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Research Report Prepared for
Auckland Transport

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2015 Auckland Region Manual Cycle Monitor

- Albany 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:

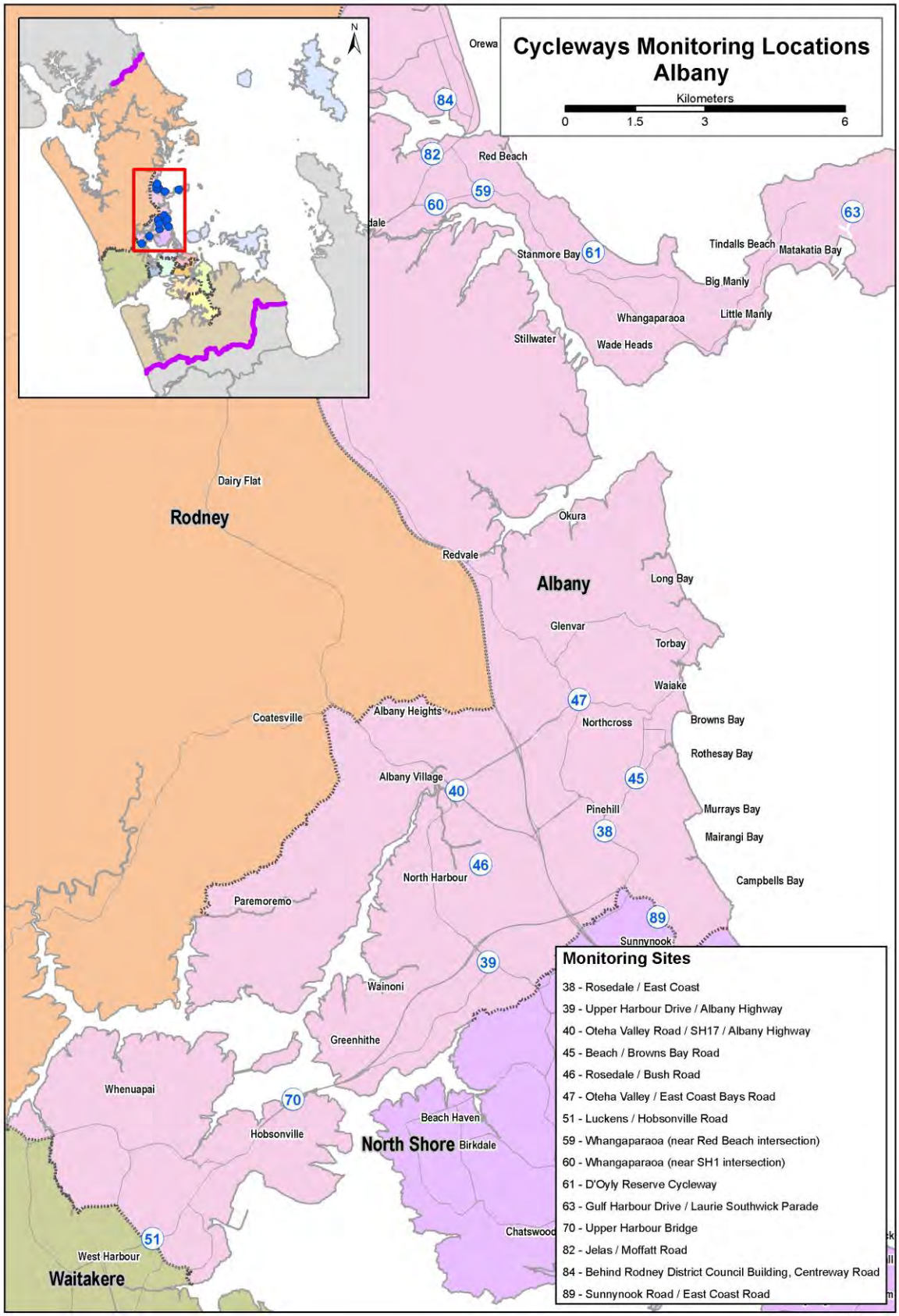
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and 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 15 sites in the Albany 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 15 pre-determined sites in the Albany 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 Albany ward. Note that two sites (Sunnynook/East Coast Road in Sunnynook (Site 89) and Luckens Road/Hobsonville Road in West Harbour (Site 51)) lie on the border with other wards (North Shore and Waitakere ward respectively) and consequently has been included in both ward reports.

Figure 1.1: 2015 Cycle Monitoring Locations in Albany 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 15 sites surveyed in the Albany 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 Albany 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 Sixteen of this report.

Note: Surveying in the Albany ward was undertaken on Thursday 5th of March, 2015. Sunrise was at 7:09am and sunset was at 7:55pm. The highest temperature was 27.0 degrees Celsius.

1.4 Morning Peak

Environmental Conditions

- The weather was fine across the Albany ward.
- For Site No. 40 Oteha Valley/SH17/Albany Highway there were road works at this intersection as part of the Albany Highway North Upgrade Project. However, all 12 movements were still possible for cyclists.
- There were no other road works or accidents that may affect cycle counts.

Key Points

- A total of 544 cyclist movements were recorded across the monitoring sites in the Albany ward during the morning peak period (between 6:30am and 9:00am) in 2015. This represents a 43 per cent increase from last year (380 movements).
- Nine per cent of all cycle movements in the morning peak (n=51) were made by those riding as groups. This compares with one per cent (n=4) in 2014.
- The average volume of morning cyclist movements across all 15 monitoring sites in the Albany ward was 36 cycle movements, compared with 25 last year.
- The busiest site during the morning peak was the Sunnynook Road/East Coast Road intersection (88 movements), while the two quietest sites were at Whangaparaoa Road near both the Red Beach and Hibiscus Coast Highway intersections, each with 13 movements across the entire morning monitoring period.
- All sites recorded increases in cycle numbers compared with 12 months ago. The four most notable increases occurred at:
  - Whangaparaoa Road, near Hibiscus Coast Highway intersection – up 120 per cent;
  - Sunnynook Road/East Coast Road – up 96 per cent;
  - Whangaparaoa Road, near Red Beach intersection – up 86 per cent; and
  - Rosedale Road/Bush Road – up 77 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
47	Oteha Valley/East Coast Road	42	40	69	87	53	68	60	56	**87**	**55%**	**107%**
38	Rosedale Road/East Coast Road	54	52	105	93	73	67	65	37	**54**	**46%**	**0%**
46	Rosedale Road/Bush Road	15	36	26	48	29	22	43	22	**39**	**77%**	**160%**
39	Upper Harbour Drive/Albany Highway	14	54	63	65	57	51	55	27	**38**	**41%**	**171%**
45	Beach Road/Browns Bay Road	11	26	29	50	47	28	43	27	**30**	**11%**	**173%**
40	Oteha Valley/SH17/Albany Highway	4	20	25	29	26	40	29	19	**26**	**37%**	**550%**
51	Luckens Road/Hobsonville Road	20	25	26	41	14	42	44	17	**17**	**0%**	**-15%**
63	Gulf Harbour Drive/Laurie Southwick Parade	17	14	5	14	12	13	24	14	**14**	**0%**	**-18%**
61	D'Oyly Reserve cycleway	14	19	5	31	13	14	13	10	**14**	**40%**	**0%**
59	Whangaparaoa Road, near Red Beach intersection	13	15	15	21	11	15	15	7	**13**	**86%**	**0%**
60	Whangaparaoa Road, near Hibiscus Coast Highway intersection	11	9	6	13	7	10	10	6	**13**	**120%**	**18%**
	Average per site (11 sites since 2007)	**20**	**28**	**34**	**45**	**31**	**34**	**36**	**22**	**31**	**41%**	**55%**
	Total (11 sites since 2007)	**215**	**310**	**374**	**492**	**342**	**370**	**401**	**242**	**345**	**43%**	**60%**
84	Behind Auckland Council Building, Orewa	-	-	75	73	72	61	66	59	**67**	**14%**	**-**
70	Squadron Drive/Buckley Avenue*	-	17	23	37	34	28	46	19	**26**	**37%**	**-**
82	Hibiscus Coast Highway/Jelas Road	-	-	15	24	19	20	28	15	**18**	**20%**	**-**
	Average per site (12 sites in 2008, 14 sites since 2009)	**-**	**27**	**35**	**45**	**33**	**34**	**39**	**24**	**33**	**38%**	**-**
	Total (12 sites in 2008, 14 sites since 2009)	**-**	**327**	**487**	**626**	**467**	**479**	**541**	**335**	**456**	**36%**	**-**
89	Sunnynook Road/East Coast Road	-	-	-	**-**	81	95	96	45	**88**	**96%**	**-**
	Average per site (15 sites since 2011)	**-**	**27**	**35**	**45**	**37**	**38**	**42**	**25**	**36**	**44%**	**-**
	Total (15 sites since 2011)	**-**	**327**	**487**	**626**	**548**	**574**	**637**	**380**	**544**	**43%**	**-**

** Note: The original Upper Harbour Bridge observation site was relocated to Upper Harbour Drive/Buckley Avenue in 2010, due to road construction. In 2012, due to a change in road layout, this site was re-located. Consequently results from previous years are not directly comparable.*

- Morning cyclist characteristics are shown in Table 1.2 below. Overall, 73 per cent of cyclists were adults (stable from 70 per cent in 2014).
- The majority of the cyclists were wearing a helmet (96 per cent, up slightly from 93 per cent in 2014).
- Approximately five in six cyclists were male (84 per cent, down slightly from 81 per cent last year).
- There has been an eight percentage point increase in the share of cyclists riding on the road (63 per cent, compared with 55 per cent in 2014). Sixteen per cent of cyclists were travelling on the footpath, with the remaining 21 per cent on the off-road cycleway.

Table 1.2: Summary of Morning Cyclist Characteristics

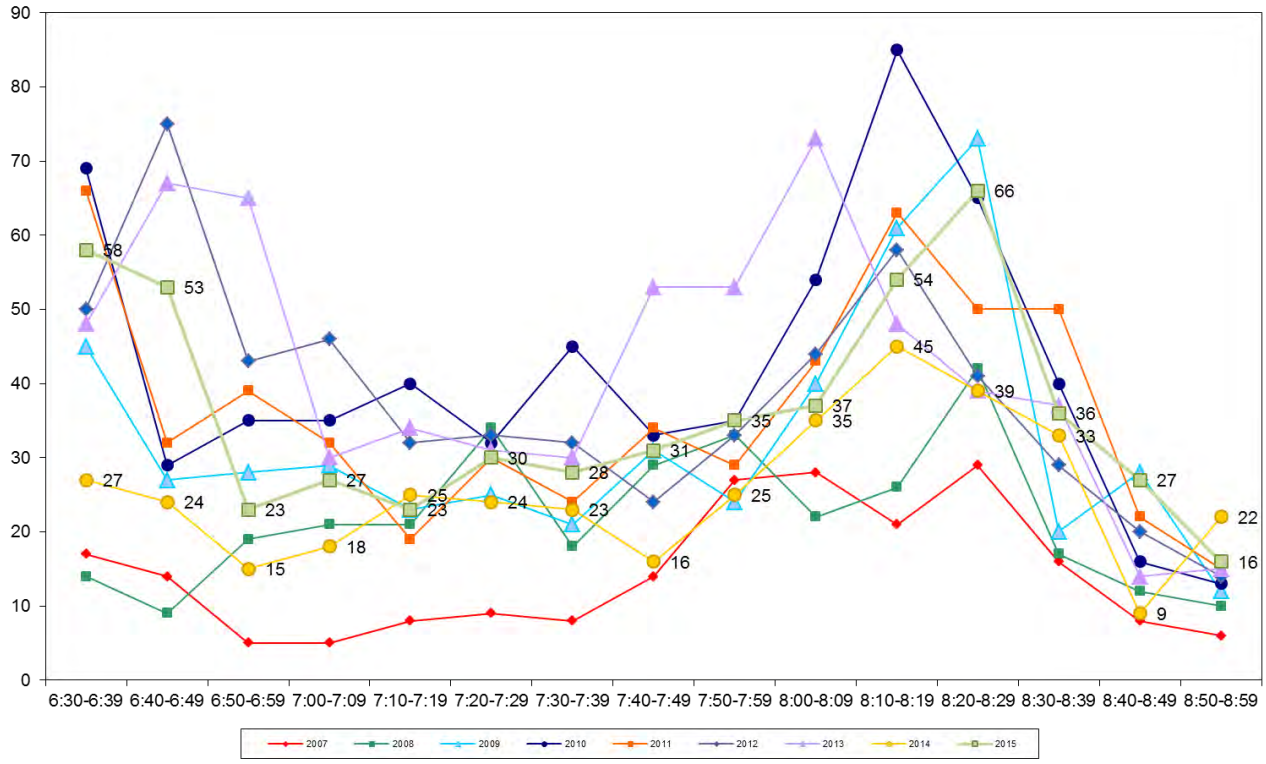
2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	56	69	60	60	72	71	78	70	**73**	**3**
School child	44	31	40	40	28	29	22	30	**27**	**-3**
Helmet Wearing										
Helmet on head	91	91	91	92	93	96	97	93	**96**	**3**
No helmet	9	9	9	8	7	4	3	7	**4**	**-3**
Gender										
Male	-	-	-	-	83	82	86	81	**84**	**3**
Female	-	-	-	-	14	16	13	18	**13**	**-5**
Can't tell	-	-	-	-	3	2	1	1	**3**	**2**
Where Riding										
Road	47	67	56	56	66	69	71	55	**63**	**8**
Footpath	46	26	25	20	14	13	13	22	**16**	**-6**
Off-road cycleway	7	7	19	24	20	18	16	23	**21**	**-2**
Base:	***215***	***327***	***487***	***626***	***548***	***574***	***637***	***380***	***544***	

- Figure 1.2 illustrates the total number of cyclists in the morning peak by time of movement for all 15 sites monitored in 2015. Consistent with previous years, there was a clear peak present at the start of the shift with 58 cyclists between 6:30am and 6:39am. Cycle volumes then declined for an approximately an hour before increasing up to the peak of 66 cyclists between 8:20 am and 8:29am. The overall trend was generally consistent with previous years.

Figure 1.2: Total Cyclist Frequency

Morning Peak 2007 – 2015



1.5 Evening Peak

Environmental Conditions

- The sites monitored in Albany ward all had fine weather in the evening, with some sites experiencing light to moderate winds.
- For Site No.40 Oteha Valley/SH17/Albany Highway, there were road works at this intersection as part of the Albany Highway North Upgrade Project. However, all 12 movements were still possible for cyclists.
- There were no other road works or accidents that may affect cycle counts.

Key Points

- A total of 511 cyclist movements were recorded across the 15 sites monitored during the evening peak period (between 4:00pm and 7:00pm) in 2015. This is a 7 per cent increase from 479 movements in 2014.
- Three per cent of all evening cycle movements (n=16) were made by cyclists riding as groups. This compares with four per cent (n=18) in 2014.
- The average volume of evening cyclist movements across all 15 monitoring sites in the Albany ward was 34 movements, up from 32 movements in 2014.
- The busiest site in the evening peak was the Sunnynook Road/East Coast Road intersection (61 movements), while the quietest sites were Whangaparaoa Road, near Red Beach intersection and the Hibiscus Coast Highway/Jelas Road intersection, both with 13 movements each across the entire evening monitoring period.
- Of the 15 sites in this ward, 11 sites recorded increases in cycle volume this year, most notably at Hibiscus Coast Highway/Jelas Road (from 7 movements to 13 movements, equating to an increase of 86 per cent).
- The most notable decrease occurred at Beach Road/Brown's Bay Road (from 43 movements in 2014 to 24 movements this year, equating to a decrease of 44 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
47	Oteha Valley/East Coast Road	17	74	69	81	76	69	46	47	**59**	**26%**	**247%**
46	Rosedale Road/Bush Road	16	37	46	61	56	41	57	58	**54**	**-7%**	**238%**
38	Rosedale Road/East Coast Road	22	46	54	59	70	51	47	48	**50**	**4%**	**127%**
39	Upper Harbour Drive/ Albany Highway	11	44	75	93	91	136	79	48	**49**	**2%**	**345%**
51	Luckens Road/Hobsonville Road	12	16	51	54	38	70	60	24	**35**	**46%**	**192%**
40	Oteha Valley/SH17/ Albany Highway	15	28	47	62	56	88	56	41	**33**	**-20%**	**120%**
45	Beach Road/Browns Bay Road	8	19	30	27	28	33	17	43	**24**	**-44%**	**200%**
63	Gulf Harbour Drive/ Laurie Southwick Parade	39	30	17	23	27	20	16	15	**18**	**20%**	**-54%**
60	Whangaparaoa Road, near Hibiscus Coast Highway intersection	17	11	6	10	15	10	9	9	**15**	**67%**	**-12%**
61	D'Oyly Reserve cycleway	10	84	4	13	45	21	14	14	**14**	**0%**	**40%**
59	Whangaparaoa Road, near Red Beach intersection	16	16	11	8	15	13	10	11	**13**	**18%**	**-19%**
	Average per site (11 sites since 2007)	**17**	**37**	**37**	**45**	**47**	**50**	**37**	**33**	**33**	**0%**	**94%**
	Total (11 sites since 2007)	**183**	**405**	**410**	**491**	**517**	**552**	**411**	**358**	**364**	**2%**	**99%**
70	Squadron Drive/ Buckley Avenue*	-	18	45	57	49	82	60	46	**48**	**4%**	-
84	Behind Auckland Council Building, Orewa	-	-	11	22	66	28	23	16	**25**	**56%**	-
82	Hibiscus Coast Highway/ Jelas Road	-	-	23	15	11	14	15	7	**13**	**86%**	-
	Average per site (12 sites in 2008, 14 sites since 2009)	**-**	**35**	**35**	**42**	**46**	**48**	**36**	**31**	**32**	**3%**	-
	Total (12 sites in 2008, 14 sites since 2009)	**-**	**423**	**489**	**585**	**643**	**676**	**509**	**427**	**450**	**5%**	-
89	Sunnynook Road/East Coast Road	-	-	-	-	93	60	53	52	**61**	**17%**	-
	Average per site (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**35**	**35**	**42**	**49**	**49**	**37**	**32**	**34**	**6%**	-
	Total (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**423**	**489**	**585**	**736**	**736**	**562**	**479**	**511**	**7%**	-

** Note: The original Upper Harbour Bridge observation site was relocated to Upper Harbour Drive/Buckley Avenue in 2010, due to road construction. In 2012, due to a change in road layout, this site was re-located. Consequently results from previous years are not directly comparable.*

- Most evening cyclists were adults (86 per cent, unchanged from last year).
- Nearly all cyclists wore a helmet (92 per cent, stable from 93 per cent last year).
- Approximately four in five cyclists were male (84 per cent, up slightly from 80 per cent last year).
- Sixteen per cent of all evening cyclists were riding on the off-road cycleway (up from 10 per cent in 2014). The remainder travelled on the road (66 per cent, stable from 69 per cent last year) or the footpath (18 per cent, stable from 21 per cent in 2014).

Table 1.4: Summary of Evening Cyclist Characteristics

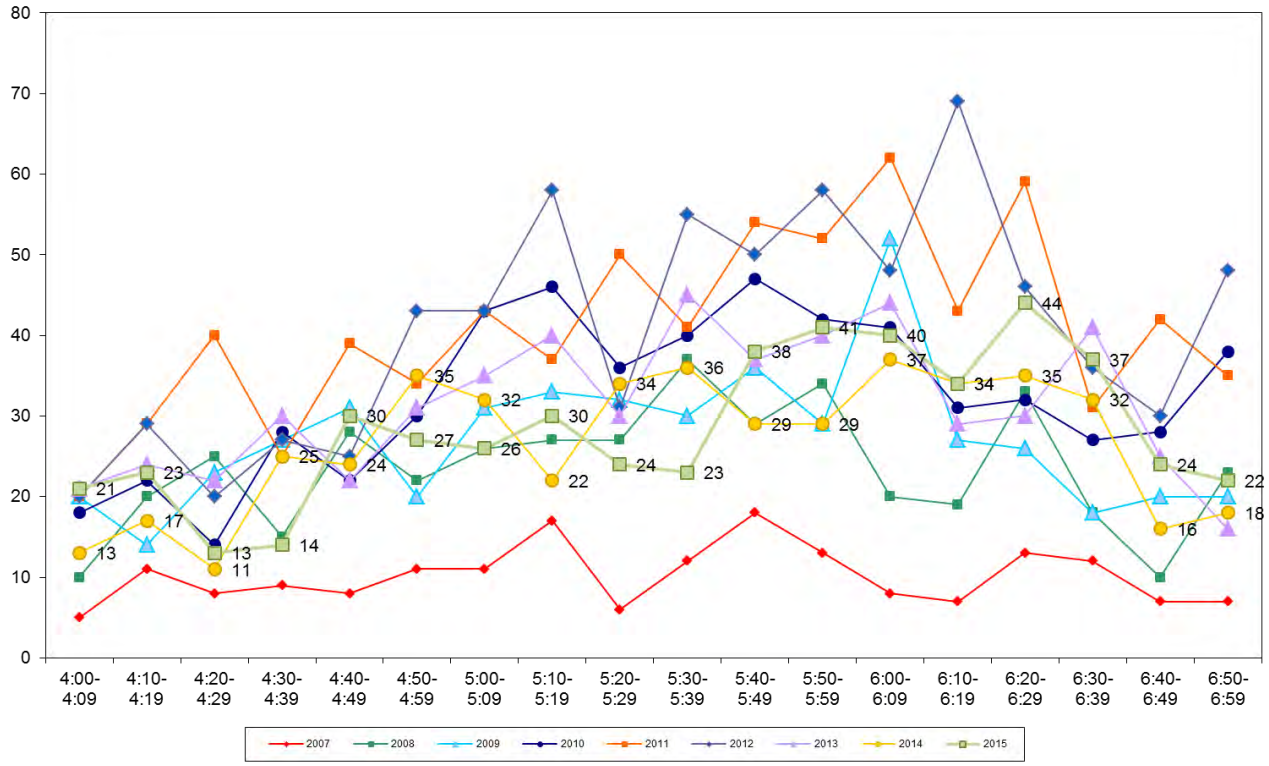
2007 – 2015 (%)

	2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***	**Change 14-15**
Cyclist Type										
Adult	78	67	80	85	79	81	87	86	**86**	**0**
School child	22	33	20	15	21	19	13	14	**14**	**0**
Helmet Wearing										
Helmet on head	88	79	93	90	91	92	93	93	**92**	**-1**
No helmet	12	21	7	10	9	8	6	7	**8**	**1**
Can't tell	-	-	-	-	-	-	1	0	**0**	**0**
Gender										
Male	-	-	-	-	82	82	86	80	**84**	**4**
Female	-	-	-	-	17	15	14	19	**16**	**-3**
Can't tell	-	-	-	-	1	3	0	1	**0**	**-1**
Where Riding										
Road	60	59	70	69	66	80	74	69	**66**	**3**
Footpath	35	20	21	17	15	11	15	21	**18**	**-3**
Off-road cycleway	5	21	9	14	19	9	11	10	**16**	**6**
Base:	***183***	***423***	***489***	***585***	***736***	***736***	***562***	***479***	***511***	

- Figure 1.3 illustrates the overall pattern of cyclist volumes by time of movement in the evening for all 15 sites monitored this year. Cycle volumes varied throughout the evening peak, with volumes being lower during the first half. The highest number of cyclists recorded over the evening monitoring period was between 6:20pm and 6:29pm with 44 cyclists observed.

Figure 1.2: Total Cyclist Frequency

Evening Peak 2007 – 2015 (n)



1.6 Aggregated Total

- A total of 1055 cyclist movements were recorded across the 15 sites monitored during the morning and evening peak periods in 2015. This represents a 23 per cent increase from 2014 (859 movements).
- Six per cent (n=67) of the cycle movements were made by pelotons. This compares with three per cent (n=22) in 2014 and seven per cent (n=82) in 2013.
- The average volume of evening cyclist movements across all 15 monitoring sites in the Albany ward was 70 movements. This compares with 57 movements last year.
- The busiest site in 2015 was the Sunnynook Road/East Coast Road intersection (149 movements), whereas the least number of cycle movements were observed at Whangaparaoa Road near Red Beach intersection (26 movements).
- Thirteen out of the 15 sites in this ward experienced an increase in cycle volume over the past 12 months. The most notable increase was at Whangaparaoa Road, near Hibiscus Coast Highway (up 87 per cent from 2014).
- The most notable decrease in cycle volume this year occurred at Beach Road/Brown's Bay Road (down 23 per cent from 2014).

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
47	Oteha Valley/East Coast Road	59	114	138	168	129	137	106	103	**146**	**42%**	**147%**
38	Rosedale Road/East Coast Road	76	98	159	152	143	118	112	85	**104**	**22%**	**37%**
46	Rosedale Road/Bush Road	31	73	72	109	85	63	100	80	**93**	**16%**	**200%**
39	Upper Harbour Drive/ Albany Highway	25	98	138	158	148	187	134	75	**87**	**16%**	**248%**
40	Oteha Valley/SH17/ Albany Highway	19	48	72	91	82	128	85	60	**59**	**-2%**	**211%**
45	Beach Road/Browns Bay Road	19	45	59	77	75	61	60	70	**54**	**-23%**	**184%**
51	Luckens Road/Hobsonville Road	32	41	77	95	52	112	104	41	**52**	**27%**	**63%**
63	Gulf Harbour Drive/ Laurie Southwick Parade	56	44	22	37	39	33	40	29	**32**	**10%**	**43%**
61	D'Oyly Reserve cycleway	24	103	9	44	58	35	27	24	**28**	**17%**	**17%**
60	Whangaparaoa Road, near Hibiscus Coast Highway intersection	28	20	12	23	22	20	19	15	**28**	**87%**	**0%**
59	Whangaparaoa Road, near Red Beach intersection	29	31	26	29	26	28	25	18	**26**	**44%**	**-10%**
	Average per site (11 sites since 2007)	**36**	**65**	**71**	**89**	**78**	**84**	**74**	**55**	**64**	**16%**	**78%**
	Total (11 sites since 2007)	**398**	**715**	**784**	**983**	**859**	**922**	**812**	**600**	**709**	**18%**	**78%**
84	Behind Auckland Council Building, Orewa	-	-	86	95	138	89	89	75	**92**	**23%**	**-**
70	Squadron Drive/Buckley Avenue*	-	35	68	94	83	110	106	65	**74**	**14%**	**-**
82	Hibiscus Coast Highway/ Jelas Road	-	-	38	39	30	34	43	22	**31**	**41%**	**-**
	Average per site (12 sites in 2008, 14 sites since 2009)	**-**	**63**	**70**	**87**	**79**	**83**	**75**	**54**	**65**	**20%**	**-**
	Total (12 sites in 2008, 14 sites since 2009)	**-**	**750**	**976**	**1211**	**1110**	**1155**	**1050**	**762**	**906**	**19%**	**-**
89	Sunnynook Road/East Coast Road	-	-	-	-	174	155	149	97	**149**	**54%**	**-**
	Average per site (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**63**	**70**	**87**	**86**	**87**	**80**	**57**	**70**	**23%**	**-**
	Total (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**750**	**976**	**1211**	**1284**	**1310**	**1199**	**859**	**1055**	**23%**	**-**

∞Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the average and total figures exclude this outlier for more accurate comparison.

** Note: The original Upper Harbour Bridge observation site was relocated to Upper Harbour Drive/Buckley Avenue in 2010, due to road construction. In 2012, due to a change in road layout, this site was re-located. Consequently results from previous years are not directly comparable.*

- Overall cyclist characteristics are illustrated in Table 1.6. In total, 79 per cent of cyclists were adults (unchanged from 2014).
- Nearly all cyclists wore a helmet (94 per cent, stable from 93 per cent in 2014).
- Approximately, five in six cyclists were male (84 per cent, slightly down from 80 per cent last year).
- About two-thirds of the cyclists were riding on the road (64 per cent, stable from 63 per cent in 2014). The remainder travelled on the footpath (17 per cent) or the off-road cycleway (19 per cent).

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	66	68	70	72	76	77	82	79	**79**	**0**
School child	34	32	30	28	24	23	18	21	**21**	**0**
Helmet Wearing										
Helmet on head	89	84	92	91	92	94	95	93	**94**	**1**
No helmet	11	16	8	9	8	6	5	7	**6**	**-1**
Gender										
Male	-	-	-	-	83	82	86	80	**84**	**4**
Female	-	-	-	-	16	15	13	19	**14**	**-5**
Can't tell	-	-	-	-	1	3	1	1	**2**	**1**
Where Riding										
Road	53	63	62	63	66	75	73	63	**64**	**1**
Footpath	41	23	23	19	15	12	14	22	**17**	**-5**
Off-road cycleway	6	14	15	18	19	13	13	15	**19**	**4**
Base:	***398***	***750***	***976***	***1211***	***1284***	***1310***	***1199***	***859***	***1055***	

1.7 Average Annual Daily Traffic (AADT) Estimate

Note: A discussion of Average Annual Daily Traffic Estimates is provided in Section 1.2. A full description of the tool, the calculation used, and the limitations of the estimates are provided in Appendix One. Readers are encouraged to review these sections in conjunction with the data presented here.

Table 1.7 provides the comparative AADT estimates for each site, based on the average of morning and evening peak AADT calculations.

- The highest AADT was at Sunnynook Road/East Coast Road (219 daily movements) and the lowest was at Whangaparaoa Road near Red Beach intersection (38 daily movements).
- Out of the 15 sites in this ward, 13 have registered an increase in cycle volume compared to last year. The most notable increase occurred at Whangaparaoa Road, near Hibiscus Coast Highway intersection (up 86 per cent).

- **Table 1.7: Dry Weather Factor 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
89	Sunnynook Road/ East Coast Road	-	-	-	-	252	228	220	140	**219**	**56%**	**-**
47	Oteha Valley/ East Coast Road	137	163	201	245	186	199	155	150	**214**	**43%**	**56%**
38	Rosedale Road/East Coast Road	176	143	235	224	208	173	164	123	**151**	**23%**	**-14%**
84	Behind Auckland Council Building, Orewa	-	-	130	142	201	132	133	112	**137**	**22%**	**-**
46	Rosedale Road/Bush Road	70	106	103	157	121	90	144	114	**134**	**18%**	**91%**
39	Upper Harbour Drive/ Albany Highway	57	143	200	228	213	265	193	107	**126**	**18%**	**121%**
70	Squadron Drive/ Buckley Avenue*	-	51	97	135	120	156	153	92	**106**	**15%**	**-**
40	Oteha Valley/SH17/ Albany Highway	42	69	103	130	117	182	121	86	**85**	**-1%**	**102%**
45	Beach Road/Browns Bay Road	44	66	86	114	107	88	89	101	**79**	**-22%**	**80%**
51	Luckens Road/Hobsonville Road	47	60	110	137	74	161	150	59	**74**	**25%**	**57%**
63	Gulf Harbour Drive/Laurie Southwick Parade	80	63	31	53	56	47	59	42	**46**	**10%**	**-43%**
82	Hibiscus Coast Highway/ Jelas Road	-	-	55	57	44	50	64	33	**45**	**36%**	**-**
61	D'Oyly Reserve cycleway	35	145	13	65	82	50	39	35	**41**	**17%**	**17%**
60	Whangaparaoa Road, near Hibiscus Coast Highway intersection	40	29	17	34	31	29	28	22	**41**	**86%**	**3%**
59	Whangaparaoa Road, near Red Beach intersection	42	45	38	43	37	41	37	26	**38**	**46%**	**-10%**

** Note: The original Upper Harbour Bridge observation site was relocated to Upper Harbour Drive/Buckley Avenue in 2010, due to road construction. In 2012, due to a change in road layout, this site was re-located. Consequently results from previous years are not directly comparable.*

1.8 Ferry Wharf Bike Count Summary

Hobsonville Ferry Terminal - Key Points

- In the morning, no bicycles were observed at 6:10am and two bicycles were observed at the 9:10am. This suggests two ferry passengers rode to the Hobsonville Ferry Terminal and parked the bikes there. This figure is up from no bicycles in 2014.
- In the afternoon, two bicycles were observed at 3:30pm and one bicycle was observed at 7:10pm. This suggests one ferry passenger collected the bike after disembarking and cycled home. This figure is up from no bicycles in 2014.

Gulf Harbour Ferry Terminal - Key Points

- Note: No counts have been done at the Gulf Harbour Wharf in 2015.

1.9 School Bike Shed Count Summary

Cycle Counts

- Among the surveyed schools, of those eligible to cycle to school, on average, two per cent of students are cycling to their schools. This share is unchanged since 2013.
- Hobsonville Point Primary School reported the highest share of cyclists with 20 per cent of all eligible students currently cycling to school.
- In total, n=272 students from the responding schools were reported to be cycling to school.
- Of the 13 schools that participated in the count in both 2014 and 2015, one (8 per cent) reported an increase in the share of students cycling. Four (31 per cent) reported a decrease in the share of students cycling.

