**	**195**	**198**	**159**	**180**	**137**	**161**	**18%**	**-**

- The majority of morning cyclists were adults (84 per cent, stable from 87 per cent last year).
- Helmet wearing continued to be widespread (91 per cent, stable 88 per cent from last year).
- Eighty-nine per cent of the morning cyclists were males (stable from 88 per cent in the previous measure).
- The share of cyclists using the road was 60 per cent, while the remaining 40 per cent rode on the footpath.

Table 1.2: Summary of Morning Cyclist Characteristics

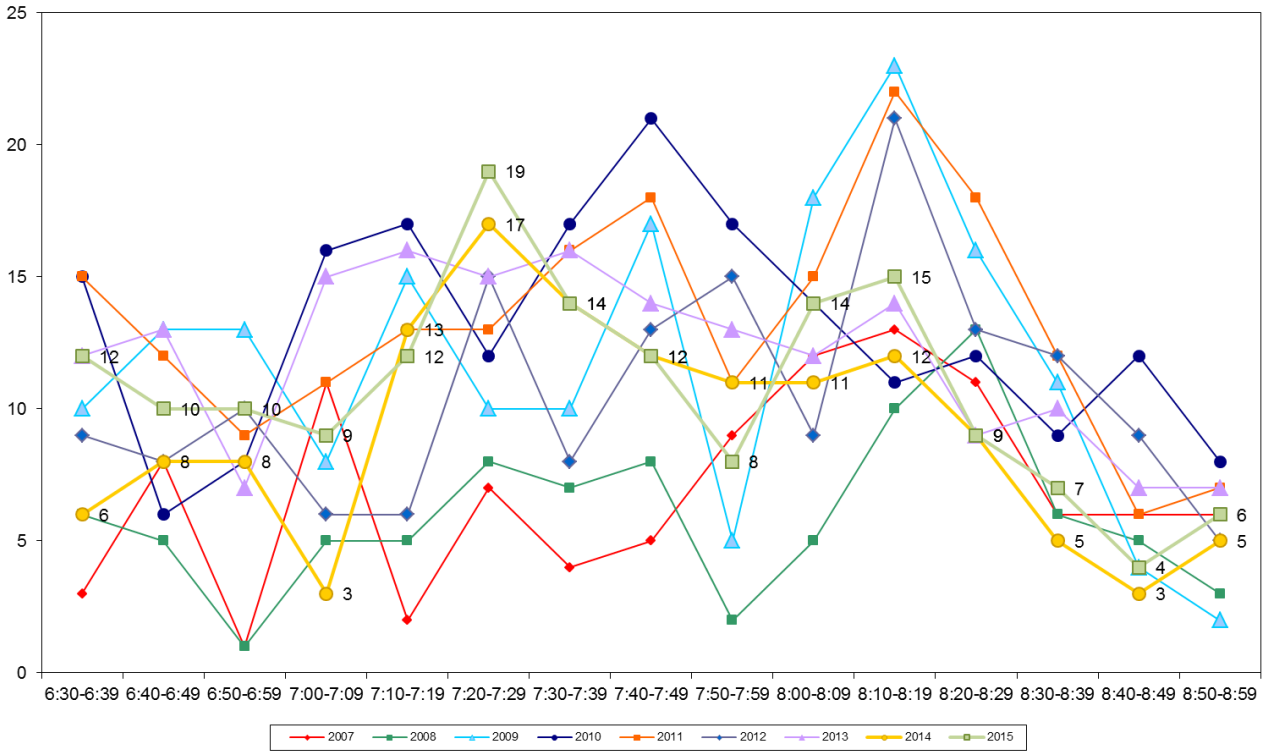
2007 – 2014 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	2015	Change 13-14
Cyclist Type										
Adult	62	73	76	85	84	81	92	87	**84**	**-3**
School child	38	27	24	15	16	19	8	13	**16**	**3**
Helmet Wearing										
Helmet on head	80	92	90	93	95	90	91	88	**91**	**3**
No helmet	20	8	10	7	5	10	9	12	**9**	**-3**
Gender										
Male	-	-	-	-	89	88	81	88	**89**	**1**
Female	-	-	-	-	7	8	11	8	**11**	**3**
Can't tell	-	-	-	-	4	4	8	4	**0**	**-4**
Where Riding										
Road	42	65	58	68	63	58	69	57	**60**	**3**
Footpath	58	35	42	32	37	42	31	43	**40**	**-3**
Base:	***104***	***89***	***175***	***195***	***198***	***159***	***180***	***137***	***161***	

- Figure 1.2 illustrates the total number of cycle movements in the morning peak by time of movement. In general, cycle traffic had a similar pattern to last year's, but with the second peak being more distinctive this year. Cycle movements first peaked between 7:20am and 7:29am with a count of 19, then dropped down a little before increasing to a total of 29 movements between 8:00am to 8:19am. From there, cycle volume decreased until the end of the monitoring period.

Figure 1.2: Total Cyclist Frequency – Morning Peak

2007 – 2015 (n)



1.5 Evening Peak

Environmental Conditions

- All sites had overcast and windy weather in the evening peak. A few sites also experienced light drizzle towards the end of the shift.
- There were no road works or accidents that may affect cycle counts at all sites.

Key Points

- Across the five sites monitored in the Howick ward, the number of evening cycle movements has decreased by 34 per cent, from 251 movements in 2014 to 166 movements this year.
- No pelotons were seen during the evening shift this year. In 2014, 24 movements (accounting for 10 per cent of the evening cycle traffic in Howick ward) were made by pelotons
- The average volume of evening cyclists across all five sites was 33, down from 50 movements last year.
- The Pakuranga Road/Ti Rakau Drive intersection continues to be the busiest in terms of the evening cyclists' activity (51 cycle movements, down 35 per cent from last year). The intersection of Te Irirangi Drive/Ormiston Road has the lowest level of evening cyclist traffic (22 cycle movements, down from 46 movements last year).
- All sites recorded decreases in cycle movements since 2014. The most notable was at the Te Irirangi Drive/Ormiston Road intersection, which was down 52 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
33	Bucklands Beach/Pakuranga Road	72	77	43	69	64	45	45	59	**38**	**-36%**	**-47%**
34	Te Irirangi Drive/Ti Rakau Drive	45	39	29	48	39	56	66	36	**30**	**-17%**	**-33%**
	Average per site (for 2 sites since 2007)	**59**	**58**	**36**	**59**	**52**	**51**	**56**	**48**	**34**	**-29%**	**-42%**
	Total (for 2 sites since 2007)	**117**	**116**	**72**	**117**	**103**	**101**	**111**	**95**	**68**	**-28%**	**-42%**
80	Pakuranga Road/Ti Rakau Drive	-	-	77	92	65	76	79	79	**51**	**-35%**	-
79	Harris/Smales Road	-	-	25	37	40	24	30	31	**25**	**-19%**	-
81	Te Irirangi Drive/Ormiston Road	-	-	20	41	32	32	54	46	**22**	**-52%**	-
	Average per site (all sites)	**-**	**-**	***39***	***57***	***48***	***47***	***55***	***50***	***33***	**-34%**	-
	Total (all sites)	**-**	**-**	**194**	**287**	**240**	**233**	**274**	**251**	**166**	**-34%**	-

- Evening cyclist characteristics this year showed that the majority of evening cyclists in this ward were adults (90 per cent, up from 83 per cent last year).
- Eighty-nine per cent of the cyclists were wearing a helmet (unchanged since the previous measure).
- Most evening peak cyclists were male (88 per cent, up slightly from 83 per cent last year).
- Riding on the road continued to be the most common (63 per cent) although the share has declined 7 percentage points from last year.

Table 1.4: Summary of Evening Cyclist Characteristics

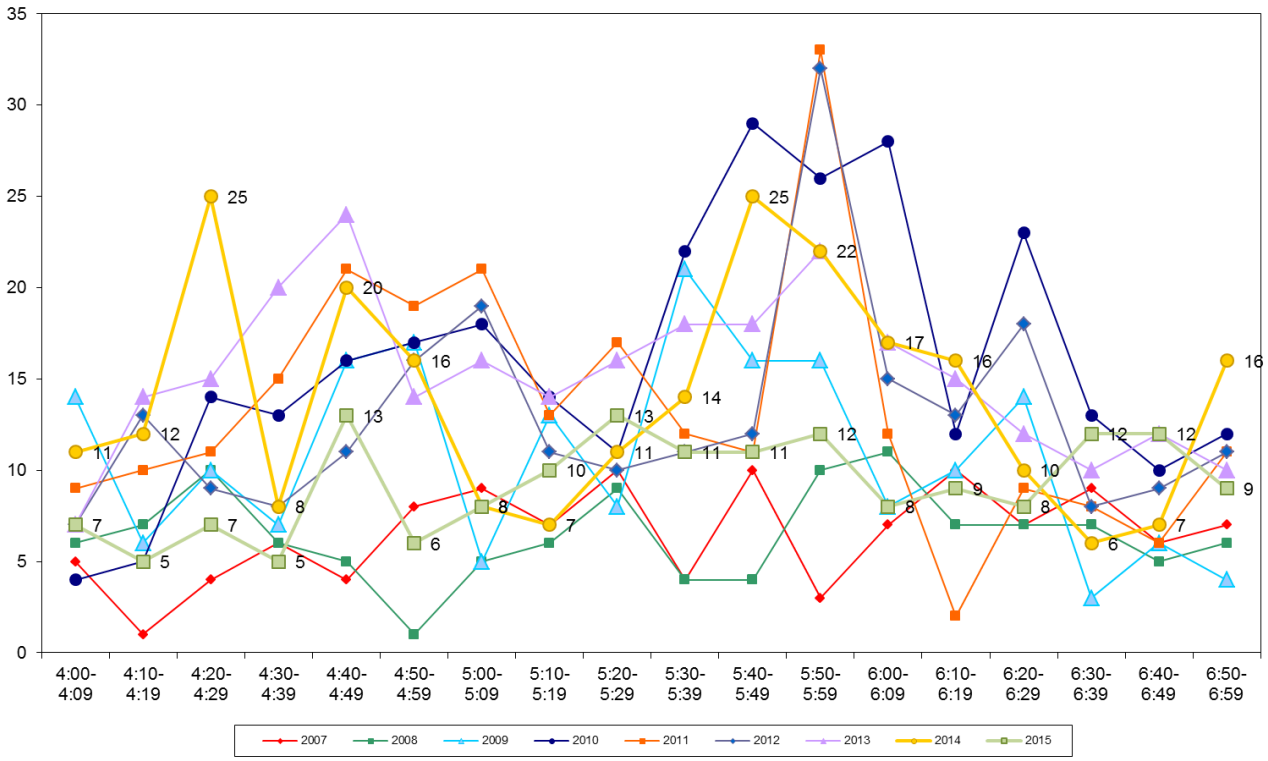
2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	84	75	93	85	89	95	92	83	**90**	**7**
School child	16	25	7	15	11	5	8	17	**10**	**-7**
Helmet Wearing										
Helmet on head	75	79	89	90	89	92	93	89	**89**	**0**
No helmet	25	21	11	10	11	8	7	10	**11**	**1**
Can't tell	-	-	-	-	-	-	0	1	**0**	**-1**
Gender										
Male	-	-	-	-	90	86	85	83	**88**	**5**
Female	-	-	-	-	5	8	8	12	**11**	**-1**
Can't tell	-	-	-	-	5	6	7	5	**1**	**-4**
Where Riding										
Road	46	54	65	72	65	64	71	70	**63**	**-7**
Footpath	54	46	35	28	35	36	29	30	**37**	**7**
Base:	***117***	***116***	***194***	***287***	***240***	***233***	***274***	***251***	***166***	

- The overall pattern of cyclist volumes by time of movement in the evening is illustrated in Figure 1.3. Unlike last year, no sharp peaks were observed and there were less fluctuations in the evening cycle volume. There were no more than 13 cycle counts per 10-minute interval throughout the shift.

