gravitas

Research Report Prepared for
Auckland Transport

May 2013

2013 Auckland Region Manual Cycle Monitor

- Albany Ward -

Gravitas Research and Strategy Limited
Level 12, Wellesley Centre,
44-52 Wellesley St, Auckland
PO Box 3802, Shortland St, Auckland
tel. 09 356 8842, fax. 09 356 5767
e-mail. info@gravitas.co.nz

TABLE OF CONTENTS

APPENDICES

1. ALBANY WARD SUMMARY OF RESULTS

1.1 Introduction

The Need For Reliable Cycle Trip Data

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

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

Manual Cycle Monitoring

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

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

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

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

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

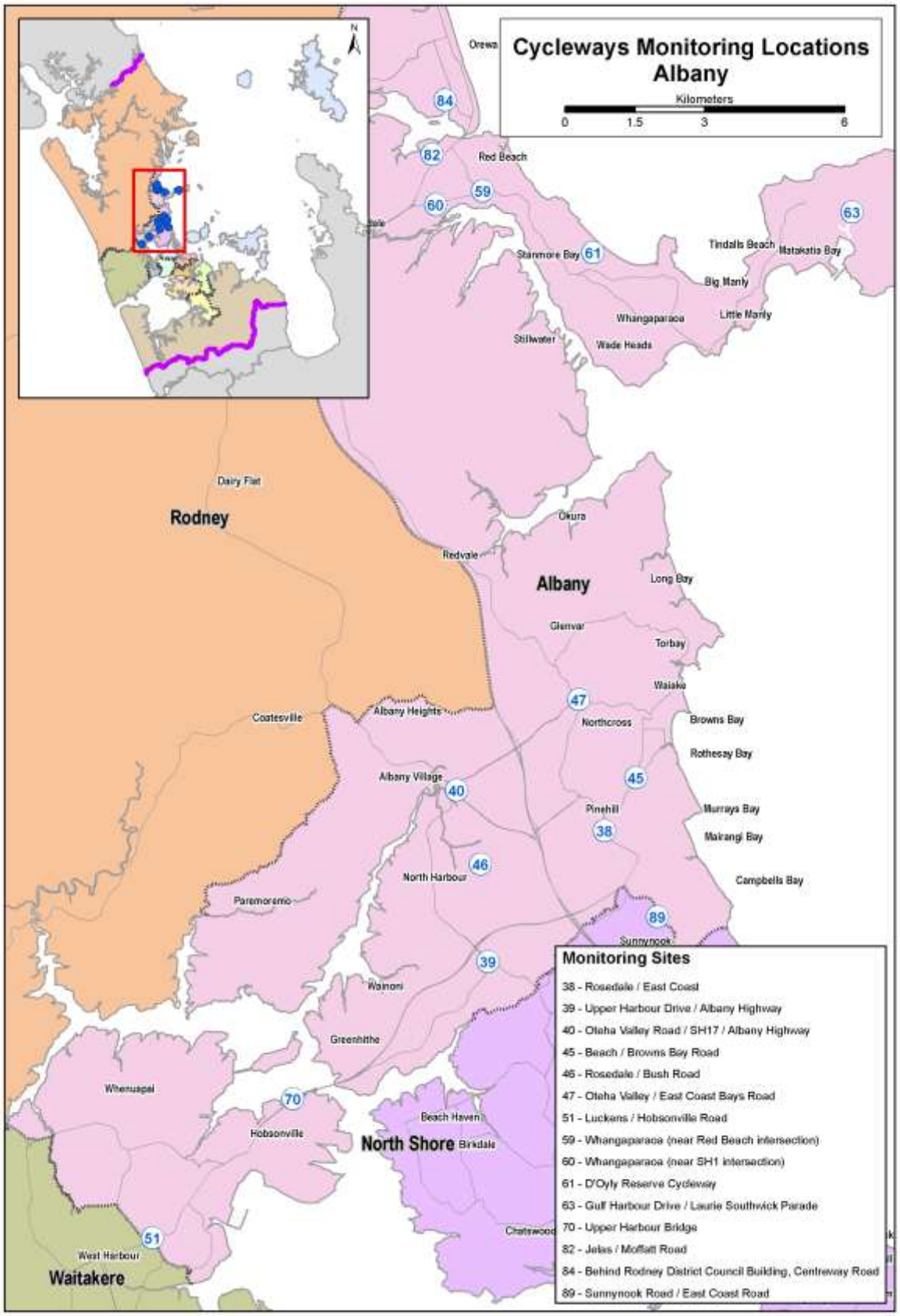
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and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

This report presents results from manual cycle counts conducted at 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/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: 2013 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 5th of March and be conducted on the first three fine days of the 5th, 6th, 7th, 12th, 13th, or 14th of March.

Counts were conducted on the following days:

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

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

Weather and Daylight Conditions

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

The weather on the four count days in 2013 was as follows:

Tuesday 5th March

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

Wednesday 6th March

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

Thursday 7th March

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

Conducting The Manual Counts

Scoping Visit

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

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

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

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

Briefing Session

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

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

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

Conducting The Manual Counts

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

During their shift the surveyor collected data on:

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

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

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

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

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

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

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

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

Data Analysis

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

Annual Average Daily Traffic (AADT) Analysis

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

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

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

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

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

School Bike Shed Counts

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

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

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

Methodology

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

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

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

2. This email was then sent to all eligible schools in Auckland region (n=306) to notify them of the bike shed count and to let them know what they would be required to do. Included in this email was a link to an online count form.

3. To enhance the comparability of the school bike shed data with that of the regional cycle monitor, Tuesday 5th March was designated as the bike shed count day. (Most schools reported that they undertook the count on this day).

4. Once the school bike shed count had been completed, schools completed the online count form and submitted it electronically to Gravitas. Gravitas contacted all participating schools who had not returned their sheets after five working days, first by email (two rounds) and then by telephone. All count forms were checked for completeness before being data-entered into Excel. In 2013, 283 responses were received, a response rate of 92 per cent. (This compares with 74 per cent in 2012).

Reporting

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

Manual Counts - Site Level Reporting

The following results have been reported for each site:

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

Manual Counts - Aggregated Reporting

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

Bike Shed Counts

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

1.3 Summary of Results

This summary contains the aggregated results of the 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 and Sixteen of this report.

Note: Surveying in the Albany ward was undertaken on Tuesday 5th of March, 2013[9]. Sunrise was at 7:10am and sunset was at 7:55pm. The highest temperature was 24.0 degrees Celsius.

[9] The only exceptions were Site 40 Oteha Valley Road/SH17/Albany Highway and Site 84 Behind Auckland Council Building, Orewa. Monitoring was conducted on Tuesday 12th of March, 2013.

1.4 Morning Peak

Environmental Conditions

- The weather was mostly fine across the Albany ward, with some cloud and short periods of light drizzle for some sites.
- There were no road works or accidents that may affect cycle counts.

Key Points

- A total of 637 cyclist movements were recorded across the monitoring sites in the Albany ward during the morning peak period (between 6:30am and 9:00am) in 2013. This represents a 11 per cent increase from 2012 (574 movements).
- Eight per cent of all cycle movements in the morning peak (n=52) were made by those riding as groups. This compares with 11 per cent (n=65) in 2012.
- The average volume of morning cyclist movements across all 15 monitoring sites in the Albany ward was 42 cycle movements, compared with 38 last year.
- The busiest site during the morning peak was the Sunnynook Road/East Coast Road intersection (96 movements), while the quietest site was at Whangaparaoa Road near the SH1 intersection, with 10 movements across the entire morning monitoring period.
- Nine sites recorded increases this year compared to 2012. The three most noticeable increases occurred at:
  - Rosedale/Bush Road – up 95 per cent;
  - Gulf Harbour Drive/Laurie Southwick Parade – up 85 per cent; and
  - Squadron Drive/Buckley Avenue– up 64 per cent.
- Four sites recorded decreases this year compared to 2012, the most noticeable at Oteha Valley/SH17/Albany Highway (down 28 per cent).
- Two sites experienced no changes in cycle volumes over the last 12 months – the Whangaparaoa Road, near Red Beach intersection and the Whangaparaoa Road, near Hibiscus Coast Highway intersection.

Table 1.1: Summary of Morning Cyclist Movements

2007 – 2013 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13	Change 07-13
38	Rosedale/East Coast Road	54	52	105	93	73	67	**65**	**-3%**	**20%**
47	Oteha Valley/East Coast Road	42	40	69	87	53	68	**60**	**-13%**	**43%**
39	Upper Harbour Drive/Albany Highway	14	54	63	65	57	51	**55**	**8%**	**293%**
51	Luckens/Hobsonville Road	20	25	26	41	14	42	**44**	**5%**	**120%**
45	Beach/Browns Bay Road	11	26	29	50	47	28	**43**	**54%**	**291%**
46	Rosedale/Bush Road	15	36	26	48	29	22	**43**	**95%**	**187%**
40	Oteha Valley/SH17/Albany Highway	4	20	25	29	26	40	**29**	**-28%**	**625%**
63	Gulf Harbour Drive/Laurie Southwick Parade	17	14	5	14	12	13	**24**	**85%**	**41%**
59	Whangaparaoa Road, near Red Beach intersection	13	15	15	21	11	15	**15**	**0%**	**15%**
61	D'Oyly Reserve cycleway	14	19	5	31	13	14	**13**	**-7%**	**-7%**
60	Whangaparaoa Road, near Hibiscus Coast Highway intersection	11	9	6	13	7	10	**10**	**0%**	**-9%**
	Average per site (11 sites since 2007)	**20**	**28**	**34**	**45**	**31**	**34**	**36**	**-6%**	**80%**
	Total (11 sites since 2007)	**215**	**310**	**374**	**492**	**342**	**370**	**401**	**8%**	**87%**
84	Behind Auckland Council Building, Orewa	-	-	75	73	72	61	**66**	**8%**	**-**
70	Squadron Drive/Buckley Avenue*	-	17	23	37	34	28	**46**	**64%**	**-**
82	Hibiscus Coast Highway/Jelas Road	-	-	15	24	19	20	**28**	**40%**	**-**
	Average per site (12 sites in 2008, 14 sites in 2009 and 2010)	**-**	**27**	**35**	**45**	**33**	**34**	**39**	**15%**	**-**
	Total (12 sites in 2008, 14 sites in 2009 and 2010)	**-**	**327**	**487**	**626**	**467**	**479**	**541**	**13%**	**-**
89	Sunnynook Road/East Coast Road	-	-	-	**-**	81	95	**96**	**1%**	**-**
	Average per site (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**27**	**35**	**45**	**37**	**38**	**42**	**11%**	**-**
	Total (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**327**	**487**	**626**	**548**	**574**	**637**	**11%**	**-**

** 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, 78 per cent of cyclists were adults (up from 71 per cent in 2012).
- Nearly all cyclists were wearing a helmet (97 per cent, stable from 96 per cent in 2012).
- The majority of cyclists were male (86 per cent, up slightly from 82 per cent last year).
- Seventy-one per cent of cyclists were riding on the road, an increasing trend since 2009. Off-road cycleway riders comprised 16 per cent of all cycle movements.