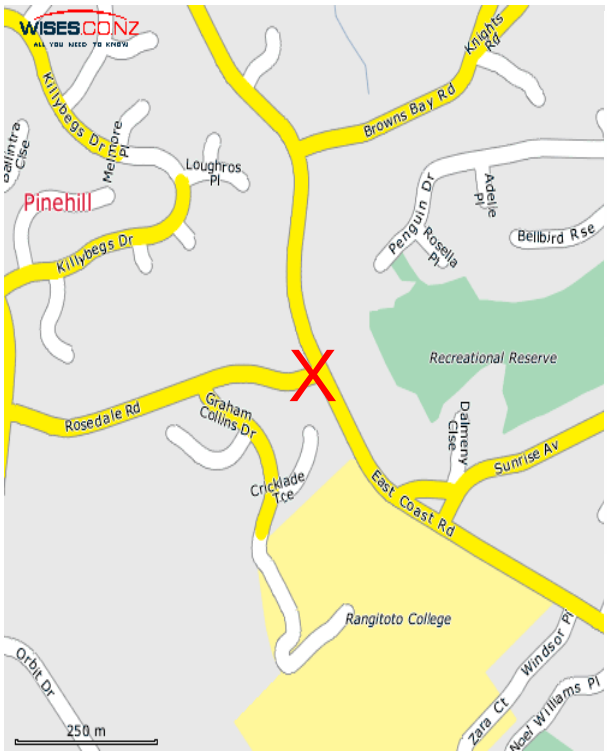
Scooter Counts

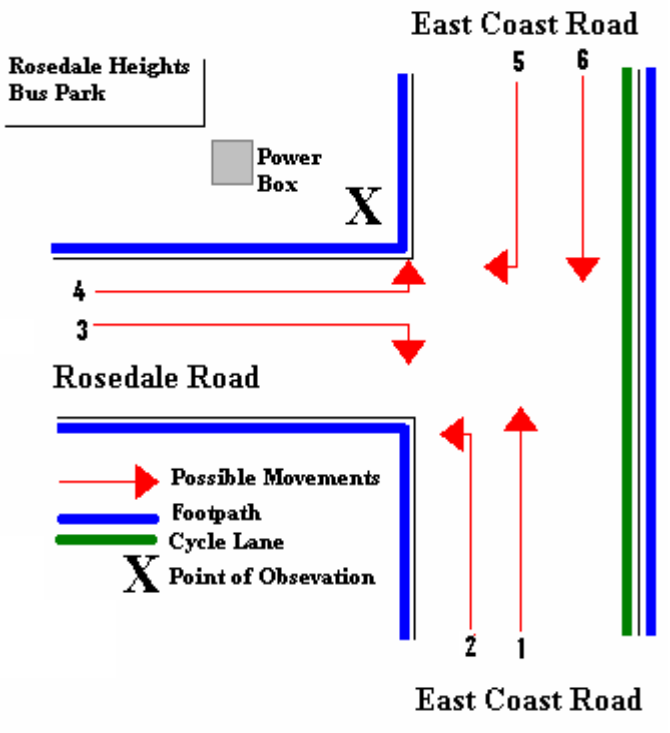
- Among the surveyed schools, of those eligible to scooter, on average, one per cent of students are scooting to their schools. This result is unchanged from 2014.
- Hobsonville Point Primary School reported the highest share of scooters, 19 per cent of all eligible students currently scooting to school (up from 17 per cent in 2014).
- In total, n=64 students from the responding schools were reported to be scooting to school.
- Of the 10 schools that participated in the count in both 2014 and 2015, two (20 per cent) reported an increase in the share of students. In contrast, 3 (30 per cent) reported a decrease in the share of students scooting.

2. ROSEDALE ROAD/EAST COAST ROAD, MAIRANGI BAY (SITE 38)

Figure 2.1 shows the possible cyclist movements at this intersection.

Figure 2.1: Cycle Movements: Rosedale Road/East Coast Road





2.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	54	22	76	176
2008	52	46	98	143
2009	105	54	159	235
2010	93	59	152	224
2011	73	70	143	208
2012	67	51	118	173
2013	65	47	112	164
2014	37	48	85	123
2015	**54**	**50**	**104**	**151**

2.2 Morning Peak

Environmental Conditions

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

Key Points

- Compared with last year, cyclist movements at the intersection of Rosedale and East Coast Road have increased (54 movements, up from 37 movements in 2014).
- The key movement in the morning was straight along East Coast Road heading south (Movement 6 = 31 cyclists).
- The most notable increase was also at Movement 6 (up 10 movements).

Table 2.1: Morning Cyclist Movements

Rosedale Road/East Coast Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	7	5	12	14	5	8	6	7	**8**	**1**
2	1	2	5	8	4	4	8	6	**4**	**-2**
3	3	4	3	5	6	0	4	0	**1**	**1**
4	0	0	1	0	0	1	1	0	**6**	**6**
5	2	2	6	3	3	2	3	3	**4**	**1**
6	41	39	78	63	55	52	43	21	**31**	**10**
Total	**54**	**52**	**105**	**93**	**73**	**67**	**65**	**37**	**54**	**17**

- The proportion of adult cyclists in the morning has increased (91 per cent, up from 86 per cent in 2014).
- Almost all of the cyclists were wearing a helmet (stable since 2011).
- The majority of cyclists were male (91 per cent).
- There has been an increase in the share of cyclists riding on the road (89 per cent, up 8 percentage points from 2014).

Table 2.2: Morning Cyclist Characteristics

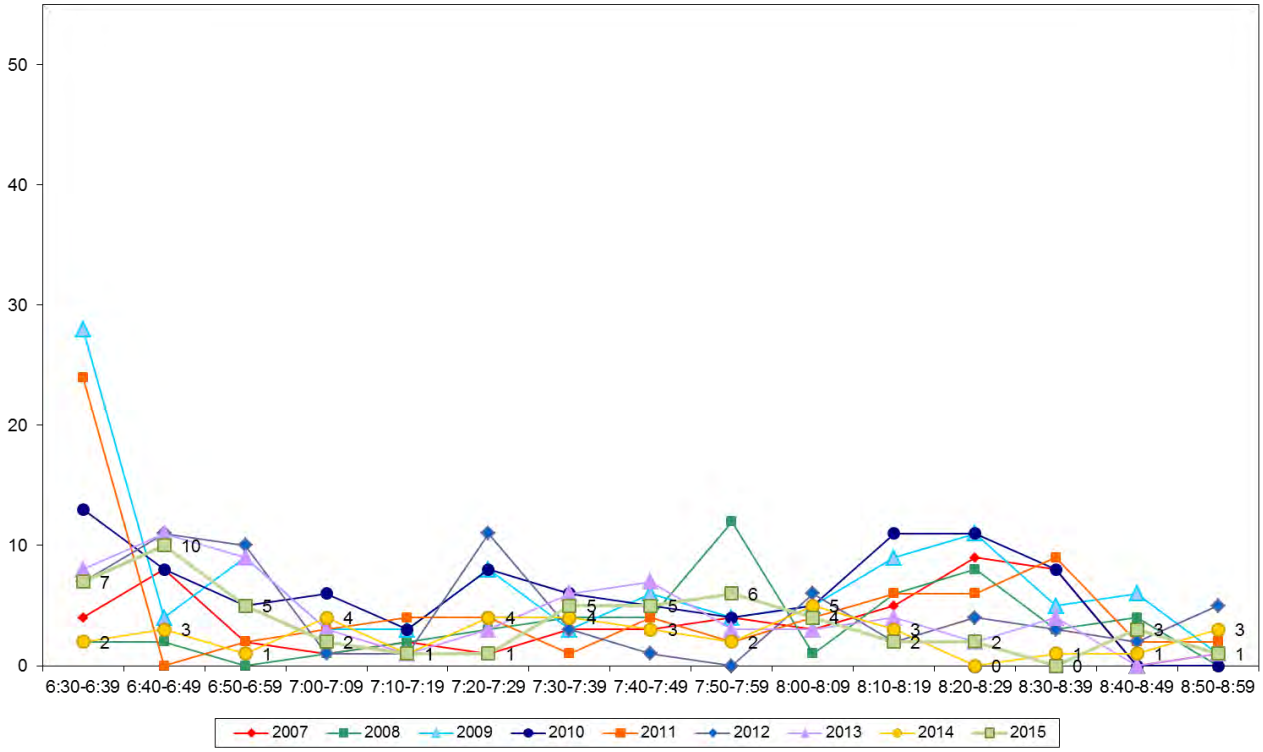
Rosedale Road/East Coast Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	57	63	71	65	73	83	94	86	**91**	**5**
School child	43	37	29	35	27	17	6	14	**9**	**-5**
Helmet Wearing										
Helmet on head	85	94	93	91	97	98	98	100	**98**	**-2**
No helmet	15	6	7	9	3	2	2	0	**0**	**0**
Blank/Don't know	-	-	-	-	-	-	-	-	**2**	**2**
Gender										
Male	-	-	-	-	75	82	89	89	**91**	**2**
Female	-	-	-	-	18	16	11	11	**9**	**-2**
Can't tell	-	-	-	-	7	1	0	0	**0**	**0**
Where Riding										
Road	46	69	68	62	78	80	91	81	**89**	**8**
Footpath	54	31	32	38	22	20	9	19	**11**	**-8**
Base:	***54***	***52***	***105***	***93***	***73***	***67***	***65***	***37***	***54***	

- Morning cyclist movement volumes at the Rosedale Road/East Coast Road intersection remained low throughout the majority of the morning monitoring period. Volumes were highest at the start of the shift, the largest volume of 10 cyclists was recorded between 6:40am and 6:49am.

Figure 2.2: Morning Peak Cyclist Frequency

Rosedale Road/East Coast Road 2007 – 2015 (n)



2.3 Evening Peak

Environmental Conditions

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

Key Points

- The volume of evening cyclists has remained stable over the last 12 months, from 48 movements last year to 50 movements this year.
- The most common movement in the evening was straight along East Coast Road heading north (Movement 1 =19 movements, down from 23 movements in 2014).
- The most notable increase was at Movement 6 (travelling straight on East Coast Road heading south) with an increase of 6 cycle movements over the past 12 months.

Table 2.3: Evening Cyclist Movements

Rosedale Road/East Coast Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	6	25	33	35	32	26	29	23	**19**	**-4**
2	1	1	1	2	3	4	2	2	**1**	**-1**
3	0	3	6	3	4	7	4	3	**6**	**3**
4	2	4	4	5	5	2	5	8	**9**	**1**
5	0	2	1	1	7	2	0	3	**0**	**-3**
6	13	11	9	13	19	10	7	9	**15**	**6**
Total	**22**	**46**	**54**	**59**	**70**	**51**	**47**	**48**	**50**	**2**

Over the evening shift, all cyclists using this intersection were adults (an increase of 12 percentage points from 2014).

- All cyclists were wearing a helmet.
- The majority of cyclists were male (90 per cent, stable from 92 per cent in 2014).
- Twenty-eight per cent of cyclists were riding on the footpath (stable from 29 per cent last year).

Table 2.4: Evening Cyclist Characteristics

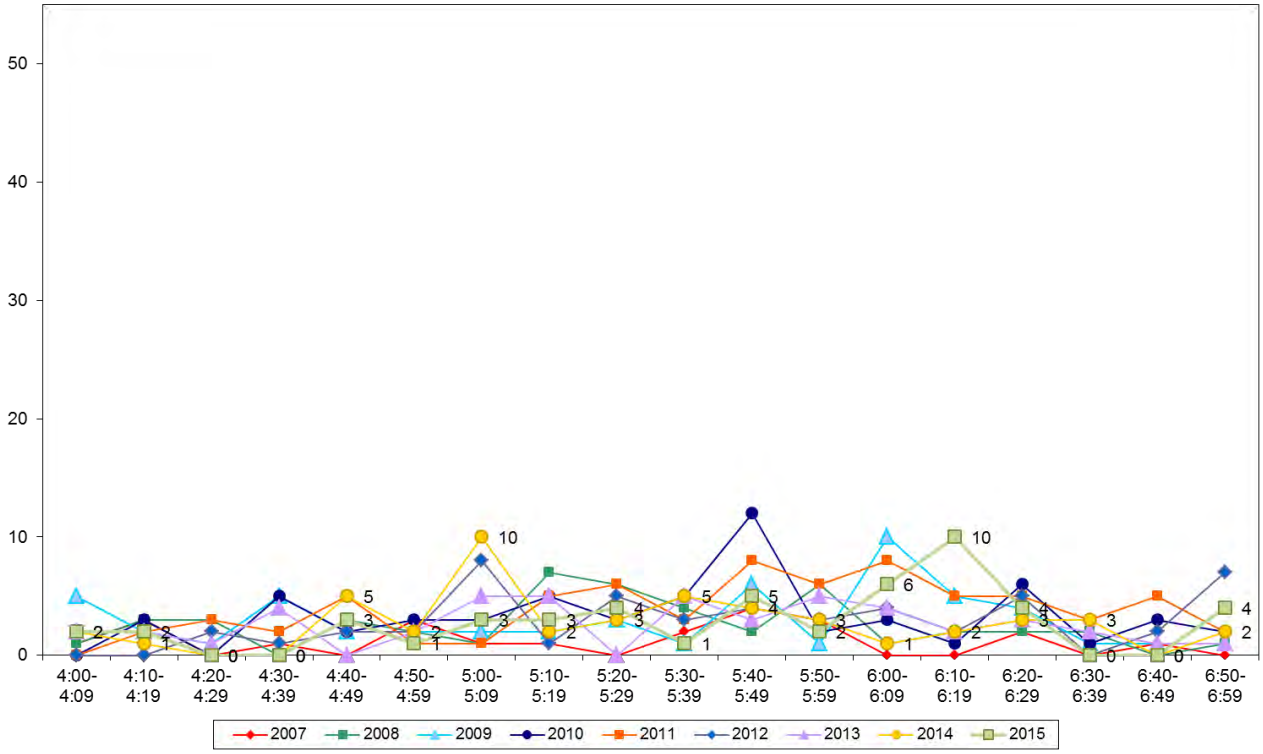
Rosedale Road/East Coast Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	73	74	91	86	81	82	98	88	**100**	**12**
School child	27	26	9	14	19	18	2	12	**0**	**-12**
Helmet Wearing										
Helmet on head	95	89	96	97	100	92	96	98	**100**	**2**
No helmet	5	11	4	3	0	8	4	2	**0**	**-2**
Gender										
Male	-	-	-	-	89	86	83	92	**90**	**-2**
Female	-	-	-	-	10	14	17	8	**10**	**2**
Can't tell	-	-	-	-	1	0	0	0	**0**	**0**
Where Riding										
Road	64	72	85	80	83	86	83	71	**72**	**1**
Footpath	36	28	15	20	17	14	17	29	**28**	**-1**
Base:	***22***	***46***	***54***	***59***	***70***	***51***	***47***	***48***	***50***	

- Evening cyclist movement volumes were low over the majority of the monitoring period. With the exception of 10 cyclists between 6:10pm and 6:19pm, all other ten-minute time intervals had no more than six movements.

Figure 2.3: Evening Peak Cyclist Frequency

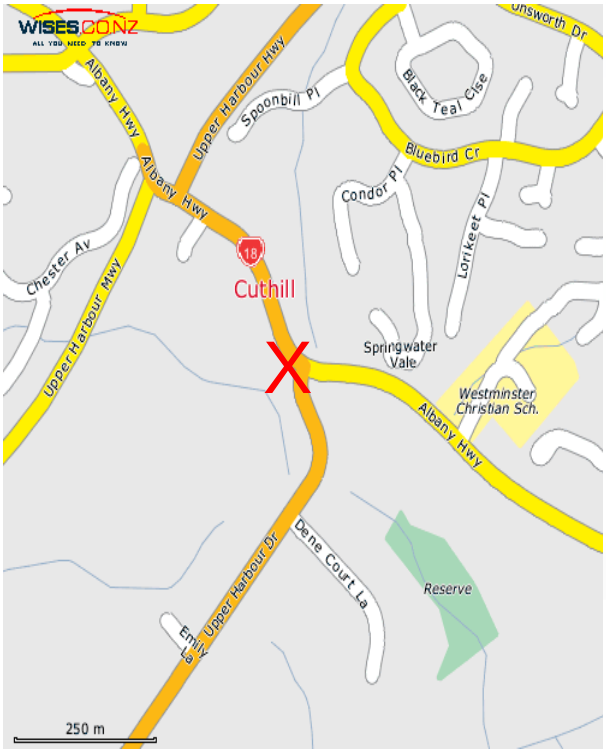
Rosedale Road/East Coast Road 2007 – 2015 (n)

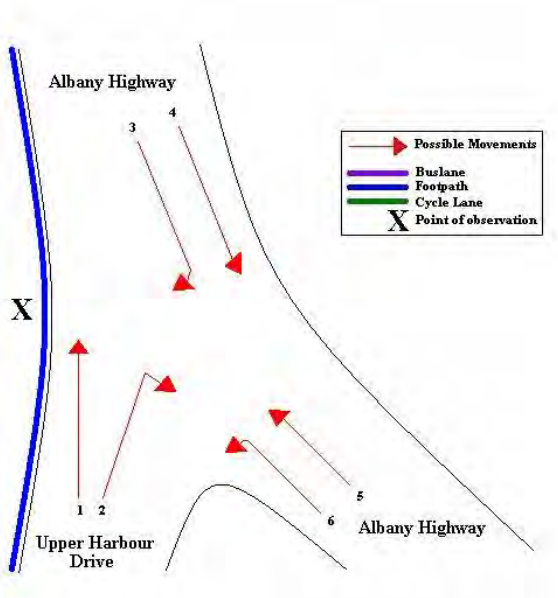


3. UPPER HARBOUR DRIVE/ALBANY HIGHWAY, GREENHITE (SITE 39)

Figure 3.1 shows the possible cyclist movements at this intersection.

Figure 3.1: Cycle Movements: Upper Harbour Drive/Albany Highway





3.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	14	11	25	57
2008	54	44	98	143
2009	63	75	138	200
2010	65	93	158	228
2011	57	91	148	213
2012	51	136	187	265
2013	55	79	134	193
2014	27	48	75	107
2015	**38**	**49**	**87**	**126**

3.2 Morning Peak

Environmental Conditions

- The weather was fine with a 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 Upper Harbour Drive/Albany Highway intersection has increased in 2015 (38 movements, up from 27 in 2014).
- The most common movement in the morning was travelling straight along Albany Highway heading north (Movement 5 = 12 cyclists).
- The largest change in cyclist movement during the morning shift was observed at Movement 5 and Movement 6, each with an increase of 4 cyclists this year.

Table 3.1: Morning Cyclist Movements

Upper Harbour Drive/Albany Highway 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	7	1	10	12	9	7	9	6	**7**	**1**
2	1	0	11	10	15	8	9	5	**7**	**2**
3	0	26	6	7	1	3	5	1	**1**	**0**
4	0	6	5	2	4	5	4	3	**3**	**0**
5	6	10	22	14	13	12	13	8	**12**	**4**
6	0	11	9	20	15	16	15	4	**8**	**4**
Total	**14**	**54**	**63**	**65**	**57**	**51**	**55**	**27**	**38**	**11**

- Over the morning peak, 95 per cent of cyclists at this intersection were identified as adults (stable since 2013).
- All cyclists were wearing a helmet (up from 96 per cent in 2014).
- The majority of cyclists were male (87 per cent). The share of female cyclists decreased this year by 9 percentage points (13 per cent, down from 22 per cent in 2014).
- Nearly all cyclists were riding on the road (92 per cent, stable from 89 per cent in 2014).

Table 3.2: Morning Cyclist Characteristics

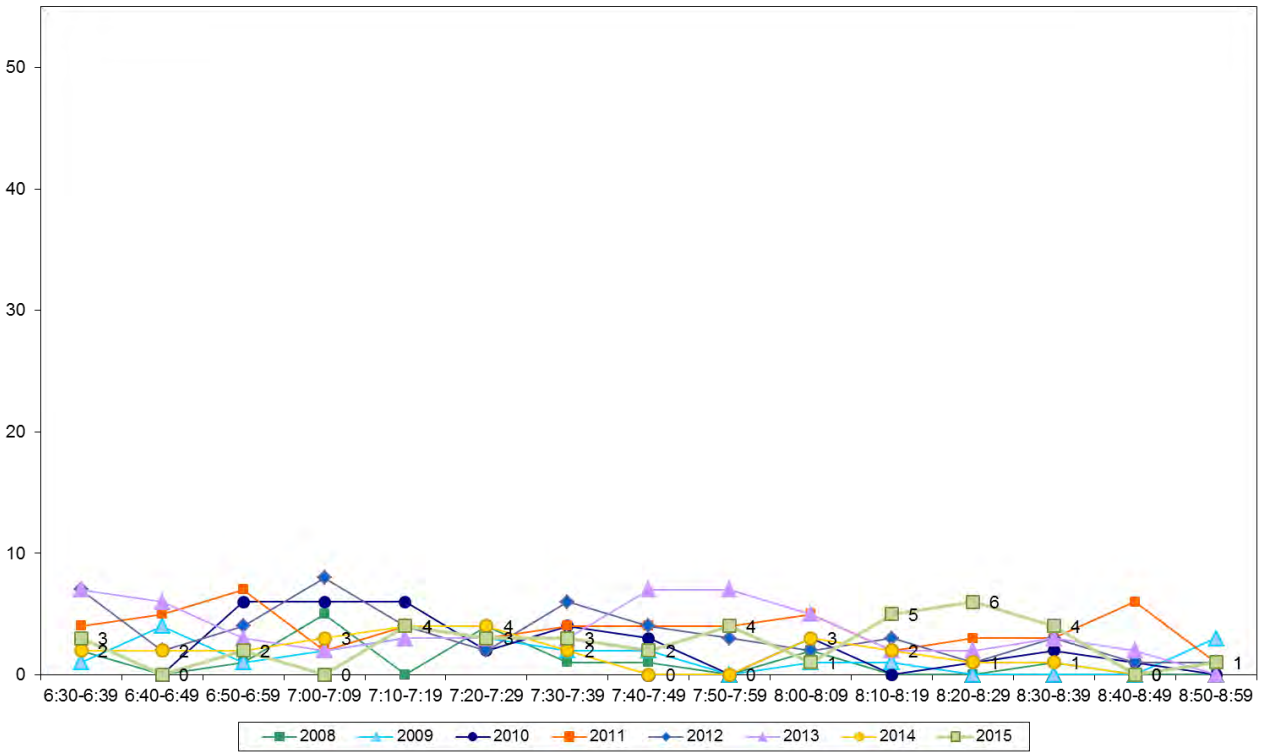
Upper Harbour Drive/Albany Highway 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	100	89	94	95	98	49	96	96	**95**	**-1**
School child	0	11	6	5	2	51	4	4	**5**	**1**
Helmet Wearing										
Helmet on head	100	98	92	97	81	100	98	96	**100**	**4**
No helmet	0	2	8	3	19	0	2	4	**0**	**-4**
Gender										
Male	-	-	-	-	81	82	93	67	**87**	**20**
Female	-	-	-	-	16	8	7	22	**13**	**-9**
Can't tell	-	-	-	-	3	10	0	11	**0**	**-11**
Where Riding										
Road	86	94	92	98	100	98	96	89	**92**	**3**
Footpath	14	6	8	2	0	2	4	11	**8**	**-3**
Base:	***14***	***54***	***63***	***65***	***98***	***51***	***55***	***27***	***38***	

- The volume of morning cyclist movements was low throughout the morning shift. There were no notable peaks as cycle volumes reached no higher than six movements at any ten minute interval.

Figure 3.2: Morning Peak Cyclist Frequency

Upper Harbour Drive/Albany Highway 2008 – 2015 (n)



3.3 Evening Peak

Environmental Conditions

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

Key Points

- Evening cyclist volumes at the Upper Harbour Drive/Albany Highway intersection have remained stable over the past 12 months (49 movements, stable from 48 movements in 2014).
- The most common movements in the evening were turning left from Albany Highway onto to Upper Harbour Drive (Movement 6 = 14 movements); turning right from Upper Harbour Drive onto Albany Highway (Movement 2 = 10 movements) and turning right from Albany Highway into to Upper Harbour Drive (Movement 3 = 10 movements).

Table 3.3: Evening Cyclist Movements

Upper Harbour Drive/Albany Highway 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	1	20	19	25	20	29	20	11	**4**	**-7**
2	2	9	5	11	12	31	10	5	**10**	**5**
3	3	4	13	10	5	16	18	11	**10**	**-1**
4	4	6	15	17	28	16	9	10	**7**	**-3**
5	1	2	9	15	11	19	6	7	**4**	**-3**
6	0	3	14	15	15	25	16	4	**14**	**10**
Total	**11**	**44**	**75**	**93**	**91**	**136**	**79**	**48**	**49**	**1**

- Over the evening peak, all of the cyclists using this intersection were adults (up from 90 per cent in 2014).
- All cyclists were wearing a helmet.
- The majority of cyclists were male (88 per cent, stable from 90 per cent in 2014).
- Ten percent of cyclists were riding on the footpath (up from 6 per cent in 2014).

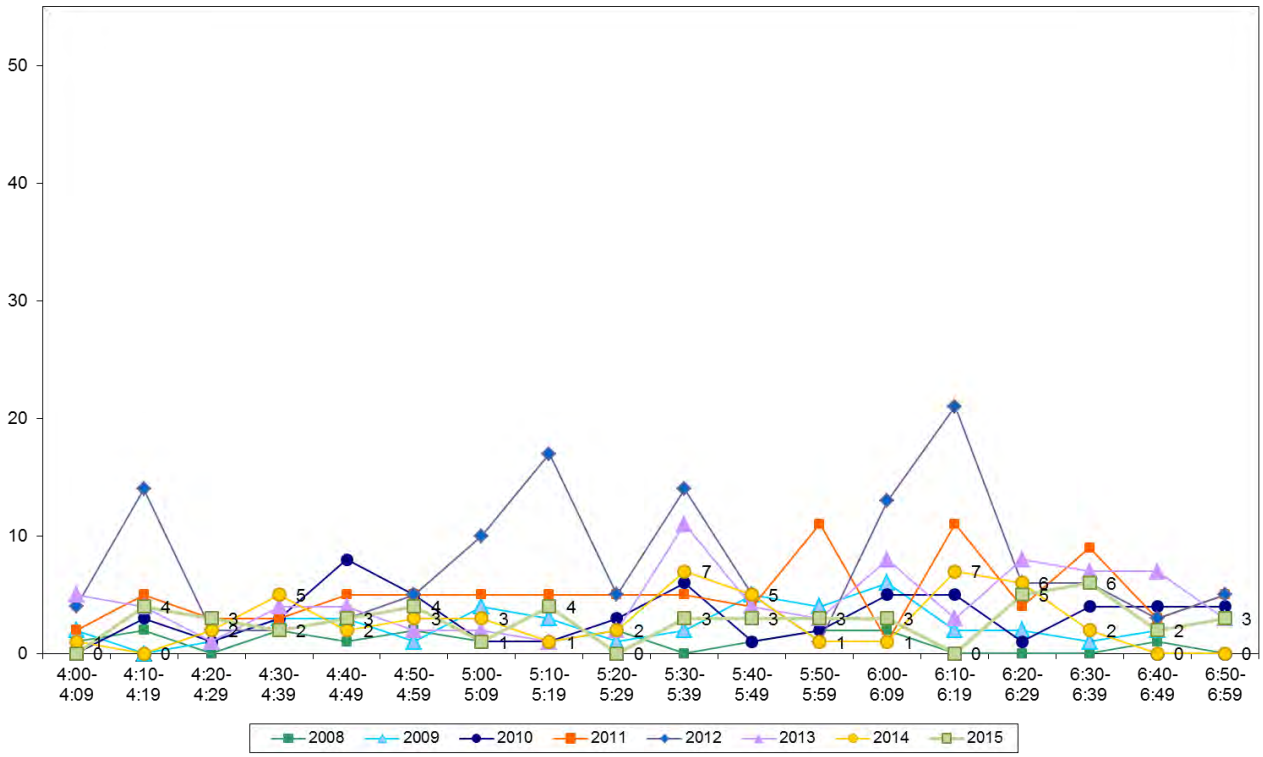
Table 3.4: Evening Cyclist Characteristics

Upper Harbour Drive/Albany Highway 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	100	89	92	94	97	79	82	90	**100**	**10**
School child	0	11	8	6	3	21	18	10	**0**	**-10**
Helmet Wearing										
Helmet on head	100	100	99	97	100	100	98	98	**100**	**2**
No helmet	0	0	1	3	0	0	2	2	**0**	**-2**
Gender										
Male	-	-	-	-	79	68	90	90	**88**	**-2**
Female	-	-	-	-	19	14	9	10	**12**	**2**
Can't tell	-	-	-	-	2	18	1	0	**0**	**0**
Where Riding										
Road	91	84	92	97	97	98	99	94	**90**	**-4**
Footpath	9	16	8	3	3	2	1	6	**10**	**4**
Base:	***11***	***44***	***75***	***93***	***91***	***136***	***79***	***48***	***49***	

- Cycle movement volumes remained low throughout the evening monitoring period. Cycle volumes reached their highest peak between 6:30pm and 6:39pm (6 movements).

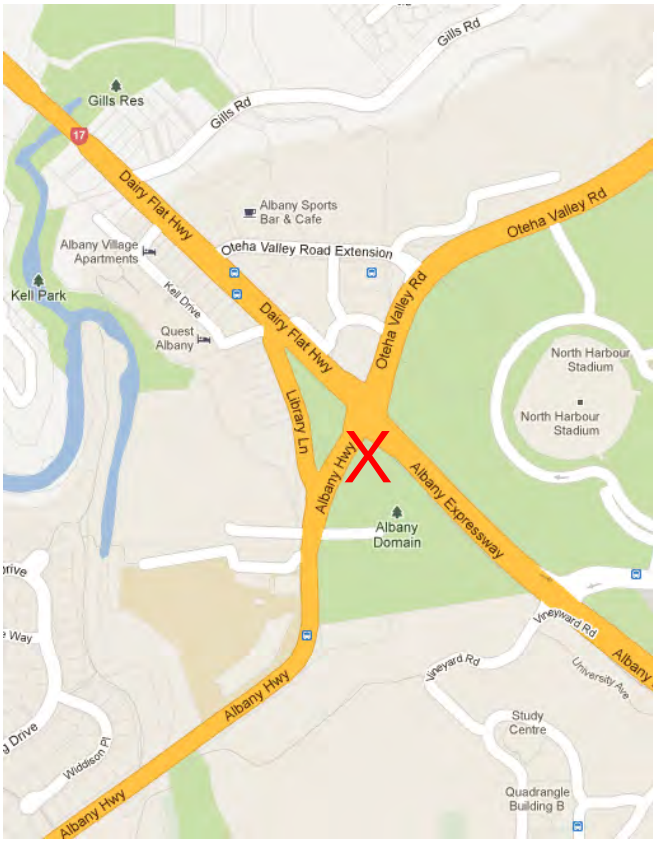
Figure 3.3: Evening Peak Cyclist Frequency
Upper Harbour Drive/Albany Highway 2008 – 2015 (n)

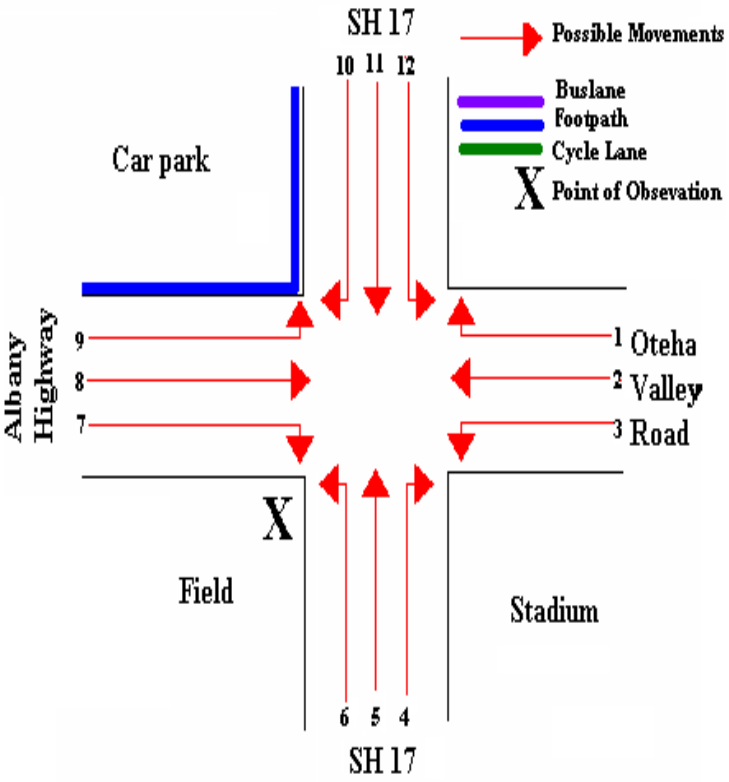


4. OTEHA VALLEY ROAD/SH17/ALBANY HIGHWAY, ALBANY (SITE 40)

Figure 4.1 shows the possible cyclist movements at this intersection.