Figure 1.3: Total Cyclist Frequency – Evening Peak

2007 – 2015 (n)



1.6 Aggregate Total

- A total of 327 cyclist movements were recorded across the five sites in 2015. This result is down from 388 movements in 2014, a 16 per cent decrease.
- One per cent (n=3) of the total movements were made by pelotons. This compares with six per cent (n=24) in 2014.
- The average number of movements per site was down from 78 last year to 65 this year.
- Consistent with previous years, the busiest site was the intersection of Pakuranga Road/ Ti Rakau Drive, with a total of 104 movements (down from 118 movements in 2014).
- Te Irirangi Drive/Ormiston Road had the lowest number of cyclists (45 movements, down from 61 movements last year)
- All five sites of Howick ward registered decreases in total cycle counts, with the most notable declines being the Te Irirangi Drive/Ormiston Road intersection (down 26 per cent) and Harris/Smales Road intersection (down 23 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
33	Bucklands Beach/Pakuranga Road	140	130	94	114	107	85	71	90	**77**	**-14%**	**-45%**
34	Te Irirangi Drive/Ti Rakau Drive	81	75	59	78	76	86	107	55	**52**	**-5%**	**-36%**
	Average per site (for 2 sites since 2007)	**111**	**103**	**77**	**96**	**92**	**86**	**89**	**73**	**65**	**-11%**	**-41%**
	Total (for 2 sites since 2007)	**221**	**205**	**153**	**192**	**183**	**171**	**178**	**145**	**129**	**-11%**	**-42%**
80	Pakuranga Road/Ti Rakau Drive	-	-	123	162	124	127	134	118	**104**	**-12%**	**-**
79	Harris/Smales Road	-	-	60	62	75	44	57	64	**49**	**-23%**	**-**
81	Te Irirangi Drive/Ormiston Road	-	-	33	66	56	50	85	61	**45**	**-26%**	**-**
	Average per site (all sites)	-	-	***74***	***96***	***88***	***78***	***91***	***78***	***65***	**-17%**	**-**
	Total (all sites)	**-**	**-**	**369**	**482**	**438**	**392**	**454**	**388**	**327**	**-16%**	**-**

- Overall cyclist characteristics are illustrated in Table 1.6. In total, 87 per cent of cyclists were adults (stable from 85 per cent last year). The share of school-aged cyclists was 13 per cent (also stable from 15 per cent last year)).
- Ninety per cent of the cyclists were wearing a helmet (stable from last year).
- Almost all cyclists were male (88 per cent, stable from last year).
- Sixty-two per cent of cyclists were riding on the road (stable from last year).

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	74	74	85	85	86	89	92	85	**87**	**2**
School child	26	26	15	15	14	11	8	15	**13**	**-2**
Helmet Wearing										
Helmet on head	77	85	89	91	91	91	92	88	**90**	**2**
No helmet	23	15	11	9	9	9	8	11	**10**	**-1**
Can't tell	-	-	-	-	-	-	0	1	**0**	**-1**
Gender										
Male	-	-	-	-	89	87	83	85	**88**	**3**
Female	-	-	-	-	6	8	9	10	**11**	**1**
Can't tell	-	-	-	-	5	5	8	5	**1**	**-4**
Where Riding										
Road	44	59	62	70	64	61	70	65	**62**	**-3**
Footpath	56	41	38	30	36	39	30	35	**38**	**3**
Base:	***221***	***205***	***369***	***482***	***438***	***392***	***454***	***388***	***327***	

1.7 Average Annual Daily Traffic (AADT) Estimate

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

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 was at the Pakuranga Road/Ti Rakau Drive intersection (151 daily movements) and the lowest is at the Te Irirangi Drive/Ormiston Road intersection (65 daily movements).
- All five sites in Howick ward have recorded decreases in cycle traffic, most notable at the Te Irirangi Drive/Ormiston Road intersection (a 24 per cent decrease) and at the Harris/Smales Road intersection (a 23 per cent decrease).

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
80	Pakuranga Road/Ti Rakau Drive	-	-	176	234	180	183	193	168	**151**	**-10%**	**-**
33	Bucklands Beach/Pakuranga Road	203	187	137	164	154	123	102	129	**112**	**-13%**	**-45%**
34	Te Irirangi Drive/Ti Rakau Drive	117	109	86	112	110	123	154	79	**75**	**-5%**	**-36%**
79	Harris/Smales Road	-	-	88	89	109	64	83	93	**71**	**-23%**	**-**
81	Te Irirangi Drive/Ormiston Road	-	-	47	95	81	72	122	86	**65**	**-24%**	**-**

1.8 Ferry Wharf Bike Count Summary

Key Points

- In the morning, no cycles were observed at the Half Moon Bay Ferry Wharf at 6:10am and two were observed at 9:10am. This suggests two passengers rode to the ferry and parked their cycles in the morning peak.
- In the afternoon, three cycles were recorded at the Half Moon Bay Ferry Wharf at 3:30pm and none were observed at 7:10pm. This suggests three ferry passengers collected their bikes after disembarking and cycled home in the evening peak.

1.9 School Bike Shed Count Summary

Cycle Counts

- Among the surveyed schools, of those eligible to cycle to school, on average, one per cent of students are cycling to their schools, unchanged from 2011.
- In total, n=109 students from the responding schools were reported to be cycling to school.
- Of the 9 schools that responded, 1 (11 per cent) had no students cycling to school.
- Of the 8 schools that participated in the count in both 2014 and 2015, 2 (25 per cent) reported an increase in the share of students cycling. Two (25 per cent) reported a decrease in the share of students cycling.

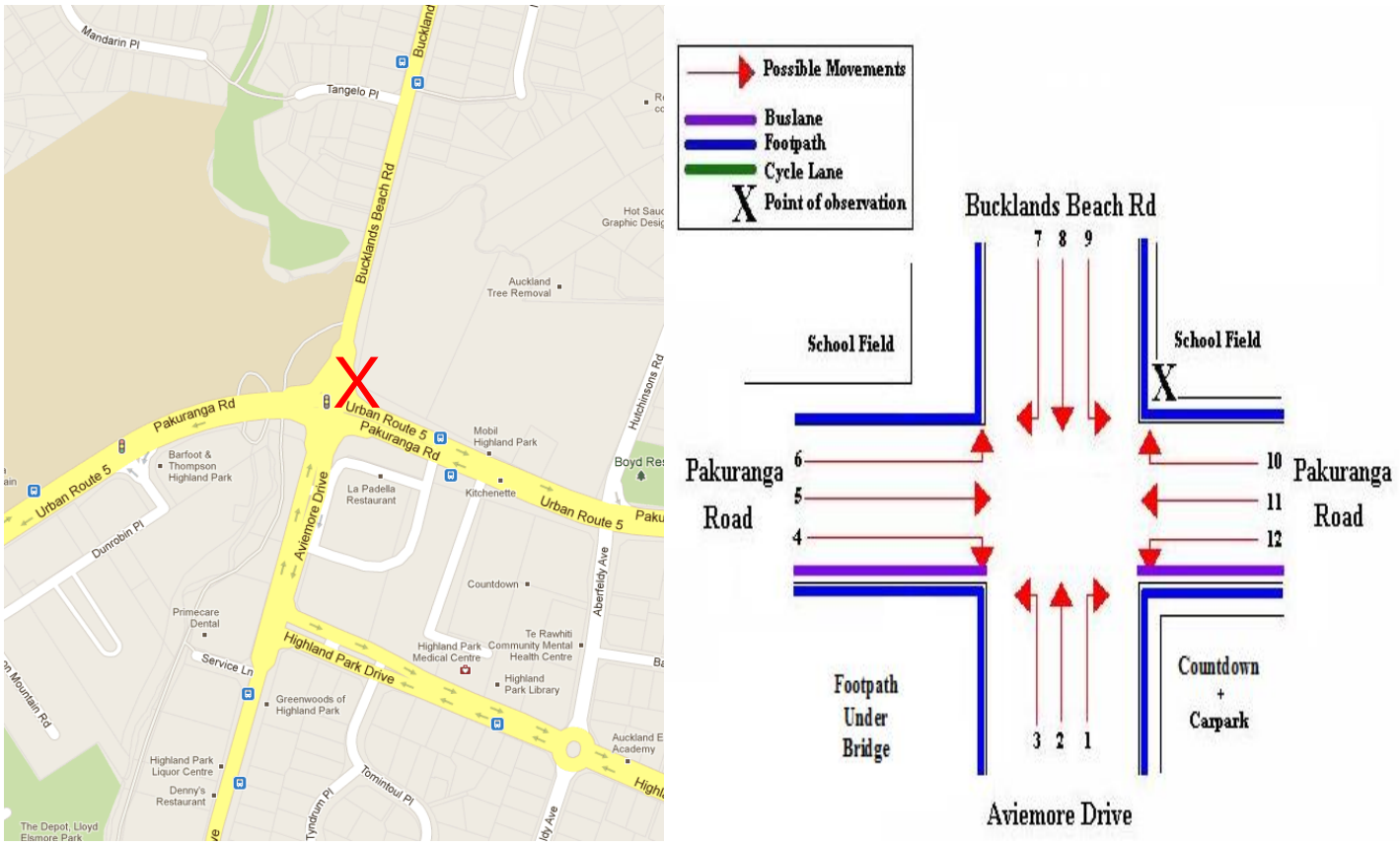
Scooter Counts

- Among the surveyed schools, Elim Christian Charter/College reported the highest share of scooters – 8 per cent of all eligible students currently scooting to school.
- In total, n=132 students from the responding schools were reported to be scooting to school.
- Of the 8 schools that responded, 5 (63 per cent) had no students scooting to school.
- Among the surveyed schools, of those eligible to scooter, on average 2 per cent of students were scooting to school. The compares with less than 1 per cent last year.

2. BUCKLANDS BEACH ROAD/PAKURANGA ROAD, PAKURANGA (SITE 33)

Figure 2.1 shows the possible cyclist movements at this intersection.

Figure 2.1: Cycle Movements: Bucklands Beach/Pakuranga Road



2.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	68	72	140	203
2008	53	77	130	187
2009	51	43	94	137
2010	45	69	114	164
2011	43	64	107	154
2012	40	45	85	123
2013	26	45	71	102
2014	31	59	90	129
2015	**39**	**38**	**77**	**112**

2.2 Morning Peak

Environmental Conditions

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

Key Points

- A total of 39 cyclist movements were recorded during the morning peak, eight more than last year.
- The most common morning movement, and notable increase from 2014, was cyclists traveling straight from Aviemore Drive to Bucklands Beach Road (Movement 2 = 10 movements, up 8 movements from last year).
- The most notable decrease was Movement 7 – right-hand turn from Bucklands Beach Road into Pakuranga Road (down 5 movements).

Table 2.1: Morning Cyclist Movements

Bucklands Beach/Pakuranga Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	0	0	0	1	0	0	0	**0**	**0**
2	7	6	3	3	3	0	5	2	**10**	**8**
3	15	8	12	6	4	9	3	5	**3**	**-2**
4	1	0	2	4	1	0	3	1	**2**	**1**
5	3	3	6	7	2	1	2	0	**1**	**1**
6	2	3	2	2	2	1	0	1	**2**	**1**
7	5	3	2	4	6	5	1	6	**1**	**-5**
8	5	8	9	3	8	7	4	4	**6**	**2**
9	5	3	1	2	1	4	4	0	**2**	**2**
10	2	2	0	4	2	1	1	1	**4**	**3**
11	22	16	14	9	13	12	3	11	**8**	**-3**
12	1	1	0	1	0	0	0	0	**0**	**0**
Total	**68**	**53**	**51**	**45**	**43**	**40**	**26**	**31**	**39**	**8**

- Over half of the morning cyclists at this site were adults (59 per cent, up 7 percentage points from last year). The remaining 41 per cent of cyclists were recorded as school-aged children.
- The majority of the cyclists were wearing a helmet (90 per cent, up from 84 per cent in the previous year).
- The majority of the cyclists were male (95 per cent, up from 80 per cent last year).
- The share of cyclists riding on the road has increased by 12 percentage points to 44 per cent this year.