Table 1.2: Summary of Morning Cyclist Characteristics

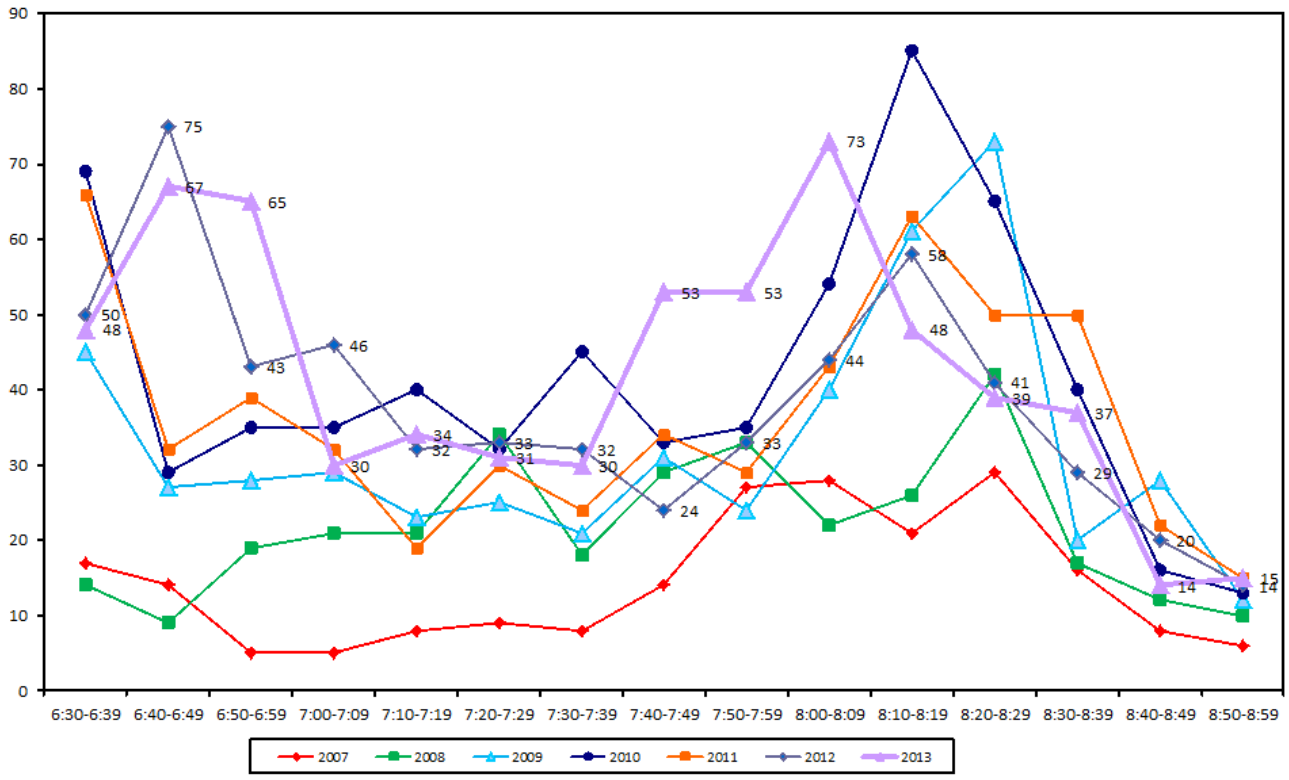
2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	56	69	60	60	72	71	**78**	**7**
School child	44	31	40	40	28	29	**22**	**-7**
Helmet Wearing								
Helmet on head	91	91	91	92	93	96	**97**	**1**
No helmet	9	9	9	8	7	4	**3**	**-1**
Gender								
Male	-	-	-	-	83	82	**86**	**4**
Female	-	-	-	-	14	16	**13**	**-3**
Can't tell	-	-	-	-	3	2	**1**	**-1**
Where Riding								
Road	47	67	56	56	66	69	**71**	**2**
Footpath	46	26	25	20	14	13	**13**	**0**
Off-road cycleway	7	7	19	24	20	18	**16**	**-2**
Base:	***215***	***327***	***487***	***626***	***548***	***574***	***637***	

- Figure 1.2 illustrates the total number of cyclists in the morning peak by time of movement for all 15 sites monitored in 2013. The volume of morning cycle movements peaked between 6:40am and 6:59am (an average of 66 movements per ten-minute interval), and again between 8:00am and 8:09am (73 movements). The overall trend was consistent with previous years.

Figure 1.2: Total Cyclist Frequency

Morning Peak 2007 – 2013



1.5 Evening Peak

Environmental Conditions

- The sites monitored in Albany ward generally had overcast weather in the evening. Many sites experienced intermittent showers, particularly in the first half of the evening monitoring period.
- At Site 82 (Hibiscus Coast Highway/Jelas Road), police were observed conducting breath tests from 6.57pm on Hibiscus Coast Highway.
- There were no road works or accidents that may affect cycle counts.

Key Points

- A total of 562 cyclist movements were recorded across the 15 sites monitored during the evening peak period (between 4:00pm and 7:00pm) in 2013. This is a 24 per cent decrease from 736 movements in 2012.
- Five per cent of all evening cycle movements (n=30) were made by cyclists riding as groups. This compares with 15 per cent (n=111) in 2012.
- The average volume of evening cyclist movements across all 15 monitoring sites in the Albany ward was 37 movements, down from 49 movements in 2012.
- The busiest site in the evening peak was the Upper Harbour Drive/Albany Highway intersection (79 movements), while the quietest site was at Whangaparaoa Road, near Hibiscus Coast Highway intersection with only nine movements across the entire evening monitoring period.
- Of the 15 sites in this ward, 13 have recorded decreases this year. The most noticeable decreases occurred at:
  - Beach/Browns Bay Road – down 48 per cent; and
  - Upper Harbour Drive/Albany Highway – down 42 per cent.
- Only two sites have experienced increases in cycle volume this year:
  - Rosedale/Bush Road – up 39 per cent; and
  - Hibiscus Coast Highway/Jelas Road – up 7 per cent.

Table 1.3: Summary Of Evening Cyclist Movements

2007 – 2013 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13	Change 07-13
39	Upper Harbour Drive/Albany Highway	11	44	75	93	91	136	**79**	**-42%**	**618%**
51	Luckens/Hobsonville Road	12	16	51	54	38	70	**60**	**-14%**	**400%**
46	Rosedale/Bush Road	16	37	46	61	56	41	**57**	**39%**	**256%**
40	Oteha Valley/SH17/Albany Highway	15	28	47	62	56	88	**56**	**-36%**	**273%**
38	Rosedale/East Coast Road	22	46	54	59	70	51	**47**	**-8%**	**114%**
47	Oteha Valley/East Coast Road	17	74	69	81	76	69	**46**	**-33%**	**171%**
45	Beach/Browns Bay Road	8	19	30	27	28	33	**17**	**-48%**	**113%**
63	Gulf Harbour Drive/Laurie Southwick Parade	39	30	17	23	27	20	**16**	**-20%**	**-59%**
61	D'Oyly Reserve cycleway	10	84	4	13	45	21	**14**	**-33%**	**40%**
59	Whangaparaoa Road, near Red Beach intersection	16	16	11	8	15	13	**10**	**-23%**	**-38%**
60	Whangaparaoa Road, near Hibiscus Coast Highway intersection	17	11	6	10	15	10	**9**	**-10%**	**-47%**
	Average per site (11 sites since 2007)	**17**	**37**	**37**	**45**	**47**	**50**	**37**	**-26%**	**118%**
	Total (11 sites since 2007)	**183**	**405**	**410**	**491**	**517**	**552**	**411**	**-26%**	**125%**
70	Squadron Drive/Buckley Avenue*	-	18	45	57	49	82	**60**	**-27%**	**-**
84	Behind Auckland Council Building, Orewa	-	-	11	22	66	28	**23**	**-18%**	**-**
82	Hibiscus Coast Highway/Jelas Road	-	-	23	15	11	14	**15**	**7%**	**-**
	Average per site (12 sites in 2008, 14 sites in 2009 and 2010)	**-**	**35**	**35**	**42**	**46**	**48**	**36**	**-25%**	**-**
	Total (12 sites in 2008, 14 sites in 2009 and 2010)	**-**	**423**	**489**	**585**	**643**	**676**	**509**	**-25%**	**-**
89	Sunnynook Road/East Coast Road	-	-	-	-	93	60	**53**	**-12%**	**-**
	Average per site (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**35**	**35**	**42**	**49**	**49**	**37**	**-24%**	**-**
	Total (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**423**	**489**	**585**	**736**	**736**	**562**	**-24%**	**-**

** 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 (87 per cent, up from 81 per cent in 2012).
- Nearly all cyclists wore a helmet (93 per cent, stable from last year).
- The majority of cyclists were male (86 per cent, up slightly from last year).
- Three-quarters of all evening cyclists were riding on the road (down from 80 per cent in 2012). The remainder rode on the off-road cycleway (11 per cent, stable from last year) or the footpath (15 per cent, up slightly from 11 per cent in 2012).

Table 1.4: Summary of Evening Cyclist Characteristics

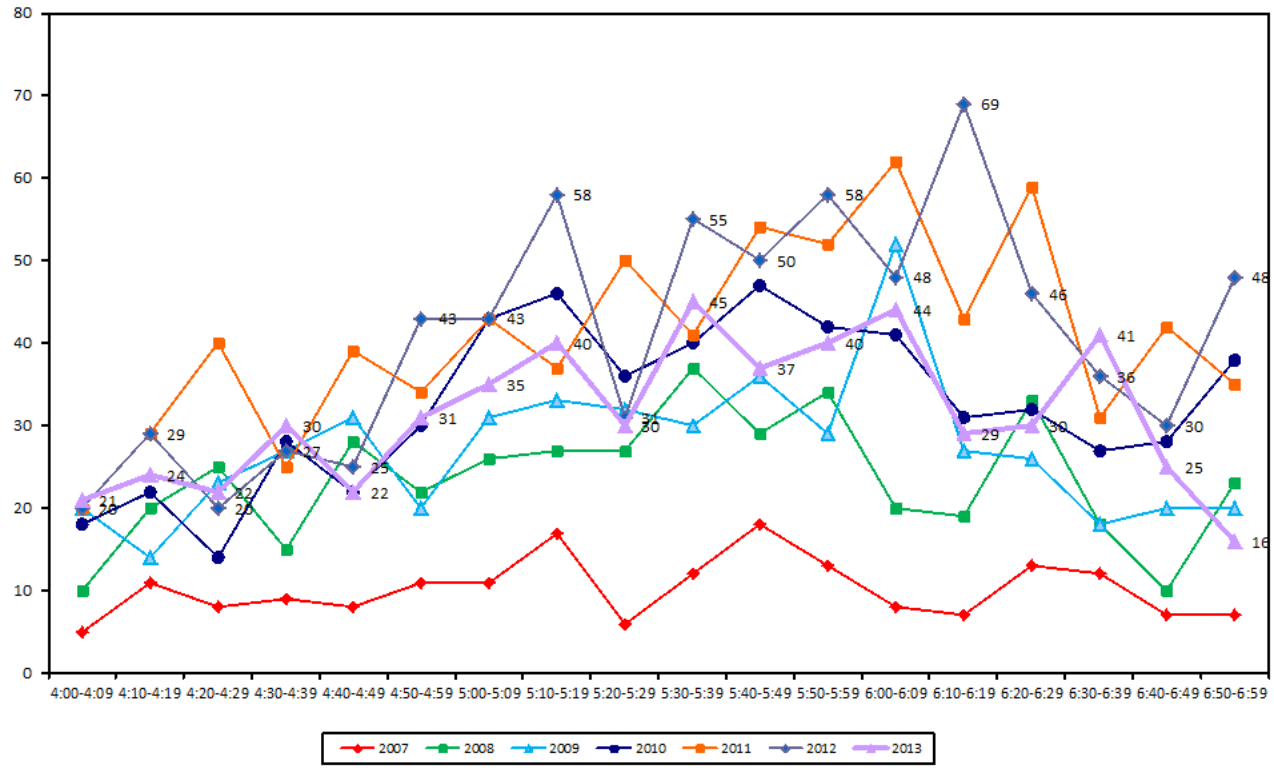
2007 – 2013 (%)

	2007	***2008***	***2009***	***2010***	***2011***	**2012**	**2013**	**Change 12-13**
Cyclist Type								
Adult	78	67	80	85	79	81	**87**	**6**
School child	22	33	20	15	21	19	**13**	**-6**
Helmet Wearing								
Helmet on head	88	79	93	90	91	92	**93**	**1**
No helmet	12	21	7	10	9	8	**6**	**-2**
Can't tell	-	-	-	-	-	-	**1**	**1**
Gender								
Male	-	-	-	-	82	82	**86**	**4**
Female	-	-	-	-	17	15	**14**	**-1**
Can't tell	-	-	-	-	1	3	**0**	**-3**
Where Riding								
Road	60	59	70	69	66	80	**74**	**-6**
Footpath	35	20	21	17	15	11	**15**	**4**
Off-road cycleway	5	21	9	14	19	9	**11**	**2**
Base:	***183***	***423***	***489***	***585***	***736***	***736***	***562***	

- Figure 1.3 illustrates the overall pattern of cyclist volumes by time of movement in the evening for all 15 sites monitored this year. The number of cyclist movements increased over the evening monitoring period to a peak of 45 movements between 5:30pm and 5:39pm. This compared with 69 movements between 6:10pm and 6:19pm last year.