Figure 4.1: Cycle Movements: Oteha Valley Road/SH17/Albany Highway





4.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	4	15	19	42
2008	20	28	48	69
2009	25	47	72	103
2010	29	62	91	130
2011	26	56	82	117
2012	40	88	128	182
2013	29	56	85	121
2014	19	41	60	86
2015	**26**	**33**	**59**	**85**

4.2 Morning Peak

Environmental Conditions

- The weather was fine throughout the morning shift.
- There were road works at this site as part of the Albany Highway North Upgrade Project. However, all 12 movements were still possible for cyclists.
- There were no other road works or accidents that may affect cycle counts.

Key Points

- The volume of cycle movements at the Oteha Valley Road/SH17/Albany Highway intersection has increased in 2015 (26 cycle movements, compared with 19 movements in 2014).
- There were no key movements in the morning, however, four movements recorded 5 cyclists during the monitoring period.
- Of the 12 movements possible at this site, the most notable change was a decrease in cyclists turning left from State Highway 17 onto Albany Highway (Movement 6, down 5 movements from 2014).

Table 4.1: Morning Cyclist Movements

Oteha Valley Road/SH17/Albany Highway 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	1	0	0	0	0	0	0	**1**	**1**
2	1	2	7	9	9	9	10	3	**5**	**2**
3	1	0	0	2	1	0	2	1	**2**	**1**
4	0	1	0	0	0	0	0	1	**0**	**-1**
5	0	0	0	0	1	1	1	1	**2**	**1**
6	0	6	0	4	3	3	0	5	**0**	**-5**
7	0	0	1	0	1	3	0	1	**5**	**4**
8	0	4	7	5	4	5	8	3	**5**	**2**
9	0	1	0	0	0	10	0	0	**0**	**0**
10	0	1	4	1	0	6	0	0	**0**	**0**
11	2	3	6	6	6	3	8	4	**5**	**1**
12	0	1	0	2	1	0	0	0	**1**	**1**
Total	**4**	**20**	**25**	**29**	**26**	**40**	**29**	**19**	**26**	**7**

- Over the morning peak, most cyclists riding through this intersection were adults (88 per cent, down from 95 per cent in 2014).
- The majority of cyclists were wearing a helmet (88 per cent, down slightly from 95 last year).
- Eighty-four per cent of cyclists were male, a notable increase from 48 per cent last year. Consequently, the female share of cyclists decreased notably to 8 per cent this year (down from 47 per cent in 2014).
- Twenty-seven per cent of cyclists were travelling on the footpath, down from 42 per cent last year.

Table 4.2: Morning Cyclist Characteristics

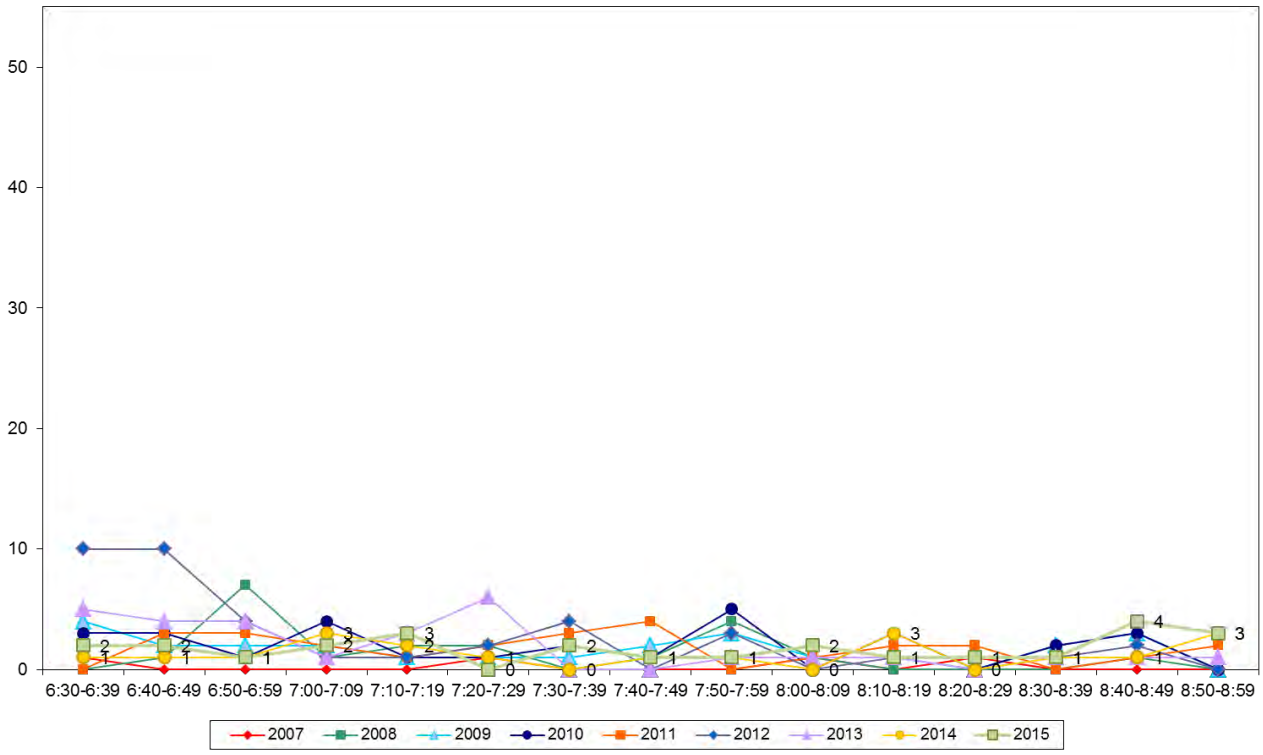
Oteha Valley Road/SH17/Albany Highway 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	100	80	92	83	81	95	97	95	**88**	**-7**
School child	0	20	8	17	19	5	3	5	**12**	**7**
Helmet Wearing										
Helmet on head	100	100	88	100	96	100	100	95	**88**	**-7**
No helmet	0	0	12	0	4	0	0	5	**8**	**3**
Blank/Can't tell	-	-	-	-	-	-	-	-	**4**	**4**
Gender										
Male	-	-	-	-	65	70	79	48	**84**	**36**
Female	-	-	-	-	35	30	21	47	**8**	**-39**
Can't tell	-	-	-	-	-	-	-	5	**8**	**3**
Where Riding										
Road	50	100	92	76	62	90	86	58	**69**	**11**
Footpath	50	0	8	24	38	10	14	42	**27**	**-15**
Blank/Don't know	-	-	-	-	-	-	-	-	**4**	**4**
Base:	***4***	***20***	***25***	***29***	***26***	***40***	***29***	***19***	***26***	

- Similar to previous years, morning cyclist movement volumes were low over the entire monitoring period with no more than four cycle movements observed during each ten minute interval.

Figure 4.2: Morning Peak Cyclist Frequency

Oteha Valley Road/SH17/Albany Highway 2007 – 2015 (n)



4.3 Evening Peak

Environmental Conditions

- The weather was fine throughout the evening shift.
- There were road works at this site as part of the Albany Highway North Upgrade Project. However, all 12 movements were still possible for cyclists riding past.
- There were no other road works or accidents that may affect cycle counts.

Key Points

- Evening cyclist movements at the Oteha Valley Road/SH17/Albany Highway intersection have recorded a decrease in 2015 (33 movements, down from 41 movements in 2014).
- The most common movement in the evening was travelling south on State Highway 17 (Movement 11 = 10 movements).
- The most notable change was cyclists who were riding straight along Albany Highway into Oteha Valley Road (Movement 8 = down 12 movements).
- The largest increase in cyclist movements during the evening was observed at Movement 11 (up 8 movements from last year).

Table4.3: Evening Cyclist Movements

Oteha Valley Road/SH17/Albany Highway 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	2	2	0	0	0	1	0	**1**	**1**
2	1	5	3	6	5	13	6	5	**2**	**-3**
3	0	0	1	4	2	9	10	1	**0**	**-1**
4	1	1	1	3	0	2	1	1	**1**	**0**
5	4	5	5	4	3	3	3	4	**2**	**-2**
6	1	1	3	1	2	4	1	5	**3**	**-2**
7	1	3	10	9	5	7	0	1	**3**	**2**
8	1	4	12	25	27	36	25	16	**4**	**-12**
9	0	1	1	1	0	0	0	2	**0**	**-2**
10	3	3	4	6	3	3	3	3	**3**	**0**
11	3	3	5	1	7	8	3	2	**10**	**8**
12	0	0	0	2	2	3	3	1	**4**	**3**
Total	**15**	**28**	**47**	**62**	**56**	**88**	**56**	**41**	**33**	**-8**

- Most cyclists using this site were adults (94 per cent, down from 98 per cent in 2014).
- Almost all cyclists were wearing a helmet (94 per cent, down from 100 per cent in 2014).
- The majority of cyclists were male (88 per cent, up from 68 per cent in the previous year).
- The share of cyclists travelling on the footpath has increased this year (27 per cent, up from 15 per cent in 2014).

Table 4.4: Evening Cyclist Characteristics

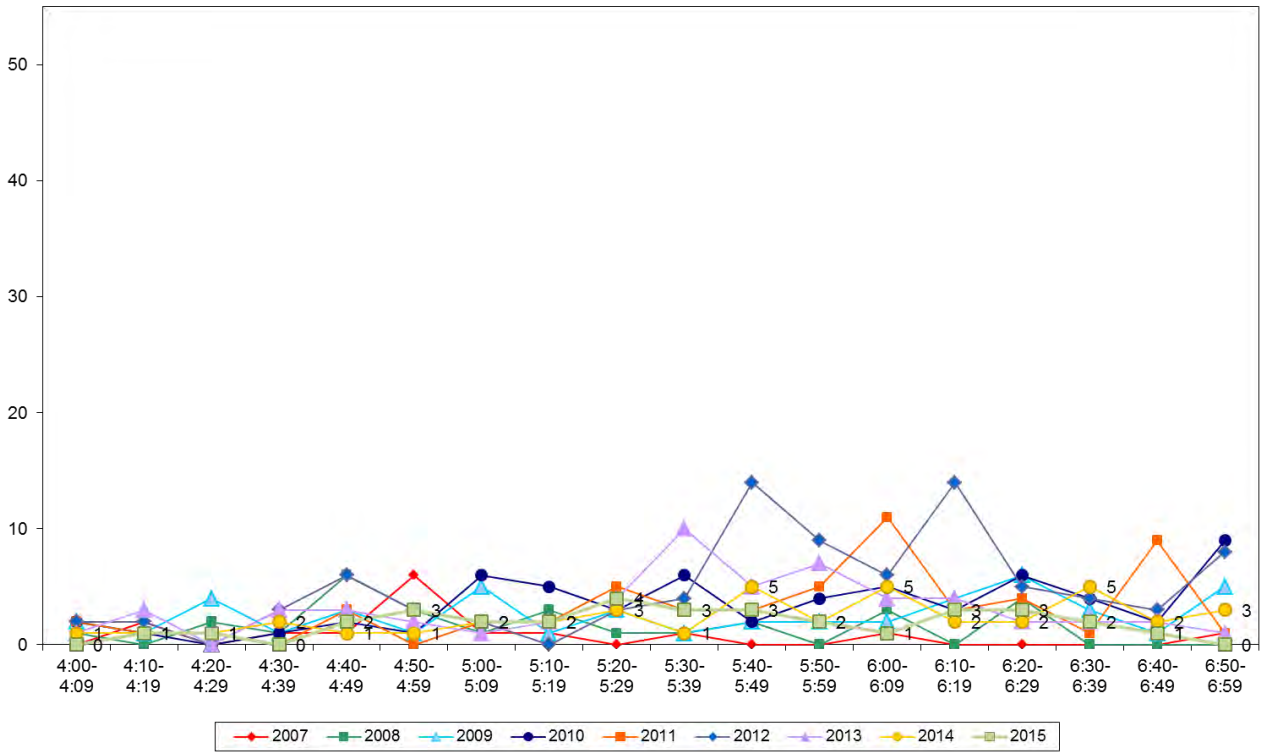
Oteha Valley Road/SH17/Albany Highway 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	100	82	94	94	93	95	98	98	**94**	**-4**
School child	0	18	6	6	7	5	2	2	**6**	**4**
Helmet Wearing										
Helmet on head	93	89	94	100	98	92	96	100	**94**	**-6**
No helmet	7	11	6	0	2	8	4	0	**6**	**6**
Gender										
Male	-	-	-	-	80	83	86	68	**88**	**20**
Female	-	-	-	-	20	17	14	30	**12**	**-18**
Can't tell	-	-	-	-	0	0	0	2	**0**	**-2**
Where Riding										
Road	87	100	81	90	84	89	89	85	**70**	**-15**
Footpath	13	0	19	10	16	11	11	15	**27**	**12**
Blank/Not recorded	-	-	-	-	-	-	-	-	**3**	**3**
Base:	***15***	***28***	***47***	***62***	***56***	***88***	***56***	***41***	***33***	

- The volume of evening cyclist movements were low throughout the entire monitoring period, with no more than four cyclists being recorded during any ten minute time interval.

Figure 4.3: Evening Peak Cyclist Frequency

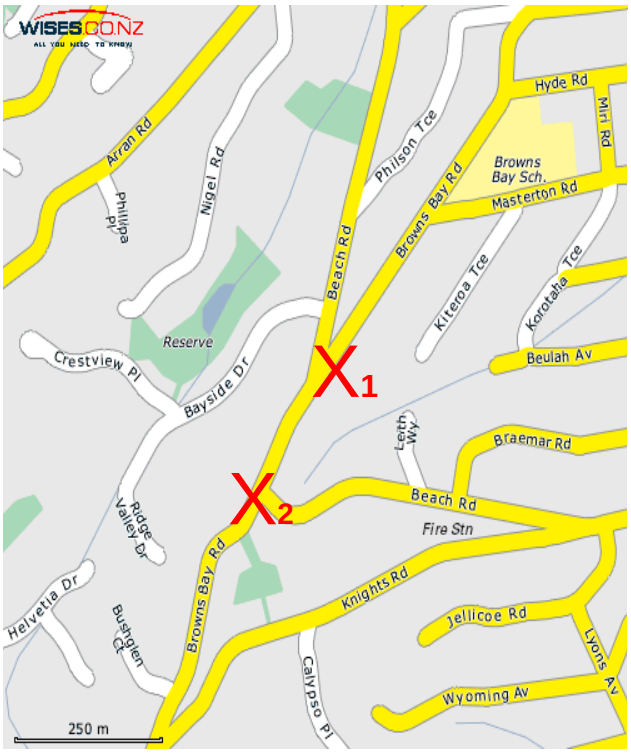
Oteha Valley Road/SH17/Albany Highway 2007 – 2015 (n)

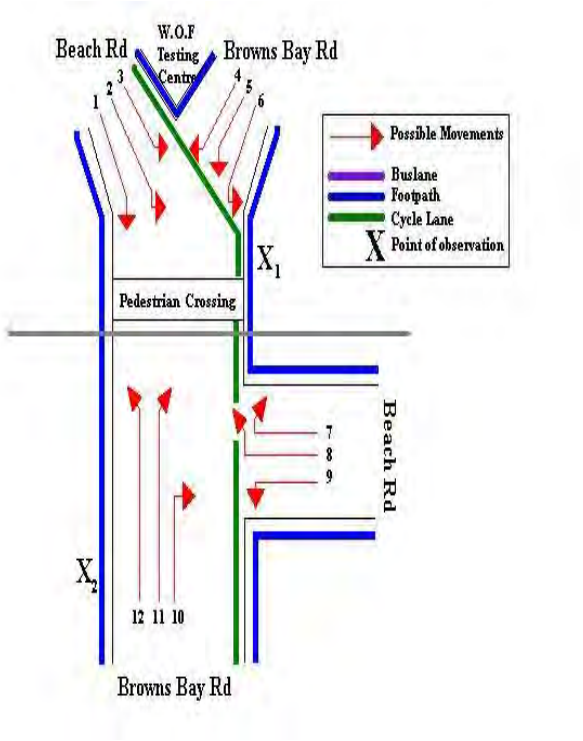


5. BEACH ROAD/BROWNS BAY ROAD, ROTHESAY BAY (SITE 45)

Figure 5.1 shows the possible cyclist movements at this intersection. *Note: Due to the size of this intersection, two surveyors were used to conduct the cycle counts.*

Figure 5.1: Cycle Movements: Beach Road/Browns Bay Road





5.1 Site Summary

	Raw Counts			AADT
	Morning Peak	Evening Peak	Total	Total
2007	11	8	19	44
2008	26	19	45	66
2009	29	30	59	86
2010	50	27	77	114
2011	47	28	75	107
2012	28	33	61	88
2013	43	17	60	89
2014	27	43	70	101
2015	**30**	**24**	**54**	**79**

5.2 Morning Peak

Environmental Conditions

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

Key Points

- In 2015, the morning cyclist traffic at the intersection of Beach Road/Browns Bay Road was stable compared to 2014 (30 movements, up from 27 movements last year).
- The key movement was travelling along Browns Bay Road heading south (Movement 5) with 8 movements.
- Out of 12 possible movements, the two that recorded the largest increase in the morning were travelling along Browns Bay Road heading south (Movement 5) and turning left from Beach Road onto Browns Bay Road (Movement 3). Both observed an increase of 5 movements.

Table 5.1: Morning Cyclist Movements

Beach Road/Browns Bay Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	1	4	7	0	1	4	2	3	**1**	**-2**
2	2	4	0	1	8	13	15	4	**0**	**-1**
3	3	0	0	2	3	1	7	0	**5**	**5**
4	3	0	0	1	0	0	2	0	**1**	**1**
5	0	4	7	22	20	0	1	3	**8**	**5**
6	2	3	0	1	0	0	7	5	**4**	**-1**
7	0	0	5	7	7	2	1	1	**0**	**-1**
8	0	9	6	3	0	2	5	10	**7**	**-3**
9	0	0	0	3	0	1	0	0	**0**	**0**
10	0	0	0	0	0	0	0	0	**0**	**0**
11	0	0	3	8	5	4	1	0	**2**	**2**
12	0	2	1	2	3	1	1	1	**2**	**1**
DK	-	-	-	-	-	-	1	0	**0**	**0**
Total	**11**	**26**	**29**	**50**	**47**	**28**	**43**	**27**	**30**	**3**

- Over the morning peak in 2015, the share of adult cyclists has decreased from last year (90 per cent, compared with 96 per cent in 2014).
- Almost all cyclists recorded were wearing a helmet (93 per cent, down from 100 per cent in 2014).
- The majority of cyclists were male (83 per cent, down 10 percentage points from last year).
- Seventeen cyclists were travelling on the footpath, a notable increase from no cyclists being recorded last year.

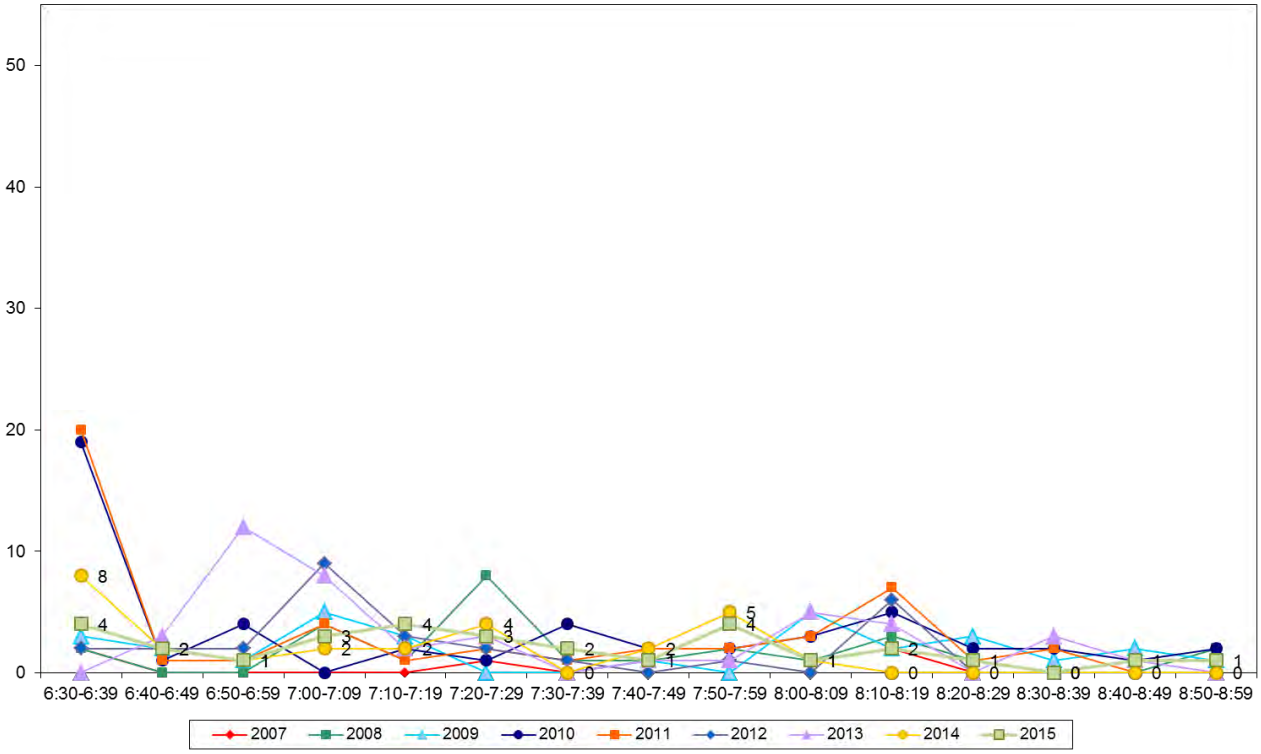
Table 5.2: Morning Cyclist Characteristics

Beach Road/Browns Bay Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	36	88	69	80	74	75	74	96	**90**	**-6**
School child	64	12	31	20	26	25	26	4	**10**	**6**
Helmet Wearing										
Helmet on head	91	96	93	98	100	96	100	100	**93**	**-7**
No helmet	9	4	7	2	0	4	0	0	**7**	**7**
Gender										
Male	-	-	-	-	94	96	93	93	**83**	**-10**
Female	-	-	-	-	6	4	7	7	**17**	**10**
Can't tell	-	-	-	-	0	0	0	0	**0**	**0**
Where Riding										
Road	45	88	42	80	74	79	77	100	**83**	**-17**
Footpath	55	12	34	6	26	21	23	0	**17**	**17**
Off-road cycleway	-	-	24	14	0	0	0	0	**0**	**0**
Base:	***11***	***26***	***29***	***50***	***47***	***28***	***43***	***27***	***30***	

- Cycle volumes remained low throughout the morning period, with no more than four cyclists being recorded at any ten minute time interval. Over the last hour of monitoring, no more than 2 cyclists were recorded during any interval.

Figure 5.2: Morning Peak Cyclist Frequency
Beach Road/Browns Bay Road 2007 – 2015 (n)



5.3 Evening Peak

Environmental Conditions

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

Key Points

- The volume of cycle movements at the Beach Road/Browns Bay Road intersection has almost halved compared to last year (24 movements, down from 43 movements in 2014).
- The key movement in the evening was turning left from Browns Bay Road into Beach Road (Movement 6 = 10 movements). Out of the 12 possible movements at this site, Movement 6 observed the most notable change in evening cyclists (up 10 cyclists from 2014).
- Cyclists travelling along Browns Bay Road entering Beach Road on their left (Movement 12) recorded the most notable decrease in cyclist movements (3 movements, down from 13 movements in 2014).

Table 5.3: Evening Cyclist Movements

Beach Road/Browns Bay Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	1	3	4	4	3	2	1	5	**1**	**-4**
2	0	2	0	3	1	2	1	5	**0**	**-5**
3	3	1	0	0	3	1	0	0	**0**	**0**
4	0	0	0	0	2	2	0	0	**0**	**0**
5	0	2	13	3	1	3	2	1	**1**	**0**
6	0	1	0	2	1	2	1	0	**10**	**10**
7	1	1	4	1	3	1	2	2	**2**	**0**
8	0	1	4	3	2	5	5	6	**2**	**-4**
9	0	0	0	1	3	0	0	0	**1**	**1**
10	0	0	0	0	0	1	0	4	**0**	**-4**
11	3	4	3	5	2	5	0	7	**4**	**-3**
12	0	4	2	5	7	9	5	13	**3**	**-10**
Total	**8**	**19**	**30**	**27**	**28**	**33**	**17**	**43**	**24**	**-19**

- Three-quarters of cyclists at this site were adults (down from 88 per cent in 2014).
- The majority of cyclists were wearing a helmet (92 per cent, up from 88 per cent last year).
- Ninety-six per cent of evening cyclists were male. The share of female cyclists has decreased by eight percentage points compared to last year.
- The majority of cyclists were riding on the road (96 per cent, a notable increase from 67 per cent at the previous measure).

Table 5.4: Evening Cyclist Characteristics

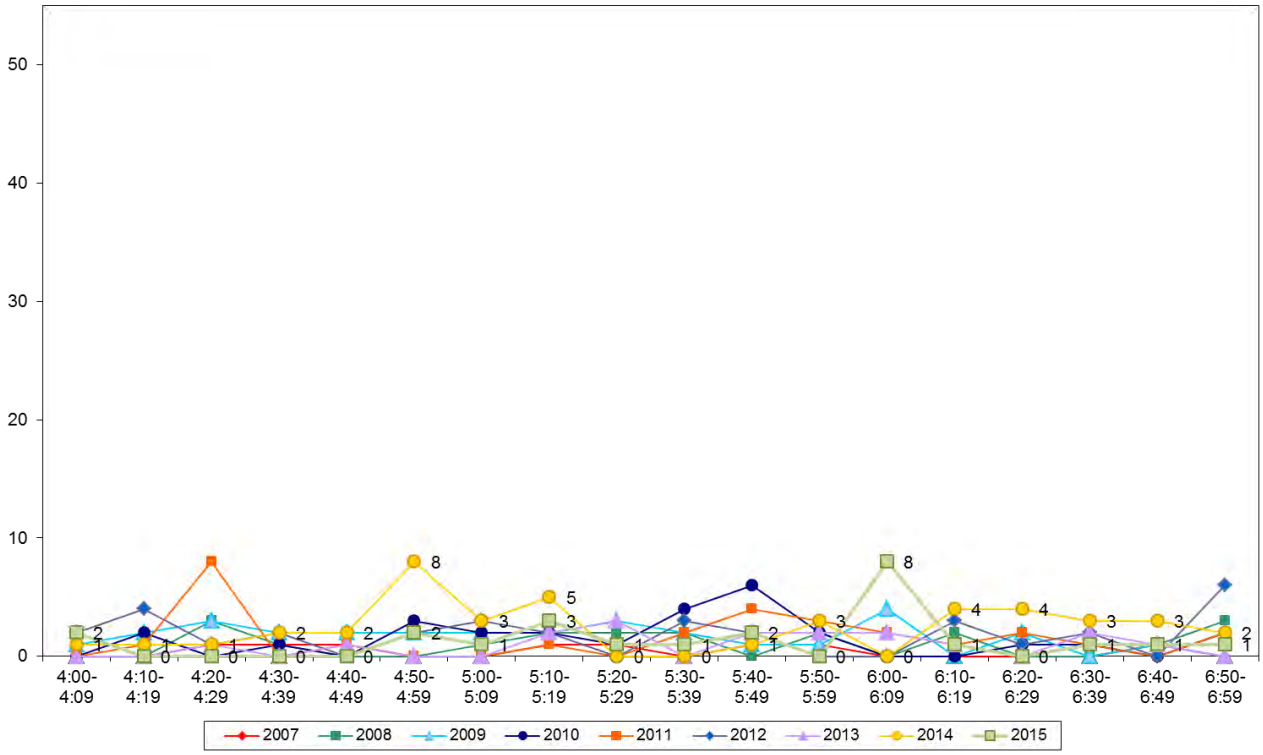
Beach Road/Browns Bay Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	100	58	60	85	82	91	88	88	**75**	**-13**
School child	0	42	40	15	18	9	12	12	**25**	**13**
Helmet Wearing										
Helmet on head	100	95	100	89	96	91	100	88	**92**	**4**
No helmet	0	5	0	11	4	9	0	12	**8**	**-4**
Gender										
Male	-	-	-	-	89	88	94	86	**96**	**10**
Female	-	-	-	-	11	9	6	12	**4**	**-8**
Can't tell	-	-	-	-	0	3	0	2	**0**	**-2**
Where Riding										
Road	87	63	33	81	75	76	71	67	**96**	**29**
Footpath	13	37	44	15	25	24	29	33	**4**	**-29**
Off-road cycleway	-	-	23	4	0	0	0	0	**0**	**0**
Base:	***8***	***19***	***30***	***27***	***28***	***33***	***17***	***43***	***24***	

- Evening cyclist volumes were low throughout the monitoring period. A peak in cycle movements was recorded between 6:00pm and 6:09pm with eight cyclists observed. All other time intervals observed no more than three cyclists at each interval.

Figure 5.3: Evening Peak Cyclist Frequency

Beach Road/Browns Bay Road 2007 – 2015 (n)

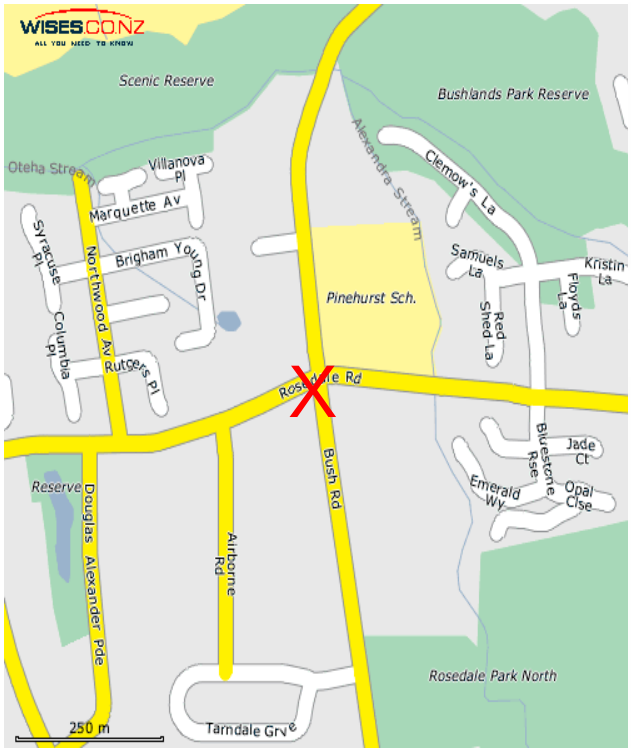


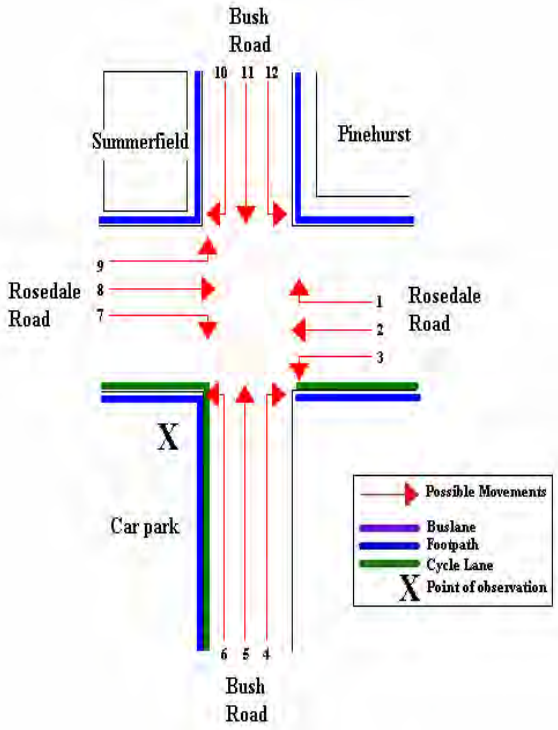
Note: In 2015, a group of six cyclists were recorded riding past at 6:09pm, which accounts for 25 per cent of this site's evening cycle traffic. The surveyor also noted that a group of four cyclists passed by outside the monitoring period (4:00pm to 7:00pm) at 7:01pm, travelling north along Beach Road (Movement 8).