Table 2.2: Morning Cyclist Characteristics

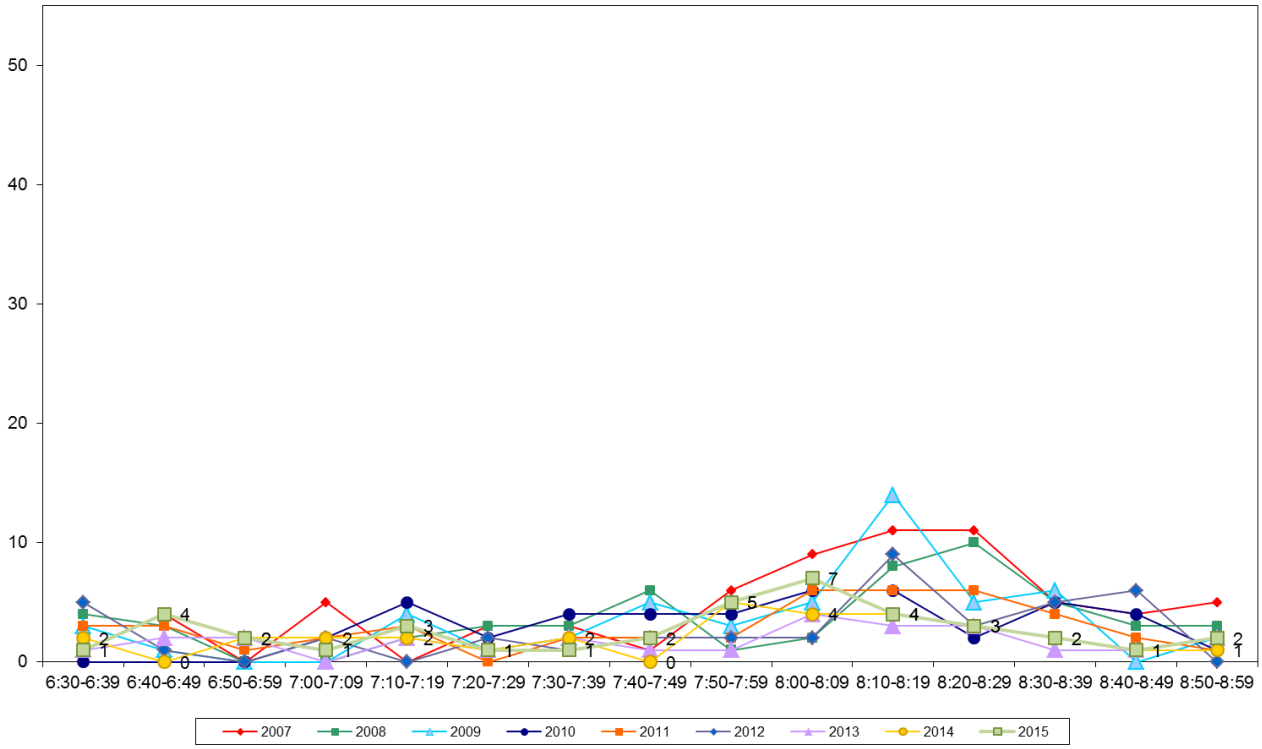
Bucklands Beach/Pakuranga Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	43	58	45	62	60	48	81	52	**59**	**7**
School child	57	42	55	38	40	52	19	48	**41**	**-7**
Helmet Wearing										
Helmet on head	75	91	90	87	88	85	85	84	**90**	**6**
No helmet	25	9	10	13	12	15	15	16	**10**	**-6**
Gender										
Male	-	-	-	-	86	95	81	80	**95**	**15**
Female	-	-	-	-	5	0	15	10	**5**	**-5**
Can't tell	-	-	-	-	9	5	4	10	**0**	**-10**
Where Riding										
Road	24	47	39	36	44	33	38	32	**44**	**12**
Footpath	76	53	61	64	56	67	62	68	**56**	**-12**
Base:	***68***	***53***	***51***	***45***	***43***	***40***	***26***	***31***	***39***	

- The volume of morning cyclist movements was very low at the start of the shift and slowly increased to a small peak of seven cycle movements between 8:00am and 8:09am. From there, cycle counts decrease**.**

Figure 2.2: Morning Peak Cyclist Frequency

Bucklands Beach/Pakuranga Road 2007 – 2015 (n)



2.3 Evening Peak

Environmental Conditions

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

Key Points

- A total of 38 cycle movements were recorded at this site in the evening, 21 less than last year.
- The most common movement in the evening was traveling straight from Bucklands Beach Road to Aviemore Drive (Movement 8 = 11 movements).
- Across the 12 movements possible at this intersection, the most notable change has been at Movement 7 – riding from Bucklands Beach Road turning right onto Pakuranga Road (down 9 movements from last year).

Table 2.3: Evening Cyclist Movements

Bucklands Beach/Pakuranga Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	1	0	0	0	1	0	1	**1**	**0**
2	4	7	11	9	10	5	5	3	**7**	**4**
3	4	8	2	1	3	3	4	3	**1**	**-2**
4	11	10	4	6	1	4	6	5	**2**	**-3**
5	10	9	7	11	14	4	8	12	**7**	**-5**
6	7	6	2	7	2	4	4	5	**4**	**-1**
7	11	9	5	2	3	5	4	10	**1**	**-9**
8	7	7	6	12	14	11	4	9	**11**	**2**
9	4	4	1	6	7	2	2	1	**0**	**-1**
10	4	8	0	0	5	1	2	0	**1**	**1**
11	10	6	4	14	4	5	6	8	**2**	**-6**
12	0	2	1	1	1	0	0	0	**1**	**1**
Don't know	0	0	0	0	0	0	0	2	**0**	**-2**
Total	**72**	**77**	**43**	**69**	**64**	**45**	**45**	**59**	**38**	**-21**

- About four in five cyclists in the evening were adults (82 per cent, compared with 78 per cent 12 months ago).
- The majority of the cyclists at this site were wearing a helmet (95 per cent, up from 88 per cent last year).
- Ninety-five per cent of cyclists were male (95 per cent, up 10 percentage points from last year).
- Compared with 2014, the share of cyclists riding on the road has increased by 13 percentage points to 71 per cent this year.

Table 2.4: Evening Cyclist Characteristics

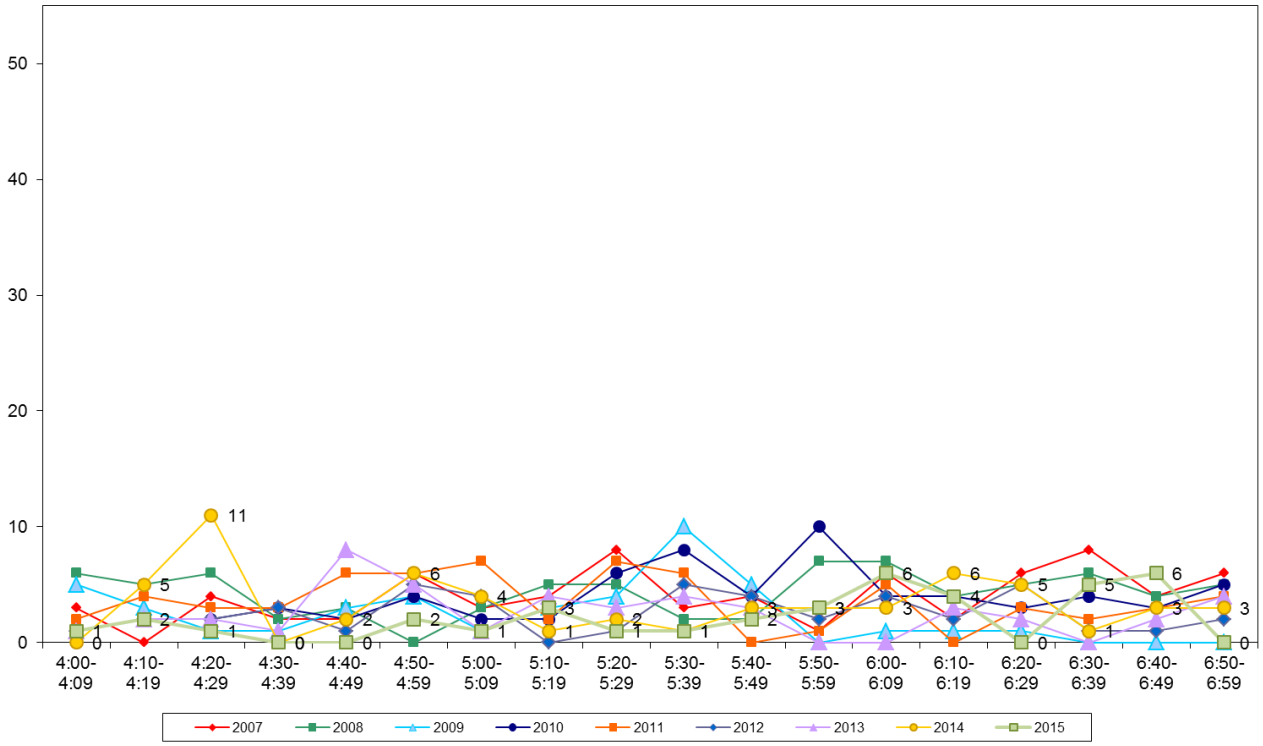
Bucklands Beach/Pakuranga Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	76	65	91	70	75	87	64	78	**82**	**4**
School child	24	35	9	30	25	13	36	22	**18**	**-4**
Helmet Wearing										
Helmet on head	68	77	86	81	83	89	87	88	**95**	**7**
No helmet	32	23	14	19	17	11	13	12	**5**	**-7**
Gender										
Male	-	-	-	-	88	89	84	85	**95**	**10**
Female	-	-	-	-	3	9	16	12	**5**	**-7**
Can't tell	-	-	-	-	9	2	0	3	**0**	**-3**
Where Riding										
Road	38	44	53	64	58	58	39	58	**71**	**13**
Footpath	62	56	47	36	42	42	61	42	**29**	**-13**
Base:	***72***	***77***	***43***	***69***	***64***	***45***	***45***	***59***	***38***	

- This year, cycle traffic remained very low in the first half of the monitoring period but became heavier in the second half. Two small peaks occurred - between 6:00pm – 6:09pm and between 6:40pm – 6:49pm (6 movements in each of the 10-minute intervals).

Figure 2.3: Evening Peak Cyclist Frequency

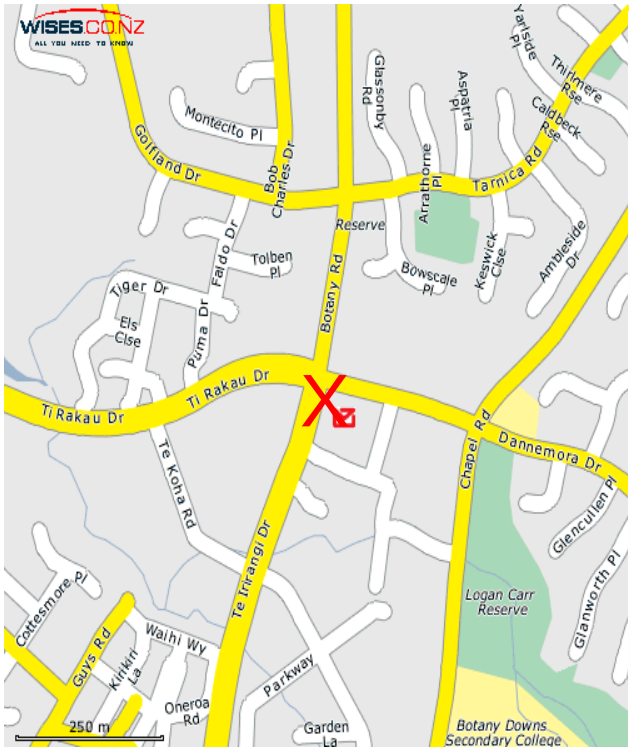
Bucklands Beach/Pakuranga Road 2007 – 2015 (n)

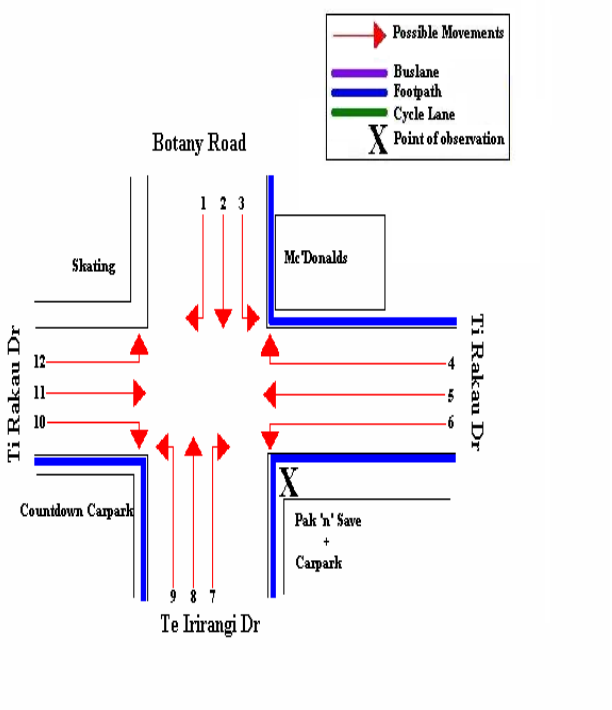


3. TE IRIRANGI DRIVE/TI RAKAU DRIVE, BOTANY DOWNS (SITE 34)

Figure 3.1 shows the possible cyclist movements at this intersection.