Figure 1.2: Total Cyclist Frequency

Evening Peak 2007 – 2013 (n)



1.6 Aggregated Total

- A total of 1199 cyclist movements were recorded across the 15 sites monitored during the morning and evening peak periods in 2013. This represents a 9 per cent decrease from 2012 (1310 movements).
- Seven per cent (n=82) of the cycle movements were made by pelotons. This compares with 13 per cent (n=176) in 2013.
- The average volume of evening cyclist movements across all 15 monitoring sites in the Albany ward was 80 movements. This compares with 87 movements in 2012.
- The busiest site in 2013 was the Sunnynook Road/East Coast Road intersection (149 movements), whereas the least number of cycle movements were observed at Whangaparaoa Road near the SH1 intersection (19 movements).
- Only three out of the 15 sites have experienced increases in cycle volume this year:
  - Rosedale/Bush Road – up 59 per cent;
  - Hibiscus Coast Highway/Jelas Road – up 26 per cent; and
  - Gulf Harbour Drive/Laurie Southwick Parade – up 21 per cent.
- Eleven sites experienced decrease this year, most noticeable at Oteha Valley/SH17/Albany Highway (down 34 per cent from 2012).
- The site behind the Auckland Council Building in Orewa registered no change in cycle volume over the last 12 months.

Table 1.5: Summary Of Total Cyclist Movements

2007 – 2013 (n)

Site No.	*Locations*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13	Change 07-13
39	Upper Harbour Drive/Albany Highway	25	98	138	158	148	187	**134**	**-28%**	**436%**
38	Rosedale/East Coast Road	76	98	159	152	143	118	**112**	**-5%**	**47%**
47	Oteha Valley/East Coast Road	59	114	138	168	129	137	**106**	**-23%**	**80%**
51	Luckens/Hobsonville Road	32	41	77	95	52	112	**104**	**-7%**	**225%**
46	Rosedale/Bush Road	31	73	72	109	85	63	**100**	**59%**	**223%**
40	Oteha Valley/SH17/Albany Highway	19	48	72	91	82	128	**85**	**-34%**	**347%**
45	Beach/Browns Bay Road	19	45	59	77	75	61	**60**	**-2%**	**216%**
63	Gulf Harbour Drive/Laurie Southwick Parade	56	44	22	37	39	33	**40**	**21%**	**-29%**
61	D'Oyly Reserve cycleway	24	103	9	44	58	35	**27**	**-23%**	**13%**
59	Whangaparaoa Road, near Red Beach intersection	29	31	26	29	26	28	**25**	**-11%**	**-14%**
60	Whangaparaoa Road, near Hibiscus Coast Highway intersection	28	20	12	23	22	20	**19**	**-5%**	**-32%**
	Average per site (11 sites since 2007)	**36**	**65**	**71**	**89**	**78**	**84**	**74**	**-12%**	**106%**
	Total (11 sites since 2007)	**398**	**715**	**784**	**983**	**859**	**922**	**812**	**-12%**	**104%**
70	Squadron Drive/Buckley Avenue*	-	35	68	94	83	110	**106**	**-4%**	**-**
84	Behind Auckland Council Building, Orewa	-	-	86	95	138	89	**89**	**0%**	**-**
82	Hibiscus Coast Highway/Jelas Road	-	-	38	39	30	34	**43**	**26%**	**-**
	Average per site (12 sites in 2008, 14 sites in 2009 and 2010)	**-**	**63**	**70**	**87**	**79**	**83**	**75**	**-10%**	**-**
	Total (12 sites in 2008, 14 sites in 2009 and 2010)	**-**	**750**	**976**	**1211**	**1110**	**1155**	**1050**	**-10%**	**-**
89	Sunnynook Road/East Coast Road	-	-	-	-	174	155	**149**	**-4%**	**-**
	Average per site (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**63**	**70**	**87**	**86**	**87**	**80**	**-8%**	**-**
	Total (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites since 2011)	**-**	**750**	**976**	**1211**	**1284**	**1310**	**1199**	**-8%**	**-**

∞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, 82 per cent of cyclists were adults (up from 77 per cent in 2012).
- Nearly all cyclists wore a helmet (95 per cent, stable from 94 per cent in 2012).
- The greatest share of cyclists were male (86 per cent, up slightly from 82 per cent in 2012).
- Three-quarters of cyclists were riding on the road (73 per cent, stable from 75 per cent in 2012). The remainder rode on the off-road cycleway (13 per cent) or the footpath (14 per cent).

Table 1.6: Summary of Total Cyclist Characteristics

2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	66	68	70	72	76	77	**82**	**5**
School child	34	32	30	28	24	23	**18**	**-5**
Helmet Wearing								
Helmet on head	89	84	92	91	92	94	**95**	**1**
No helmet	11	16	8	9	8	6	**5**	**-1**
Gender								
Male	-	-	-	-	83	82	**86**	**4**
Female	-	-	-	-	16	15	**13**	**-2**
Can't tell	-	-	-	-	1	3	**1**	**-2**
Where Riding								
Road	53	63	62	63	66	75	**73**	**-2**
Footpath	41	23	23	19	15	12	**14**	**2**
Off-road cycleway	6	14	15	18	19	13	**13**	**0**
Base:	***398***	***750***	***976***	***1211***	***1284***	***1310***	***1199***	

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 is at the Sunnynook Road/East Coast Road intersection (220 daily movements) and the lowest is at Whangaparaoa Road near the SH1 intersection (28 daily movements).
- Out of the 15 sites in this ward, 10 sites have registered decreases in cycle volume compared to last year. The most noticeable decreases were at:
  - Oteha Valley/SH17/Albany Highway – down 34 per cent
  - Upper Harbour Drive/Albany Highway - down 27 per cent
  - Oteha Valley/East Coast Road and D'Oyly Reserve cycleway – each down 22 per cent.
- The remaining five sites have recorded increases in cycle volume since last year. The greatest increase was at Rosedale/Bush Road (up by 60 per cent), while the smallest increase occurred Behind Auckland Council Building, Orewa (up by 1 per cent).

Table 1.7: Dry Weather Factor AADT Estimates Based on Morning and Evening Cyclist Movements 2007 – 2013 (n)

Site No.	*Locations*	*2007 AADT*	*2008 AADT*	*2009 AADT*	*2010 AADT*	*2011 AADT*	*2012 AADT*	*2013 AADT*	Change 12-13	Change 07-13
89	Sunnynook Road/East Coast Road	-	-	-	-	252	228	**220**	**-4%**	**-**
39	Upper Harbour Drive/Albany Highway	57	143	200	228	213	265	**193**	**-27%**	**239%**
38	Rosedale/East Coast Road	176	143	235	224	208	173	**164**	**-5%**	**-7%**
47	Oteha Valley/East Coast Road	137	163	201	245	186	199	**155**	**-22%**	**13%**
70	Squadron Drive/Buckley Avenue*	-	51	97	135	120	156	**153**	**-2%**	**-**
51	Luckens/Hobsonville Road	47	60	110	137	74	161	**150**	**-7%**	**219%**
46	Rosedale/Bush Road	70	106	103	157	121	90	**144**	**60%**	**106%**
84	Behind Auckland Council Building, Orewa	-	-	130	142	201	132	**133**	**1%**	**-**
40	Oteha Valley/SH17/Albany Highway	42	69	103	130	117	182	**121**	**-34%**	**188%**
45	Beach/Browns Bay Road	44	66	86	114	107	88	**89**	**1%**	**102%**
82	Hibiscus Coast Highway/Jelas Road	-	-	55	57	44	50	**64**	**28%**	**-**
63	Gulf Harbour Drive/Laurie Southwick Parade	80	63	31	53	56	47	**59**	**26%**	**-26%**
61	D'Oyly Reserve cycleway	35	145	13	65	82	50	**39**	**-22%**	**11%**
59	Whangaparaoa Road, near Red Beach intersection	42	45	38	43	37	41	**37**	**-10%**	**-12%**
60	Whangaparaoa Road, near Hibiscus Coast Highway intersection	40	29	17	34	31	29	**28**	**-3%**	**-30%**

** 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

Key Points

- In the morning, one cycle was observed at the Hobsonville Ferry Wharf at 9:10am.
- The same cycle was still on-site at the wharf at both 3:30 and 7:10 pm.

1.9 School Bike Shed Count Summary

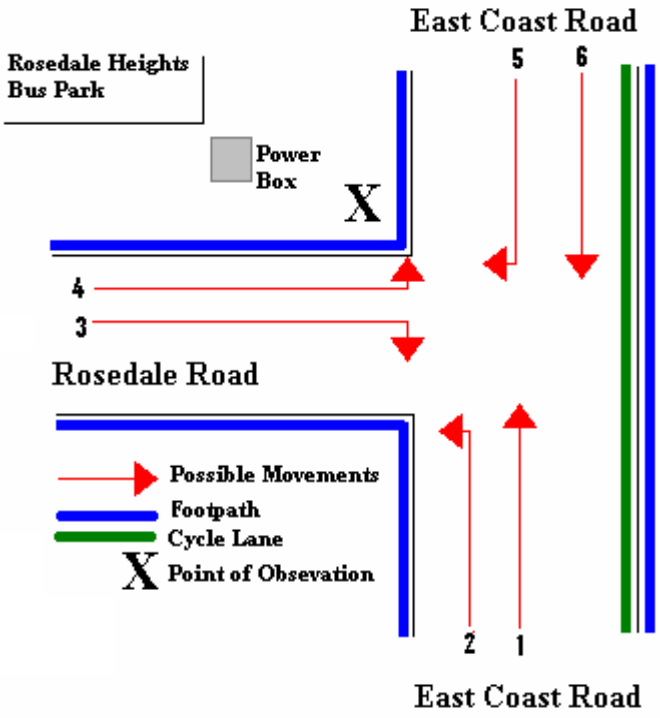
Key Points

- Among the surveyed schools, of those eligible to cycle at school, on average two per cent of students are cycling to their schools. This is an increase when compared with 2012 (1 per cent).
- Among the 19 responding schools, n=251 students were identified as cycling to school.
- This year, Hobsonville Point School reported the highest share of cyclists – 31 per cent of all eligible students currently cycling.
- Of the 19 schools that responded, four (21 per cent) had no students cycling to school.
- Rates of cycling to school are highest among combined intermediate/secondary and full primary schools, each with 4 per cent. Rates are lowest for secondary schools (less than 1 per cent).

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/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**

2.2 Morning Peak

Environmental Conditions

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

Key Points

- Compared with last year, cyclist movements at the intersection of Rosedale and East Coast Road have remained stable (65 movements, down from 67 movements in 2012).
- The key movement in the morning was straight along East Coast Road in a southerly direction (Movement 6 = 43 cyclists).
- The most noticeable decrease was at Movement 6 (down 9 movements).

Table 2.1: Morning Cyclist Movements

Rosedale/East Coast Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	7	5	12	14	5	8	**6**	**-2**
2	1	2	5	8	4	4	**8**	**4**
3	3	4	3	5	6	0	**4**	**4**
4	0	0	1	0	0	1	**1**	**0**
5	2	2	6	3	3	2	**3**	**1**
6	41	39	78	63	55	52	**43**	**-9**
Total	**54**	**52**	**105**	**93**	**73**	**67**	**65**	**-2**

- The proportion of adult cyclists in the morning has been increasing (94 per cent, the highest share since monitoring began in 2007).
- Nearly all cyclists were wearing a helmet (98 per cent, unchanged from 2012).
- The majority of cyclists were male (89 per cent).
- There has been an increase in the share of cyclists riding on the road (91 per cent, the highest percentage since 2007).