6. ROSEDALE ROAD/BUSH ROAD, ALBANY (SITE 46)

Figure 6.1 shows the possible cyclist movements at this intersection.

Figure 6.1: Cycle Movements: Rosedale Road/Bush Road





6.1 Site Summary

	Raw Counts			*AADT*
	Morning Peak	***Evening Peak***	***Total***	***Total***
2007	15	16	31	70
2008	36	37	73	106
2009	26	46	72	103
2010	48	61	109	157
2011	29	56	85	121
2012	22	41	63	90
2013	43	57	100	144
2014	22	58	81	114
2015	**39**	**54**	**93**	**134**

6.2 Morning Peak

Environmental Conditions

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

Key Points

- Since last year, the volume of morning cyclists at the Rosedale Road/Bush Road intersection has increased, from 22 in 2014 to 39 movements this year.
- The most common movement in the morning was travelling west along Rosedale Road (Movement 2 = 10 cyclists). Movement 2 also observed the most notable change out of the 12 possible movements (up 7 cyclists from 2014).

Table 6.1: Morning Cyclist Movements

Rosedale Road/Bush Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	1	0	2	1	0	3	0	**6**	**6**
2	8	6	13	16	9	6	11	3	**10**	**7**
3	0	1	1	1	3	2	1	5	**1**	**-4**
4	0	1	0	2	3	1	1	0	**2**	**2**
5	4	3	1	6	2	2	3	1	**2**	**1**
6	0	12	2	5	4	1	4	2	**2**	**0**
7	0	0	0	0	0	0	0	0	**0**	**0**
8	0	3	3	5	2	3	9	3	**6**	**3**
9	0	2	0	4	0	2	5	0	**1**	**1**
10	3	3	3	2	2	1	3	3	**5**	**2**
11	0	2	2	4	2	3	3	3	**1**	**-2**
12	0	2	1	1	1	1	0	1	**3**	**2**
DK	0	0	0	0	0	0	0	1	**0**	**-1**
Total	**15**	**36**	**26**	**48**	**29**	**22**	**43**	**22**	**39**	**17**

- Over the morning peak, a high percentage of cyclists at this site were adults (82 per cent, a decrease from 91 per cent last year).
- Almost all of the cyclists were wearing a helmet (92 per cent, down from 100 per cent in 2014).
- The majority of cyclists continued to be male (74 per cent, stable from 77 in 2014).
- Approximately half of the cyclists were travelling on the footpath (51 per cent), a notable increase from 27 per cent in 2014. This is the highest record since 2008.

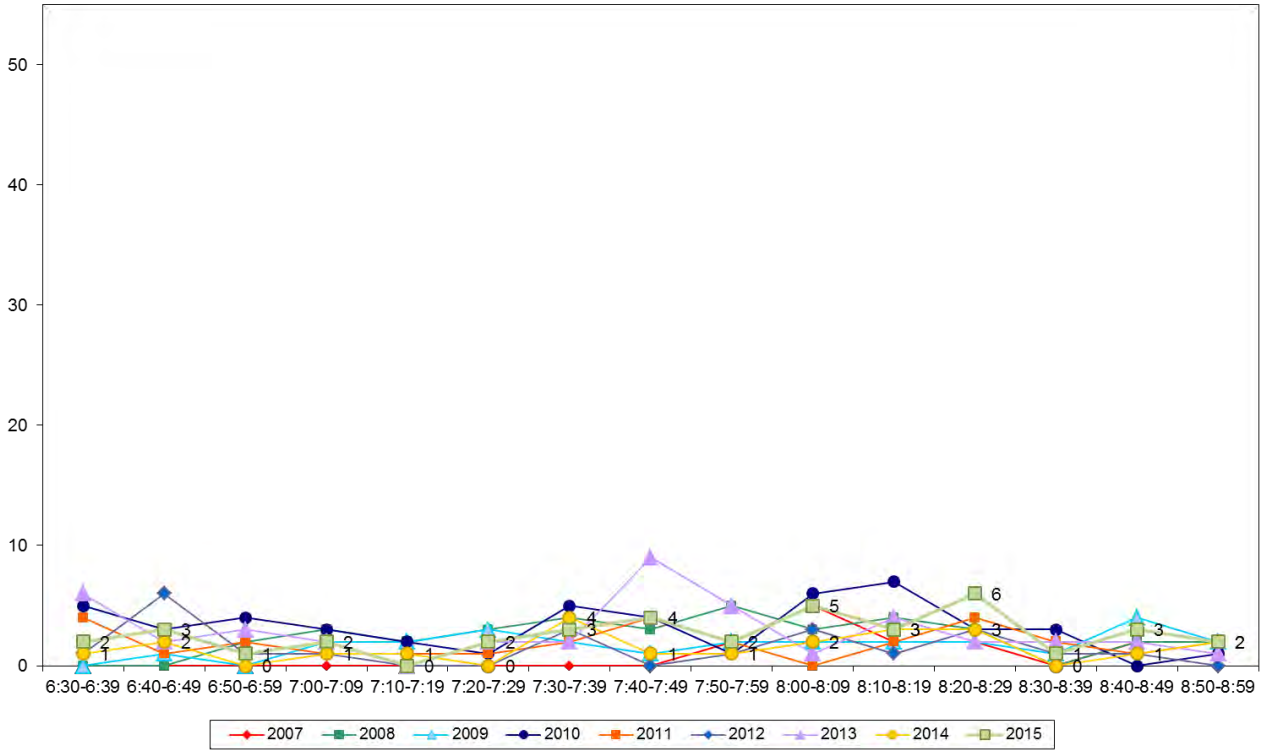
Table 6.2: Morning Cyclist Characteristics

Rosedale Road/Bush Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	40	81	81	81	93	82	84	91	**82**	**-9**
School child	60	19	19	19	7	18	16	9	**18**	**9**
Helmet Wearing										
Helmet on head	100	92	92	96	97	95	95	100	**92**	**-8**
No helmet	0	8	8	4	3	5	5	0	**8**	**8**
Gender										
Male	-	-	-	-	69	86	91	77	**74**	**-3**
Female	-	-	-	-	24	14	9	14	**23**	**9**
Can't tell	-	-	-	-	7	0	0	9	**3**	**-6**
Where Riding										
Road	33	61	69	73	83	82	91	73	**49**	**-24**
Footpath	67	39	31	27	17	18	9	27	**51**	**24**
Base:	***15***	***36***	***26***	***48***	***29***	***22***	***43***	***22***	***39***	

- Consistent with the trends in previous years, cyclist volumes were low throughout most of the monitoring period. This year, no more than six cyclists were observed during each ten minute interval throughout the monitoring period.

Figure 6.2: Morning Peak Cyclist Frequency
Rosedale Road/Bush Road 2007 – 2015 (n)



6.3 Evening Peak

Environmental Conditions

- The weather was fine throughout the 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 Rosedale Road/Bush Road intersection over the evening shift has decreased slightly to 54 cyclists (compared to 58 last year).
- There were three key evening movements turning left from Bush Road onto Rosedale Road (Movement 12 = 10 movements), travelling west along Rosedale Road (Movement 2 = 9 movements) and turning left from Bush Road onto Rosedale Road (Movement 6 = 9 movements).
- The most notable increase in evening cyclist movements was observed at Movement 12 (up 9 movements) and the most notable decrease was observed at Movement 4, turning right from Bush Road onto Rosedale Road (down 8 movements).

Table 6.3: Evening Cyclist Movements

Rosedale Road/Bush Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	1	1	2	0	2	0	1	4	**1**	**-3**
2	1	10	8	9	16	6	15	13	**9**	**-4**
3	0	5	2	1	3	2	3	4	**1**	**-3**
4	0	1	1	6	3	1	1	11	**3**	**-8**
5	2	4	2	12	6	5	1	3	**4**	**1**
6	3	5	0	7	4	6	4	5	**9**	**4**
7	0	0	3	2	0	2	1	0	**0**	**0**
8	4	3	6	4	4	7	14	7	**6**	**-1**
9	0	1	2	3	1	2	2	3	**4**	**1**
10	1	3	14	5	2	2	5	3	**5**	**2**
11	3	3	3	6	13	5	8	4	**2**	**-2**
12	1	1	3	6	2	3	2	1	**10**	**9**
Total	**16**	**37**	**46**	**61**	**56**	**41**	**57**	**58**	**54**	**-4**

- Consistent with the previous measure, the majority of evening cyclists using this intersection are adults (91 per cent, stable from 88 per cent in 2014).
- Although the share has declined, helmet wearing remains prevalent (83 per cent, down from 95 per cent in 2014).
- The greatest share of cyclists continued to be male (78 per cent, up from 64 per cent in 2014).
- Thirty-one per cent of cyclists were riding on the footpath (down 7 percentage points from last year).

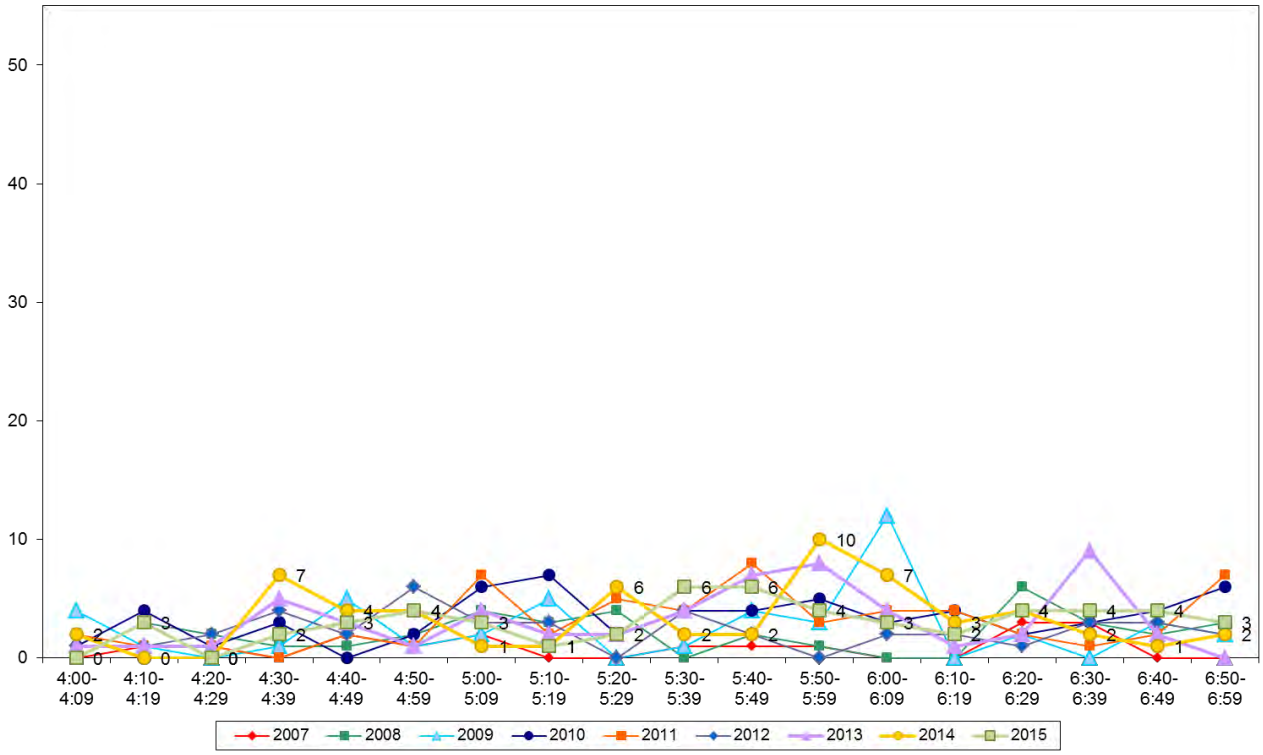
Table 6.4: Evening Cyclist Characteristics

Rosedale Road/Bush Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	81	78	76	80	95	80	84	88	**91**	**3**
School child	19	22	24	20	5	20	16	12	**9**	**-3**
Helmet Wearing										
Helmet on head	94	92	93	84	98	93	95	95	**83**	**-12**
No helmet	6	8	7	16	2	7	5	5	**17**	**12**
Gender										
Male	-	-	-	-	88	93	82	64	**78**	**14**
Female	-	-	-	-	13	7	18	34	**22**	**-12**
Can't tell	-	-	-	-	0	0	0	2	**0**	**-2**
Where Riding										
Road	62	76	61	69	84	85	72	62	**69**	**7**
Footpath	38	24	39	31	16	15	28	38	**31**	**-7**
Base:	***16***	***37***	***46***	***61***	***56***	***41***	***57***	***58***	***54***	

- Cyclist volumes were low throughout the majority of the monitoring period. Volumes were heavier during the second half of the shift, with a small peak of 6 cyclists observed between two time intervals (5:30pm and 5:39am; 5:40pm and 5:49pm). With the exception of this peak, cyclist numbers at all other time intervals observed no more than four cyclists.

Figure 6.3: Evening Peak Cyclist Frequency
Rosedale Road/Bush Road 2007 – 2015 (n)

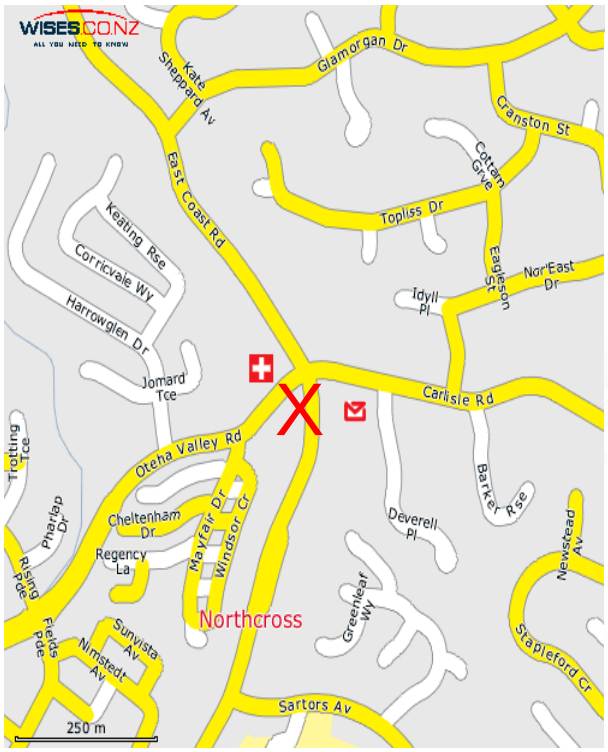


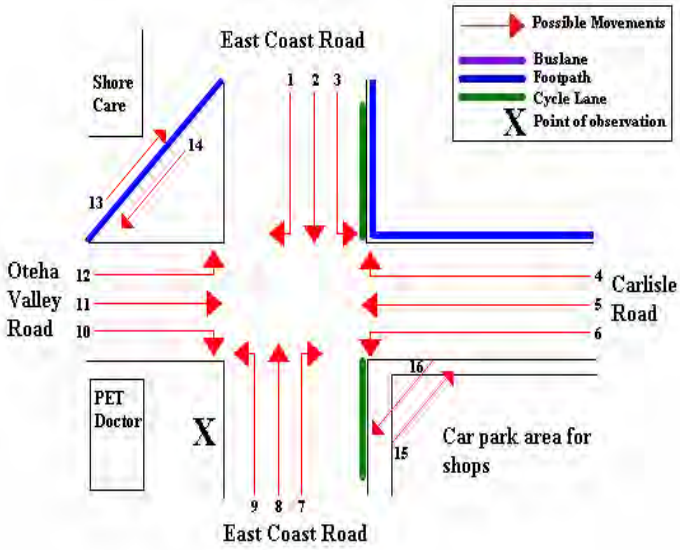
Note: In 2015, no group cyclists or pelotons were observed at this site in the evening. This compares with 21 per cent (n=12) last year.

7. OTEHA VALLEY ROAD/EAST COAST ROAD, ALBANY (SITE 47)

Figure 7.1 shows the possible cyclist movements at this intersection.

Figure 7.1: Cycle Movements: Oteha Valley Road/East Coast Road





7.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	42	17	59	137
2008	40	74	114	163
2009	69	69	138	201
2010	87	81	168	245
2011	53	76	129	186
2012	68	69	137	199
2013	60	46	106	155
2014	56	47	103	150
2015	**87**	**59**	**146**	**214**

7.2 Morning Peak

Environmental Conditions

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

Key Points

- Compared to last year, the volume of morning cyclists at the Oteha Valley/East Coast Road intersection has significantly increased, from 56 movements last year to 87 movements this year.
- The most common movement in the morning continued to be cycling straight through East Coast Road north to south (Movement 2 = 40 cyclists, up notably from 13 in 2014).

Table 7.1: Morning Cyclist Movements

Oteha Valley Road/East Coast Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	2	0	1	4	6	2	1	6	**4**	**-2**
2	16	14	18	29	8	24	20	13	**40**	**27**
3	2	0	0	0	0	0	0	2	**1**	**-1**
4	3	0	3	4	1	0	1	1	**1**	**0**
5	3	3	4	4	8	6	8	4	**8**	**4**
6	8	3	15	8	16	13	11	10	**10**	**0**
7	0	0	1	3	1	0	0	0	**6**	**6**
8	1	3	4	8	0	7	7	2	**9**	**7**
9	1	2	2	7	3	3	3	4	**0**	**-4**
10	0	6	5	8	5	2	6	2	**1**	**-1**
11	0	1	1	4	1	4	0	2	**0**	**-2**
12	0	1	2	0	0	1	2	0	**2**	**2**
13	0	0	0	1	0	0	0	0	**0**	**0**
14	0	0	0	0	1	1	0	0	**0**	**0**
15	1	1	2	1	1	2	0	2	**0**	**-2**
16	5	6	11	6	2	3	1	8	**5**	**-3**
Total	**42**	**40**	**69**	**87**	**53**	**68**	**60**	**56**	**87**	**31**

- Over the morning peak, the greatest share of cyclists were adults (86 per cent, up from 64 per cent in 2014).
- Almost all cyclists were wearing a helmet (99 per cent).
- The majority of cyclists were recorded as male (86 per cent). For the first time since 2011, the share of female cyclists decreased (14 per cent, down from 30 per cent in 2014).
- Eighty-seven per cent of cyclists were travelling on the road, up notably from 48 per cent last year.

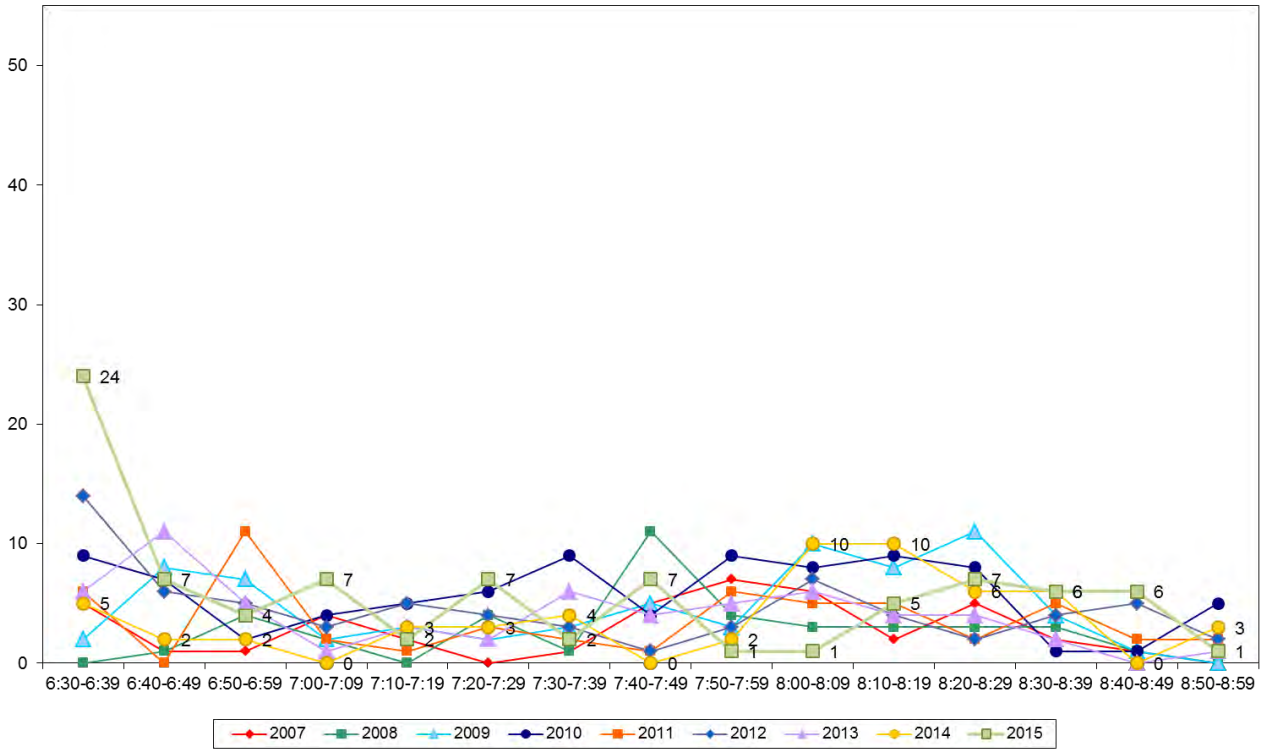
Table 7.2: Morning Cyclist Characteristics

Oteha Valley Road/East Coast Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	48	68	59	64	74	78	88	64	**86**	**22**
School child	52	32	41	36	26	22	12	36	**14**	**-22**
Helmet Wearing										
Helmet on head	95	90	97	98	96	98	100	93	**99**	**6**
No helmet	5	10	3	2	4	2	0	7	**1**	**-6**
Gender										
Male	-	-	-	-	79	74	68	70	**86**	**16**
Female	-	-	-	-	15	18	27	30	**14**	**-16**
Can't tell	-	-	-	-	6	8	5	0	**0**	**0**
Where Riding										
Road	62	60	59	70	62	74	87	48	**87**	**39**
Footpath	38	40	41	30	38	26	13	52	**10**	**-42**
Blank/Don't know	-	-	-	-	-	-	-	-	**3**	**3**
Base:	***42***	***40***	***69***	***87***	***53***	***68***	***60***	***56***	***87***	

- In contrast to previous years, cyclist volumes started with a large peak of 24 cyclists between 6:30am and 6:39am. Volumes then fluctuated, but remained low throughout the majority of the monitoring period with no more than seven cyclists being observed during the rest of the time intervals.

Figure 7.2: Morning Peak Cyclist Frequency
Oteha Valley Road/East Coast Road 2007 – 2015 (n)



Note: In 2015, 28 per cent of the total cycle movements (n=24) in the morning peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *4 cyclists at 6:35am*
- *17 cyclists at 6:37am*
- *3 cyclists at 6:45am.*

This compares with seven per cent (n=4) of this site's morning cycle traffic being made by pelotons in 2014.

7.3 Evening Peak

Environmental Conditions

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

Key Points

- The total number of evening cycle movements recorded at the Oteha Valley/East Coast Road intersection has increased, from 47 movements last year to 59 movements in 2015.
- The key movement during the evening monitoring was travelling north along East Coast Road (Movement 8 = 12 cyclists)
- Across the 16 possible movements, the most notable increase in cyclists was observed at Movement 7, turning right from East Coast Road onto Carlisle Road (up 5 cyclists). The most notable decrease was observed at Movement 12, cyclists turning left from Oteha Valley Road onto East Coast Road (down 5 cyclists from last year).

Table 7.3: Evening Cyclist Movements

Oteha Valley Road/East Coast Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	6	0	2	2	1	1	1	**0**	**-1**
2	3	13	3	10	17	7	2	5	**7**	**2**
3	1	3	4	3	3	3	3	2	**5**	**3**
4	0	2	1	1	3	1	1	0	**2**	**2**
5	0	3	4	6	4	6	0	3	**0**	**-3**
6	1	3	6	7	3	4	3	0	**4**	**4**
7	2	6	10	12	6	7	3	3	**8**	**5**
8	5	15	12	14	14	13	14	8	**12**	**4**
9	1	3	6	3	5	9	5	5	**6**	**1**
10	0	3	2	3	2	4	2	1	**3**	**2**
11	1	6	7	9	6	5	8	8	**6**	**-2**
12	2	8	4	0	2	7	3	8	**3**	**-5**
13	0	0	0	4	7	0	0	0	**0**	**0**
14	0	0	0	0	0	0	0	0	**0**	**0**
15	1	1	7	4	2	2	1	3	**1**	**-2**
16	0	2	3	3	0	0	0	0	**2**	**2**
Total	**17**	**74**	**69**	**81**	**76**	**69**	**46**	**47**	**59**	**12**

- Over the evening peak, the majority of cyclists using this site were adults (95 per cent, stable from 94 per cent in 2014).
- Most cyclists were wearing a helmet (88 per cent, down significantly from 98 in 2014).
- Eighty-eight per cent of the cyclists were male (a 9 percentage point increase from last year).
- Eighty-one per cent of cyclists were riding on the road (a 7 percentage point increase from last year).

Table 7.4: Evening Cyclist Characteristics

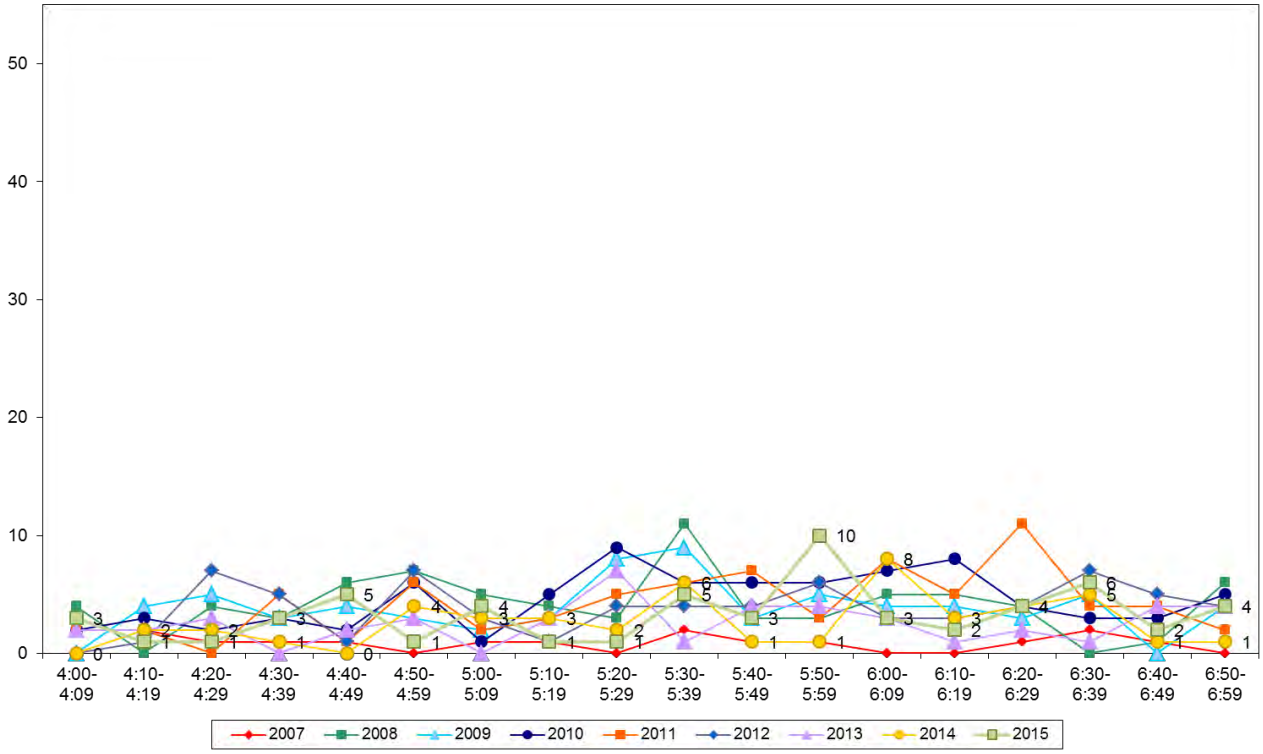
Oteha Valley/East Coast Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	76	81	75	80	91	80	91	94	**95**	**1**
School child	24	19	25	20	9	20	9	6	**5**	**-1**
Helmet Wearing										
Helmet on head	88	96	94	90	96	93	98	98	**88**	**-10**
No helmet	12	4	6	10	4	7	2	2	**12**	**10**
Gender										
Male	-	-	-	-	93	89	89	79	**88**	**9**
Female	-	-	-	-	7	10	11	21	**12**	**-9**
Can't tell	-	-	-	-	0	1	0	0	**0**	**0**
Where Riding										
Road	71	72	74	67	83	75	87	74	**81**	**7**
Footpath	29	28	26	33	17	25	13	26	**19**	**-7**
Base:	***17***	***74***	***69***	***81***	***76***	***69***	***46***	***47***	***59***	

- The volume of cycle movements was low throughout the evening period. With the exception of the peak between 5:50pm and 5:59pm (10 movements), no more than six cyclists were recorded at any other time interval. The overall trend remained consistent with previous years.

Figure 7.3: Evening Peak Cyclist Frequency

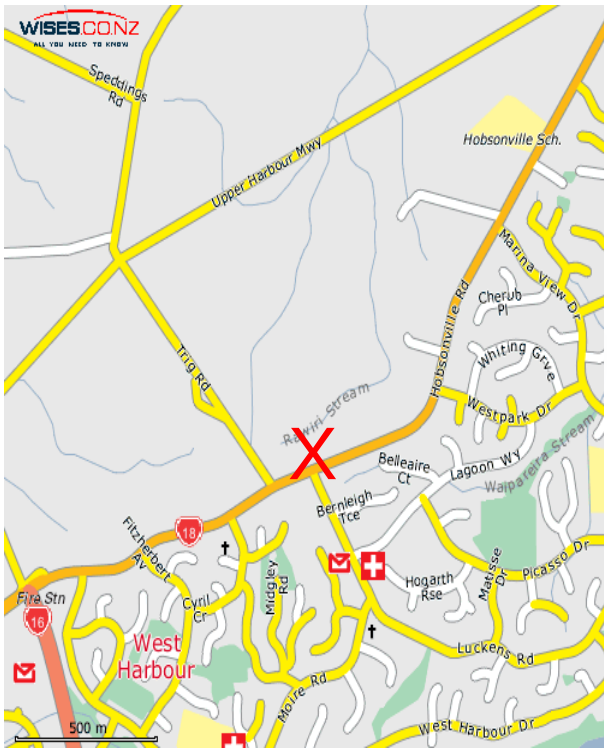
Oteha Valley/East Coast Road 2007 – 2015 (n)

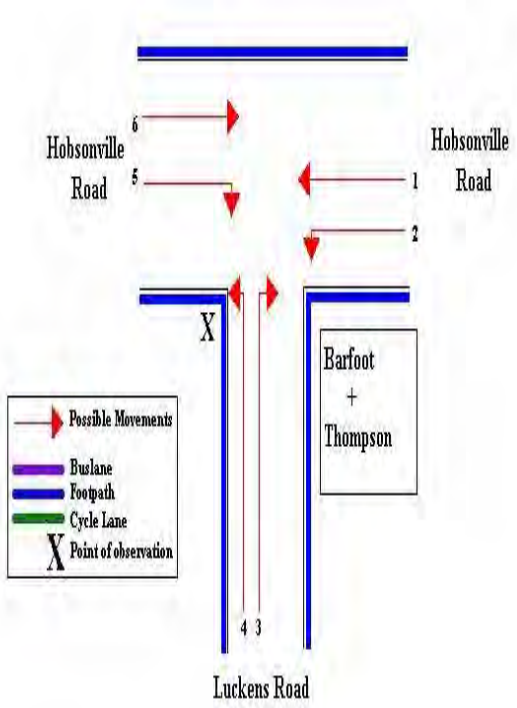


8. LUCKENS ROAD/HOBSONVILLE ROAD, WEST HARBOUR (SITE 51)

Figure 8.1 shows the possible cyclist movements at this intersection.

Figure 8.1: Cycle Movement: Luckens Road/Hobsonville Road





8.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	20	12	32	47
2008	25	16	41	60
2009	26	51	77	110
2010	41	54	95	137
2011	14	38	52	74
2012	42	70	112	161
2013	44	60	104	150
2014	17	24	41	59
2015	**17**	**35**	**52**	**74**

8.2 Morning Peak

Environmental Conditions

- The weather was mostly fine throughout the morning shift. It was foggy and cloudy at the start but cleared away when the sun came out.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of morning cyclists at the Luckens Road/Hobsonville Road intersection has not changed from last year (17 cycle movements).
- The most common movement in the morning, and the movement with the largest change, was turning right out of Luckens Road onto Hobsonville Road (Movement 3 – up 5 movements).
- Three cyclists were recorded each at Movements 5 and 6.