Figure 3.1: Cycle Movements: Te Irirangi /Ti Rakau Drive





3.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	36	45	81	117
2008	36	39	75	109
2009	30	29	59	86
2010	30	48	78	112
2011	37	39	76	110
2012	30	56	86	123
2013	41	66	107	154
2014	19	36	55	79
2015	**22**	**30**	**52**	**75**

3.2 Morning Peak

Environmental Conditions

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

Key Points

- The number of cyclist movements recorded at the Te Irirangi/Ti Rakau Drive intersection has increased slightly, from 19 movements in 2014 to 22 movements in 2015.
- The key movement in the morning has continued to be straight along Botany Road into Te Irirangi Drive (Movement 2 = 10 movements).
- The most notable change occurred at Movement 7, right-hand turn from Te Irirangi Drive to Ti Rakau Drive (from 0 cycle counts last year to 4 counts this year).

Table 3.1: Morning Cyclist Movements

Te Irirangi /Ti Rakau Drive 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	13	10	6	4	7	9	9	5	**4**	**-1**
2	8	12	13	12	14	11	13	10	**10**	**0**
3	1	0	2	1	0	2	3	0	**2**	**2**
4	0	0	0	0	1	0	2	0	**1**	**1**
5	6	6	4	4	4	1	3	1	**1**	**0**
6	1	0	0	0	2	1	0	0	**0**	**0**
7	1	0	0	1	1	0	0	0	**4**	**4**
8	4	3	2	1	3	2	1	0	**0**	**0**
9	1	1	0	0	1	2	0	0	**0**	**0**
10	1	1	0	5	2	0	3	0	**0**	**0**
11	0	2	3	1	1	2	6	2	**0**	**-2**
12	0	1	0	1	1	0	1	1	**0**	**-1**
Total	**36**	**36**	**30**	**30**	**37**	**30**	**41**	**19**	**22**	**3**

- Over the morning peak, most cyclists were adults (82 per cent, stable from the previous measure of 84 per cent).
- All cyclists were wearing a helmet (100 per cent, up from 95 per cent last year).
- Almost all cyclists were male (91 per cent, stable from 90 per cent last year).
- The share of cyclists riding on the road is stable from the previous measure (58 per cent in 2014 and 59 per cent in this year).

Table 3.2: Morning Cyclist Characteristics

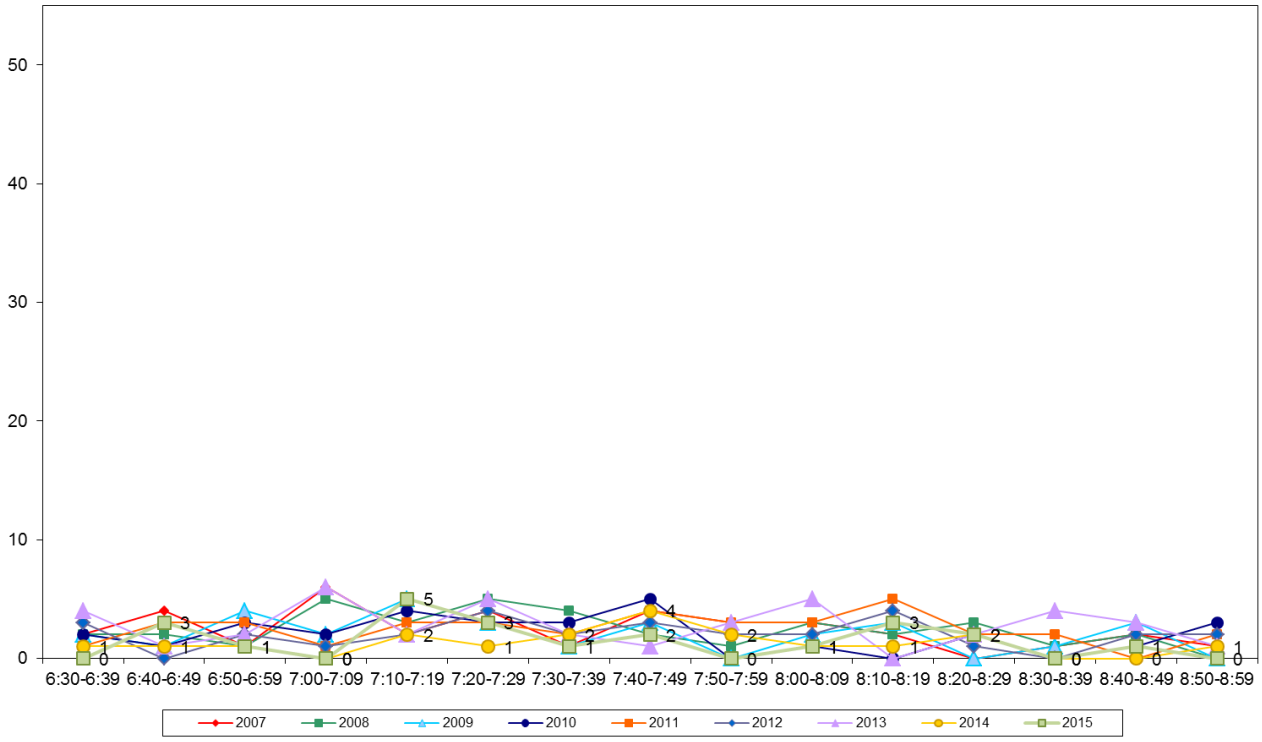
Te Irirangi /Ti Rakau Drive 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	97	94	93	87	89	87	88	84	**82**	**-2**
School child	3	6	7	13	11	13	12	16	**18**	**2**
Helmet Wearing										
Helmet on head	89	94	90	100	97	97	93	95	**100**	**5**
No helmet	11	6	10	0	3	3	7	5	**0**	**-5**
Gender										
Male	-	-	-	-	86	67	71	90	**91**	**1**
Female	-	-	-	-	14	20	12	5	**9**	**4**
Can't tell	-	-	-	-	0	13	17	5	**0**	**-5**
Where Riding										
Road	58	75	70	83	68	63	76	58	**59**	**1**
Footpath	42	25	30	17	32	37	24	42	**41**	**-1**
Base:	***36***	***36***	***30***	***30***	***37***	***30***	***41***	***19***	***22***	

- Morning cycle volume was low throughout the monitoring period. The greatest number of cycle movements occurred between 7:10am and 7:19am (5 movements).

Figure 3.2: Morning Peak Cyclist Frequency

Te Irirangi /Ti Rakau Drive 2007 – 2015 (n)



Note: In 2015, a group of three cyclists rode past this site together at 7:14am (14% of the site's morning cycle volume).

3.3 Evening Peak

Environmental Conditions

- The weather was sunny at the start of the shift but became overcast with moderate winds as the evening progressed.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The total number of evening cyclist movements observed at the Te Irirangi/Ti Rakau Drive intersection has decreased from 36 movements in 2014 to 30 movements this year.
- The most common evening movement was travelling straight from Te Irirangi Drive onto Botany Road (Movement 8 = 12 movements).
- Movement 6 (turning left from Ti Rakau Drive onto Te Irirangi Drive) experienced the greatest change in cyclist volume when compared to last year's counts, decreasing by 12 movements.

Table 3.3: Evening Cyclist Movements

Te Irirangi /Ti Rakau Drive 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	3	1	0	9	2	2	1	0	0	**0**
2	11	3	4	2	5	6	12	5	7	**2**
3	3	0	0	1	4	3	3	1	2	**1**
4	5	1	0	2	0	4	5	0	1	**1**
5	0	4	7	5	6	2	1	2	2	**0**
6	0	0	0	0	0	0	14	12	0	**-12**
7	1	2	0	2	6	3	2	1	0	**-1**
8	11	16	5	6	1	15	17	8	12	**4**
9	0	0	0	1	0	3	1	0	0	**0**
10	4	0	6	3	2	4	4	0	1	**1**
11	3	7	5	10	12	2	2	3	3	**0**
12	4	5	2	7	1	12	4	4	2	**-2**
Total	**45**	**39**	**29**	**48**	**39**	**56**	**66**	**36**	**30**	**-6**

- The share of school-aged cyclists using this intersection during the evening period has increased by 10 percentage points over the last 12 months (0 per cent in 2014, 10 per cent in 2015).
- Almost all cyclists at this site were wearing a helmet (97 per cent, stable from 94 per cent last year).
- The share of female cyclists has increased from 6 per cent last year to 17 per cent this year.
- The majority of the cyclists were riding on the road (67 per cent, stable from 2014).

Table 3.4: Evening Cyclist Characteristics

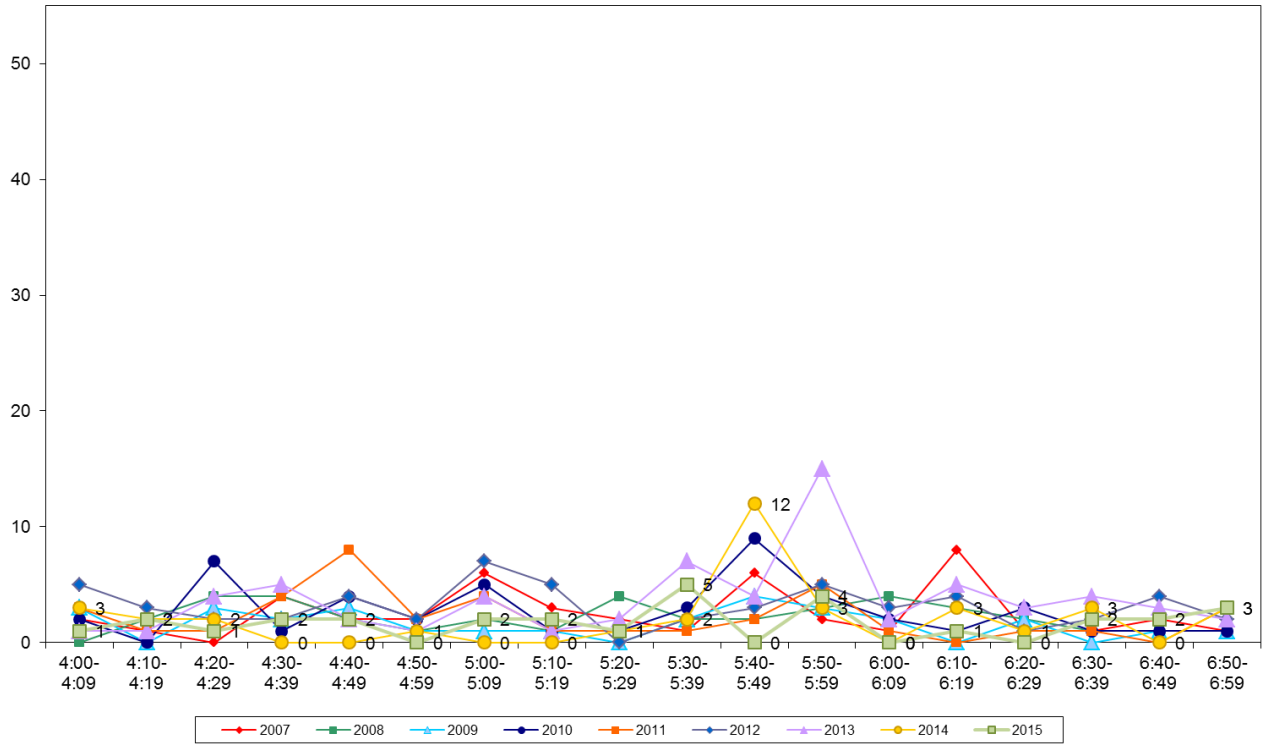
Te Irirangi /Ti Rakau Drive 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	98	95	90	81	95	98	100	100	**90**	**-10**
School child	2	5	10	19	5	2	0	0	**10**	**10**
Helmet Wearing										
Helmet on head	87	82	97	94	97	98	98	94	**97**	**3**
No helmet	13	18	3	6	3	2	2	6	**3**	**-3**
Gender										
Male	-	-	-	-	92	68	68	88	**83**	**-5**
Female	-	-	-	-	8	11	6	6	**17**	**11**
Can't tell	-	-	-	-	0	21	26	6	**0**	**-6**
Where Riding										
Road	58	59	59	69	69	66	88	69	**67**	**-2**
Footpath	42	41	41	31	31	34	12	31	**33**	**2**
Base:	***45***	***39***	***29***	***48***	***39***	***56***	***66***	***36***	***30***	

- The volume of cyclist movements in the evening was generally low throughout the entire monitoring period. A small peak occurred at 5:30pm-5:39pm where 5 movements were recorded. Four movements where recorded soon after at 5:50pm-5:59pm.