Table 2.2: Morning Cyclist Characteristics

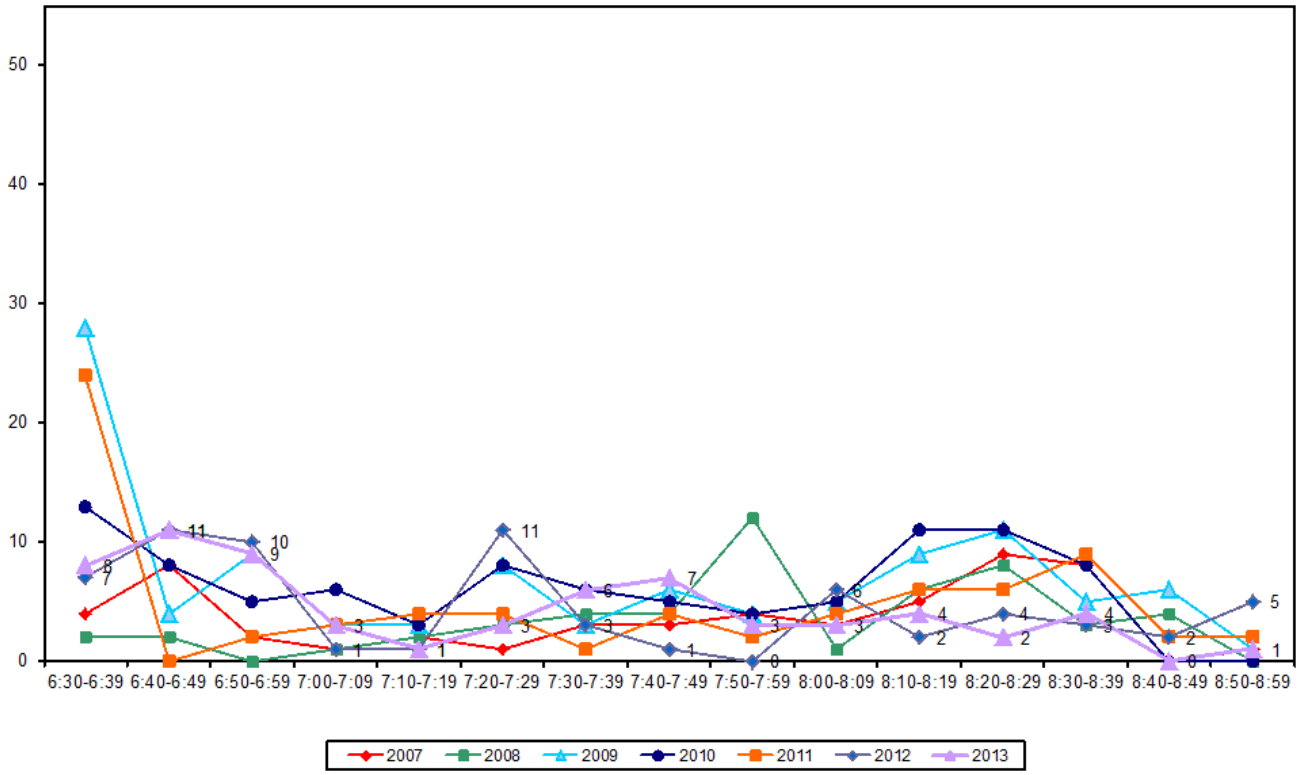
Rosedale/East Coast Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	57	63	71	65	73	83	**94**	**11**
School child	43	37	29	35	27	17	**6**	**-11**
Helmet Wearing								
Helmet on head	85	94	93	91	97	98	**98**	**0**
No helmet	15	6	7	9	3	2	**2**	**0**
Gender								
Male	-	-	-	-	75	82	**89**	**6**
Female	-	-	-	-	18	16	**11**	**-5**
Can't tell	-	-	-	-	7	1	**0**	**-1**
Where Riding								
Road	46	69	68	62	78	80	**91**	**11**
Footpath	54	31	32	38	22	20	**9**	**-11**
Base:	***54***	***52***	***105***	***93***	***73***	***67***	***65***	

- Morning cyclist movement volumes at the Rosedale/East Coast Road intersection started off with a peak of 11 movements (between 6:40am and 6:49am). From there, the cycle volume followed a decreasing trend until the end of the monitoring period.

Figure 2.2: Morning Peak Cyclist Frequency

Rosedale/East Coast Road 2007 – 2013 (n)



2.3 Evening Peak

Environmental Conditions

- Except for a 30-minute spell of light rain at the start of the shift, 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 decreased slight over the last 12 months, from 51 movements last year down to 47 movements this year.
- The most common movement in the evening was straight along East Coast Road heading north (Movement 1 = 29 cyclists).

Table 2.3: Evening Cyclist Movements

Rosedale/East Coast Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	6	25	33	35	32	26	**29**	**3**
2	1	1	1	2	3	4	**2**	**-2**
3	0	3	6	3	4	7	**4**	**-3**
4	2	4	4	5	5	2	**5**	**3**
5	0	2	1	1	7	2	**0**	**-2**
6	13	11	9	13	19	10	**7**	**-3**
Total	**22**	**46**	**54**	**59**	**70**	**51**	**47**	**-4**

- Over the evening shift, most cyclists using this intersection were adults (98 per cent, the highest share since monitoring began in 2007).
- Most cyclists were wearing a helmet (96 per cent, up from 92 per cent in 2012).
- The majority of cyclists were male (83 per cent, slightly down from 86 per cent in 2012).
- Most evening cyclists were riding on the road (83 per cent, slightly down from 86 per cent in 2012).

Table 2.4: Evening Cyclist Characteristics

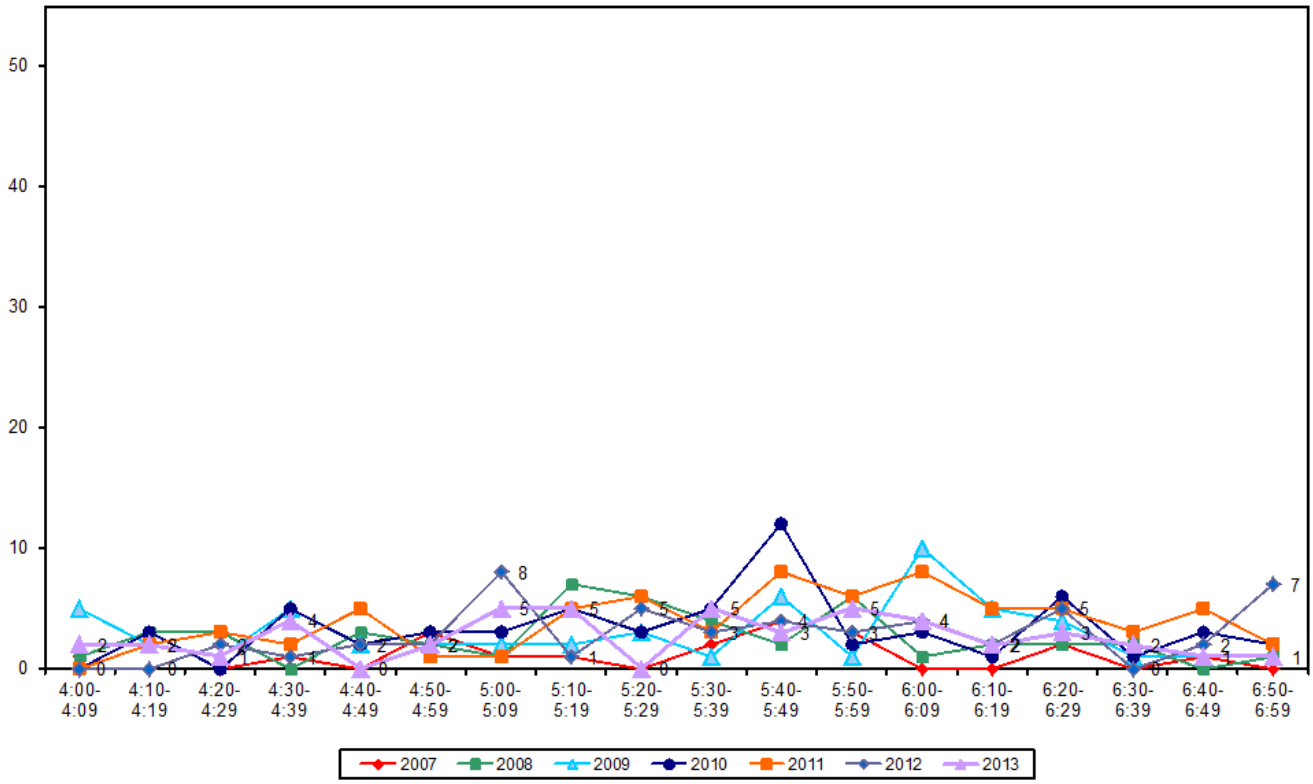
Rosedale/East Coast Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	73	74	91	86	81	82	**98**	**16**
School child	27	26	9	14	19	18	**2**	**-16**
Helmet Wearing								
Helmet on head	95	89	96	97	100	92	**96**	**4**
No helmet	5	11	4	3	0	8	**4**	**-4**
Gender								
Male	-	-	-	-	89	86	**83**	**-3**
Female	-	-	-	-	10	14	**17**	**3**
Can't tell	-	-	-	-	1	0	**0**	**0**
Where Riding								
Road	64	72	85	80	83	86	**83**	**-3**
Footpath	36	28	15	20	17	14	**17**	**3**
Base:	***22***	***46***	***54***	***59***	***70***	***51***	***47***	

- Evening cyclist movement volumes were low over the monitoring period, with no more than five movements per ten-minute interval.

Figure 2.3: Evening Peak Cyclist Frequency

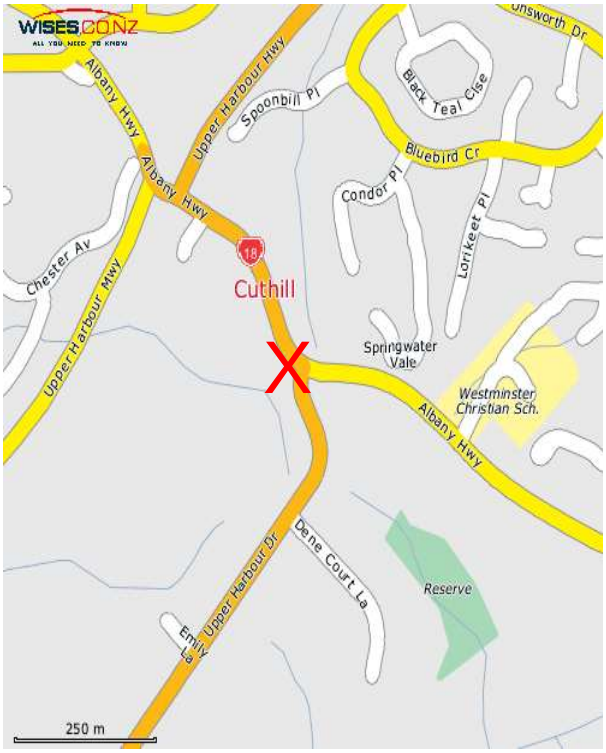
Rosedale/East Coast Road 2007 – 2013 (n)

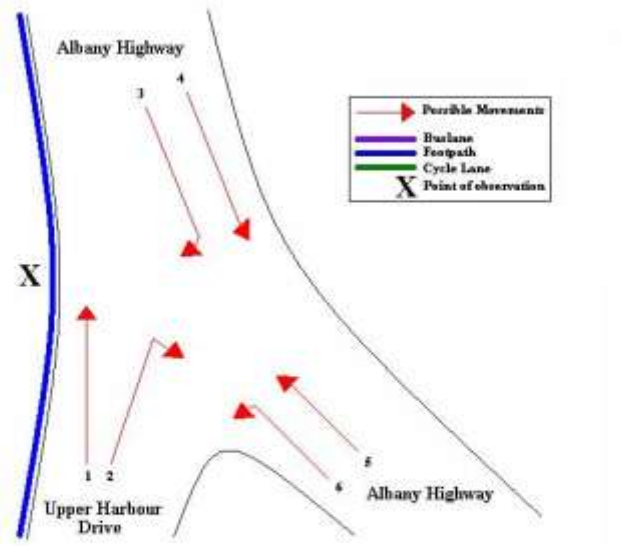


3. UPPER HARBOUR DRIVE/ALBANY HIGHWAY, GREENHITE (SITE 39)

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**

3.2 Morning Peak

Environmental Conditions

- The weather was fine at the beginning of the shift then gradually turned cloudy. Two spells of light drizzle were recorded from 7:35am to 7:40am and at 9:00am.
- 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 slightly in 2013 (55 movements, up from 51 in 2012).
- The most common movement in the morning was turning left from the Albany Highway into Upper Harbour Drive (Movement 6 = 15 cyclists).
- There were no significant changes in cyclist volume for all six movements.

Table 3.1: Morning Cyclist Movements

Upper Harbour Drive/Albany Highway 2007 – 2013 (n)

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

- Over the morning peak, 96 per cent of cyclists at this intersection were identified as adults (a noticeable increase from 49 per cent in 2012, but consistent with the data from previous years).
- Ninety-eight per cent of cyclists were wearing a helmet (stable from 100 per cent in 2012).
- The majority of cyclists were male (93 per cent).
- Nearly all cyclists were riding on the road (96 per cent, stable from 98 per cent in 2012).