Table 8.1: Morning Cyclist Movements

Luckens Road/Hobsonville Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	5	3	7	7	7	15	14	4	**2**	**-2**
2	3	8	9	9	4	11	10	3	**2**	**-1**
3	2	7	1	6	0	3	3	0	**5**	**5**
4	2	3	6	7	2	5	10	4	**2**	**-2**
5	0	2	2	1	0	1	0	1	**3**	**2**
6	8	2	1	11	1	7	7	4	**3**	**-1**
Don't know	0	0	0	0	0	0	0	1	**0**	**-1**
Total	**20**	**25**	**26**	**41**	**14**	**42**	**44**	**17**	**17**	**0**

- The share of cyclists recorded as a school child increased notably, from no school children to 35 per cent this year.
- All cyclists were wearing a helmet (unchanged from 2014).
- The majority of cyclists recorded were male (82 per cent, down from 88 per cent last year).
- The share of cyclists riding on the footpath increased notably (35 per cent, up from 6 per cent in 2014).

Table 8.2: Morning Cyclist Characteristics

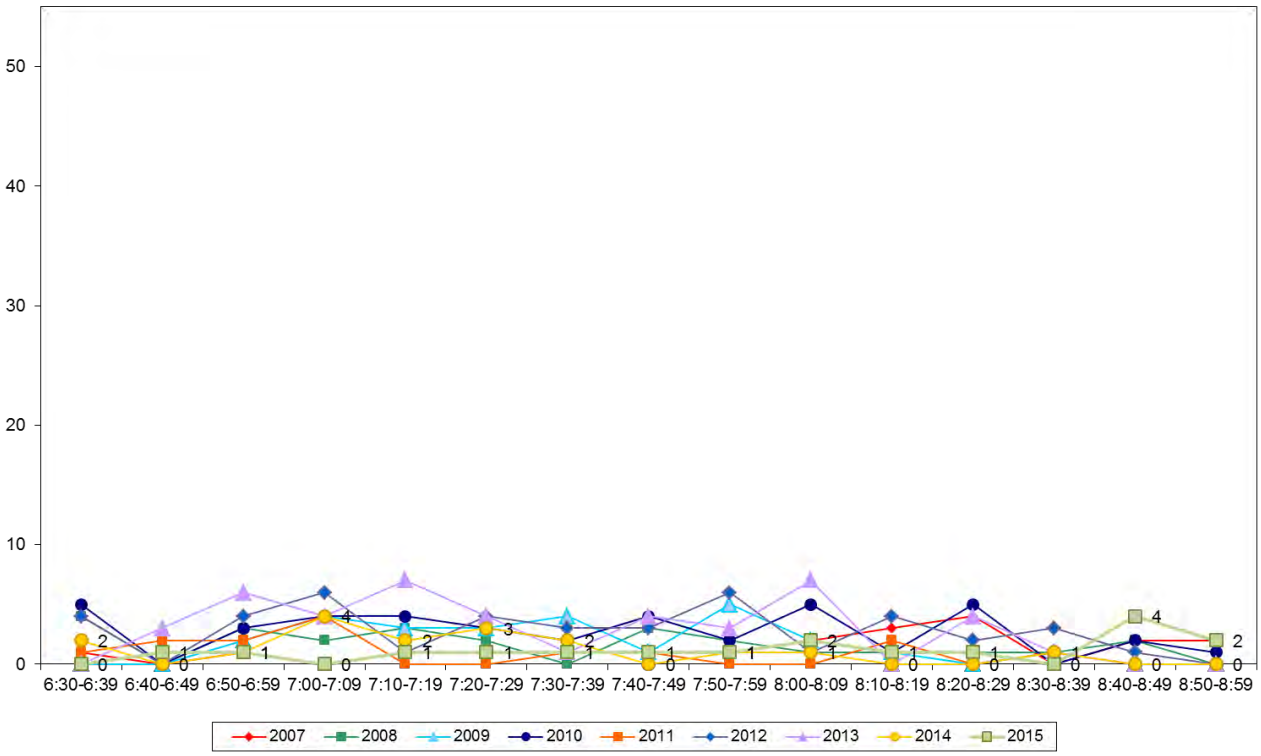
Luckens Road/Hobsonville Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	75	88	88	83	86	93	98	100	**65**	**-35**
School child	25	12	12	17	14	7	2	0	**35**	**35**
Helmet Wearing										
Helmet on head	100	100	96	98	93	95	98	100	**100**	**0**
No helmet	0	0	4	2	7	5	2	0	**0**	**0**
Gender										
Male	-	-	-	-	100	83	90	88	**82**	**-6**
Female	-	-	-	-	0	17	5	12	**18**	**6**
Can't tell	-	-	-	-	0	0	5	0	**0**	**0**
Where Riding										
Road	70	80	81	80	79	86	98	94	**65**	**-29**
Footpath	30	20	19	20	21	14	2	6	**35**	**29**
Base:	***20***	***25***	***26***	***41***	***14***	***42***	***44***	***17***	***17***	

- The volumes of cycle movements were low throughout the morning peak monitoring period. The highest volume of cyclist movements was between 8:40am and 8:49am (4 movements).

Figure 8.2: Morning Peak Cyclist Frequency

Luckens Road/Hobsonville Road 2007 – 2015 (n)



8.3 Evening Peak

Environmental Conditions

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

Key Points

- The total number of evening cycle movements recorded at the Luckens Road/Hobsonville Road intersection has increased, with 35 movements recorded, compared with 24 movements last year.
- The largest change in cycle volumes in the evening was travelling straight along Hobsonville Road heading west (Movement 1, up 7 cyclists).

Table 8.3: Evening Cyclist Movements

Luckens Road/Hobsonville Road 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	6	1	8	12	13	13	9	6	**13**	**7**
2	3	6	4	6	4	1	6	2	**6**	**4**
3	1	2	13	10	6	28	19	4	**4**	**0**
4	2	2	2	5	4	4	4	1	**3**	**2**
5	0	0	3	4	6	8	14	5	**2**	**-3**
6	0	5	21	17	5	16	8	6	**7**	**1**
Total	**12**	**16**	**51**	**54**	**38**	**70**	**60**	**24**	**35**	**11**

- All of the cyclists using this intersection were adults (unchanged from 2014).
- Helmets continued to be worn by all cyclists (unchanged from 2014).
- The majority of cyclists were male (91 per cent, up 20 percentage points from 2014).
- All cyclists were riding on the road (up from 79 per cent in 2014).

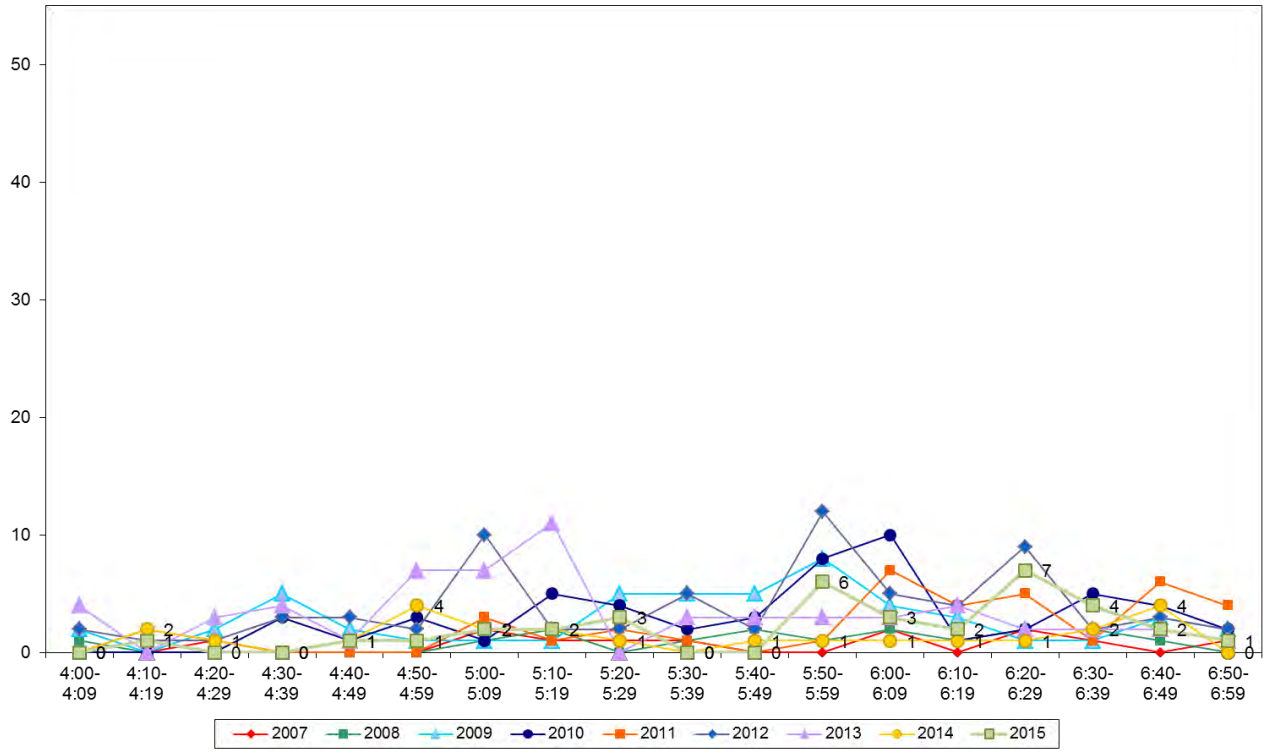
Table 8.4: Evening Cyclist Characteristics

Luckens Road/Hobsonville Road 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	100	94	100	91	66	89	90	100	**100**	**0**
School child	0	6	0	9	34	11	10	0	**0**	**0**
Helmet Wearing										
Helmet on head	100	69	98	94	74	97	92	100	**100**	**0**
No helmet	0	31	2	6	26	3	8	0	**0**	**0**
Gender										
Male	-	-	-	-	87	87	90	71	**91**	**20**
Female	-	-	-	-	5	13	10	29	**9**	**-20**
Can't tell	-	-	-	-	8	0	0	0	**0**	**0**
Where Riding										
Road	100	81	90	81	53	91	83	79	**100**	**21**
Footpath	0	19	10	19	47	9	17	21	**0**	**-21**
Base:	***12***	***16***	***51***	***54***	***38***	***70***	***60***	***24***	***35***	

- Cycle volumes were low throughout the evening monitoring period, with no more than seven cycle movements recorded at any ten minute interval. Cyclist frequency was at its busiest during the second half of the evening shift, between 5:50pm and 6:39pm, with a total of 22 cyclists recorded.

Figure 8.3: Evening Peak Cyclist Frequency
Luckens Road/Hobsonville Road 2007 – 2015 (n)

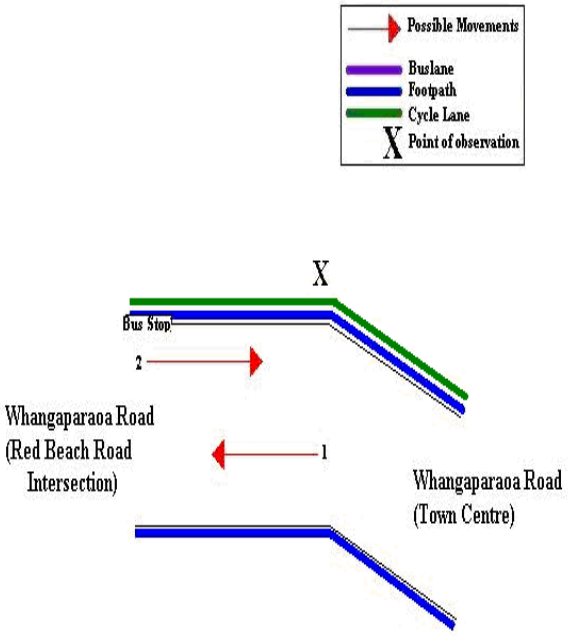


Note: In 2015, 11 per cent of the evening peak cycle movements (n=4) at this site were identified as cycling in groups. The group rode past at 5:58pm. No groups or pelotons were observed in 2014.

9. WHANGAPARAOA ROAD – NEAR RED BEACH INTERSECTION, WHANGAPARAOA (SITE 59)

Figure 9.1 shows the possible cyclist movements at this site.

Figure 9.1: Cycle Movements: Whangaparaoa Road, near Red Beach Intersection



9.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	13	16	29	42
2008	15	16	23	45
2009	15	11	26	38
2010	21	8	29	43
2011	11	15	26	37
2012	15	13	28	41
2013	15	10	25	37
2014	7	11	18	26
2015	**13**	**13**	**26**	**38**

9.2 Morning Peak

Environmental Conditions

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

Key Points

- The volume of morning cyclists at Whangaparaoa Road near the Red Beach intersection has increased by 6 cyclists since last year.
- The key morning movement was straight along Whangaparaoa Road heading west towards the Red Beach intersection (Movement 1 = 10 cyclists, an increase from 6 cyclists last year).

Table 9.1: Morning Cyclist Movements

Whangaparaoa Road, near Red Beach Intersection 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	10	13	12	18	10	12	13	6	**10**	**4**
2	3	2	3	3	1	3	2	1	**3**	**2**
Total	**13**	**15**	**15**	**21**	**11**	**15**	**15**	**7**	**13**	**6**

- Over the morning peak, adults comprised of 54 per cent of cyclists (stable from 57 per cent in 2014).
- All cyclists were wearing a helmet (up from 86 per cent in 2014).
- Predominantly male cyclists used this site (69 per cent, stable from 71 per cent in 2014).
- In 2015, 77 per cent of cyclists were recorded as travelling on the off-road cycleway (down from 86 per cent last year). The remaining 23 per cent were travelling on the road.

Table 9.2: Morning Cyclist Characteristics

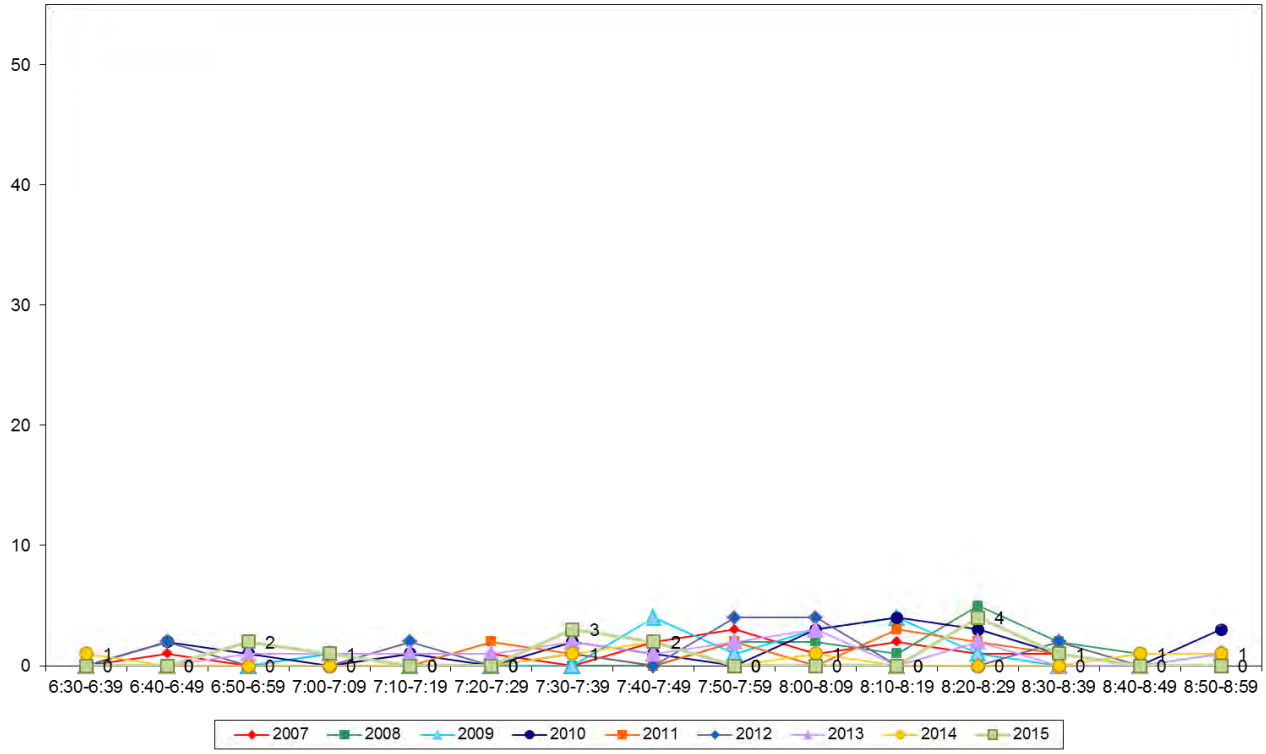
Whangaparaoa Road, near Red Beach Intersection 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	62	27	20	48	55	47	40	57	**54**	**-3**
School child	38	73	80	52	45	53	60	43	**46**	**3**
Helmet Wearing										
Helmet on head	92	100	93	76	100	93	100	86	**100**	**14**
No helmet	8	0	7	24	0	7	0	14	**0**	**-14**
Gender										
Male	-	-	-	-	91	93	87	71	**69**	**-2**
Female	-	-	-	-	9	7	13	29	**31**	**2**
Can't tell	-	-	-	-	0	0	0	0	**0**	**0**
Where Riding										
Road	15	20	13	33	18	27	20	14	**23**	**9**
Footpath	85	80	87	67	9	0	0	0	**0**	**0**
Off-road cycleway	-	-	-	-	73	73	80	86	**77**	**-9**
Base:	***13***	***15***	***15***	***21***	***11***	***15***	***15***	***7***	***13***	

- Consistent with previous years, the volume of morning cycle movements at Whangaparaoa Road, near Red Beach intersection was very low. The largest number of cyclists recorded at any ten minute interval was four, observed between 8:20am and 8:29am.

Figure 9.2: Morning Peak Cyclist Frequency

Whangaparaoa Road, near Red Beach Intersection 2007 – 2015 (n)



Note: In 2015, a peloton of four cyclists travelled past this site at 8:24am. This accounts for 31 per cent of this intersection's morning cycle traffic.

9.3 Evening Peak

Environmental Conditions

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

Key Points

- The total number of cycle movements recorded at Whangaparaoa Road, near Red Beach intersection has been stable since 2011 (13 movements this year, stable from 11 movements last year).
- In contrast to the morning shift, the most common movement in the evening was cyclists travelling east along Whangaparaoa Road heading towards the Town Centre (Movement 2 = 7 cyclists, unchanged since 2013).

Table 9.3: Evening Cyclist Movements

Whangaparaoa Road, near Red Beach Intersection 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	6	3	4	3	6	5	3	4	**6**	**2**
2	10	13	7	5	9	8	7	7	**7**	**0**
Total	**16**	**16**	**11**	**8**	**15**	**13**	**10**	**11**	**13**	**2**

- In the evening period, 92 per cent of the cyclists using Whangaparaoa Road were adults (down from 100 per cent last year).
- Ninety-two per cent of cyclists were wearing a helmet (up from 73 per cent last year).
- There was a notable change in the share of cyclist gender at this site (46 per cent for both male and female cyclists, the remaining 8 per cent couldn't not be identified). The share of female cyclists has increased notably from no cyclists being recorded last year.
- The share of cyclists riding on the off-road cycleway has declined slightly, down 5 percentage points.

Table 9.4: Evening Cyclist Characteristics

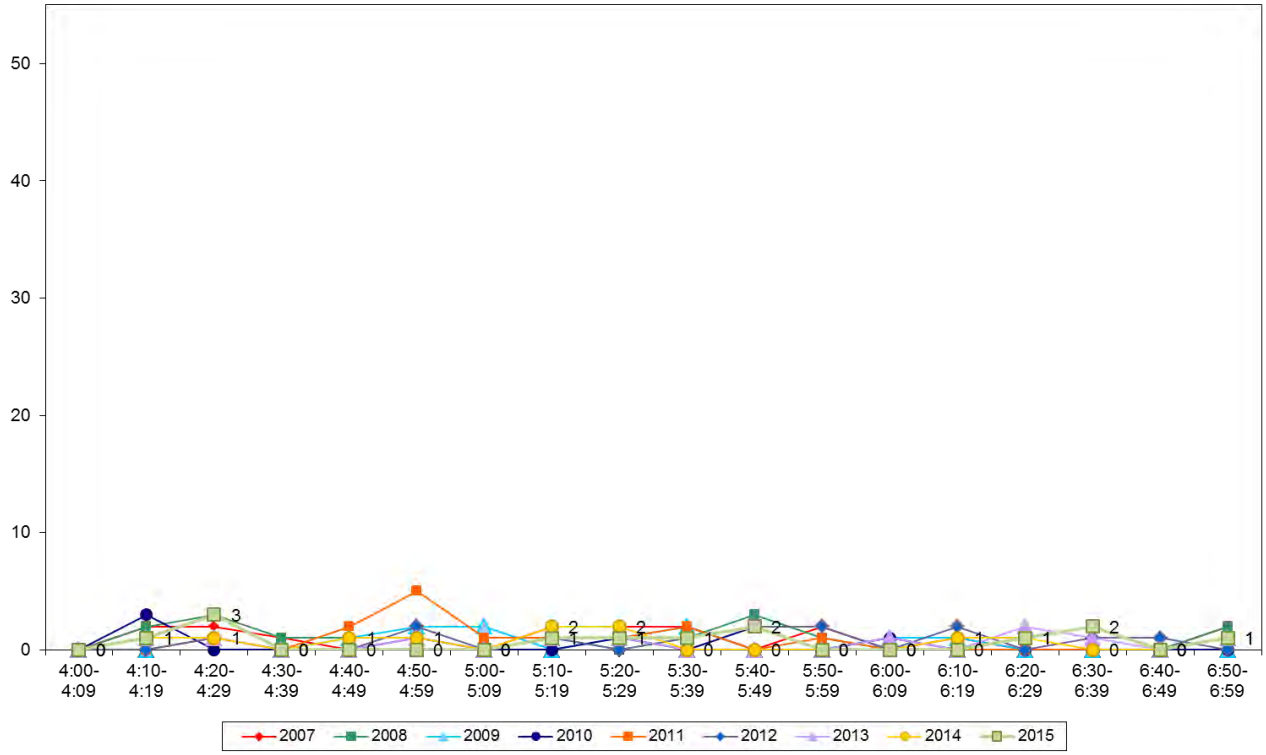
Whangaparaoa Road, near Red Beach Intersection 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	75	88	64	75	93	92	80	100	**92**	**-8**
School child	25	12	36	25	7	8	20	0	**8**	**8**
Helmet Wearing										
Helmet on head	87	94	100	63	100	85	90	73	**92**	**19**
No helmet	13	6	0	37	0	15	10	27	**8**	**-19**
Gender										
Male	-	-	-	-	87	92	90	100	**46**	**-54**
Female	-	-	-	-	13	8	10	0	**46**	**46**
Can't tell	-	-	-	-	0	0	0	0	**8**	**8**
Where Riding										
Road	25	37	36	12	67	62	20	18	**23**	**5**
Footpath	75	63	64	88	0	0	0	0	**0**	**0**
Off-road cycle way	-	-	-	-	33	38	80	82	**77**	**-5**
Base:	***16***	***16***	***11***	***8***	***15***	***13***	***10***	***11***	***13***	

- Evening cyclist numbers remained extremely low over the entire peak period, with no more than three cyclists recorded over any ten minute interval. This trend was consistent with previous years.

Figure 9.3: Evening Peak Cyclist Frequency

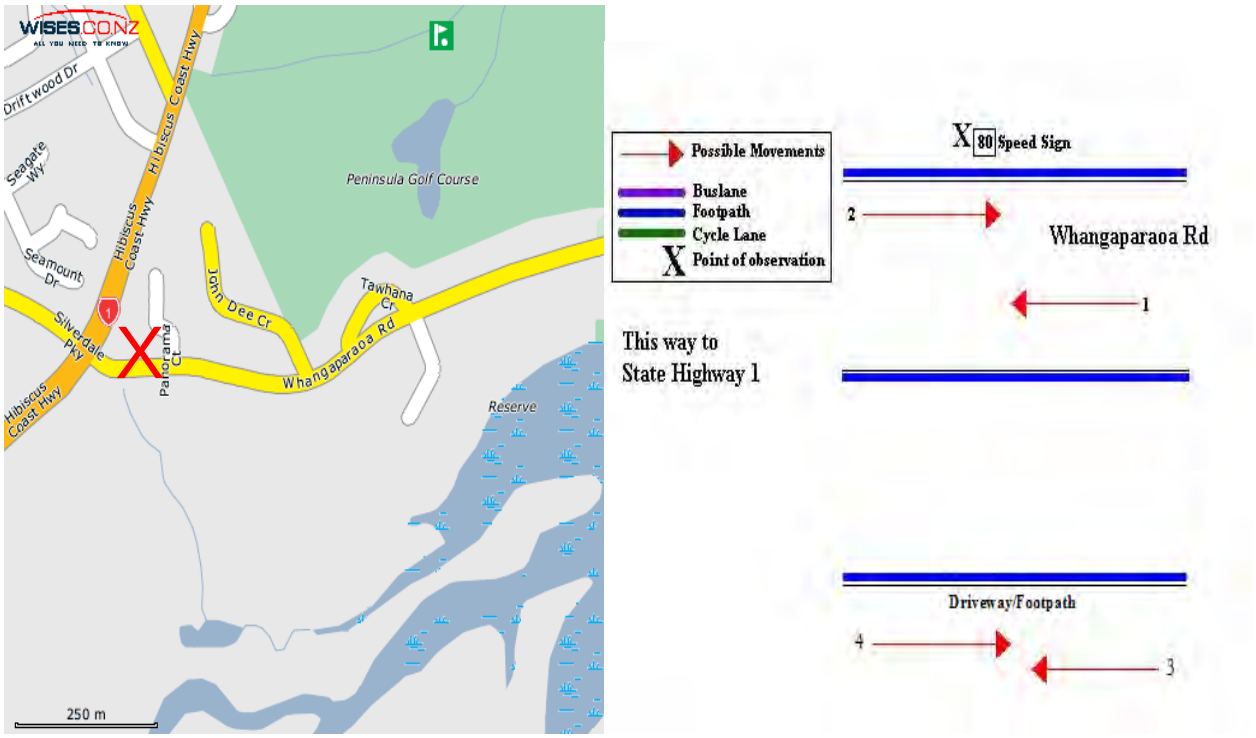
Whangaparaoa Road, near Red Beach Intersection 2007 – 2015 (n)



10. WHANGAPARAOA ROAD – NEAR HIBISCUS COAST HIGHWAY INTERSECTION, WHANGAPARAOA (SITE 60)

Figure 10.1 shows the possible cyclist movements at this site.

Figure 10.1: Cycle Movements: Whangaparaoa Road, near Hibiscus Coast Highway Intersection



10.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	11	17	28	40
2008	9	11	20	29
2009	6	6	12	17
2010	13	10	23	34
2011	7	15	22	31
2012	10	10	20	29
2013	10	9	19	28
2014	6	9	15	22
2015	**13**	**15**	**28**	**41**

10.2 Morning Peak

Environmental Conditions

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

Key Points

- In 2015, the volume of morning cyclist traffic at Whangaparaoa Road, near the Hibiscus Coast Highway intersection, has increased to 13 movements from 6 movements last year.
- Eleven out of 13 cyclists at this site were travelling straight along Whangaparaoa Road heading towards State Highway 1 (Movement 1).

Table 10.1: Morning Cyclist Movements

Whangaparaoa Road, near Hibiscus Coast Highway Intersection 2007 – 2015 (n)

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

Note: Movements 3 and 4 were added in 2013 to capture cyclists riding on the driveway/footpath above Whangaparaoa Road.

- Over the morning peak, school children comprise 62 per cent of the cyclists (a decrease of 5 per cent from last year).
- All cyclists were wearing a helmet (a 17 percentage point increase from 2014).
- Approximately three-quarters of the cyclists were recorded as male. For the first time since 2012, there was a share of female cyclists recorded (23 per cent).
- Seventy-seven per cent of cyclists were travelling on the footpath, with the remaining cyclists travelling on the road.

Table 10.2: Morning Cyclist Characteristics

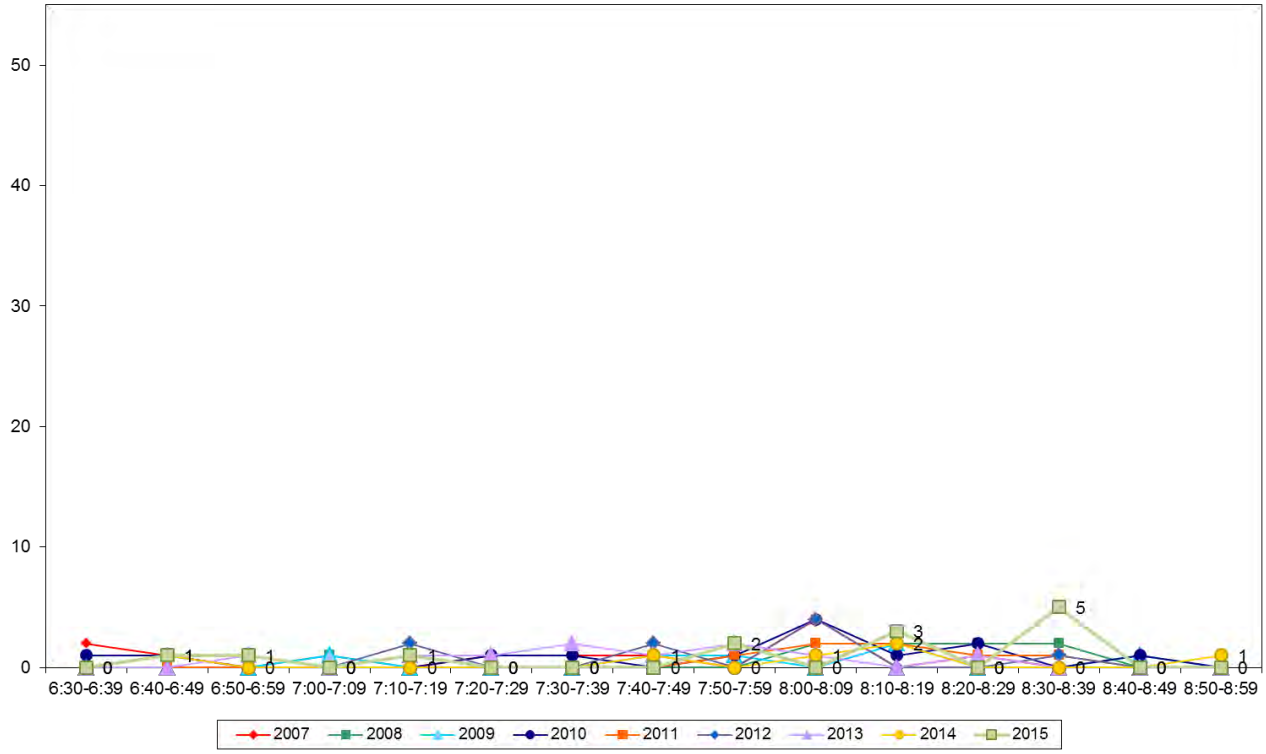
Whangaparaoa Road, near Hibiscus Coast Highway Intersection 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	55	33	50	38	29	60	60	33	**38**	**5**
School child	45	67	50	62	71	40	40	67	**62**	**-5**
Helmet Wearing										
Helmet on head	91	100	100	100	100	100	100	83	**100**	**17**
No helmet	9	0	0	0	0	0	0	17	**0**	**-17**
Gender										
Male	-	-	-	-	100	70	100	100	**77**	**-23**
Female	-	-	-	-	0	30	0	0	**23**	**23**
Can't tell	-	-	-	-	0	0	0	0	**0**	**0**
Where Riding										
Road	36	33	33	31	29	40	50	0	**23**	**23**
Footpath	64	67	67	69	71	60	50	100	**77**	**-23**
Base:	***11***	***9***	***6***	***13***	***7***	***10***	***10***	***6***	***13***	

- Consistent with previous years, morning cyclist movement volumes were low, with five cyclists being the largest number recorded during any ten minute interval. This occurred between 8:30am to 8:39am.

Figure 10.2: Morning Peak Cyclist Frequency

Whangaparaoa Road, near Hibiscus Coast Highway Intersection 2007 – 2015 (n)



Note: In 2015, a group of three cyclists travelled past this site at 8:35am. This accounts for 23 per cent of this intersection's morning cycle traffic.