Figure 3.3: Evening Peak Cyclist Frequency

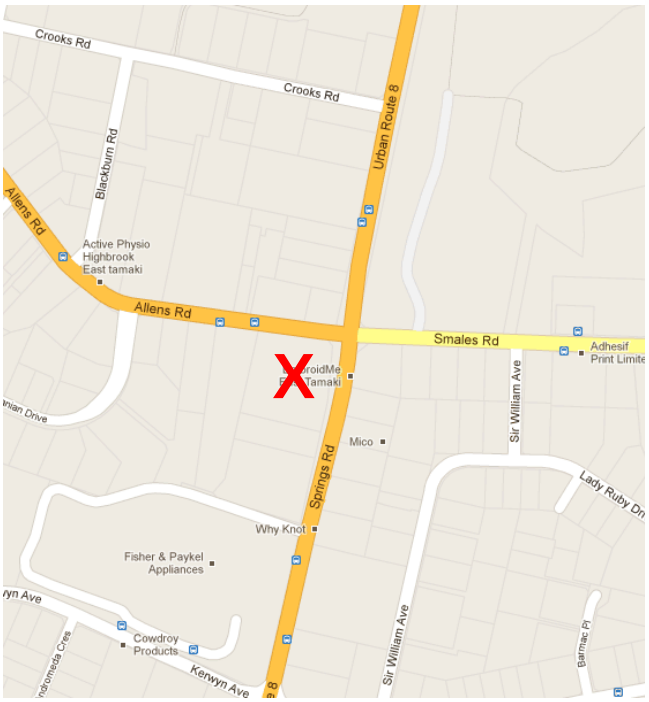
Te Irirangi/Ti Rakau Drive 2007 – 2015 (n)

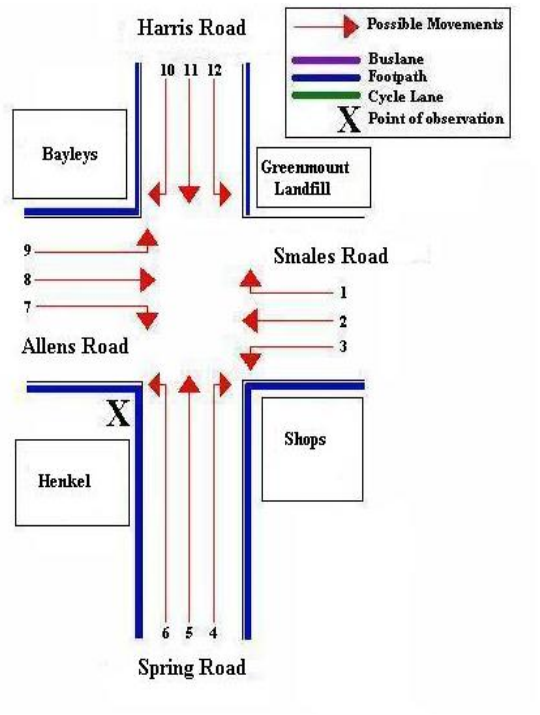


4. HARRIS/SMALES ROAD, EAST TAMAKI (SITE 79)

Figure 4.1 shows the possible cyclist movements at this intersection.

Figure 4.1: Cycle Movements: Harris/Smales Road





4.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2009	35	25	60	88
2010	25	37	62	89
2011	35	40	75	109
2012	20	24	44	64
2013	27	30	57	83
2014	33	31	64	93
2015	**24**	**25**	**49**	**71**

4.2 Morning Peak

Environmental Conditions

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

Key Points

- Cycle volumes at the Harris Road/Smales Road site over the morning monitoring period have decreased from last year (33 counts in 2014 to 24 counts in 2015).
- The key movement in the morning is consistent with 2014 heading west on Smales Road straight to Allens Road (Movement 2 = 9 movements).
- The most notable change in cycle traffic occurred at Movement 7 – turning right from Allens Road onto Spring Road, down 5 movements).

Table 4.1: Morning Cyclist Movements

Harris/Smales Road 2009 – 2015 (n)

Movement	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	2	0	0	1	1	5	**1**	**-4**
2	8	5	7	5	8	7	**9**	**2**
3	3	2	4	2	2	4	**2**	**-2**
4	1	0	0	0	0	0	**1**	**1**
5	9	2	3	3	1	3	**1**	**-2**
6	1	3	5	1	1	2	**1**	**-1**
7	0	2	2	0	1	6	**1**	**-5**
8	0	0	0	0	4	0	**1**	**1**
9	2	1	1	0	0	0	**1**	**1**
10	2	2	4	1	1	0	**1**	**1**
11	4	6	5	4	7	6	**2**	**-4**
12	3	2	4	3	1	0	**3**	**3**
Total	**35**	**25**	**35**	**20**	**27**	**33**	**24**	**-9**

- Over the morning peak, all cyclists riding through the Harris/Smales Road intersection were adults (unchanged since 2010).
- Seventy-one per cent of the cyclists were wearing a helmet, down 14 percentage points from 85 per cent last year.
- Almost all cyclists were male (92 per cent, stable from last year).
- Over half of the cyclists at this site were recorded as riding on the road (58 per cent, up 10 percentage points from 2014).

Table 4.2: Morning Cyclist Characteristics

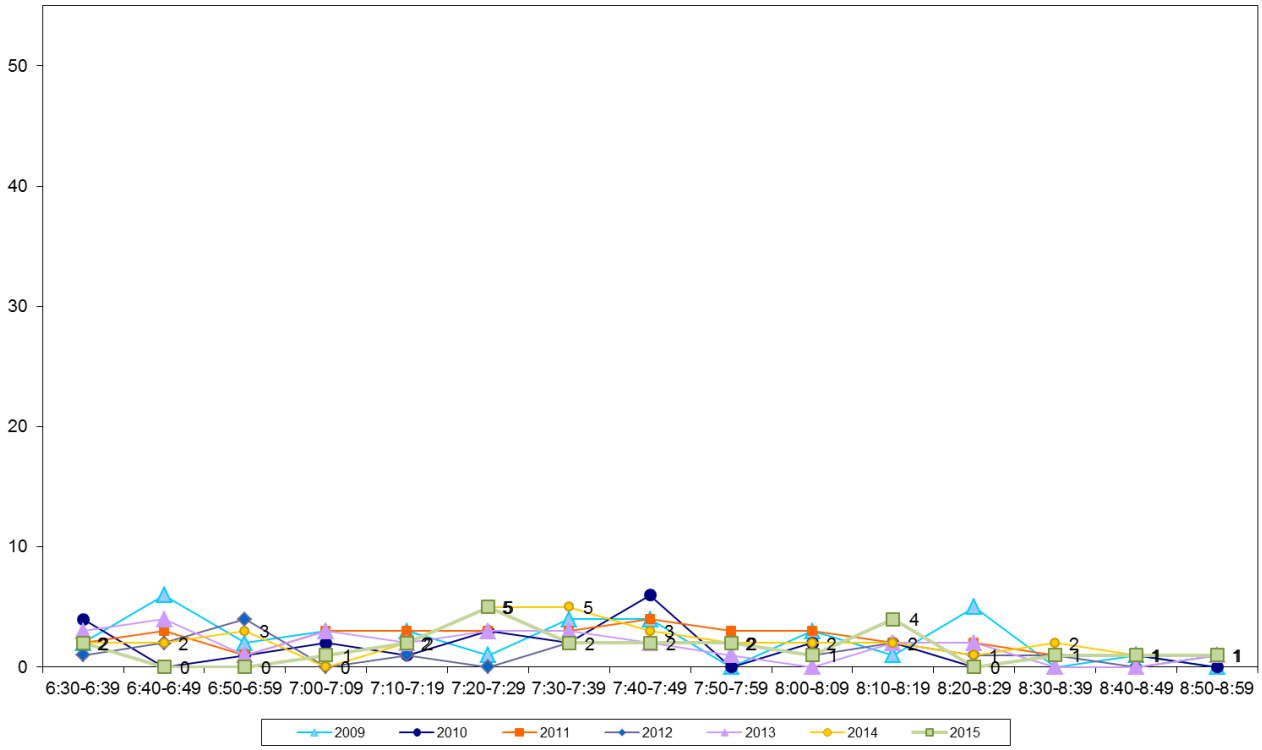
Harris/Smales Road 2009 – 2015 (%)

	2009	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	**Change 14-15**
Cyclist Type								
Adult	97	100	100	100	100	100	**100**	**0**
School child	3	0	0	0	0	0	**0**	**0**
Helmet Wearing								
Helmet on head	83	88	89	90	96	85	**71**	**-14**
No helmet	17	12	11	10	4	15	**29**	**14**
Gender								
Male	-	-	91	100	100	91	**92**	**1**
Female	-	-	0	0	0	9	**8**	**-1**
Can't tell	-	-	9	0	0	0	**0**	**0**
Where Riding								
Road	51	64	51	70	74	48	**58**	**10**
Footpath	49	36	49	30	26	52	**42**	**-10**
Base:	***35***	***25***	***35***	***20***	***27***	***33***	***24***	

- The volume of morning cyclist movements has remained low throughout the monitoring period. A small increase of cycle traffic was observed between 7:20am and 7:29am with 5 cycle movements, and again between 8:10am and 8:19am (4 movements).

Figure 4.2: Morning Peak Cyclist Frequency

Harris/Smales Road 2009 – 2015 (n)



4.3 Evening Peak

Environmental Conditions

- The weather was fine at the start of the shift but became overcast with moderate winds as the evening progressed. There was a light drizzle at 6:17pm.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The number of cyclist movements recorded at the Harris/Smales Road intersection has decreased from 31 movements to 25 movements since the last year.
- The most common movement in the evening was riding straight along Allens Road heading east (Movement 8 = 5 cyclists).
- The most notable decreases were observed at Movement 5 and Movement 8 (down 3 counts each).

Table 4.3: Evening Cyclist Movements

Harris/Smales Road 2009 – 2015 (n)

Movement	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	2	3	4	2	4	2	3	**1**
2	1	1	0	1	2	1	1	**0**
3	0	0	0	0	0	1	0	**-1**
4	3	2	3	2	3	4	3	**-1**
5	3	6	5	3	4	6	3	**-3**
6	0	0	0	1	0	1	0	**-1**
7	3	6	8	2	2	4	2	**-2**
8	4	9	10	3	4	8	5	**-3**
9	1	1	2	1	0	1	0	**-1**
10	0	1	1	2	1	0	1	**1**
11	6	8	7	6	8	2	4	**2**
12	2	0	0	1	2	1	3	**2**
Total	**25**	**37**	**40**	**24**	**30**	**31**	**25**	**-6**

- Almost all evening cyclists at this site were adults (96 per cent, compared with 100 per cent from 2011 to 2014).
- Helmet wearing has not been prevalent this year (56 per cent, down from 87 per cent last year and the lowest record since this site was first monitored.
- There has been a 9 percentage point increase in the share of female cyclists, from 3 per cent last year to 12 per cent this year.
- Sixty per cent of cyclists were riding on the road (up slightly from 55 per cent in 2014).