Table 3.2: Morning Cyclist Characteristics

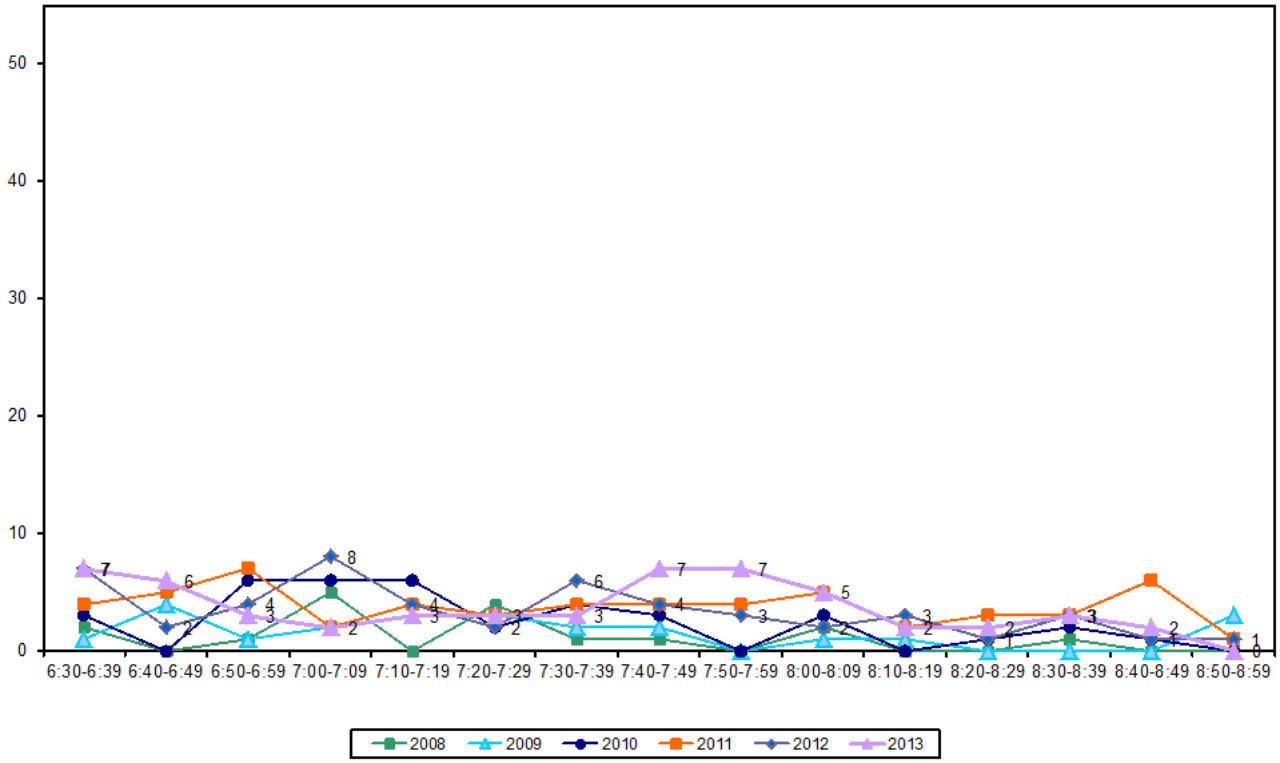
Upper Harbour Drive/Albany Highway 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	100	89	94	95	98	49	**96**	**47**
School child	0	11	6	5	2	51	**4**	**-47**
Helmet Wearing								
Helmet on head	100	98	92	97	81	100	**98**	**-2**
No helmet	0	2	8	3	19	0	**2**	**2**
Gender								
Male	-	-	-	-	81	82	**93**	**11**
Female	-	-	-	-	16	8	**7**	**-1**
Can't tell	-	-	-	-	3	10	**0**	**-10**
Where Riding								
Road	86	94	92	98	100	98	**96**	**-2**
Footpath	14	6	8	2	0	2	**4**	**2**
Base:	***14***	***54***	***63***	***65***	***98***	***51***	***55***	

- The volume of morning cyclist movements was low throughout the morning shift. Two slight peak occurred, between 6:30am and 6:39am (7 movements), and between 7:40am and 7:59am (7 movements in each ten-minute intervals).

Figure 3.2: Morning Peak Cyclist Frequency

Upper Harbour Drive/Albany Highway 2008 – 2013 (n)



Note: In 2013, three cyclists (5 per cent of all morning peak cycle movements at this site) were observed riding together at 6:30am. This compared with six cyclists (12 per cent) last year.

3.3 Evening Peak

Environmental Conditions

- The weather was overcast throughout the evening shift. Heavy drizzle was recorded from 3:55pm to 4:02pm. From then, there were intermittent showers until 5:30pm.
- 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 decreased in 2013 (79 movements, down from 136 movements last year).
- The most common movement in the evening was travelling straight into Albany Highway from Upper Harbour Drive (Movement 1 = 20 movements).
- The most noticeable change was at Movement 2 (down 21 movements).

Table 3.3: Evening Cyclist Movements

Upper Harbour Drive/Albany Highway 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	1	20	19	25	20	29	**20**	**-9**
2	2	9	5	11	12	31	**10**	**-21**
3	3	4	13	10	5	16	**18**	**2**
4	4	6	15	17	28	16	**9**	**-7**
5	1	2	9	15	11	19	**6**	**-13**
6	0	3	14	15	15	25	**16**	**-9**
Total	**11**	**44**	**75**	**93**	**91**	**136**	**79**	**-57**

- Over the evening peak, the majority of cyclists using this intersection were adults (82 per cent, up slightly from 79 per cent in 2012).
- Almost all cyclists were wearing a helmet (98 per cent).
- The majority of cyclists were male (90 per cent, up from 68 per cent in 2012).
- Nearly all cyclists were riding on the road (99 per cent, stable from 98 per cent in 2012).

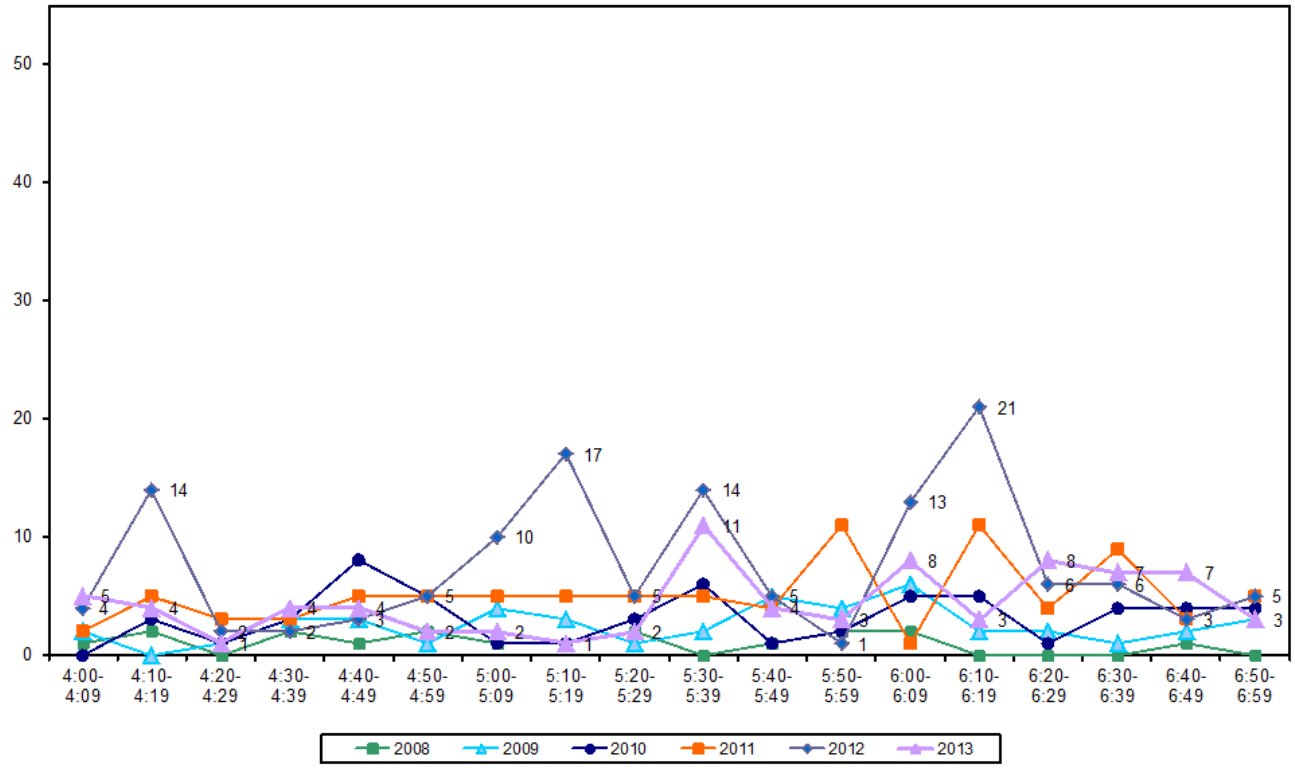
Table 3.4: Evening Cyclist Characteristics

Upper Harbour Drive/Albany Highway 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	100	89	92	94	97	79	**82**	**3**
School child	0	11	8	6	3	21	**18**	**-3**
Helmet Wearing								
Helmet on head	100	100	99	97	100	100	**98**	**-2**
No helmet	0	0	1	3	0	0	**2**	**2**
Gender								
Male	-	-	-	-	79	68	**90**	**22**
Female	-	-	-	-	19	14	**9**	**-5**
Can't tell	-	-	-	-	2	18	**1**	**-17**
Where Riding								
Road	91	84	92	97	97	98	**99**	**1**
Footpath	9	16	8	3	3	2	**1**	**-1**
Base:	***11***	***44***	***75***	***93***	***91***	***136***	***79***	

- Cycle movement volumes were low and stable for the first half of the evening shift until 5:30pm when the traffic peaked with 11 movements. From there, the traffic remained variable over the rest of the evening monitoring period, fluctuating between one to eight movements.

Figure 3.3: Evening Peak Cyclist Frequency
Upper Harbour Drive/Albany Highway 2008 – 2013 (n)



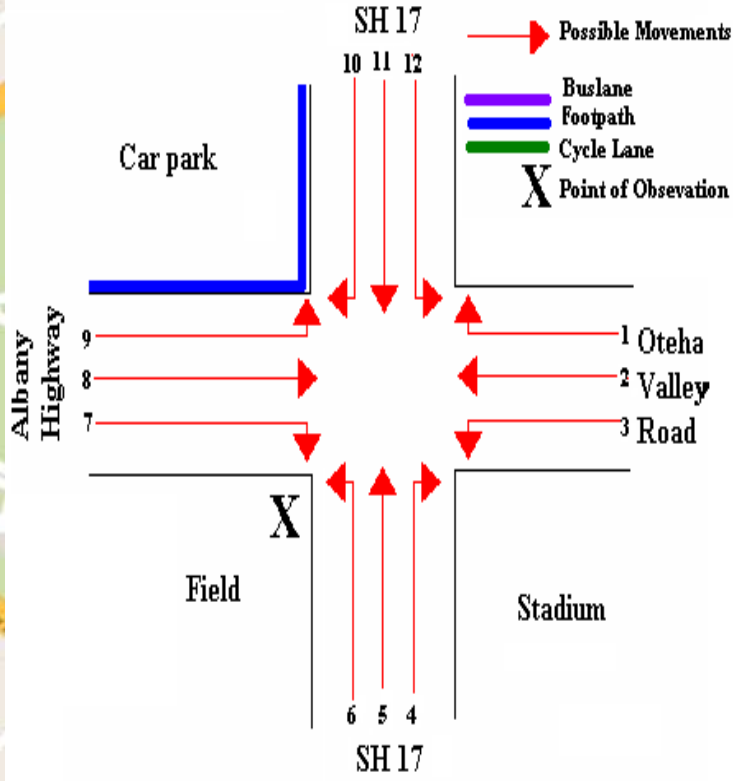
Note: In 2013, 13 per cent of the total cycle movements (n=10) in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *3 cyclists at 5:32pm*
- *Another group of 7 cyclists at 5:32pm.*

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**

4.2 Morning Peak

Environmental Conditions

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

Key Points

- The volume of cycle movements at the Oteha Valley Road/SH17/Albany Highway intersection have decreased in 2013 (29 cycle movements, compared with 40 movements in 2012).
- The two key movements in the morning were riding straight along Oteha Valley Road onto Albany Highway (Movements 2 = 10 movements) and the opposite direction (Movement 8 = 8 movements), and riding along State Highway 17 southwards (Movement 11 = 8 movements).
- Of the 12 movements possible at this site, the most noticeable decrease was at Movement 9 (down 10 movements from 2012).