10.3 Evening Peak

Environmental Conditions

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

Key Points

- The volume of evening cyclists recorded at Whangaparaoa Road, near the Hibiscus Coast Highway intersection has increased over the last twelve months (15 movements this year, up from 9 movements in 2014).
- Consistent with morning movements at this site, the most common movement in the evening monitoring period was travelling straight along Whangaparaoa Road heading towards State Highway 1 (Movement 1 = 7 cyclists).

Table 10.3: Evening Cyclist Movements

Whangaparaoa Road, near Hibiscus Coast Highway Intersection 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	6	2	4	4	8	3	2	3	**7**	**4**
2	11	9	2	6	7	7	5	6	**4**	**-2**
3	-	-	-	-	-	-	1	0	**4**	**4**
4	-	-	-	-	-	-	1	0	**0**	**0**
Total	**17**	**11**	**6**	**10**	**15**	**10**	**9**	**9**	**15**	**6**

Note: Movements 3 and 4 were added in 2013 to capture cyclists riding on the driveway/footpath above Whangaparaoa Road.

- Almost three out of four cyclists using this site in the evening were adults (down from all cyclists in 2014)
- The majority of cyclists were wearing a helmet (87 per cent, down from all cyclists in 2014).
- The majority of cyclists this year were male (67 per cent, unchanged from last year).
- There has been a notable increase in the share of cyclists traveling on the footpath (87 per cent, up from 11 per cent last year).

Table 10.4: Evening Cyclist Characteristics

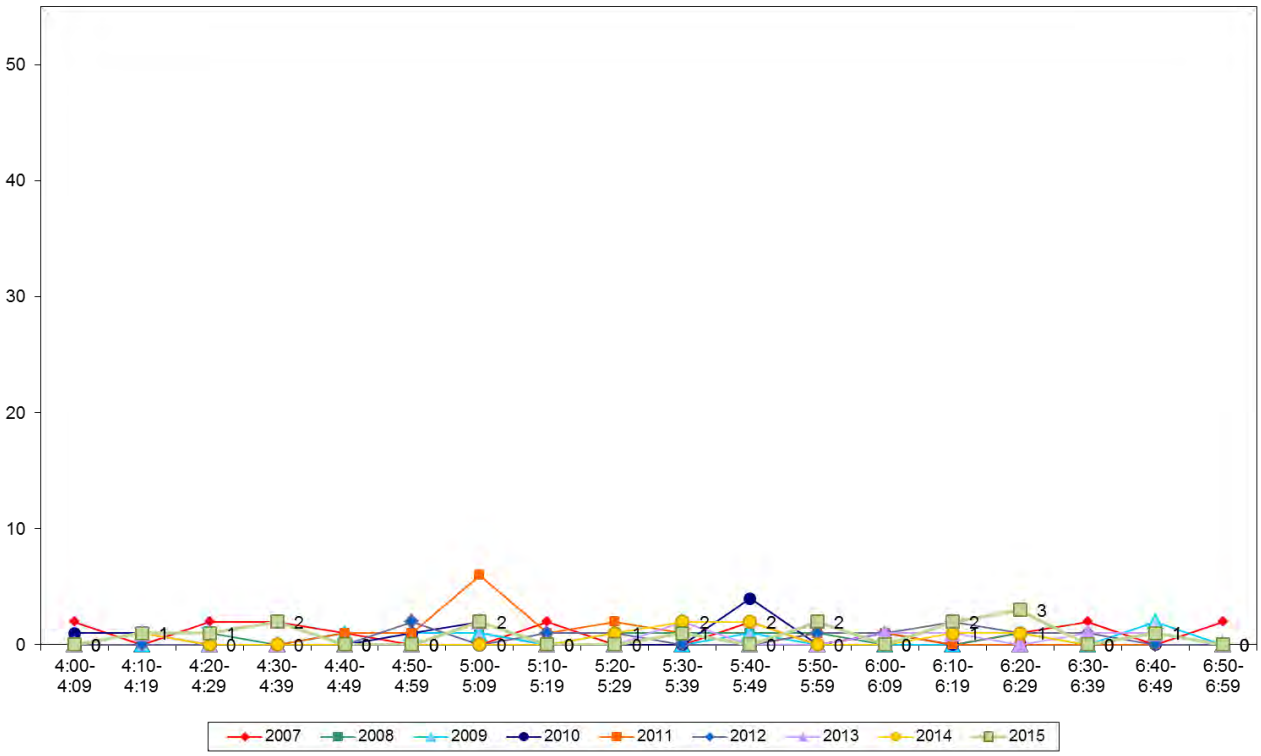
Whangaparaoa Road, near Hibiscus Coast Highway Intersection 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	53	82	67	60	67	100	78	100	**73**	**-27**
School child	47	18	33	40	33	0	22	0	**27**	**27**
Helmet Wearing										
Helmet on head	82	100	100	90	93	90	100	100	**87**	**-13**
No helmet	18	0	0	10	7	10	0	0	**13**	**13**
Gender										
Male	-	-	-	-	80	90	100	67	**67**	**0**
Female	-	-	-	-	20	10	0	33	**33**	**0**
Can't tell	-	-	-	-	0	0	0	0	**0**	**0**
Where Riding										
Road	35	45	50	30	60	50	44	89	**13**	**-76**
Footpath	65	55	50	70	40	50	56	11	**87**	**76**
Base:	***17***	***11***	***6***	***10***	***15***	***10***	***9***	***9***	***15***	

- Similar to previous years, the volume of evening cyclist movements remained low over the entire monitoring period, with no movements recorded during half of the evening shift.

Figure 10.3: Evening Peak Cyclist Frequency

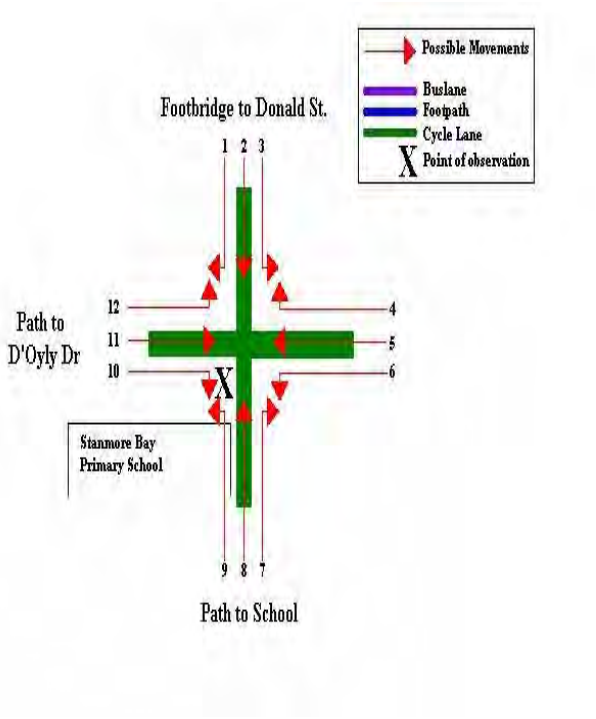
Whangaparaoa Road, near Hibiscus Coast Highway Intersection 2007 – 2015 (n)



11. D'OYLY RESERVE CYCLEWAY, WHANGAPARAOA (SITE 61)

Figure 11.1 shows the possible cyclist movements at this site.

Figure 11.1: Cycle Movements: D'Oyly Reserve Cycleway



11.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2007	14	10	24	35
2008	19	84	103	145
2009	5	4	9	13
2010	31	13	44	65
2011	13	45	58	82
2012	14	21	35	50
2013	13	14	27	39
2014	10	14	24	35
2015	**14**	**14**	**28**	**41**

11.2 Morning Peak

Environmental Conditions

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

Key Points

- Morning cyclist traffic at the D'Oyly Reserve cycleway continued to be low this year, with 14 movements recorded during the morning shift (up from 10 movements in 2014).
- The most common movement in the morning was the left turn from the cycleway into the path to Stanmore Bay Primary School (Movement 6 = 8 cyclists).

Table 11.1: Morning Cyclist Movements

D'Oyly Reserve Cycleway 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	**0**	**0**
2	0	0	0	3	0	0	0	3	**1**	**-2**
3	2	2	0	1	2	4	1	0	**0**	**0**
4	0	0	0	0	0	0	1	0	**0**	**0**
5	3	5	0	1	1	2	2	1	**0**	**-1**
6	3	5	4	15	6	4	7	5	**8**	**3**
7	0	0	0	2	1	0	0	0	**0**	**0**
8	0	0	0	0	0	0	0	0	**0**	**0**
9	1	0	0	0	0	0	0	0	**0**	**0**
10	0	0	0	7	0	0	0	0	**1**	**1**
11	5	7	1	2	3	4	2	1	**4**	**3**
12	0	0	0	0	0	0	0	0	**0**	**0**
Total	**14**	**19**	**5**	**31**	**13**	**14**	**13**	**10**	**14**	**4**

- All cyclists at this site were school children (up 10 percentage points from last year).
- The majority of cyclists were wearing helmets (71 per cent, down from 90 per cent in 2014).
- Approximately two out of three cyclists were male (64 per cent, down from 70 per cent in 2014).

Table 11.2: Morning Cyclist Characteristics

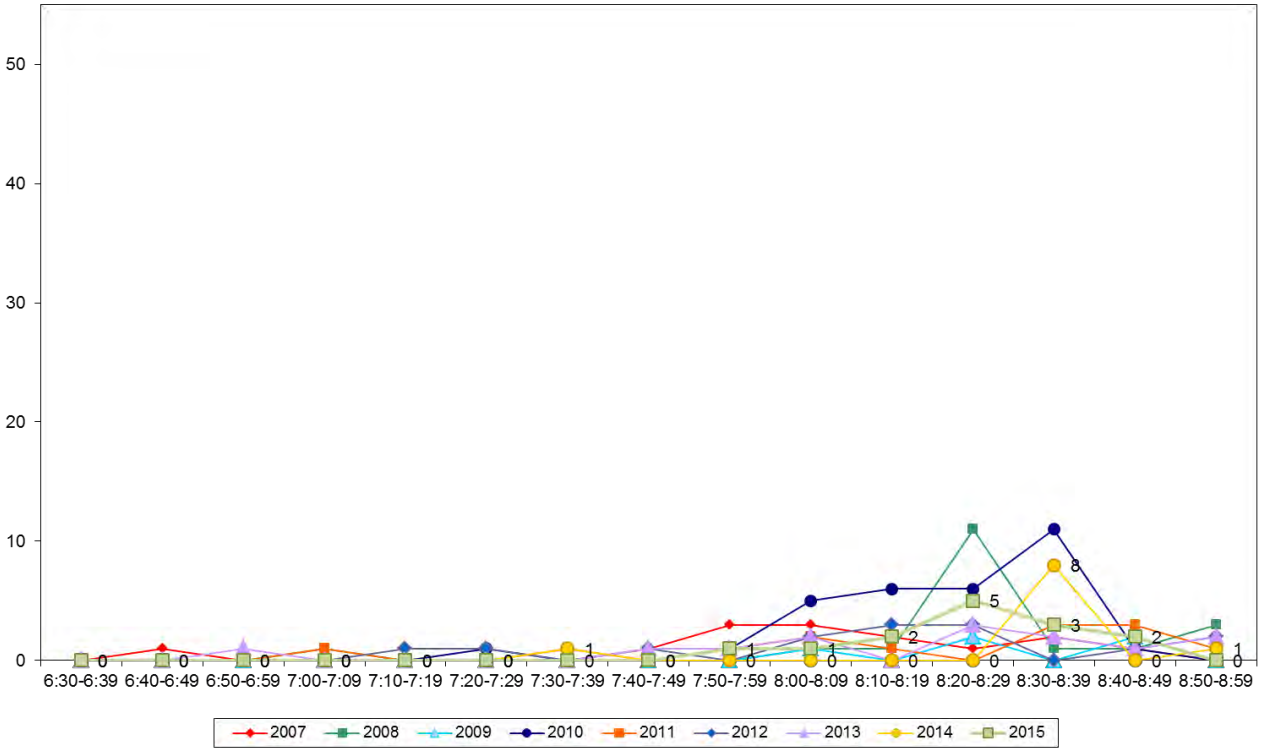
D'Oyly Reserve Cycleway 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	21	16	0	10	8	29	38	10	**0**	**-10**
School child	79	84	100	90	92	71	62	90	**100**	**10**
Helmet Wearing										
Helmet on head	64	58	20	65	62	79	92	90	**71**	**-19**
No helmet	36	42	80	35	38	21	8	10	**29**	**19**
Gender										
Male	-	-	-	-	69	71	54	70	**64**	**-6**
Female	-	-	-	-	31	29	46	30	**29**	**-1**
Can't tell	-	-	-	-	0	0	0	0	**7**	**7**
Where Riding										
Off-road cycleway	100	100	100	100	100	100	100	100	**100**	**0**
Base:	***14***	***19***	***5***	***31***	***13***	***14***	***13***	***10***	***14***	

- The volume of morning cycle movements was extremely low throughout the morning monitoring period, with only two cyclists being recorded during the first hour and a half of the shift. A peak was recorded between 8:20am and 8:29am, with 5 cycle movements observed.

Figure 11.2: Morning Peak Cyclist Frequency

D'Oyly Reserve Cycleway 2007 – 2015 (n)



11.3 Evening Peak

Environmental Conditions

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

Key Points

- The number of cyclist movements observed at this site is unchanged when compared with 2014 (14 movements, unchanged since 2013).
- The most common movement in the evening was travelling from D'Oyly Drive along the cycleway (Movement 11 = 4 movements).

Table 11.3: Evening Cyclist Movements

D'Oyly Reserve Cycleway 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	10	0	0	1	0	0	1	**0**	**-1**
2	0	3	0	0	6	2	0	0	**3**	**3**
3	2	17	0	0	1	4	0	0	**1**	**1**
4	0	15	0	1	2	1	2	1	**1**	**0**
5	4	14	2	6	16	3	6	6	**2**	**-4**
6	2	1	0	0	2	4	0	0	**0**	**0**
7	1	6	0	1	3	0	1	0	**0**	**0**
8	1	0	0	0	4	0	0	0	**3**	**3**
9	0	0	1	0	0	0	0	0	**0**	**0**
10	0	0	0	0	0	0	0	0	**0**	**0**
11	0	9	1	4	10	4	5	6	**4**	**-2**
12	0	9	0	1	0	3	0	0	**0**	**0**
Total	**10**	**84**	**4**	**13**	**45**	**21**	**14**	**14**	**14**	**0**

- The majority of cyclists using the D'Oyly Reserve cycleway were children (79 per cent, up from 57 per cent in 2014).
- The share of cyclists wearing their helmets has stayed the same when compared with last year (64 per cent).
- The majority of cyclists this year were female (57 per cent, a notable increase from 14 per cent in 2014).

Table 11.4: Evening Cyclist Characteristics

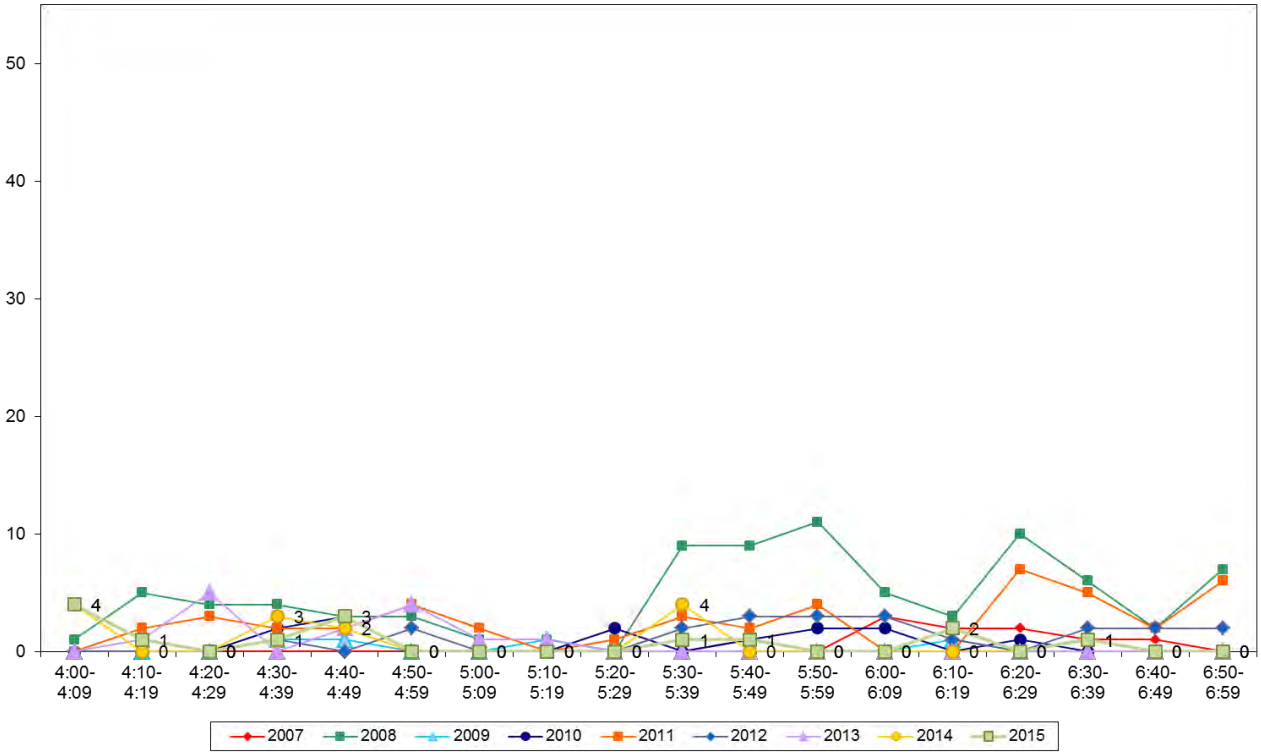
D'Oyly Reserve Cycleway 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	50	17	0	54	38	43	43	43	**21**	**-22**
School child	50	83	100	46	62	57	57	57	**79**	**22**
Helmet Wearing										
Helmet on head	70	33	75	54	69	57	86	64	**64**	**0**
No helmet	30	67	25	46	31	43	14	36	**36**	**0**
Gender										
Male	-	-	-	-	64	71	57	86	**43**	**-43**
Female	-	-	-	-	36	29	43	14	**57**	**43**
Can't tell	-	-	-	-	0	0	0	0	**0**	**0**
Where Riding										
Off-road cycleway	100	100	100	100	100	100	100	100	**100**	**0**
Base:	***10***	***84***	***4***	***13***	***45***	***21***	***14***	***14***	***14***	

- Evening cycle volumes were very low throughout the monitoring period, with no movements observed for the majority of the shift. The highest number of cyclists recorded was four, observed between 4:00pm and 4:09pm.

Figure 11.3: Evening Peak Cyclist Frequency

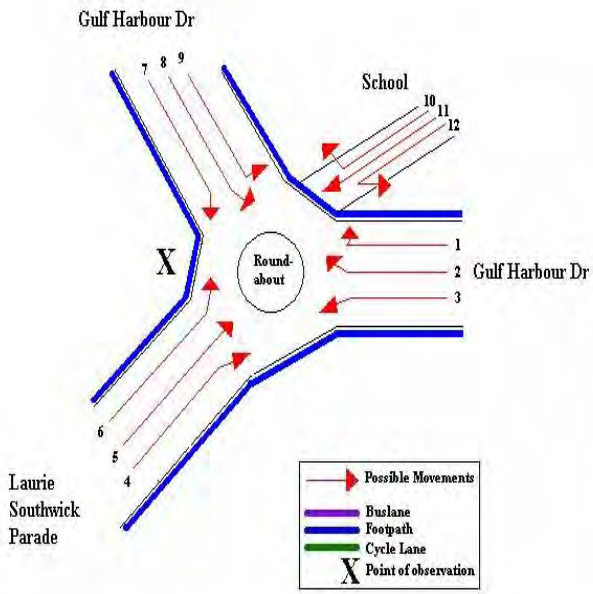
D'Oyly Reserve Cycleway 2007 – 2015 (n)



12. GULF HARBOUR DRIVE/LAURIE SOUTHWICK PARADE, WHANGAPARAOA (SITE 63)

Figure 12.1 shows the possible cyclist movements at this intersection.

Figure 12.1: Cycle Movements: Gulf Harbour Drive/Laurie Southwick Parade



12.1 Site Summary

	Raw Counts			AADT
	Morning Peak	Evening Peak	Total	Total
2007	17	39	56	80
2008	14	30	44	63
2009	5	17	22	31
2010	14	23	37	53
2011	12	27	39	56
2012	13	20	33	47
2013	24	16	40	59
2014	14	15	29	42
2015	**14**	**18**	**32**	**46**

12.2 Morning Peak

Environmental Conditions

- The weather was cloudy at the start but cleared over the course of the morning shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The number of morning cyclist movements at the Gulf Harbour Drive/Laurie Southwick Parade intersection remained the same when compared to last year (14 movements).
- The most common morning movement was Movement 5 (up 5 movements). This movement was also the greatest change recorded at this site. The share of cyclists at all other movements remained stable over the last 12 months.

Table 12.1: Morning Cyclist Movements

Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	2	1	1	1	0	1	1	0	**1**	**1**
2	0	1	0	2	0	0	0	0	**1**	**1**
3	2	0	0	0	5	2	8	3	**3**	**0**
4	1	2	1	1	1	2	3	3	**0**	**-3**
5	1	0	0	1	1	0	1	0	**5**	**5**
6	1	2	1	6	1	2	3	2	**0**	**-2**
7	4	4	2	1	2	4	6	4	**1**	**-3**
8	6	4	0	2	0	1	2	2	**3**	**1**
9	0	0	0	0	2	0	0	0	**0**	**0**
10	0	0	0	0	0	0	0	0	**0**	**0**
11	0	0	0	0	0	0	0	0	**0**	**0**
12	0	0	0	0	0	1	0	0	**0**	**0**
Total	**17**	**14**	**5**	**14**	**12**	**13**	**24**	**14**	**14**	**0**

- Over the morning peak, the majority of the cyclists were adults (57 per cent, down from 79 per cent in 2014).
- For the first time since monitoring began, all cyclists were wearing a helmet.
- The majority of cyclists were male (79 per cent, down from 86 per cent last year).
- Half of the cyclists were travelling on the road, the other half were riding on the footpath.

Table 12.2: Morning Cyclist Characteristics

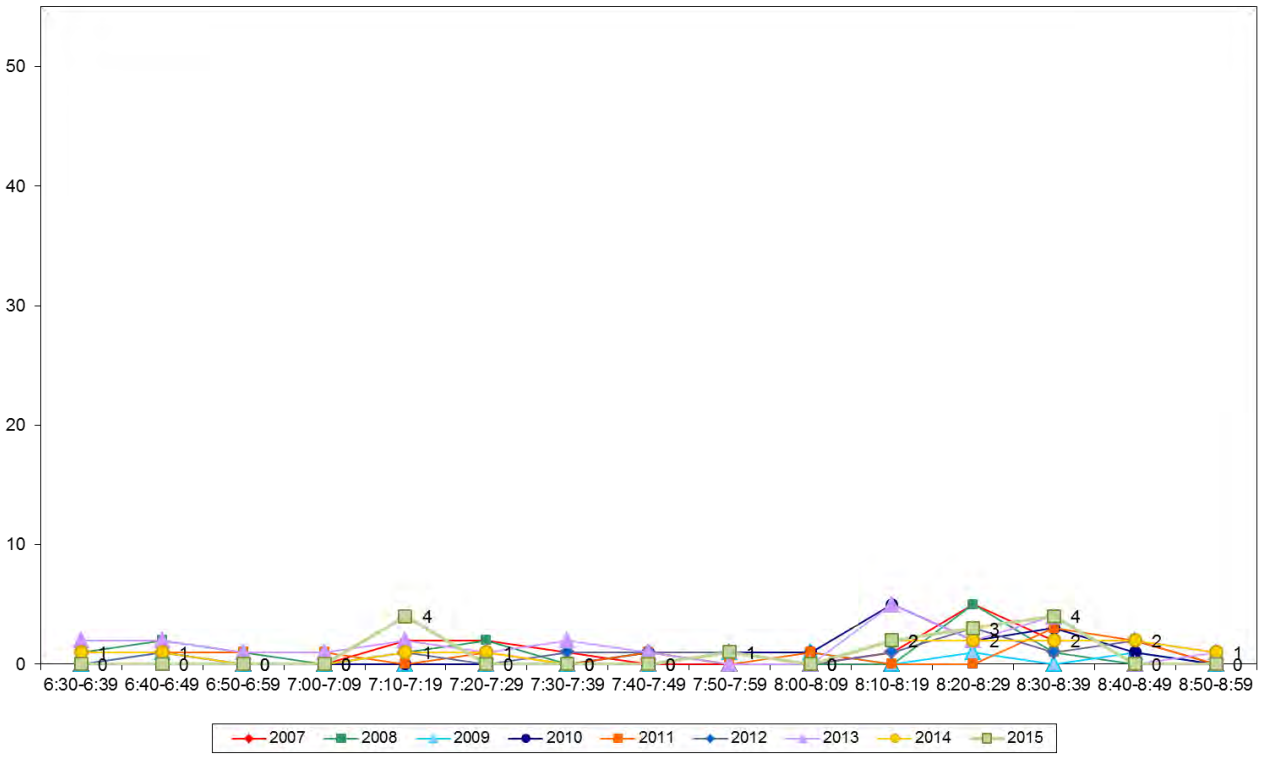
Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	53	43	40	36	75	67	88	79	**57**	**-22**
School child	47	57	60	64	25	33	12	21	**43**	**22**
Helmet Wearing										
Helmet on head	88	50	80	71	75	85	88	71	**100**	**29**
No helmet	12	50	20	29	25	15	12	29	**0**	**-29**
Gender										
Male	-	-	-	-	92	69	83	86	**79**	**-7**
Female	-	-	-	-	8	31	17	14	**21**	**7**
Can't tell	-	-	-	-	0	0	0	0	**0**	**0**
Where Riding										
Road	41	50	0	36	75	54	92	57	**50**	**-7**
Footpath	59	50	100	64	25	46	8	43	**50**	**7**
Base:	***17***	***14***	***5***	***14***	***12***	**13**	**24**	**14**	**14**	

- The volume of cyclist movements was extremely low across the monitoring period. No more than four movements were recorded during any ten minute intervals.

Figure 12.2: Morning Peak Cyclist Frequency

Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2015 (n)



12.3 Evening Peak

Environmental Conditions

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

Key Points

- Evening cyclist volumes at the Gulf Harbour Drive/Laurie Southwick Parade intersection remained stable this year (18 movements, compared with 15 movements in 2014).
- The most common movement in the evening was travelling on Laurie Southwick Parade, turning right at the roundabout onto Gulf Harbour Drive (Movement 4 = 8 cyclists). Movement 4 also recorded the greatest increase in the share of cycle movements at this site when compared with 2014 (up 8 movements).
- Evening cyclist volumes were relatively stable over the last 12 months.

Table 11.3: Evening Cyclist Movements

Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2015 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	0	0	0	1	1	0	2	0	**0**	**0**
2	4	4	2	1	5	1	2	5	**1**	**-4**
3	8	7	1	2	3	1	1	0	**0**	**0**
4	6	7	3	3	4	2	4	0	**8**	**8**
5	0	0	0	0	0	0	0	1	**0**	**-1**
6	8	3	3	3	6	5	2	2	**4**	**2**
7	6	2	6	7	4	4	2	2	**1**	**-1**
8	6	6	2	5	3	3	2	4	**2**	**-2**
9	0	0	0	0	0	2	0	0	**0**	**0**
10	0	0	0	0	0	1	0	0	**2**	**2**
11	0	0	0	0	1	0	0	0	**0**	**0**
12	1	1	0	1	0	1	0	1	**0**	**-1**
DK	-	-	-	-	-	-	1	0	**0**	**0**
Total	**39**	**30**	**17**	**23**	**27**	**20**	**16**	**15**	**18**	**3**

- The majority of cyclists at the Gulf Harbour/Laurie Southwick Parade site during the evening peak were adults (78 per cent, up notably from 33 per cent in 2014).
- Seventy-two per cent of the cyclists were wearing a helmet (up from 67 per cent in 2014).
- Most cyclists were male (83 per cent, down from 87 per cent last year).
- Over half of the cyclist were travelling on the road (56 per cent, up from 27 per cent in 2014).

Table 12.4: Evening Cyclist Characteristics

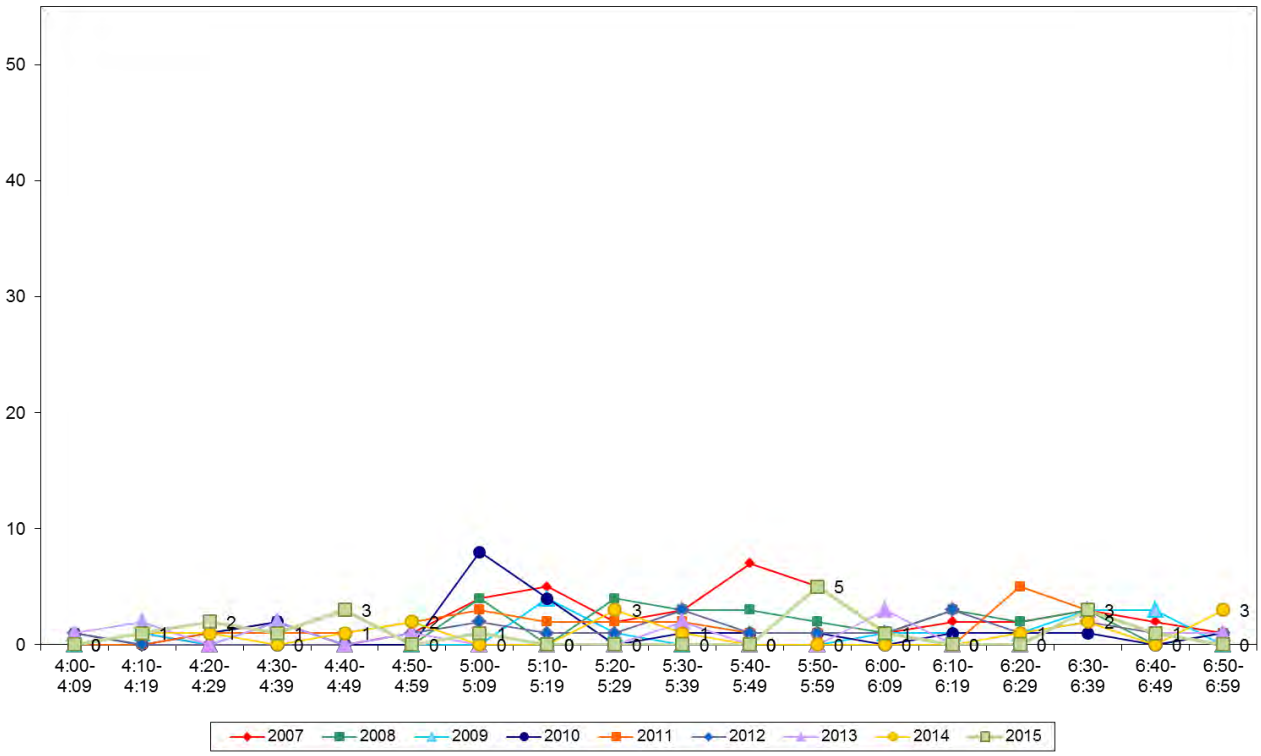
Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2015 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type										
Adult	72	77	65	74	41	70	63	33	**78**	**45**
School child	28	23	35	26	59	30	37	67	**22**	**-45**
Helmet Wearing										
Helmet on head	77	73	47	70	59	75	63	67	**72**	**5**
No helmet	23	27	53	30	41	25	37	33	**28**	**-5**
Gender										
Male	-	-	-	-	63	70	81	87	**83**	**-4**
Female	-	-	-	-	37	30	19	13	**17**	**4**
Can't tell	-	-	-	-	0	0	0	0	**0**	**0**
Where Riding										
Road	54	80	53	74	33	50	56	27	**56**	**29**
Footpath	46	20	47	26	67	50	44	73	**44**	**-29**
Base:	***39***	***30***	***17***	***23***	***27***	***20***	***16***	***15***	***18***	

- In 2015, the volume of cyclist movements was very low, with no more than five movements recorded at each time interval.