Table 4.4: Evening Cyclist Characteristics

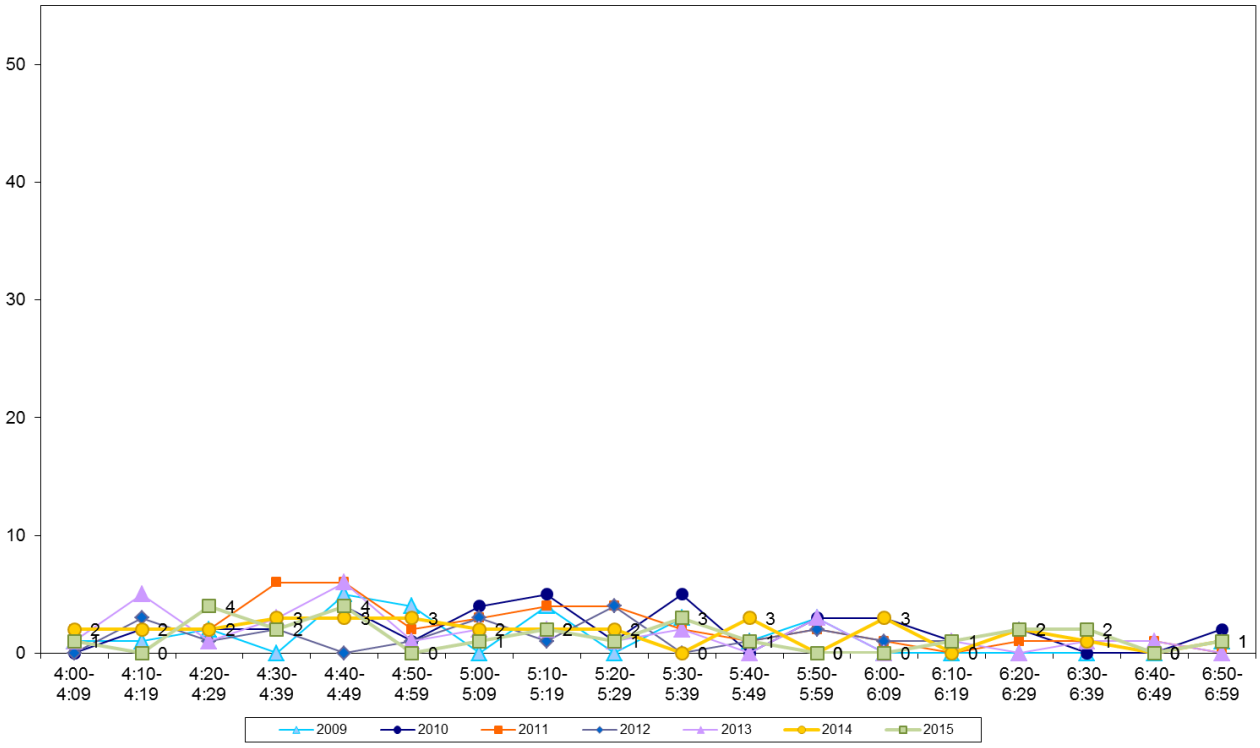
Harris/Smales Road 2009 – 2015 (%)

	2009	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	**Change 14-15**
Cyclist Type								
Adult	96	95	100	100	100	100	**96**	**-4**
School child	4	5	0	0	0	0	**4**	**4**
Helmet Wearing								
Helmet on head	84	95	83	83	93	87	**56**	**-31**
No helmet	16	5	17	17	7	13	**44**	**31**
Gender								
Male	-	-	88	92	97	97	**88**	**-9**
Female	-	-	8	8	3	3	**12**	**9**
Can't tell	-	-	5	0	0	0	**0**	**0**
Where Riding								
Road	56	65	60	54	67	55	**60**	**5**
Footpath	44	35	40	46	33	45	**40**	**-5**
Base:	***25***	***37***	***40***	***24***	***30***	***31***	***25***	

- The volume of cycle movements was low in the evening, no ten-minute intervals having more than four cyclists riding past. This pattern is consistent with previous years.

Figure 4.3: Evening Peak Cyclist Frequency

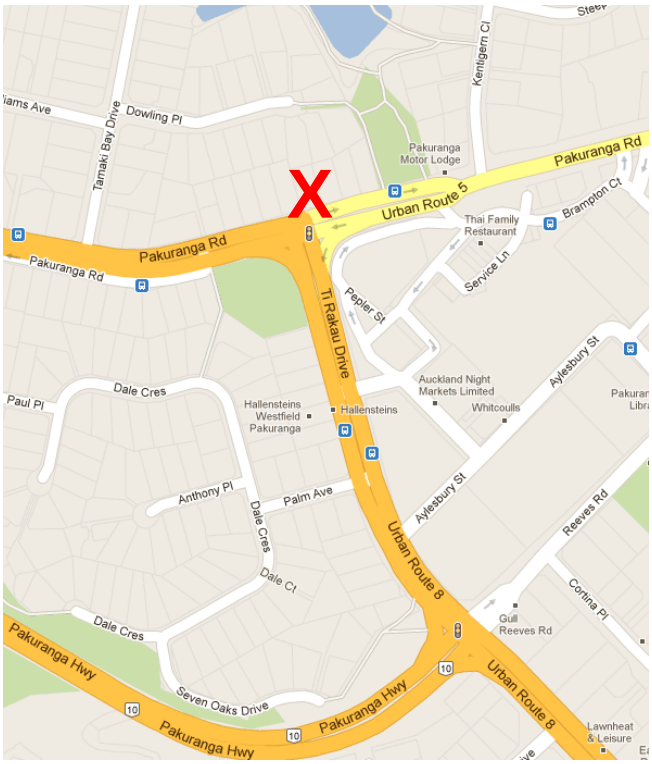
Harris/Smales Road 2009 – 2015 (n)

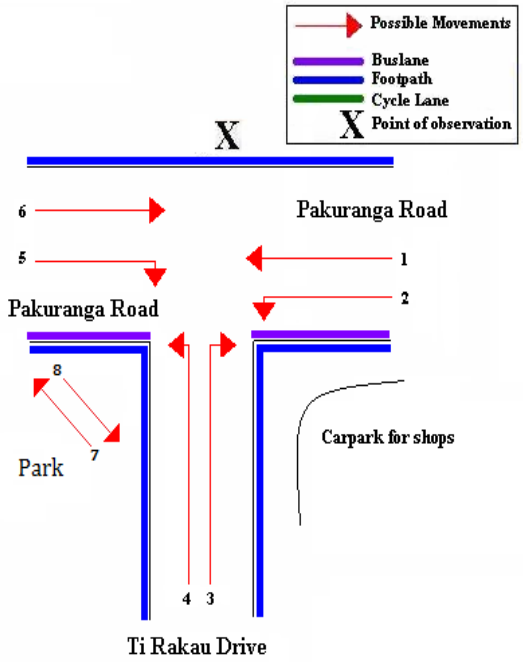


5. PAKURANGA ROAD/TI RAKAU DRIVE, PAKURANGA (SITE 80)

Figure 5.1 shows the possible cyclist movements at this intersection.

Figure 5.1: Cycle Movements: Pakuranga Road/Ti Rakau Drive





5.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2009	46	77	123	176
2010	70	92	162	234
2011	59	65	124	180
2012	51	76	127	183
2013	55	79	134	193
2014	39	79	118	168
2015	**53**	**51**	**104**	**151**

5.2 Morning Peak

Environmental Conditions

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

Key Points

- The number of cycle movements recorded at the Pakuranga Road/Ti Rakau Drive intersection has increased by 14 movements since 2014, to a total of 53 movements this year.
- The key movements in the morning were turning right from Pakuranga Road onto Ti Rakau Drive (Movement 5 = 18 cycle counts); riding straight along Pakuranga Road heading west (Movement 1 = 17 cycle counts) and turning left from Ti Rakau Drive onto Pakuranga Road (Movement 4 = 14 counts).
- The most notable change in cycle volumes was at Movement 4 (up 8 counts from 2014).

Table 5.1: Morning Cyclist Movements

Pakuranga Road/Ti Rakau Drive 2009 – 2015 (n)

Movement	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	10	19	17	18	17	14	**17**	**3**
2	4	0	3	2	1	0	**2**	**2**
3	0	0	3	1	0	1	**0**	**-1**
4	2	8	5	7	8	6	**14**	**8**
5	22	30	26	18	25	14	**18**	**4**
6	8	13	5	5	4	3	**2**	**-1**
7	-	-	-	-	-	1	**0**	**-1**
8	-	-	-	-	-	0	**0**	**0**
Total	**46**	**70**	**59**	**51**	**55**	**39**	**53**	**14**

- Over the morning peak, 92 per cent cyclists riding through the Pakuranga Road/Ti Rakau Drive intersection were adults (down from 100 per cent in 2014).
- Almost all cyclists were wearing a helmet (98 per cent, up from 90 per cent last year).
- The majority of cyclists were male (91 per cent, compared with 87 per cent in the previous measure).
- Seventy per cent of cyclists were riding on the road (down 4 percentage points since 2014).

Table 5.2: Morning Cyclist Characteristics

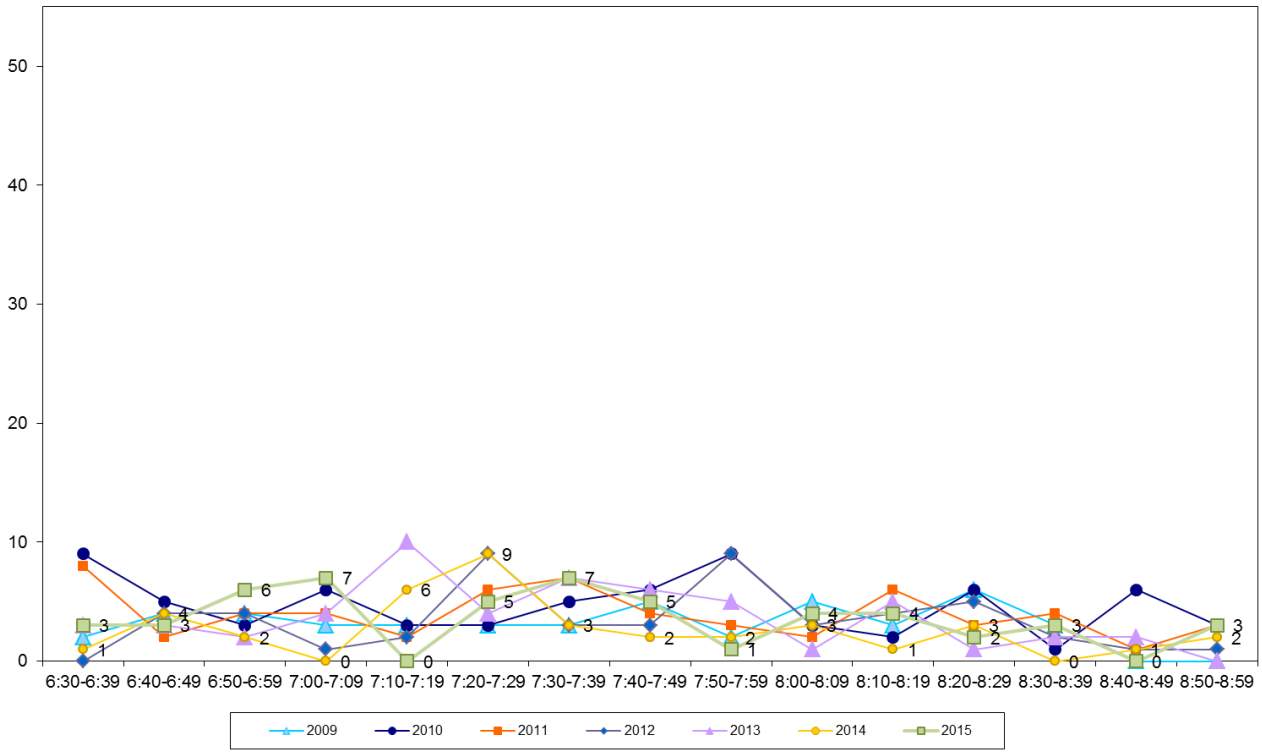
Pakuranga Road/Ti Rakau Drive 2009 – 2015 (%)

	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type								
Adult	85	96	88	92	95	100	**92**	**-8**
School child	15	4	12	8	5	0	**8**	**8**
Helmet Wearing								
Helmet on head	96	97	100	94	95	90	**98**	**8**
No helmet	4	3	0	6	5	10	**2**	**-8**
Gender								
Male	-	-	90	90	87	87	**91**	**4**
Female	-	-	8	10	11	10	**9**	**-1**
Can't tell	-	-	2	0	2	3	**0**	**-3**
Where Riding								
Road	63	79	68	69	78	74	**70**	**-4**
Footpath	37	21	32	31	22	26	**30**	**4**
Base:	***46***	***70***	***59***	***51***	***55***	***39***	***53***	

- The volume of cyclist movements was low throughout the morning monitoring period. Overall, cycle traffic was heavier in the first half of the shift. There were two peaks of 7 cyclists, the first peak between 7:00am- 7:09am and the other occurring half an hour later - between 7:30am – 7:39am.