Table 4.1: Morning Cyclist Movements

Oteha Valley Road/SH17/Albany Highway 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	1	0	0	0	0	**0**	**0**
2	1	2	7	9	9	9	**10**	**1**
3	1	0	0	2	1	0	**2**	**2**
4	0	1	0	0	0	0	**0**	**0**
5	0	0	0	0	1	1	**1**	**0**
6	0	6	0	4	3	3	**0**	**-3**
7	0	0	1	0	1	3	**0**	**-3**
8	0	4	7	5	4	5	**8**	**3**
9	0	1	0	0	0	10	**0**	**-10**
10	0	1	4	1	0	6	**0**	**-6**
11	2	3	6	6	6	3	**8**	**5**
12	0	1	0	2	1	0	**0**	**0**
Total	**4**	**20**	**25**	**29**	**26**	**40**	**29**	**-11**

- Over the morning peak, most cyclists riding through this intersection were adults (97 per cent, stable from 95 per cent in 2012).
- All cyclists were wearing a helmet (100 per cent, unchanged from last year).
- The majority of cyclists were male (79 per cent, up from 70 per cent in 2012).
- The share of road riders at this site has decreased slightly over the last 12 months – down 4 percentage points to 86 per cent.

Table 4.2: Morning Cyclist Characteristics

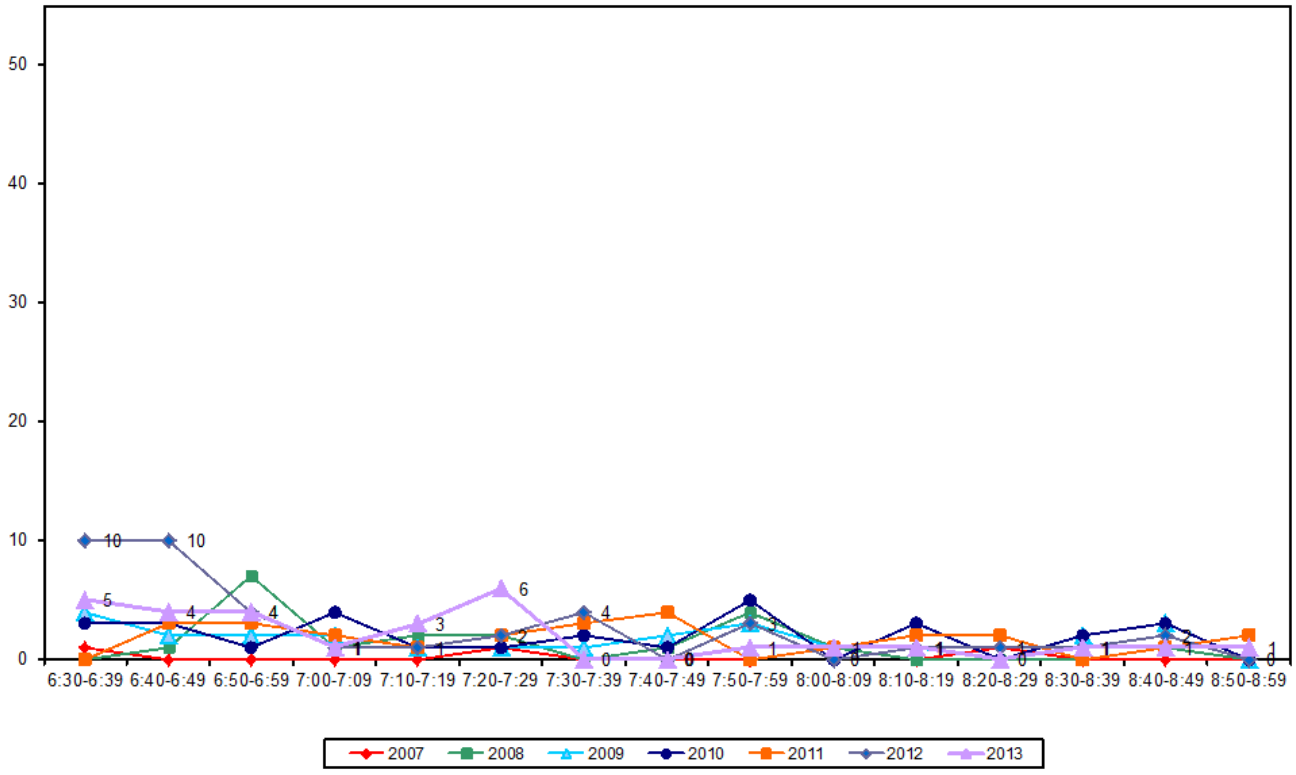
Oteha Valley Road/SH17/Albany Highway 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	100	80	92	83	81	95	97	**2**
School child	0	20	8	17	19	5	3	**-2**
Helmet Wearing								
Helmet on head	100	100	88	100	96	100	100	**0**
No helmet	0	0	12	0	4	0	0	**0**
Gender								
Male	-	-	-	-	65	70	79	**9**
Female	-	-	-	-	35	30	21	**-9**
Can't tell	-	-	-	-	0	0	0	**0**
Where Riding								
Road	50	100	92	76	62	90	86	**-4**
Footpath	50	0	8	24	38	10	14	**4**
Base:	***4***	***20***	***25***	***29***	***26***	***40***	***29***	

- Like last year, morning cyclist movement volumes were low over the entire monitoring period. A slight peak occurred between 7:20am and 7:29am (6 movements). Otherwise the cycle counts during any ten-minute interval did not exceed five movements.

Figure 4.2: Morning Peak Cyclist Frequency

Oteha Valley Road/SH17/Albany Highway 2007 – 2013 (n)



4.3 Evening Peak

Environmental Conditions

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

Key Points

- Evening cyclist movements at the Oteha Valley Road/SH17/Albany Highway intersection have recorded a decrease in 2013 (56 movements, down from 88 movements in 2012).
- The most common movement in the evening was riding straight along Albany Highway into Oteha Valley Road (Movement 8 = 25 movements).
- The most noticeable change in evening cyclist movement volumes occurred at Movement 8 (down 11 movements).

Table4.3: Evening Cyclist Movements

Oteha Valley Road/SH17/Albany Highway 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	2	2	0	0	0	**1**	**1**
2	1	5	3	6	5	13	**6**	**-7**
3	0	0	1	4	2	9	**10**	**1**
4	1	1	1	3	0	2	**1**	**-1**
5	4	5	5	4	3	3	**3**	**0**
6	1	1	3	1	2	4	**1**	**-3**
7	1	3	10	9	5	7	**0**	**-7**
8	1	4	12	25	27	36	**25**	**-11**
9	0	1	1	1	0	0	**0**	**0**
10	3	3	4	6	3	3	**3**	**0**
11	3	3	5	1	7	8	**3**	**-5**
12	0	0	0	2	2	3	**3**	**0**
Total	**15**	**28**	**47**	**62**	**56**	**88**	**56**	**-32**

- Most cyclists using this site were adults (98 per cent, stable from 95 per cent in 2012).
- Most cyclists were wearing a helmet (96 per cent, up slightly from 92 per cent in 2012).
- The majority of cyclists were male (86 per cent, stable from 83 per cent in 2012).
- Consistent with the morning peak, the share of road riders has remained unchanged at 89 per cent.

Table 4.4: Evening Cyclist Characteristics

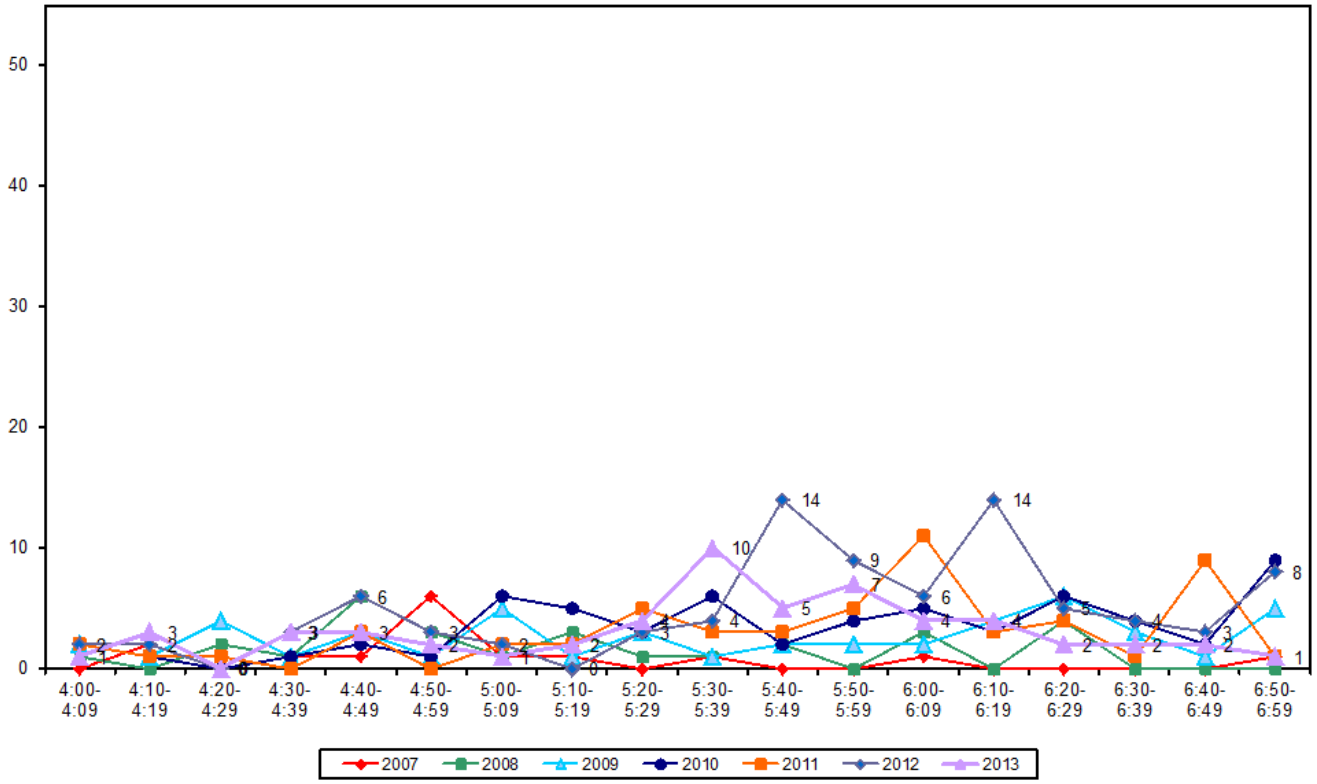
Oteha Valley Road/SH17/Albany Highway 2007 – 2013 (%)

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

- The volume of evening cyclist movements started low and came to a peak between 5:30pm and 5:39pm (10 movements). After the peak, cycle activity followed a decreasing trend until the end of the shift. This compares with the peaks between 5:40pm and 5:49pm (14 movements) and 6:10pm and 6:19pm (14 movements) last year.

Figure 4.3: Evening Peak Cyclist Frequency

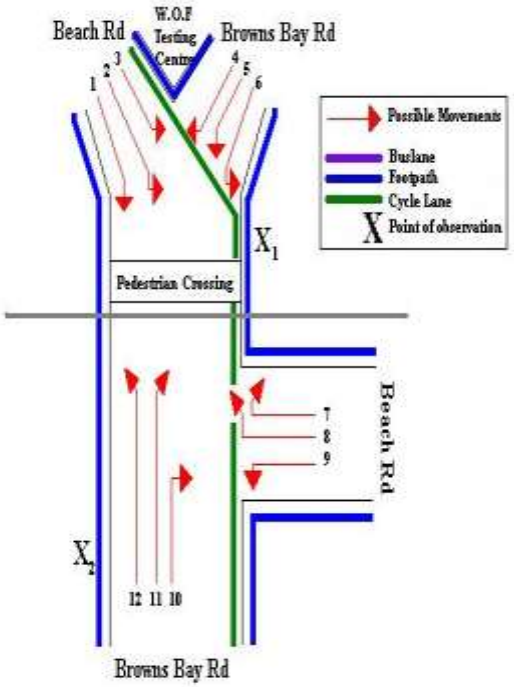
Oteha Valley Road/SH17/Albany Highway 2007 – 2013 (n)



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/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**

5.2 Morning Peak

Environmental Conditions

- The weather was overcast throughout the morning shift, with brief light drizzle recorded at 7:58am.
- There were no road works or accidents that may affect cycle counts.

Key Points

- In 2013, the morning cyclist traffic at the intersection of Beach/Browns Bay Road increased by 15 movements (from 28 movements last year to 43 this year).
- The key movement in the morning was heading south along Beach Road (Movement 2 = 15 movements).
- Morning cyclist volumes at this site increased most noticeably at Movement 6 (up 7 movements).