Figure 12.3: Evening Peak Cyclist Frequency

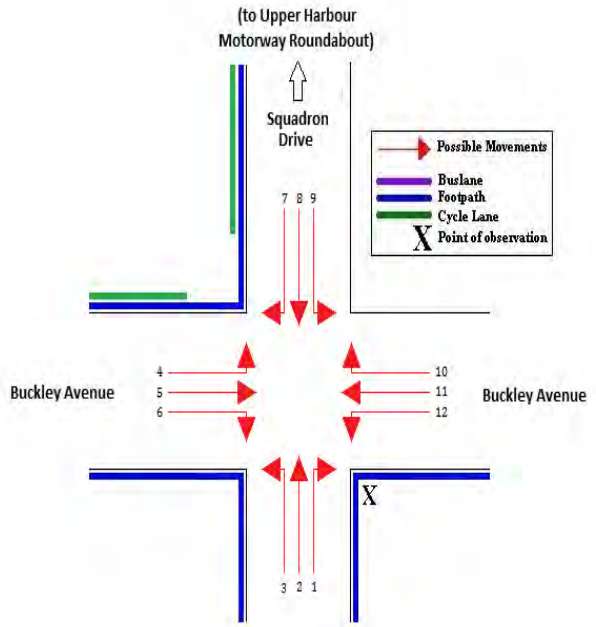
Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2015 (n)



13. SQUADRON DRIVE/BUCKLEY AVENUE, GREENHITHE (SITE 70)

Figure 13.1 shows the possible cyclist movements at this intersection.

Figure 13.1: Cycle Movements: Squadron Drive/Buckley Avenue



Note: In the period between the 2013 and 2014 cycle monitor, Squadron Drive was extended south of Buckley Avenue. This has resulted in additional cycle movements being possible at this site. The new movements are illustrated in the diagram above. As a result of this change, cycle volumes by movement prior to 2014 are not comparable with 2014 and 2015 counts.

13.1 Site Summary

	Raw Counts			*AADT*
	Morning Peak	***Evening Peak***	***Total***	***Total***
2010	37	57	94	135
2011	34	49	83	120
2012	28	82	110	156
2013	46	60	106	153
2014	19	46	65	92
2015	**26**	**48**	**74**	**106**

13.2 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

- Twenty-six cycle movements were recorded at the Squadron Drive/Buckley Avenue site, 7 more than last year.
- The key morning movements were turning right from Squadron Drive into Buckley Avenue heading west (Movement 7 = 7 cyclists) and turning left from Buckley Avenue into Squadron Drive (Movement 4 = 6 cyclists).

Table 13.1: Morning Cyclist Movements

Squadron Drive/Buckley Avenue 2010 – 2015 (n)

Movement	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	-	-	-	-	0	**0**	**0**
2	-	-	-	-	0	**1**	**1**
3	-	-	-	-	0	**0**	**0**
4	-	-	-	-	0	**6**	**6**
5	-	-	-	-	1	**0**	**-1**
6	-	-	-	-	7	**2**	**-5**
7	-	-	-	-	7	**7**	**0**
8	-	-	-	-	4	**5**	**1**
9	-	-	-	-	0	**2**	**2**
10	-	-	-	-	0	**2**	**2**
11	-	-	-	-	0	**0**	**0**
12	-	-	-	-	0	**0**	**0**
DK	-	-	-	-	-	**1**	**1**
Total	**37**	**34**	**28**	**46**	**19**	**26**	**7**

In 2014, due to a change in road layout, this site has been altered. Consequently results by movement from previous years are not directly comparable.

- The majority of cyclists recorded at this site were adults (88 per cent, down from 95 per cent last year).
- All cyclists were wearing a helmet (unchanged from last year and stable since 2010).
- The majority of cyclists were male (92 per cent, down from 95 per cent in 2013).
- There has been an increase in use of the off-road cycleway (15 per cent, no cyclists were recorded on the off-road cycleway in 2014). Twelve per cent of cyclists were travelling on the footpath, the remaining 73 per cent were travelling on the road.

Table 13.2: Morning Cyclist Characteristics

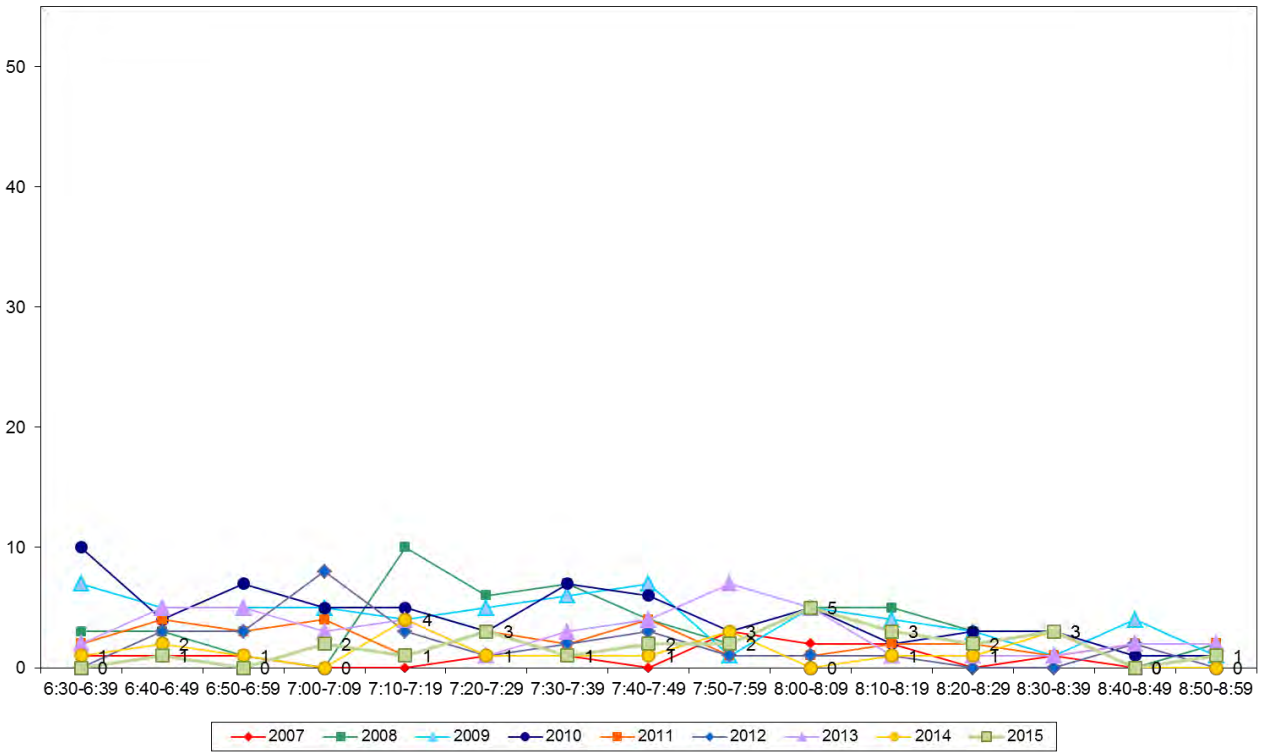
Squadron Drive/Buckley Avenue 2010 – 2015 (%)

	2010	***2011***	***2012***	***2013***	***2014***	***2015***	**Change 14-15**
Cyclist Type							
Adult	65	97	100	98	95	**88**	**-7**
School child	35	3	0	2	5	**12**	**7**
Helmet Wearing							
Helmet on head	97	97	100	98	100	**100**	**0**
No helmet	3	3	0	2	0	**0**	**0**
Gender							
Male	-	97	93	91	95	**92**	**-3**
Female	-	0	7	9	5	**8**	**3**
Can't tell	-	3	0	0	0	**0**	**0**
Where Riding							
Road	19	85	93	76	68	**73**	**5**
Footpath	0	15	0	2	32	**12**	**-20**
Off-road cycleway	81	0	7	22	0	**15**	**15**
Base:	***37***	***34***	***28***	***46***	***19***	***26***	

- In 2015, the volumes of cyclist movements were low throughout the morning period. No more than five cyclists were observed at any ten minute interval.

Figure 13.2: Morning Peak Cyclist Frequency

Squadron Drive/Buckley Avenue 2007 – 2015 (n)



13.3 Evening Peak

Environmental Conditions

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

Key Points

- The total number of cycle movements recorded at the Squadron Drive/Buckley Avenue site was 48, stable from 46 last year.
- The most common movements were turning left from Buckley Avenue into Squadron Drive (Movement 4 = 16 cyclists) and turning right from Squadron Drive into Buckley Avenue heading west (Movement 7 = 13 cyclists).
- The most notable change in cyclist movements was a decrease in cyclists turning right from Buckley Avenue into Squadron Drive heading south (Movement 6 = no cyclists, down 22 cyclists from 2014).

Table 13.3: Evening Cyclist Movements

Squadron Drive/Buckley Avenue 2010 – 2015 (n)

Movement	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	-	-	-	-	0	**0**	**0**
2	-	-	-	-	0	**4**	**4**
3	-	-	-	-	1	**0**	**-1**
4	-	-	-	-	0	**16**	**16**
5	-	-	-	-	0	**0**	**0**
6	-	-	-	-	22	**0**	**-22**
7	-	-	-	-	20	**13**	**-7**
8	-	-	-	-	2	**8**	**6**
9	-	-	-	-	0	**4**	**4**
10	-	-	-	-	1	**0**	**-1**
11	-	-	-	-	0	**1**	**1**
12	-	-	-	-	0	**2**	**2**
Total	**57**	**49**	**82**	**60**	**46**	**48**	**2**

In 2014, due to a change in road layout, this site has been altered. Consequently results by movement from previous years are not directly comparable.

- Over the evening peak, all cyclists using this site were adults (down slightly from 96 per cent last year).
- All evening cyclists at this site were wearing a helmet (unchanged from last year and stable since 2010).
- The majority of cyclists were male (88 per cent, up from 70 per cent last year).
- There has been an increase in the use of the off-road cycleway this year (31 per cent, compared to no cyclists in 2014). Consequently, the number of cyclists using either the road or footpath have decreased.

Table 13.4: Evening Cyclist Characteristics

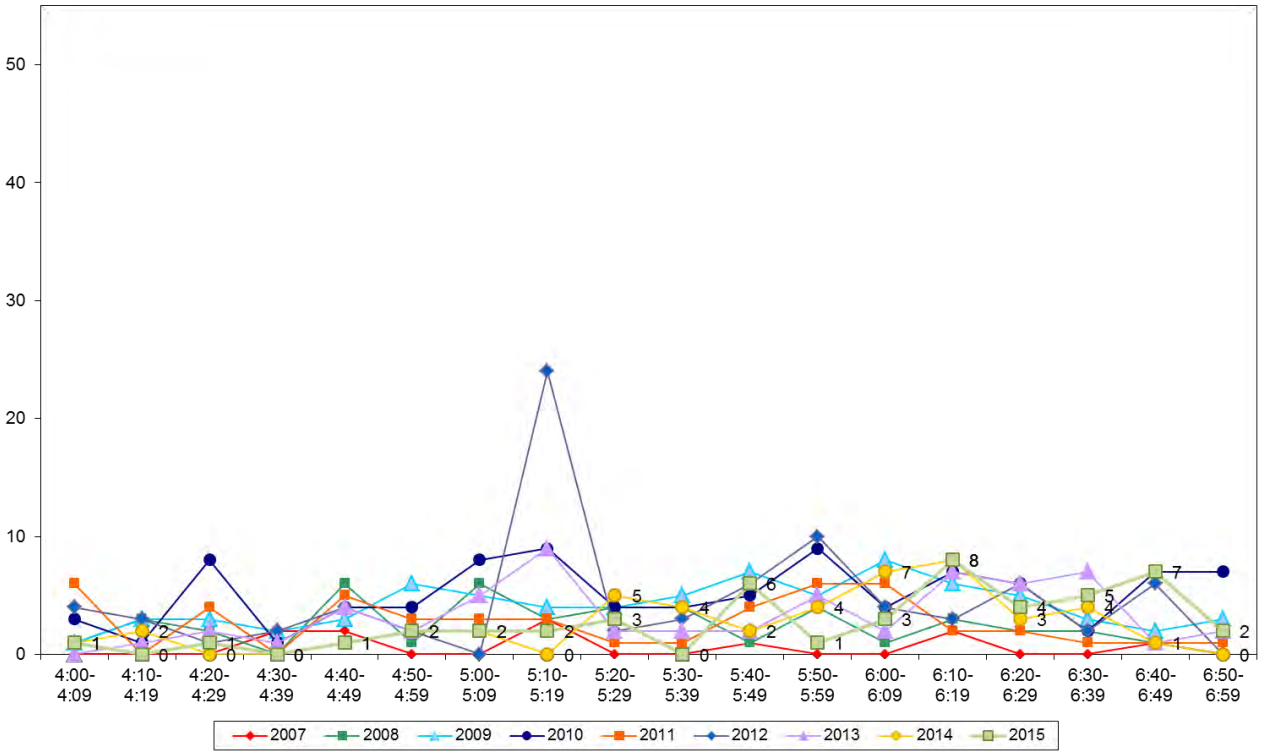
Squadron Drive/Buckley Avenue 2010 – 2015 (%)

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type							
Adult	100	92	72	100	96	**100**	**4**
School child	0	8	28	0	4	**0**	**-4**
Helmet Wearing							
Helmet on head	100	98	99	97	100	**100**	**0**
No helmet	0	2	1	3	0	**0**	**0**
Gender							
Male	-	90	87	92	70	**88**	**18**
Female	-	6	13	8	30	**12**	**-18**
Can't tell	-	4	0	0	0	**0**	**0**
Where Riding							
Road	32	73	94	72	78	**63**	**-15**
Footpath	0	27	0	3	22	**6**	**-16**
Off-road cycleway	68	0	6	25	0	**31**	**31**
Base:	***57***	***49***	***82***	***60***	***46***	***48***	

- Evening cyclist volumes were variable throughout the monitoring period. Consistent with 2014, cycle volumes were higher in the second half of the shift with a peak observed between 6:10pm and 6:19pm (8 movements).

Figure 14.3: Evening Peak Cyclist Frequency

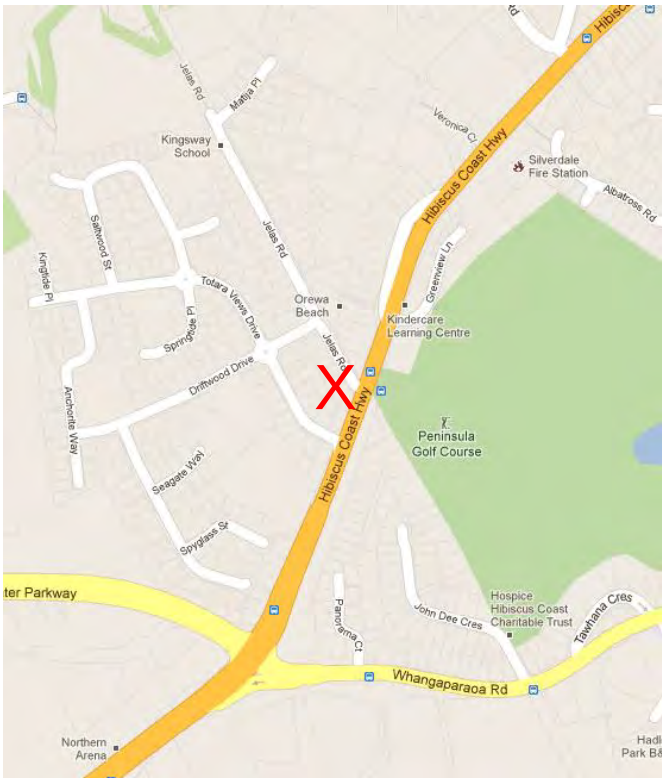
Squadron Drive/Buckley Avenue 2007 – 2015 (n)

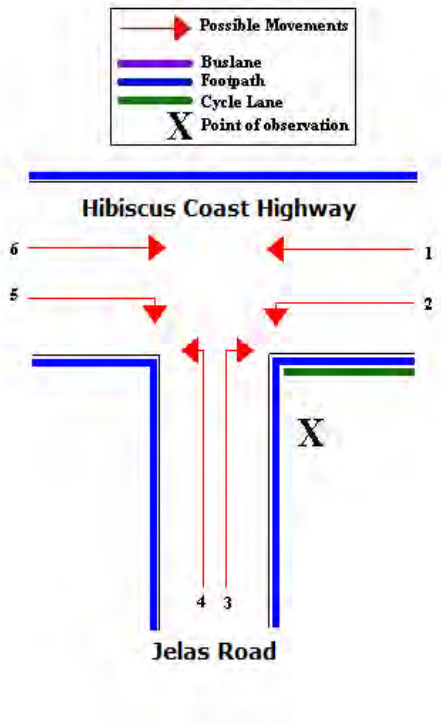


14. HIBISCUS COAST HIGHWAY/JELAS ROAD (SITE 82)

Figure 14.1 shows the possible cyclist movements at this site.

Figure 14.1: Cycle Movements: Hibiscus Coast Highway/Jelas Road





Note: Due to visibility difficulties, in 2013 monitoring at this site was reviewed and the site map was re-designed. Consequently, results prior to 2013 are not directly comparable with 2013, 2014 and 2015 counts.

14.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2009	15	23	38	55
2010	24	15	39	57
2011	19	11	30	44
2012	20	14	34	50
2013	28	15	43	64
2014	15	7	22	33
2015	**18**	**13**	**31**	**45**

14.2 Morning Peak

Environmental Conditions

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

Key Points

- The volume of morning cyclist movements recorded at the Hibiscus Coast Highway/Jelas Road site has slightly increased this year (18 movements, up from 15 movements in 2014).
- Consistent with previous years, the most common movement in the morning was straight along Hibiscus Coast Highway heading northeast (Movement 1 = 10 cyclists).

Table 14.1: Morning Cyclist Movements

Hibiscus Coast Highway/Jelas Road 2009 – 2015 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	-	-	-	-	14	8	**10**	**2**
2	-	-	-	-	0	2	**1**	**-1**
3	-	-	-	-	0	0	**0**	**0**
4	-	-	-	-	3	2	**4**	**2**
5	-	-	-	-	3	0	**1**	**1**
6	-	-	-	-	8	3	**2**	**-1**
Total	**15**	**24**	**19**	**20**	**28**	**15**	**18**	**3**

Note: Due to visibility difficulties, in 2013 monitoring at this site was reviewed and the site map was re-designed. Consequently, movements from previous years are not directly comparable.

- Over the morning peak, 67 per cent of the cyclists using this site were children (unchanged from last year).
- Almost all cyclists were wearing a helmet (94 per cent).
- All cyclists were male (up from 93 per cent in 2014).
- Half of the cyclists were riding on the footpath (up notably from 7 per cent in 2014). The share of cyclists travelling on the off-road cycleway declined significantly this year (28 per cent, down from 80 per cent in 2014).

Table 14.2: Morning Cyclist Characteristics

Hibiscus Coast Highway/Jelas Road 2009 – 2015 (%)

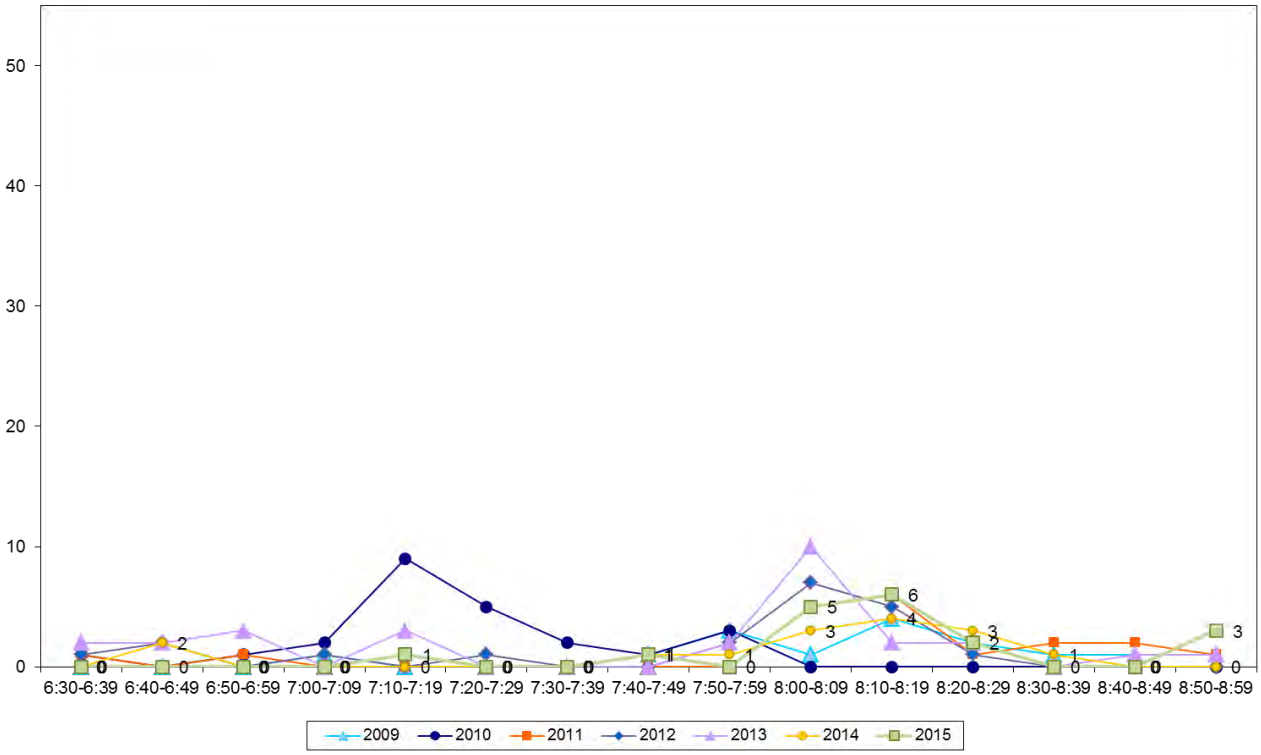
	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type								
Adult	27	25	53	40	50	33	**33**	**0**
School child	73	75	47	60	50	67	**67**	**0**
Helmet Wearing								
Helmet on head	93	88	100	95	89	80	**94**	**14**
No helmet	7	12	0	5	11	20	**6**	**-14**
Gender								
Male	-		100	85	89	93	**100**	**7**
Female	-		0	15	11	7	**0**	**-7**
Can't tell	-		0	0	0	0	**0**	**0**
Where Riding								
Road	-	-	-	-	43	13	**22**	**9**
Footpath	-	-	-	-	57	7	**50**	**43**
Off-road cycleway	-	-	-	-	0	80	**28**	**-52**
Base:	***15***	***24***	***19***	***20***	***28***	***15***	***18***	

Note: Due to visibility difficulties, in 2013 monitoring at this site was reviewed and the site map was re-designed. Consequently, data on where cyclists were riding is not directly comparable.

- Cyclist volumes at the Hibiscus Coast/Jelas Road site were relatively low throughout the monitoring period, with the busiest period being between 8:00am to 8:19am (combined total of 11 movements). With the exception of this busy period, all other time intervals did not observe any more than 3 cyclists during each interval.

Figure 14.2: Morning Peak Cyclist Frequency

Hibiscus Coast Highway/Jelas Road 2009 – 2014 (n)



14.3 Evening Peak

Environmental Conditions

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

Key Points

- Evening cyclist traffic at Hibiscus Coast Highway/Jelas Road remains low, but has almost doubled from that recorded in 2014 (13 movements, up from 7 movements in 2014).
- Consistent with 2014, the key movement in the evening is travelling straight along Hibiscus Coast Highway heading southwest (Movement 6 = 7 movements).

Table 14.3: Evening Cyclist Movements

Hibiscus Coast Highway/Jelas Road 2009 – 2015 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	-	-	-	-	7	1	**3**	**2**
2	-	-	-	-	1	0	**0**	**0**
3	-	-	-	-	2	0	**1**	**1**
4	-	-	-	-	3	1	**1**	**0**
5	-	-	-	-	1	1	**1**	**0**
6	-	-	-	-	1	4	**7**	**3**
Total	**23**	**15**	**11**	**14**	**15**	**7**	**13**	**6**

Note: Due to visibility difficulties, in 2013 monitoring at this site was reviewed and the site map was re-designed. Consequently, movements from previous years are not directly comparable.

- In contrast to last year, the greatest share of cyclists using the Hibiscus Coast Highway/Jelas Road site in 2015 were adults (69 per cent, up notably from 14 per cent in 2014).
- The majority of cyclists were wearing a helmet (77 per cent, down from 86 per cent in 2014).
- Approximately three-quarters of cyclists at this site were male (77 per cent, down from all cyclists last year)
- The share of cyclists riding on the footpath has increased notably (46 per cent, up from no cyclists last year). Consequently, there has been a notable decrease in the share of cyclists travelling on the off-road cycleway (8 per cent, down from 86 per cent in 2014).

Table 14.4: Evening Cyclist Characteristics

Hibiscus Coast Highway/Jelas Road 2009 – 2015 (%)

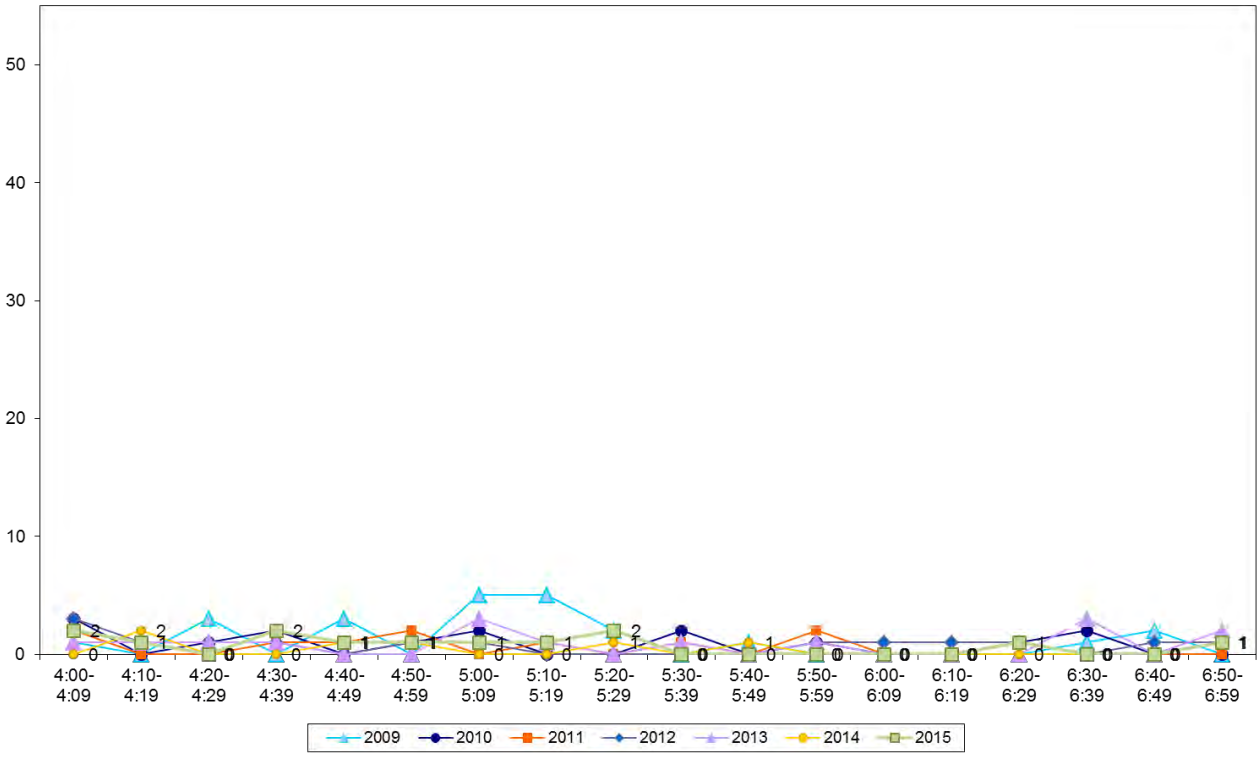
	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type								
Adult	17	53	73	79	67	14	**69**	**55**
School child	83	47	27	21	33	86	**31**	**-55**
Helmet Wearing								
Helmet on head	74	93	73	79	73	86	**77**	**-9**
No helmet	26	7	27	21	27	14	**23**	**9**
Gender								
Male	-	-	91	79	80	100	**77**	**-23**
Female	-	-	9	21	20	0	**23**	**23**
Can't tell	-	-	0	0	0	0	**0**	**0**
Where Riding								
Road	-	-	-	-	47	14	**46**	**32**
Footpath	-	-	-	-	53	0	**46**	**46**
Off-road cycleway	-	-	-	-	0	86	**8**	**-78**
Base:	***23***	***15***	***11***	***14***	***15***	***7***	***13***	

Note: Due to visibility difficulties, in 2013 monitoring at this site was reviewed and the site map was re-designed. Consequently, data on where cyclists were riding is not directly comparable.

- Consistent with previous years, cyclist volumes are low throughout the evening monitoring period, with no more than two cyclists recorded over any ten minute interval.

Figure 14.3: Evening Peak Cyclist Frequency

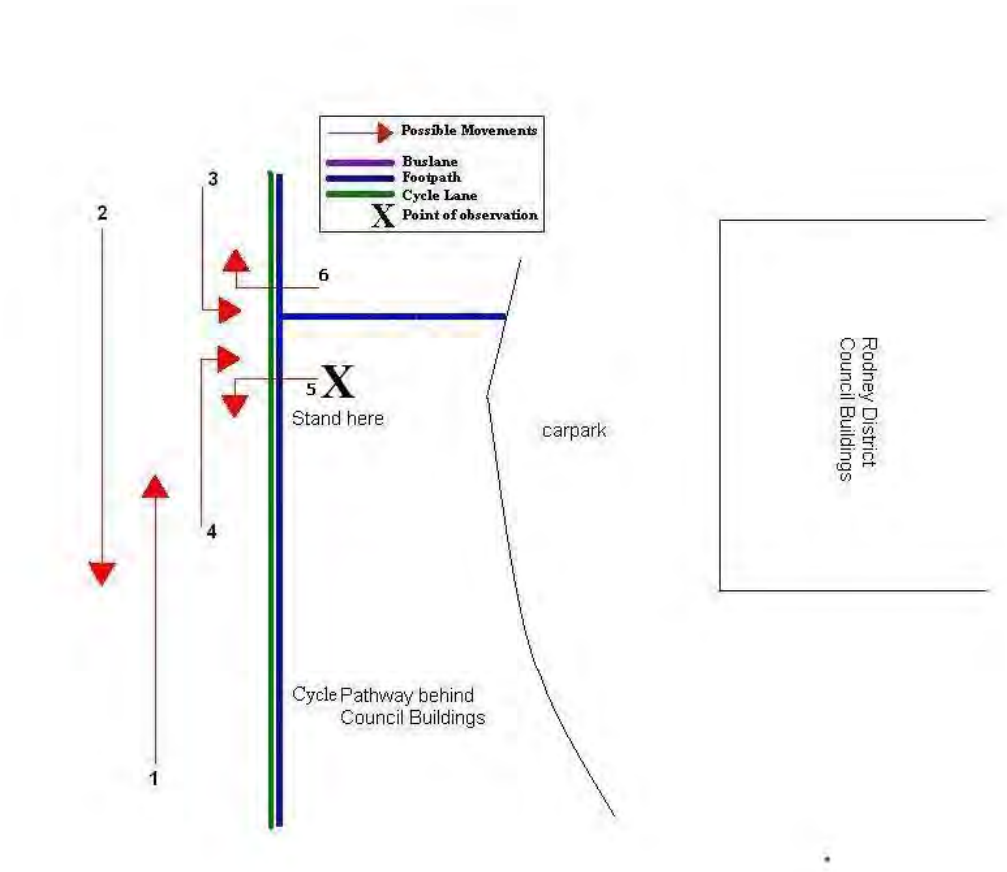
Hibiscus Coast Highway/Jelas Road 2009 – 2015 (n)



15. BEHIND AUCKLAND COUNCIL BUILDING, OREWA (SITE 84)

Figure 15.1 shows the possible cyclist movements at this site.

Figure 15.1: Cycle Movements: Behind Auckland Council Building, Orewa



15.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2009	75	11	86	130
2010	73	22	95	142
2011	72	66	138	201
2012	61	28	89	132
2013	66	23	89	133
2014	59	16	75	112
2015	**67**	**25**	**92**	**137**

15.2 Morning Peak

Environmental Conditions

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

Key Points

- The total number of cyclist movements recorded in 2015 has increased from last year (67 movements, up from 59 movements in 2014).
- Most of the movements in the morning were heading north along the cycleway (Movement 1 = 60 cyclists).
- Change in morning cyclist volumes at this site since 2014 was also most notable at Movement 1 (up 8 movements).