Figure 5.2: Morning Peak Cyclist Frequency

Pakuranga Road/Ti Rakau Drive 2009 – 2015 (n)



5.3 Evening Peak

Environmental Conditions

- The weather was overcast with winds developing as the evening progressed.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of evening cycle movements at this site has decreased from 79 to 51 counts this year.
- The most common movements in the evening were the left-hand turn from Ti Rakau Drive onto Pakuranga Road (Movement 4 = 16 counts) and riding straight along Pakuranga Road heading east (Movement 6 = 16 counts).
- Cyclist volumes at this site have changed notably for Movement 6 (down 22 cycle counts) and Movement 1 (down 14 cycle counts).

Table 5.3: Evening Cyclist Movements

Pakuranga Road/Ti Rakau Drive 2009 – 2015 (n)

Movement	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	19	32	28	26	11	18	**4**	**-14**
2	1	0	3	2	1	0	**2**	**2**
3	1	2	1	0	1	2	**2**	**0**
4	24	9	1	12	21	9	**16**	**7**
5	11	16	12	7	25	12	**11**	**-1**
6	21	33	20	29	20	38	**16**	**-22**
7	-	-	-	-	-	0	**0**	**0**
8	-	-	-	-	-	0	**0**	**0**
Total	**77**	**92**	**65**	**76**	**79**	**79**	**51**	**-28**

- Ninety-two per cent of the cyclists riding past this site in the evening were adults (up from 71 per cent from last year).
- Ninety-two per cent of cyclists were wearing a helmet, stable from 2014.
- The majority of the cyclists were male (up 15 percentage points from previous year).
- Just over half of the cyclists were riding on the road (51 per cent, down from 72 per cent in 2014).

Table 5.4: Evening Cyclist Characteristics

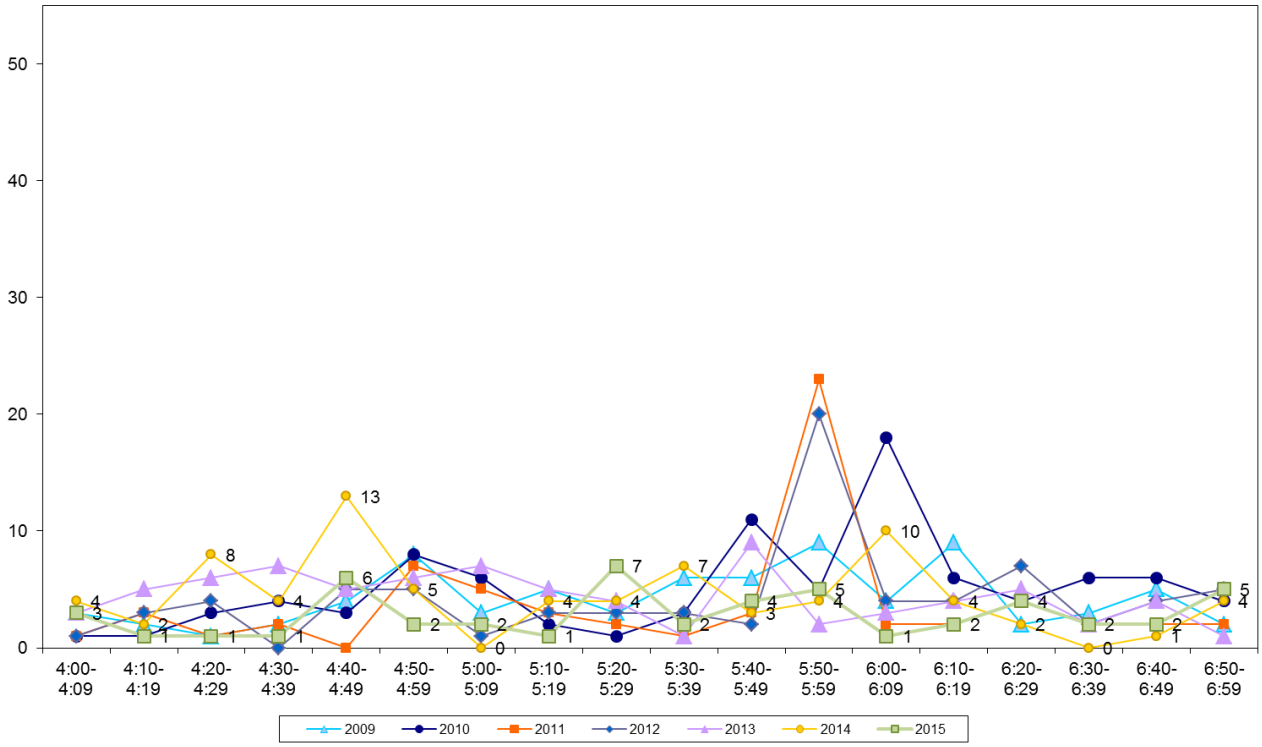
Pakuranga Road/Ti Rakau Drive 2009 – 2015 (%)

	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type								
Adult	94	96	88	96	99	71	**92**	**21**
School child	6	4	12	4	1	29	**8**	**-21**
Helmet Wearing								
Helmet on head	87	98	89	93	95	89	**92**	**3**
No helmet	13	2	11	7	5	11	**8**	**-3**
Gender								
Male	-	-	92	93	94	73	**88**	**15**
Female	-	-	5	7	5	14	**8**	**-6**
Can't tell	-	-	3	0	1	13	**4**	**-9**
Where Riding								
Road	65	74	62	66	73	72	**51**	**-21**
Footpath	35	26	38	34	27	28	**49**	**21**
Base:	***77***	***92***	***65***	***76***	***79***	***79***	***51***	

- The volume of evening cycle movements was relatively low over the entire monitoring period, with one peak between 4:40pm and 4:49pm (6 movements) and another between 5:20pm and 5:29pm (7 movements).

Figure 5.3: Evening Peak Cyclist Frequency

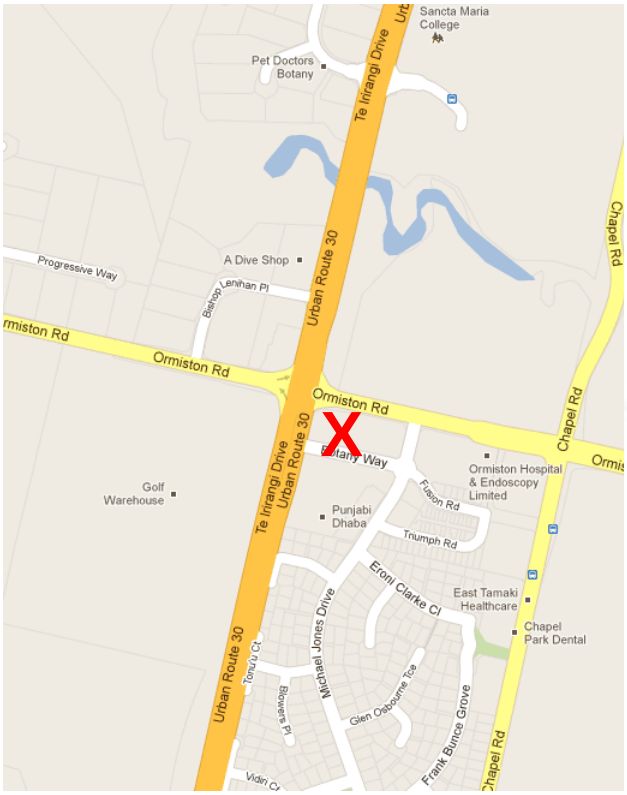
Pakuranga Road/Ti Rakau Drive 2009 – 2015 (n)

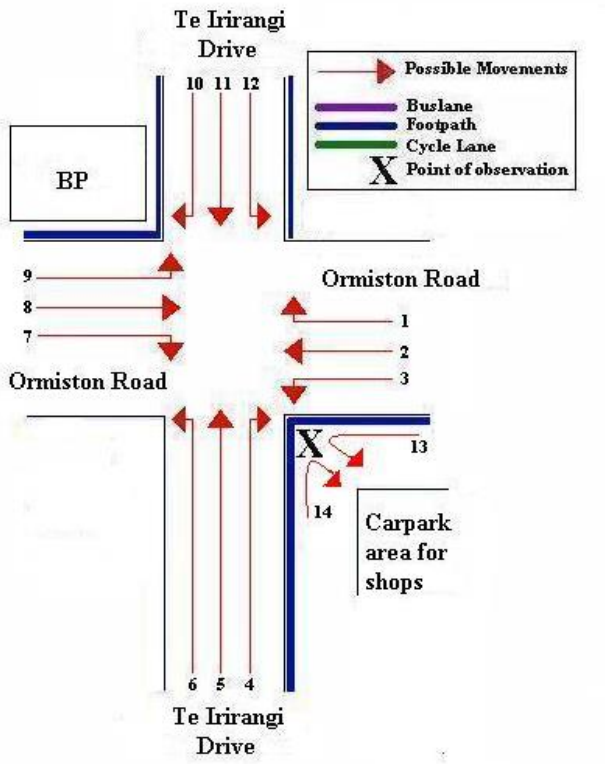


6. TE IRIRANGI DRIVE/ORMISTON ROAD, EAST TAMAKI (SITE 81)

Figure 6.1 shows the possible cyclist movements at this intersection.

Figure 6.1: Cycle Movements: Te Irirangi Drive/Ormiston Road





6.1 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**

6.2 Morning Peak

Environmental Conditions

- The weather was fine at the beginning and became cloudy towards the end of the shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- Morning cyclist traffic at the intersection of Te Irirangi Drive and Ormiston Road has increased 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 6.1: 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 in the share of female cyclists riding past 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 6.2: Morning Cyclist Characteristics

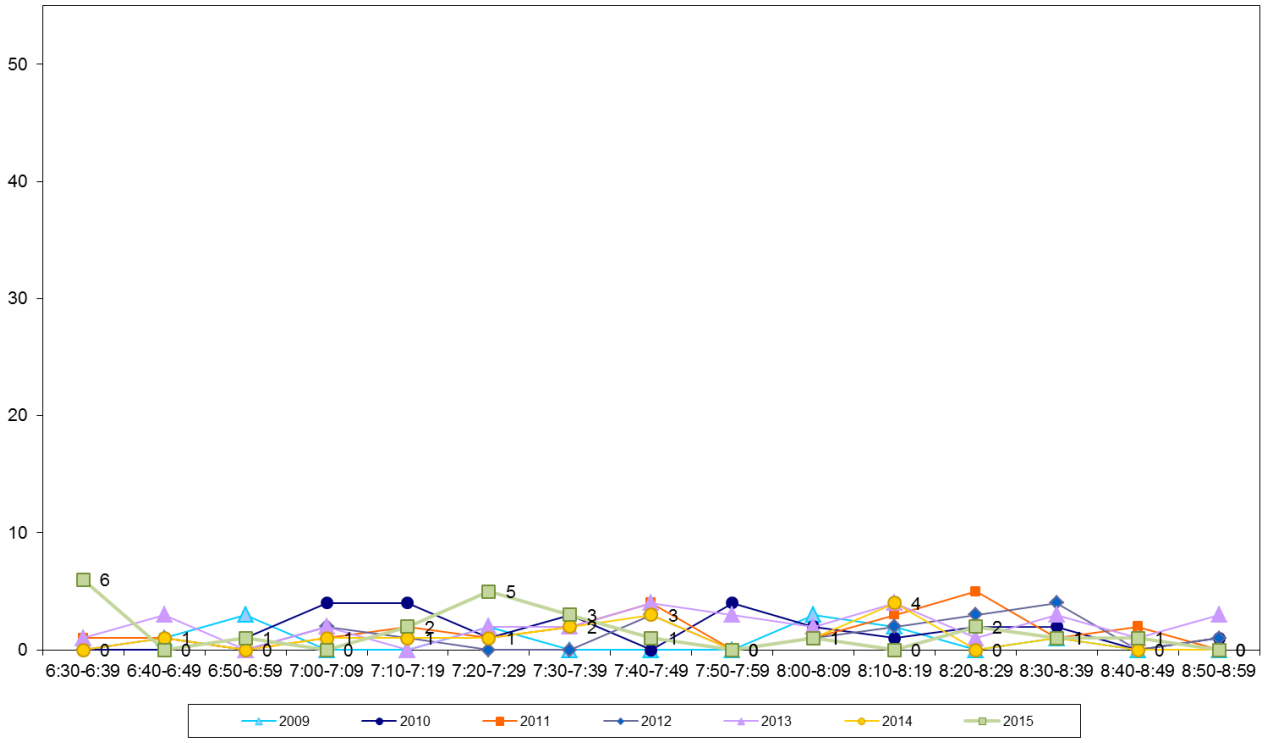
Te Irirangi Drive/Ormiston Road 2009 – 2015 (%)

	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 peak between 7:20am and 7:29am (5 movements).