Table 5.1: Morning Cyclist Movements

Beach/Browns Bay Road 2007 – 2013 (n)

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

- Over the morning peak in 2013, the number of adult cyclists has remained stable from last year (74 per cent, compared with 75 per cent in 2012).
- All cyclists recorded were wearing a helmet.
- The majority of cyclists were male (93 per cent, down slightly from 96 per cent last year).
- Three-quarters of morning cyclists were riding on the road (77 per cent, stable from 79 per cent last year), while the remaining 23 per cent were riding on the footpath.

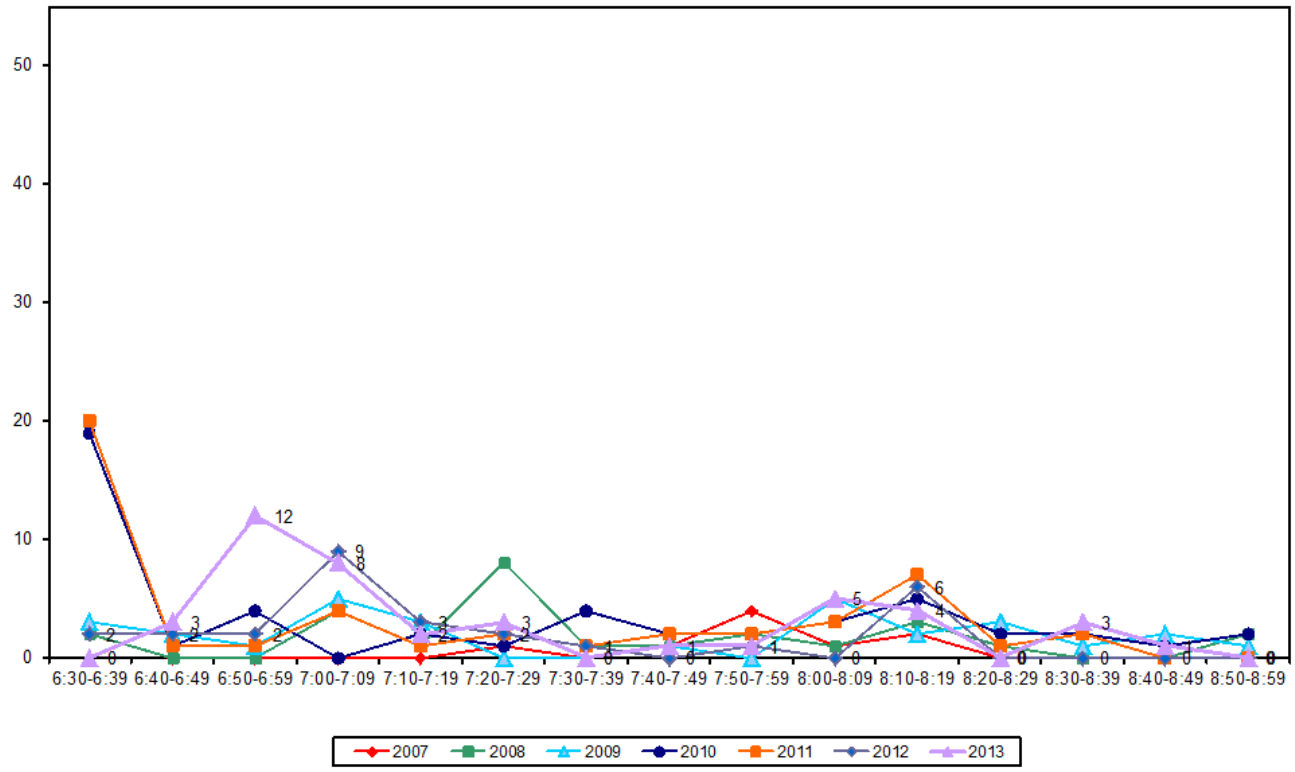
Table 5.2: Morning Cyclist Characteristics

Beach/Browns Bay Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	36	88	69	80	74	75	74	**-1**
School child	64	12	31	20	26	25	26	**1**
Helmet Wearing								
Helmet on head	91	96	93	98	100	96	100	**4**
No helmet	9	4	7	2	0	4	0	**-4**
Gender								
Male	-	-	-	-	94	96	93	**-3**
Female	-	-	-	-	6	4	7	**3**
Can't tell	-	-	-	-	0	0	0	**0**
Where Riding								
Road	45	88	42	80	74	79	77	**-2**
Footpath	55	12	34	6	26	21	23	**2**
Off-road cycleway	-	-	24	14	0	0	0	**0**
Base:	***11***	***26***	***29***	***50***	***47***	***28***	***43***	

- Similar to previous years, the volume of morning cyclist movements peaked at the beginning of the shift, with 12 movements between 6:50am and 6:59am. Cycle volume remained low over the middle part of the monitoring period, before coming to a small peak of five movements from 8:00am to 8:09am. This compares to the peaks between 7:00am and 7:09 am (9 movements) and between 8:10am and 8:19am (6 movements) last year.

Figure 5.2: Morning Peak Cyclist Frequency
Beach/Browns Bay Road 2007 – 2013 (n)



Note: In 2013, 14 cyclists (33 per cent of the total cycle movements in the morning peak) were identified as cycling in groups. This compared with four cyclists (14 per cent) last year. Three or more cyclists were observed travelling in groups at this site at the following times:

- *4 cyclists at 6:56am*
- *4 cyclists at 6:59am*
- *3 cyclists at 7:04am*
- *3 cyclists at 7:05am.*

5.3 Evening Peak

Environmental Conditions

- The weather was overcast and windy throughout the monitoring period. From 4:00pm to 4:40pm it was raining intermittently at the site.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of cycle movements at the Beach/Browns Bay Road intersection has decreased by almost 50 per cent from last year (17 movements, down from 33 in 2012).
- The key movements in the evening were riding north along Beach Road (Movement 8 = 5 movements) and riding north along Browns Bay Road turning left into Beach Road (Movement 12 = 5 movements).
- Compared with last year, the volume of evening cyclists heading north onto Browns Bay Road has decreased (fewer cyclists observed at Movement 1-6, Movement 10 and Movement 11).

Table 5.3: Evening Cyclist Movements

Beach/Browns Bay Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	1	3	4	4	3	2	**1**	**-1**
2	0	2	0	3	1	2	**1**	**-1**
3	3	1	0	0	3	1	**0**	**-1**
4	0	0	0	0	2	2	**0**	**-2**
5	0	2	13	3	1	3	**2**	**-1**
6	0	1	0	2	1	2	**1**	**-1**
7	1	1	4	1	3	1	**2**	**1**
8	0	1	4	3	2	5	**5**	**0**
9	0	0	0	1	3	0	**0**	**0**
10	0	0	0	0	0	1	**0**	**-1**
11	3	4	3	5	2	5	**0**	**-5**
12	0	4	2	5	7	9	**5**	**-4**
Total	**8**	**19**	**30**	**27**	**28**	**33**	**17**	**-16**

- Most cyclists were adults (88 per cent, stable from 91 per cent in 2012).
- All cyclists were wearing a helmet (up from 91 per cent last year).
- The majority of the cyclists were male (94 per cent). The share of female cyclists has continued to decrease.
- Three-quarters of cyclists were riding on the road (71 per cent, down slightly from 76 per cent at the previous measure). The remaining 29 per cent of cyclists were riding on the footpath.

Table 5.4: Evening Cyclist Characteristics

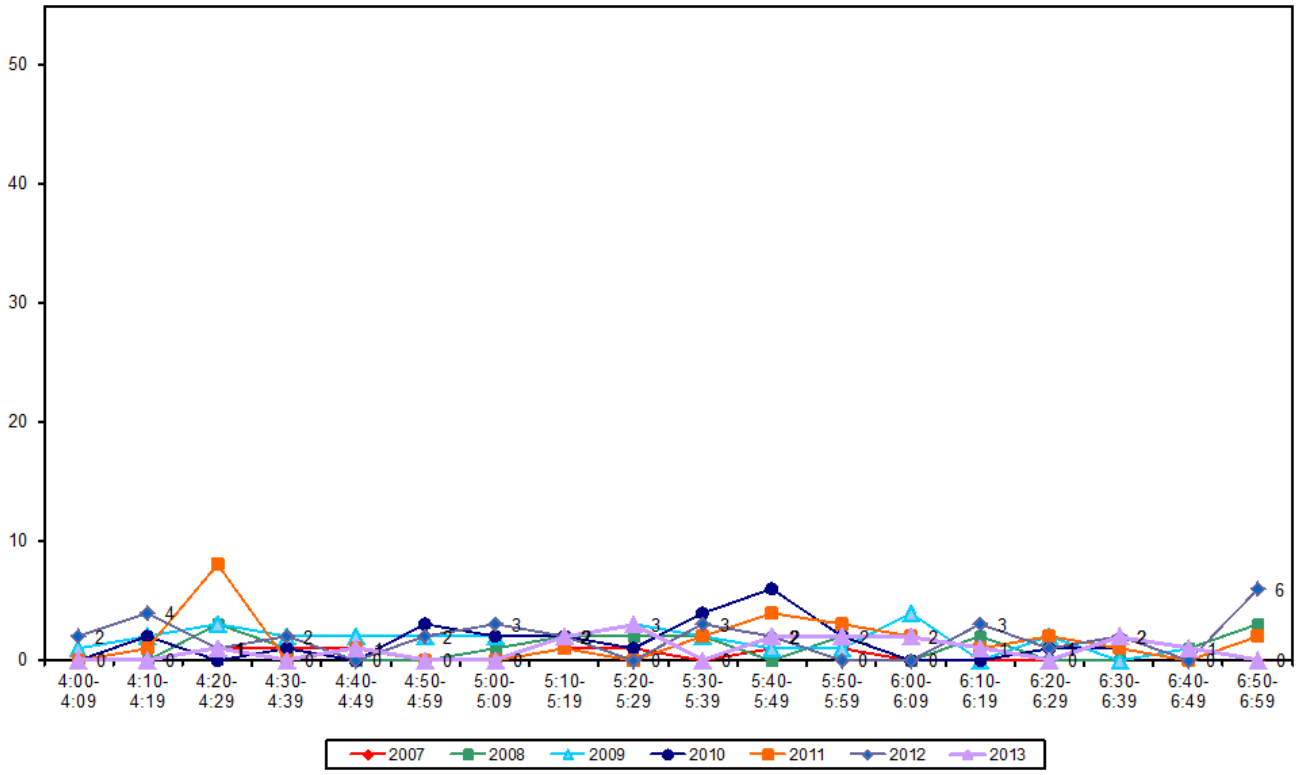
Beach/Browns Bay Road 2007 – 2013 (%)

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

- Evening cyclist movement volumes were relatively low over the entire monitoring period, with no more than three cyclists recorded during any ten-minute interval.

Figure 5.3: Evening Peak Cyclist Frequency

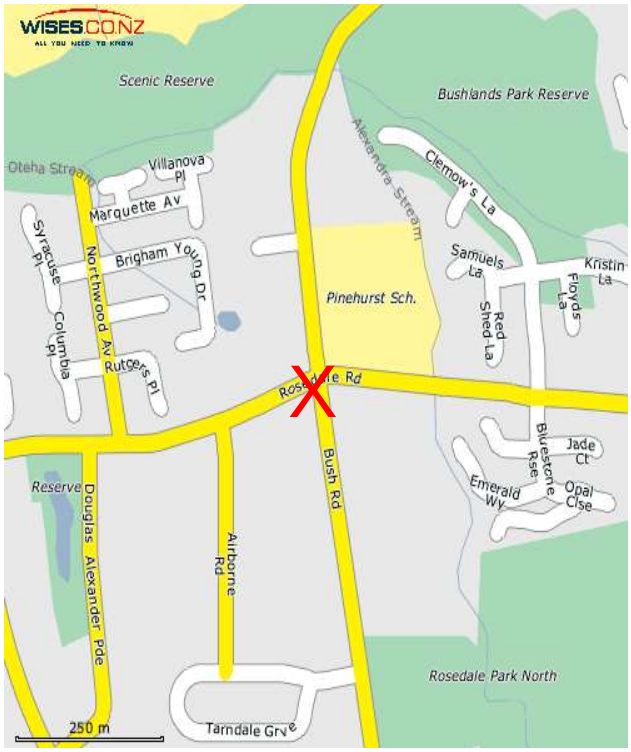
Beach/Browns Bay Road 2007 – 2013 (n)

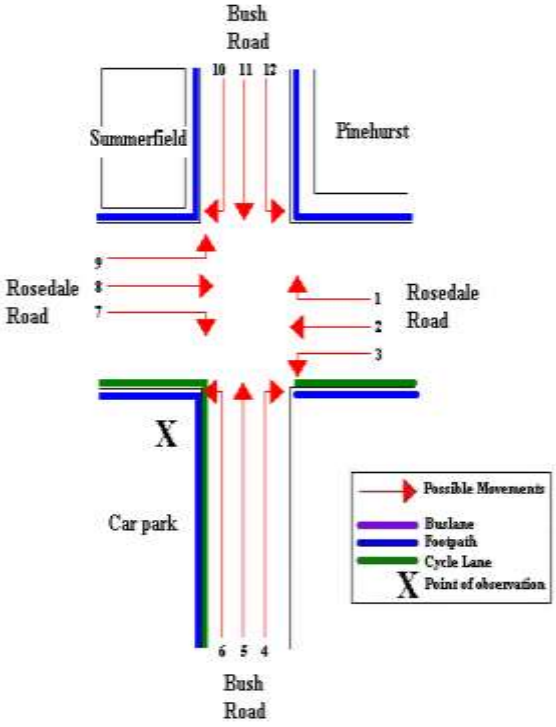


6. ROSEDALE ROAD/BUSH ROAD, ALBANY (SITE 46)

Figure 6.1 shows the possible cyclist movements at this intersection.