Table 15.1: Morning Cyclist Movements

Behind Auckland Council Building, Orewa 2009 – 2015 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	73	70	71	54	58	52	**60**	**8**
2	1	3	1	2	6	6	**3**	**-3**
3	0	0	0	1	0	0	**0**	**0**
4	1	0	0	2	1	1	**2**	**1**
5	0	0	0	2	0	0	**2**	**2**
6	0	0	0	0	1	0	**0**	**0**
Total	**75**	**73**	**72**	**61**	**66**	**59**	**67**	**8**

- The majority of morning cyclists at this site were school children (77 per cent, down from 81 last year).
- Eighty-seven per cent of the cyclists were wearing a helmet.
- Most of the cyclists were male (87 per cent, down from 92 per cent last year).

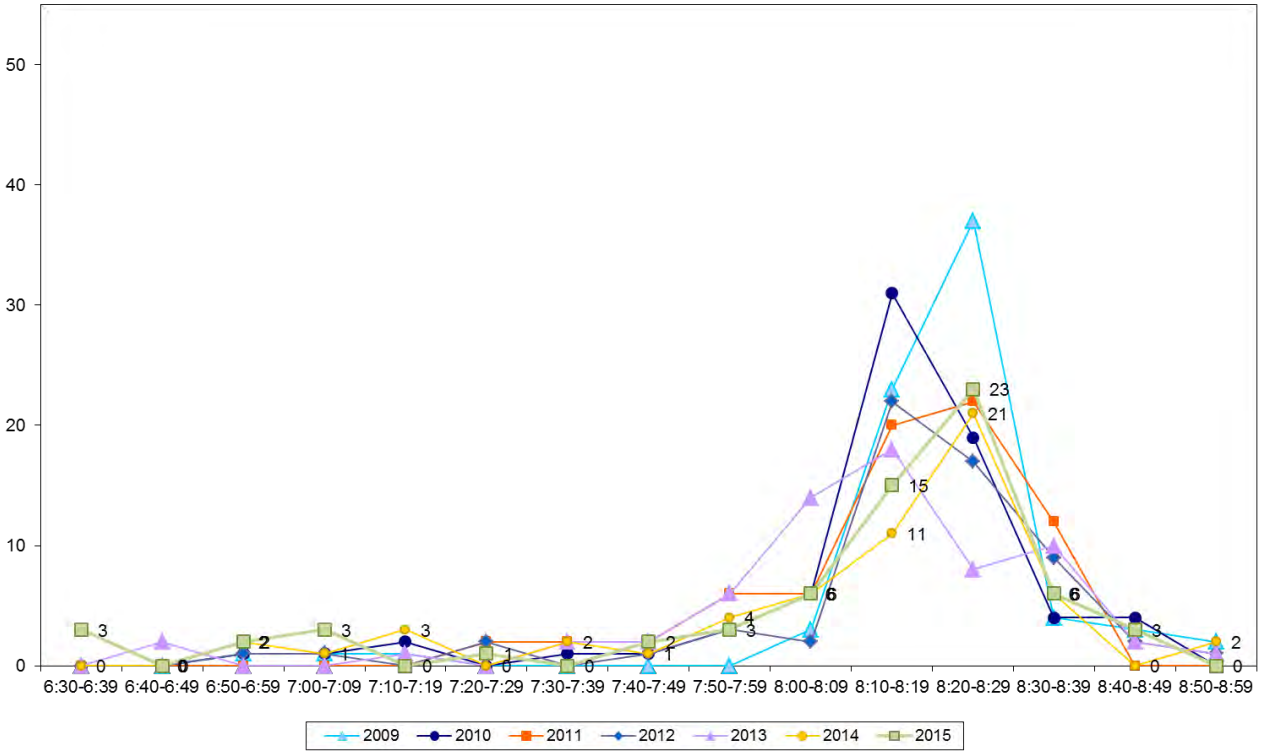
Table 15.2: Morning Cyclist Characteristics

Behind Auckland Council Building, Orewa 2009 – 2015 (%)

	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type								
Adult	8	12	11	18	17	19	**23**	**4**
School child	92	88	89	82	83	81	**77**	**-4**
Helmet Wearing								
Helmet on head	84	88	89	80	89	85	**87**	**2**
No helmet	16	12	11	20	11	15	**13**	**-2**
Gender								
Male	-	-	89	80	86	92	**87**	**-5**
Female	-	-	7	20	14	8	**13**	**5**
Can't tell	-	-	4	0	0	0	**0**	**0**
Where Riding								
Off-road cycleway	100	100	100	100	100	100	**100**	**0**
Base:	***75***	***73***	***72***	***61***	***66***	***59***	***67***	

- The volume of morning cyclist movements was very low until 7:59am, with cyclist numbers less than three at each interval. Cyclist movements peaked between 8:20am and 8:29am (23 movements). This trend is consistent with previous years.

Figure 15.2: Morning Peak Cyclist Frequency
Behind Auckland Council Building, Orewa 2009 – 2015 (n)



15.3 Evening Peak

Environmental Conditions

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

Key Points

- Twenty-five cycle movements were recorded during the evening peak at this site, 9 movements lower than the 16 movements recorded in 2014.
- The key movement was heading south along the cycleway (Movement 2 = 18 cyclists).
- The most notable change in movements compared with 2014 was Movement 2 (up 9 movements).

Table 15.3: Evening Cyclist Movements

Behind Auckland Council Building, Orewa 2009 – 2015 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	5	10	28	2	6	5	**6**	**1**
2	4	12	31	14	11	9	**18**	**9**
3	0	0	1	0	0	0	**0**	**0**
4	1	0	1	3	0	1	**0**	**-1**
5	1	0	4	9	4	1	**1**	**0**
6	0	0	1	0	2	0	**0**	**0**
Total	**11**	**22**	**66**	**28**	**23**	**16**	**25**	**9**

- Over half of evening cyclists at this site were school children (60 per cent, up from 44 per cent last year).
- Four in five cyclists were wearing a helmet (a 17 percentage point increase from 63 per cent in 2014).
- Eighty per cent of cyclists were male (stable from 81 per cent from last year).

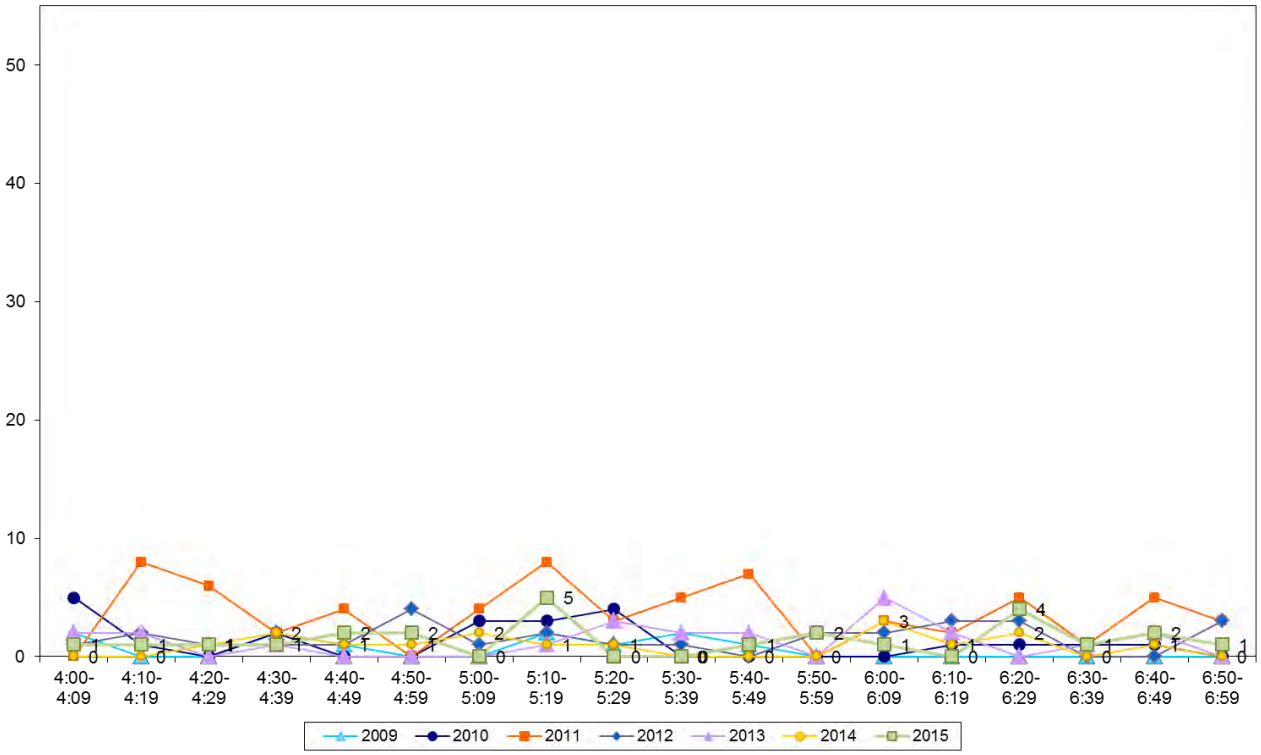
Table 14.4: Evening Cyclist Characteristics
Behind Auckland Council Building, Orewa 2009 – 2015 (%)

	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
Cyclist Type								
Adult	91	55	52	64	65	56	**40**	**-16**
School child	9	45	48	36	35	44	**60**	**16**
Helmet Wearing								
Helmet on head	82	59	77	57	74	63	**80**	**17**
No helmet	18	41	23	43	26	37	**20**	**-17**
Gender								
Male	-	-	71	71	57	81	**80**	**-1**
Female	-	-	29	29	43	19	**20**	**1**
Can't tell	-	-	0	0	0	0	**0**	**0**
Where Riding								
Off-road cycleway	100	100	100	100	100	100	**100**	**0**
Base:	***11***	***22***	***66***	***28***	***23***	***16***	***25***	

- Similar to last year, cyclist movement volumes were low during most of the monitoring period. The highest cycle volumes during the evening peak were between 5:10pm and 5:19pm with five movements, and between 6:20pm and 6:29pm with four movements.

Figure 15.3: Evening Peak Cyclist Frequency

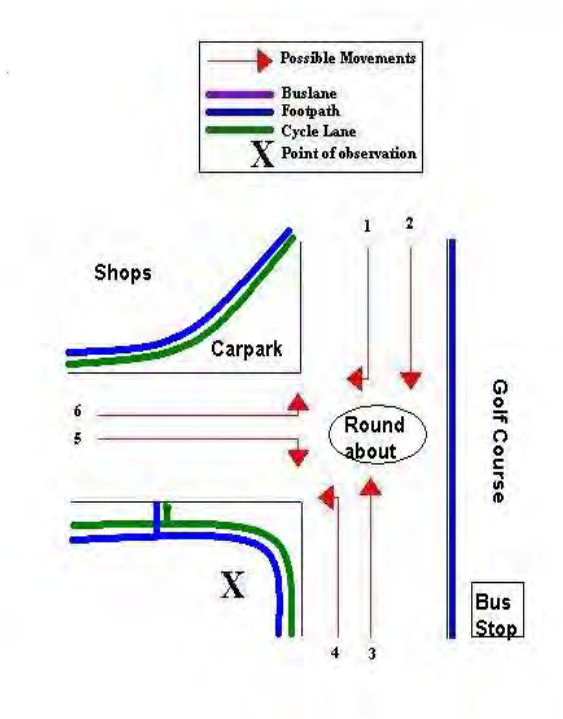
Behind Auckland Council Building, Orewa 2009 – 2014 (n)



16. SUNNYNOOK ROAD/EAST COAST ROAD, SUNNYNOOK (SITE 89)

Figure 16.1 shows the possible cyclist movements at this intersection.

Figure 16.1: Sunnynook Road/East Coast Road, Sunnynook



Note: This site was monitored for the first time in 2011.

16.1 Site Summary

	Raw Counts			AADT
	Morning Peak	*Evening Peak*	*Total*	*Total*
2011	81	93	174	252
2012	95	60	155	228
2013	96	53	149	211
2014	45	52	97	140
2015	**88**	**61**	**149**	**219**

16.2 Morning Peak

Environmental Conditions

- The weather was cloudy at the start but cleared over the course of the morning shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of morning cyclist movements recorded at the Sunnynook/East Coast Road intersection in 2015 has increased notably since last year (88 movements observed this year, compared with 45 in 2014).
- The key morning movement was continuing straight along East Coast Road travelling in a south-easterly direction (Movement 2 = 61 movements).
- The most notable change in morning cyclist movements was also at Movement 2 (up 36 movements from 2014).

Table 16.1: Morning Cyclist Movements

Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (n)

Movement	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	5	1	2	2	**0**	**-2**
2	42	74	65	25	**61**	**36**
3	25	17	22	16	**23**	**7**
4	6	0	0	0	**1**	**1**
5	0	2	3	1	**3**	**2**
6	3	1	4	1	**0**	**-1**
Total	**81**	**95**	**96**	**45**	**88**	**43**

- Over the morning peak, the majority of cyclists were adults (89 per cent, stable from 87 per cent at the previous measure).
- All cyclists were wearing a helmet (stable since 2011).
- The majority of cyclists continued to be male (82 per cent, up from 78 per cent in 2014).
- Most cyclists were riding on the road (84 per cent, up from 78 per cent last year). The share of cyclists travelling on the off-road cycleway has increased from no cyclists being recorded in 2014 up to 14 per cent in 2015.

Table 16.2: Morning Cyclist Characteristics

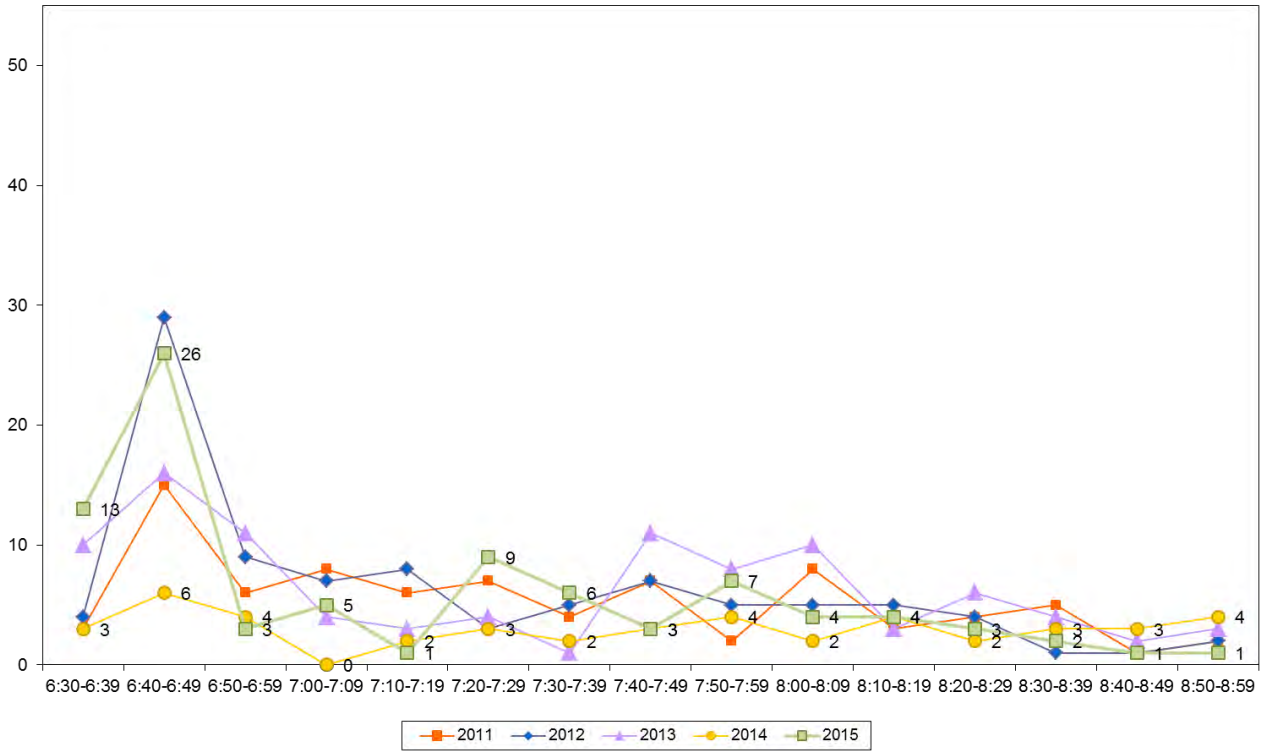
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (%)

	2011	***2012***	***2013***	***2014***	***2015***	**Change 14-15**
Cyclist Type						
Adult	88	93	85	87	**89**	**2**
School child	12	7	15	13	**11**	**-2**
Helmet Wearing						
Helmet on head	99	100	98	98	**100**	**2**
No helmet	1	0	2	2	**0**	**-2**
Gender						
Male	77	84	84	78	**82**	**4**
Female	23	16	15	22	**6**	**-16**
Can't tell	0	0	1	0	**12**	**12**
Where Riding						
Road	79	88	75	78	**84**	**6**
Footpath	2	12	25	22	**2**	**-20**
Off-road cycle way	19	0	0	0	**14**	**14**
Base:	***81***	***95***	***96***	***45***	***88***	

- In contrast to last year, morning cyclist volumes peaked early in the shift with 26 cyclists observed between 6:40am and 6:49am. Volumes fluctuated throughout the middle of the monitoring period before steadily declining in volume for the last 50 minutes of the shift (8:10am and 8:59am).

Figure 16.2: Morning Peak Cyclist Frequency

Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (n)



Note: In 2015, 23 per cent of the total cycle movements (n=20) in the morning peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *5 cyclists at 6:33am*
- *15 cyclists at 6:48am.*

The surveyor also noted that there was a peloton of over 20 cyclists riding past just before the morning monitoring period commenced.

This compares with no cyclists in 2014 and 16 per cent (n=16) in 2013.

16.3 Evening Peak

Environmental Conditions

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

Key Points

- Cyclist movement volumes have increased this year to 61 movements, up from 52 movements in 2014.
- The key movements were continuing straight on East Coast Road travelling in a south-easterly direction (Movement 2 = 24 movements) and straight along East Coast Road in a north/north westerly direction (Movement 3 = 22 movements) .
- The most notable changes from last year were at Movement 3 (down 7 movements), Movement 5 (up 6 movements) and Movement 2 (up five movements).

Table 16.3: Evening Cyclist Movements

Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (n)

Movement	*2011*	*2012*	*2013*	*2014*	*2015*	Change 14-15
1	2	1	1	1	**2**	**1**
2	33	22	19	19	**24**	**5**
3	49	35	29	29	**22**	**-7**
4	2	0	2	1	**5**	**4**
5	4	0	1	1	**7**	**6**
6	3	2	1	1	**1**	**0**
Total	***93***	***60***	***53***	***52***	***61***	**9**

- Three-quarters of cyclists at this site were adults (down 13 percentage points relative to the previous measure).
- Almost all cyclists were wearing a helmet (98 per cent, stable since 2011).
- The majority of cyclists continued to be male (90 per cent, stable since 2011).
- For the first time since 2012, there were cyclists observed on the off-road cycleway (31 per cent). As a result, the share of cyclists travelling on the road has declined notably over the past 12 months (64 per cent, down from 92 per cent in 2014)

Table 16.4: Evening Cyclist Characteristics

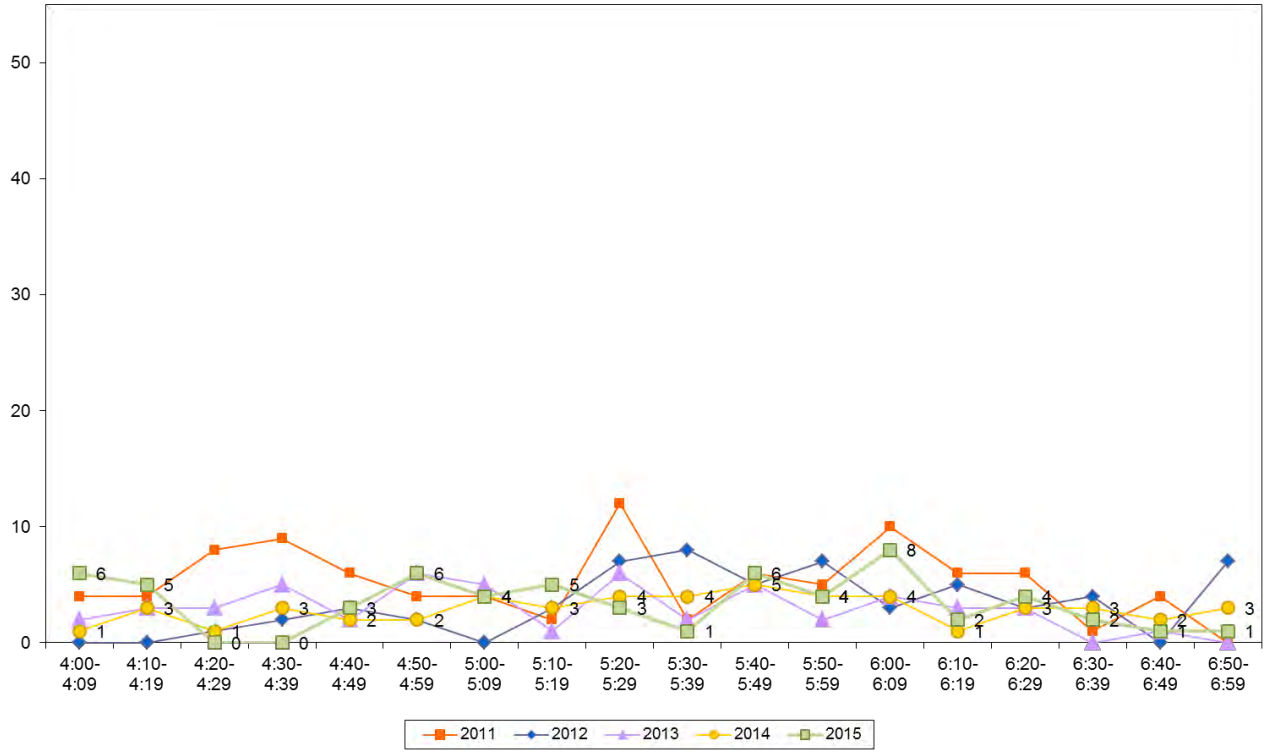
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (%)

	2011	***2012***	***2013***	***2014***	***2015***	**Change 14-15**
Cyclist Type						
Adult	82	78	92	88	**75**	**-13**
School child	18	22	8	12	**25**	**13**
Helmet Wearing						
Helmet on head	97	98	98	96	**98**	**2**
No helmet	3	2	2	4	**2**	**-2**
Gender						
Male	91	83	91	87	**90**	**3**
Female	9	17	9	13	**10**	**-3**
Can't tell	0	0	0	0	**0**	**0**
Where Riding						
Road	78	79	81	92	**64**	**-28**
Footpath	7	21	19	8	**5**	**-3**
Off-road cycle way	15	0	0	0	**31**	**31**
Base:	***93***	***60***	***53***	***52***	***61***	

- Cyclist movement volumes in the evening were low and fluctuated throughout the shift. This is consistent with previous years which have also recorded continuous low numbers throughout the evening monitoring period.

Figure 16.3: Evening Peak Cyclist Frequency

Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (n)



Note: In 2015, 10 per cent of the total cycle movements (n=6) in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *3 cyclists at 4:07pm*
- *3 cyclists at 5:12pm.*

17. ALBANY FERRY WHARVES

Environmental Conditions

- Stationary cycle counts at various ferry wharves were conducted on Thursday 5th March 2015 (the same day as the cycle counts in the Albany ward).
- There were no road works or incidents that may affect cycle counts.

Hobsonville Ferry Terminal - Key Points

- In the morning, no bicycles were observed at 6:10am and two bicycles were observed at 9:10am. This suggests two ferry passengers rode to the Hobsonville Ferry Terminal and parked the bikes there. This figure is up from no cycles in 2014.
- In the afternoon, two bicycles were observed at 3:30pm and one bicycle was observed at 7:10pm. This suggests one ferry passenger collected their bike after disembarking and cycled home. This figure is up from no cycles in 2014.

Note: Ferry services from the Hobsonville ferry wharf commenced operation in February 2013. Observation of stationary cycles was conducted for the first time in 2013.

Table 17.1: Hobsonville Ferry Wharf Counts 2015 (n)

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

Gulf Harbour Ferry Terminal - Key Points

- Note: No counts have been done at the Gulf Harbour Wharf in 2015.

18. SCHOOL BIKE SHED COUNT

18.1 Cycle Count Background Information

- A total of 16 schools in the Albany ward participated in the school bike shed count in 2015. Most schools do not have policies that restrict students cycling to school[9].
- No schools reported any events or issues that may affect cycle counts.
- The designated count day was Tuesday 3rd of March 2015[10].

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

18.2 Cycle Count Key Points

- Among the surveyed schools, of those eligible to cycle to school, on average, two per cent of students are cycling to their schools. This share is unchanged since 2013.
- Hobsonville Point Primary School reported the highest share of cyclists with 20 per cent of all eligible students currently cycling to school.
- In total, n=272 students from the responding schools were reported to be cycling to school.
- Of the 16 schools that responded, five (31 per cent) had no students cycling to school.
- Of the 13 schools that participated in the count in both 2014 and 2015, one (8 per cent) reported an increase in the share of students cycling – Pinehurst School, with 1 per cent of students cycling, up from less than 1 per cent in 2014.
- Of the 13 schools that participated in the count in both 2014 and 2015, 4 (31 per cent) reported a decrease in the share of students cycling, the most notable decreases being:
    - Silverdale Primary School (13 per cent, down from 24 per cent)
    - Timatanga Community School (no cyclists, down from 5 per cent)
    - Hobsonville Point Primary School (20 per cent, down from 24 per cent)

Table 18.1 shows the results of the 16 schools surveyed in Albany ward.

[9] The following schools have policies restricting cycling to school:
- Silverdale Primary School *"Children under 10 years must be accompanied by an adult"*
- Timatanga Community School *"Road and cycling policy straight from Ministry website. 10 years and under must be supervised"*

[10] The following schools conducted their counts on alternative days:
- Orewa College – 18th March 2015
- Silverdale Primary School – 4th March 2015
- The Corelli International Academic School of the Arts – 5th March 2015
- Timatanga Community School – 5th March 2015
- Vanguard Military School – 5th March 2015
- Wentworth College – 5th March 2015

Table 18.1: 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*[11]								
				2015	*2014*	*2013*	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
Hobsonville Point Primary School	Full Primary	150	30	**20%**	24%	31%	-	-	-	-	-	-
Silverdale Primary School	Full Primary	230	31	**13%**	24%	6%	2%	8%	-	-	-	-
Orewa College	Intermediate/ Secondary	1556	114	**7%**	8%	5%	2%	4%	7%	5%	5%	6%
Albany Junior High School	Intermediate/ Secondary	1125	27	**2%**	2%	2%	5%	-	-	-	-	-
Wentworth College	Intermediate/ Secondary	202	3	**1%**	-	1%	1%	2%	3%	4%	<1%	3%
Kristin School	Composite	1532	21	**1%**	1%	<1%	<1%	<1%	<1%	1%	-	-
Albany Senior High School	Secondary	775	10	**1%**	1%	<1%	1%	1%	2%	-	-	-
Murray's Bay Intermediate	Intermediate	1025	12	**1%**	1%	-	1%	2%	3%	2%	2%	5%
Whangaparaoa College	Intermediate/ Secondary	1355	12	**1%**	-	1%	1%	1%	-	1%	2%	4%
Pinehurst School	Composite	740	4	**1%**	<1%	1%	1%	<1%	1%	0%	1%	1%
Rangitoto College	Secondary	2870	8	**<1%**	<1%	<1%	<1%	1%	1%	1%	<1%	1%
City Impact Church School	Composite	138	0	**0%**	0%	0%	0%	0%	-	-	-	-
The Corelli International Academic School of the Arts	Composite	40	0	**0%**	0%	0%	0%	-	-	-	-	-
Timatanga Community School	Full Primary	19	0	**0%**	5%	0%	-	-	-	-	-	-
Vanguard Military School	Secondary	144	0	**0%**	-	-	-	-	-	-	-	-
Westminster Christian School	Full Primary	215	0	**0%**	0%	0%	0%	0%	-	-	-	-
Total		**12116**	**272**	**2%**	**2%**	**2%**	**1%**	**-**	**-**	**-**	**-**	**-**

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

Table 18.2 illustrates the rates of cycling to school at different school levels. Rates of cycling to school are highest among full primary schools, with 10 per cent of students cycling to school (up from 7 per cent in 2014). Rates are lowest for secondary schools (less than 1 per cent).

Table 18.2: Summary Table of School Bike Count by School Type

2007 – 2015 (%)

School Type	*Number of Schools Responded in 2015 (n)*	*Cyclists as share of those eligible*									Change 14-15
		2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	
Full Primary	4	-	-	-	-	3%	2%	4%	7%	**10%**	**3%**
Intermediate/Secondary	4	5%	3%	5%	5%	4%	2%	4%	5%	**4%**	**-1%**
Intermediate	1	5%	1%	3%	3%	2%	1%	2%	1%	**1%**	**0%**
Composite	4	<1%	1%	1%	1%	1%	2%	1%	<1%	**1%**	**<1%**
Secondary	3	1%	<1%	<1%	1%	1%	<1%	<1%	<1%	**<1%**	**0%**

18.3 Scooter Count Background Information

- A total of 14 schools in the Albany ward participated in the school bike shed scooter count. Of the schools that responded to the survey, most had no policies that restrict students scooting to school[12].
- No schools surveyed reported any events or issues that may affect the scooter counts.
- While the designated count day was Tuesday 3rd of March 2015[13].

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

18.4 Scooter Count Key Points

- Among the surveyed schools, of those eligible to scooter, on average, one per cent of students are scooting to their schools. This share is unchanged from 2014.
- Hobsonville Point Primary School reported the highest share of scooters, 19 per cent of all eligible students currently scooting to school (up from 17 per cent in 2014).
- In total, n=64 students from the responding schools were reported to be scooting to school.
- Of the 14 schools that responded, 10 (71 per cent) had no students scooting to school.
- Of the 10 schools that participated in the count in both 2014 and 2015, two (20 per cent) reported an increase in the share of students scooting - Silverdale Primary School, with 5 per cent of students scooting, up from 2 per cent in 2014, and Hobsonville Point Primary School, with 19 per cent of students scooting, up from 17 per cent in 2014.
- Of the 10 schools that participated in the count in both 2014 and 2015, 3 (30 per cent) reported a decrease in the share of students scooting.

[12] The following school have policies surrounding scooting to school:
- Silverdale Primary School *"Children must wear a helmet and be with an adult if under the age of 10."*

[13] The following schools conducted their counts on alternative days:
- Orewa College – 18th March 2015
- Silverdale Primary School – 4th March 2015
- The Corelli International academic School of the Arts – 5th March 2015
- Timatanga Community School – 5th March 2015
- Vanguard Military School – 5th March 2015
- Wentworth College – 5th March 2015

Table 18.3 shows the results of the 14 schools surveyed in the Albany ward.

Table 18.3: 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*
Hobsonville Point Primary School	Full Primary	150	28	**19%**	17%
Silverdale Primary School	Full Primary	520	24	**5%**	2%
Orewa College	Intermediate/ Secondary	1556	9	**1%**	2%
Pinehurst School	Composite	740	3	**<1%**	<1%
Albany Junior High School	Intermediate/ Secondary	1125	0	**0%**	-
Albany Senior High School	Secondary	775	0	**0%**	0%
City Impact Church School	Composite	138	0	**0%**	0%
Kristin School	Composite	1532	0	**0%**	<1%
Rangitoto College	Secondary	2870	0	**0%**	0%
The Corelli International Academic School of the Arts	Composite	40	0	**0%**	0%
Timatanga Community School	Full Primary	19	0	**0%**	21%
Vanguard Military School	Secondary	144	0	**0%**	-
Wentworth College	Intermediate/ Secondary	202	0	**0%**	-
Westminster Christian School	Full Primary	215	0	**0%**	-
Total		**10026**	**64**	**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 18.4 illustrates the rates of scooting to school at different school levels. Rates of scooting to school are highest for full primary schools (6 per cent).

Table 18.4: Summary Table of School Scooter Count by School Type

2014 – 2015 (%)

School Type	***Number of Schools Responded in 2015 (n)***	***Scooter riders as share of those eligible***		**Change 14-15**
		2014	***2015***	
Full Primary	4	2%	**6%**	**4%**
Intermediate/Secondary	3	2%	**<1%**	**-2%**
Composite	4	<1%	**<1%**	**0%**
Intermediate	0	1%	**0%**	**-1%**
Secondary	3	0%	**0%**	**0%**

APPENDIX

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[15] 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:

$\sum H_{AM} = 30$; $\sum H_{PM} = 33.3$; (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%