Figure 6.2: Morning Peak Cyclist Frequency

Te Irirangi Drive/Ormiston Road 2009 – 2015 (n)



6.3 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 volumes at the Te Irirangi Drive/Ormiston Road intersection have 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 6.3: 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).
- All cyclists were wearing a helmet (100 per cent, the first time since cycle monitor started at this site).
- Eighty-two per cent of cyclists at this site were male (stable from 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 6.4: Evening Cyclist Characteristics

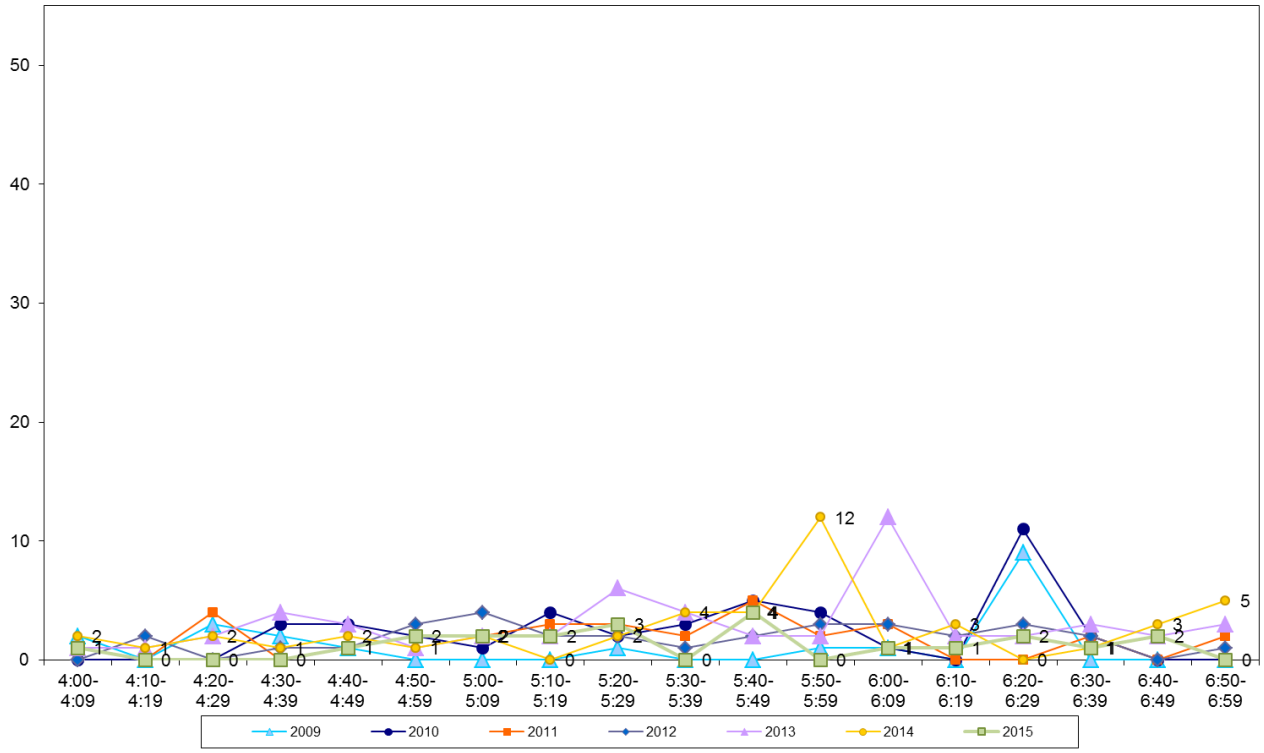
Te Irirangi Drive/Ormiston Road 2009 – 2015 (%)

	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 6.3: Evening Peak Cyclist Frequency

Te Irirangi Drive/Ormiston Road 2009 – 2015 (n)



7. HALF MOON BAY FERRY WHARF

Key Points

- In the morning, no cycles were observed at the Half Moon Bay Ferry Wharf at 6:10am and two were observed at 9:10am. This suggests two passengers rode to the ferry and parked their cycles in the morning peak.
- In the afternoon, three cycles were recorded at the Half Moon Bay Ferry Wharf at 3:30pm and none were observed at 7:10pm. This suggests three ferry passengers collected their bikes after disembarking and cycled home in the evening peak.

Table 7.1: Half Moon Bay Ferry Wharf Cycle Counts 2010 – 2015 (n)

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Morning Peak							
6:10am	2	0	0	0	0	**0**	**0**
9:10am	0	0	0	2	0	**2**	**2**
Evening Peak							
3:30pm	1	0	0	0	0	**3**	**3**
7:10pm	0	1	0	0	0	**0**	**0**

8. SCHOOL BIKE SHED COUNT

8.1 Cycle Count Background Information

- A total of 9 schools in the Howick ward participated in the school bike shed count. Of the schools that responded to the survey, one school reported a policy that restricts students cycling to school[9].
- Two schools reported an event or issue that may affect cycle counts[10].
- Most schools conducted the count on the designated count day (Tuesday 3rd of March 2015). Four schools in the Howick ward completed their count on an alternative day[11].

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

8.2 Cycle Count Key Points

- Among the surveyed schools, of those eligible to cycle to school, on average, one per cent of students are cycling to their schools. This share is unchanged since 2011.
- Elim Christian Charter/College, Mission Heights Junior College and Pakuranga Intermediate reported the highest share of cyclists – each with 3 per cent of all eligible students currently cycling to school.
- In total, n=109 students from the responding schools were reported to be cycling to school.
- Of the 9 schools that responded, 1 (11 per cent) had no students cycling to school.
- Of the 8 schools that participated in the count in both 2014 and 2015, 2 (25 per cent) reported an increase in the share of students cycling:
  - Elim Christian Charter/College (3 per cent, up from 1 per cent)
  - Edgewater College (1 per cent, up from 0 per cent)
- Of the 8 schools that participated in the count in both 2014 and 2015, 2 (25 per cent) reported a decrease in the share of students cycling.

[9] The following school reported events or issues that may affect cycle counts:
- Elim Christian Charter/College *"Years 3 and up only"*

[10] The following schools reported events or issues that may affect cycle counts:
- Ormiston Senior College *"Road works and construction across the road (200 houses being built)"*
- Pakuranga Intermediate School "*Some students away on sporting activities"*

[11] The following schools undertook counts on alternative days:
- Elim Christian Charter/College –5th March 2015
- Mission Heights Junior College – 17th March 2015
- Ormiston Senior College – 4th March 2015
- Somerville Intermediate School – 5th March 2015

Table 8.1 shows the results of the 9 schools surveyed in the Howick ward.

Table 8.1: 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*
Elim Christian Charter - Junior Campus	Full Primary	855	25	**3%**	1%	-	1%	-	-	-	-	-
Elim Christian College - Senior Campus	Intermediate/ Secondary				1%	2%	3%	-	-	-	-	-
Mission Heights Junior College	Intermediate/ Secondary	840	25	**3%**	4%	0%	2%	1%	5%	3%	-	-
Pakuranga Intermediate School	Intermediate	265	8	**3%**	3%	1%	3%	-	-	-	-	-
Somerville Intermediate School	Intermediate	970	19	**2%**	-	1%	2%	2%	3%	3%	4%	4%
Macleans College	Secondary	2564	20	**1%**	1%	1%	1%	<1%	-	2%	1%	-
Sancta Maria College	Intermediate/ Secondary	1000	6	**1%**	1%	<1%	1%	1%	1%	1%	1%	2%
Edgewater College	Secondary	729	4	**1%**	0%	1%	1%	2%	2%	2%	2%	-
Ormiston Senior College	Secondary	460	2	**<1%**	2%	<1%	<1%	-	-	-	-	-
Tyndale Park Christian School	Composite	125	0	**0%**	0%	0%	0%	0%	0%	0%	0%	0%
Total		**7808**	**109**	**1%**	**1%**	**1%**	**1%**	**1%**	**-**	**-**	**-**	**-**

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

Table 8.2 illustrates the rates of cycling to school at different school levels. Rates of cycling to school continue to be highest among intermediate schools and intermediate/secondary schools (3 per cent).

Table 8.2: Summary Table of School Bike Count by School Type

2007 – 2015 (%)

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

8.3 Scooter Count Background Information

- A total of 8 schools in the Howick ward participated in the school bike shed scooter count. Of the schools that responded to the survey, none had policies that restrict students from scooting to school.
- Two schools reported an event or issue that may affect scooter counts[13].
- Although the designated count day was Tuesday 3rd of March 2015, three schools in the Howick ward completed their count on an alternative day[14].

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

8.4 Scooter Count Key Points

- Among the surveyed schools, of those eligible to scooter, on average 2 per cent of students were scooting to school. This compares with less than 1 per cent last year.
- Among the surveyed schools, Elim Christian Charter/College reported the highest share of scooters – 8 per cent of all eligible students currently scooting to school.
- In total, n=132 students from the responding schools were reported to be scooting to school.
- Of the 8 schools that responded, 5 (63 per cent) had no students scooting to school.

[13] The following schools reported events or issues that may affect cycle counts:
- Ormiston Senior College *"Road works and construction across the road (200 houses being built)"*
- Pakuranga Intermediate School *"Some students away on sporting activities"*

[14] The following schools undertook counts on alternative days:
- Elim Christian Charter/College –5th March 2015
- Ormiston Senior College – 4th March 2015
- Somerville Intermediate School – 5th March 2015

Table 8.3 shows the results of the 8 schools surveyed in the Howick ward.

Table 8.3: 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*[15]	
				2015	*2014*
Elim Christian Charter - Junior Campus	Full Primary	998	83	**8%**	5%
Elim Christian College - Senior Campus	Intermediate/ Secondary				<1%
Mission Heights	Intermediate/ Secondary	840	43	**5%**	5%
Pakuranga Intermediate School	Intermediate	265	6	**2%**	3%
Somerville Intermediate	Intermediate	970	0	**0%**	1%
Edgewater College	Secondary	729	0	**0%**	0%
Ormiston Senior College	Secondary	460	0	**0%**	0%
Sancta Maria College	Intermediate/ Secondary	1000	0	**0%**	0%
Tyndale Park Christian School	Composite	125	0	**0%**	0%
Total		**5387**	**132**	**2%**	**<1%**

[15] 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 8.4 illustrates the rates of scooting to school at different school levels. Rates of scooting to school are highest for intermediate/secondary schools (5 per cent).

Table 8.4: Summary Table of School Scooter Count by School Type

2014 – 2015 (%)

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

APPENDICES

Appendix One: Annual Average Daily Traffic (AADT) Calculation

APPENDIX ONE: ANNUAL AVERAGE DAILY TRAFFIC (AADT) CALCULATION

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

Purpose

The purpose of this appendix is to document the recommended procedure for estimating a cycling AADT[16] 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)[17], 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.

[16] Annual average daily traffic

[17] LTSA, 2004

For the Gravitas counts, the following factors apply:

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

D = 14

W = 0.9

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

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

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

Worked Example

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

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

Figure 1: Scale Factors for Auckland Region

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

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

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

Weather	R
Fine	100%
Rain	64%