Figure 6.1: Cycle Movements: Rosedale/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**

6.2 Morning Peak

Environmental Conditions

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

Key Points

- Since last year, the volume of morning cyclists at the Rosedale/Bush Road intersection has doubled, from 22 in 2012 to 43 movements this year.
- The most common movement in the morning was straight along Rosedale Road heading west (Movement 2 = 11 cyclists).
- The most noticeable change since last year was at Movements 8 (up 6 cyclists).

Table 6.1: Morning Cyclist Movements

Rosedale/Bush Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	1	0	2	1	0	**3**	**3**
2	8	6	13	16	9	6	**11**	**5**
3	0	1	1	1	3	2	**1**	**-1**
4	0	1	0	2	3	1	**1**	**0**
5	4	3	1	6	2	2	**3**	**1**
6	0	12	2	5	4	1	**4**	**3**
7	0	0	0	0	0	0	**0**	**0**
8	0	3	3	5	2	3	**9**	**6**
9	0	2	0	4	0	2	**5**	**3**
10	3	3	3	2	2	1	**3**	**2**
11	0	2	2	4	2	3	**3**	**0**
12	0	2	1	1	1	1	**0**	**-1**
Total	**15**	**36**	**26**	**48**	**29**	**22**	**43**	**21**

- Over the morning peak, a high percentage of cyclists at this site were adults (84 per cent, stable from 82 per cent last year).
- Most cyclists were wearing a helmet (95 per cent, stable since 2010).
- The majority of cyclists continued to be male (91 per cent, up from 86 per cent last year).
- Most cyclists were riding on the road (91 per cent, up from 82 per cent last year).

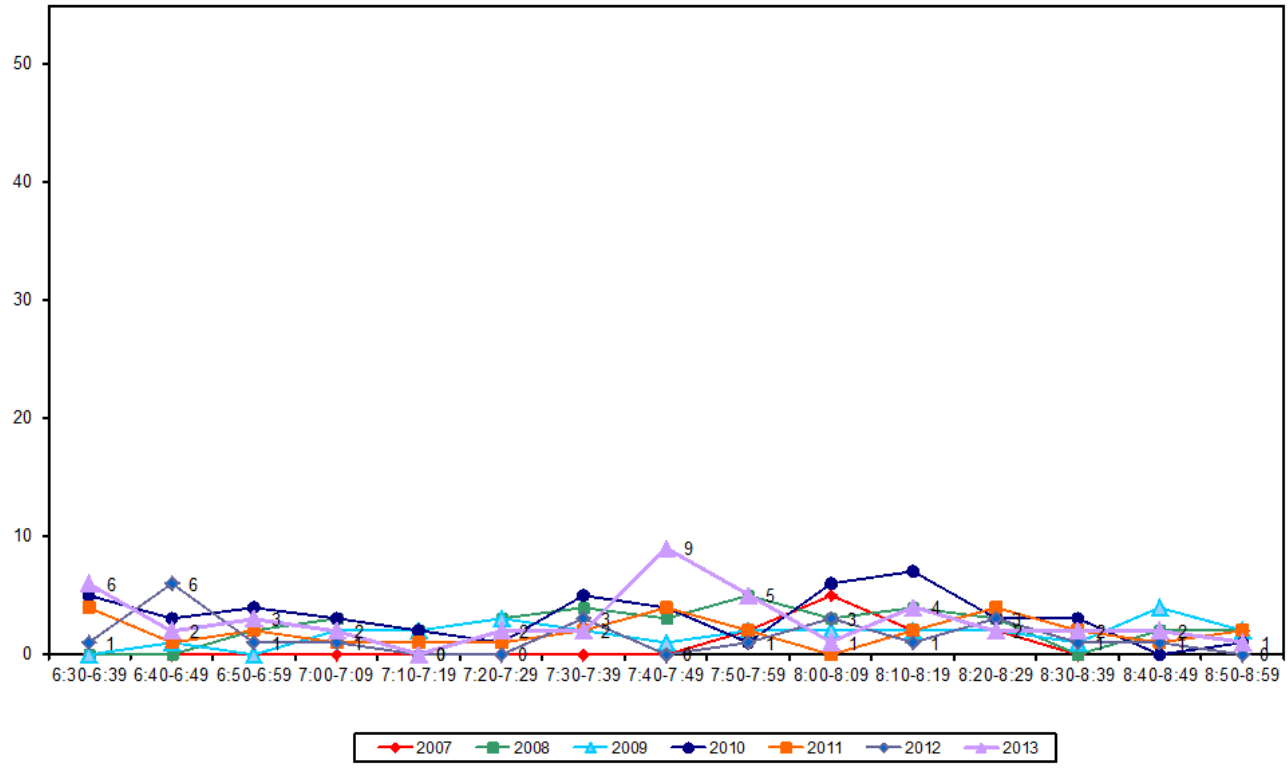
Table 6.2: Morning Cyclist Characteristics

Rosedale/Bush Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	40	81	81	81	93	82	**84**	**2**
School child	60	19	19	19	7	18	**16**	**-2**
Helmet Wearing								
Helmet on head	100	92	92	96	97	95	**95**	**0**
No helmet	0	8	8	4	3	5	**5**	**0**
Gender								
Male	-	-	-	-	69	86	**91**	**5**
Female	-	-	-	-	24	14	**9**	**-5**
Can't tell	-	-	-	-	7	0	**0**	**0**
Where Riding								
Road	33	61	69	73	83	82	**91**	**9**
Footpath	67	39	31	27	17	18	**9**	**-9**
Base:	***15***	***36***	***26***	***48***	***29***	***22***	***43***	

- Consistent with the trends in previous years, cyclist volumes were low throughout most of the monitoring period. Two peaks were identified – the first one was between 6:30am and 6:39am with 6 movements, the second between 7:40am and 7:49am with nine movements.

Figure 6.2: Morning Peak Cyclist Frequency
Rosedale/Bush Road 2007 – 2013 (n)



Note: In 2013, 11 per cent of the total cycle movements in the morning peak (n=6) 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 6:45am*
- *3 cyclists at 6:48am.*

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/Bush Road intersection over the evening shift has increased this year, from 41 cyclists last year to 57.
- The key evening movements were travelling straight along Rosedale Road in both directions (Movement 2 heading west = 15 movements, Movement 8 heading east = 14 movements).
- The most noticeable changes since 2012 were at Movement 2 and Movement 8 (up 9 and 7 cyclist movements, respectively).

Table 6.3: Evening Cyclist Movements

Rosedale/Bush Road 2007 – 2013 (n)

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

- Consistent with the previous measure, the majority of evening cyclists using this intersection are adults (84 per cent, up from 80 per cent in 2012).
- Helmet wearing remains prevalent (95 per cent, stable from 93 per cent last year).
- The greatest share of cyclists continued to be male (82 per cent, down from 93 per cent last year).
- Seventy-two per cent of cyclists were riding on the road (down from 85 per cent last year).

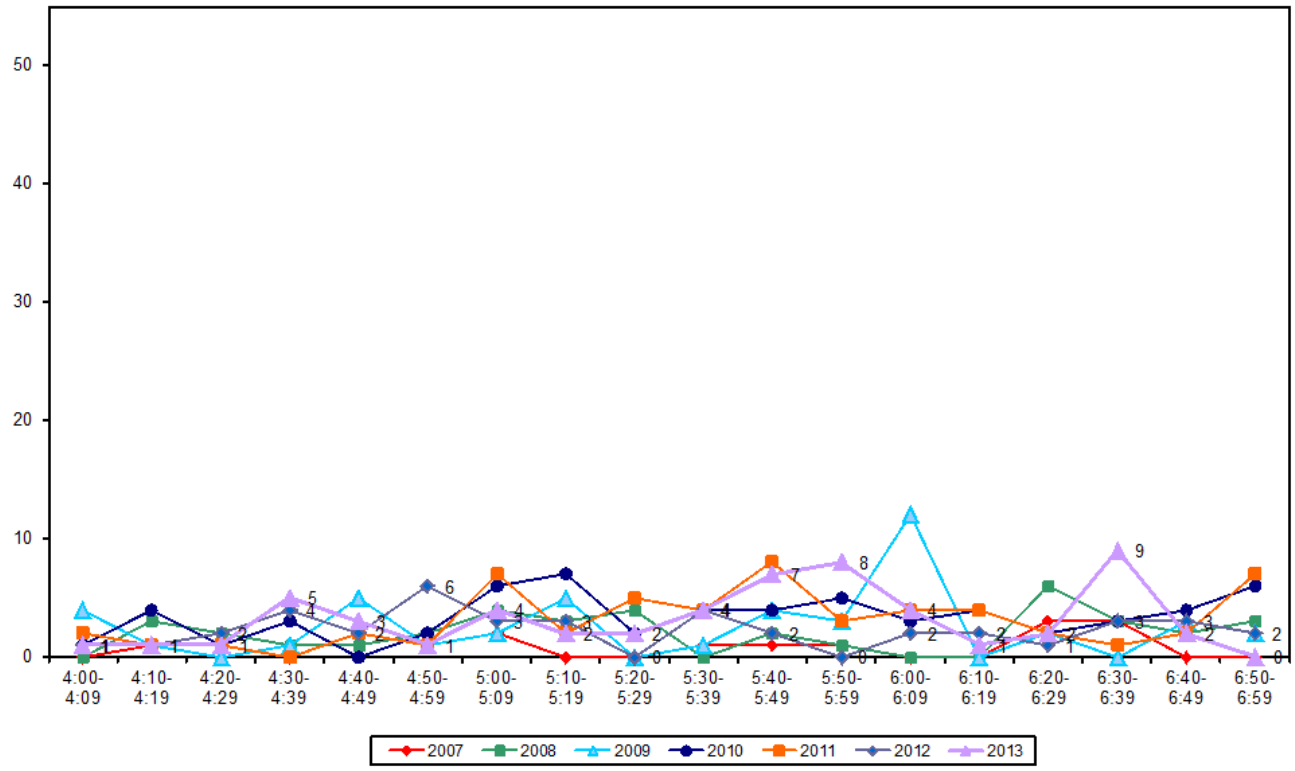
Table 6.4: Evening Cyclist Characteristics

Rosedale/Bush Road 2007 – 2013 (%)

	2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	**Change 12-13**
Cyclist Type								
Adult	81	78	76	80	95	80	84	**4**
School child	19	22	24	20	5	20	16	**-4**
Helmet Wearing								
Helmet on head	94	92	93	84	98	93	95	**2**
No helmet	6	8	7	16	2	7	5	**-2**
Gender								
Male	-	-	-	-	88	93	82	**-11**
Female	-	-	-	-	13	7	18	**11**
Can't tell	-	-	-	-	0	0	0	**0**
Where Riding								
Road	62	76	61	69	84	85	72	**-13**
Footpath	38	24	39	31	16	15	28	**13**
Base:	***16***	***37***	***46***	***61***	***56***	***41***	***57***	

- Cyclist volumes were low in the first half of the monitoring period, with no more than five cyclists recorded over any ten minute interval. The traffic was heavier in the second half of the shift, peaking twice, from 5:50pm to 5:59pm (8 movements) and from 6:30pm to 6:39pm (9 movements).

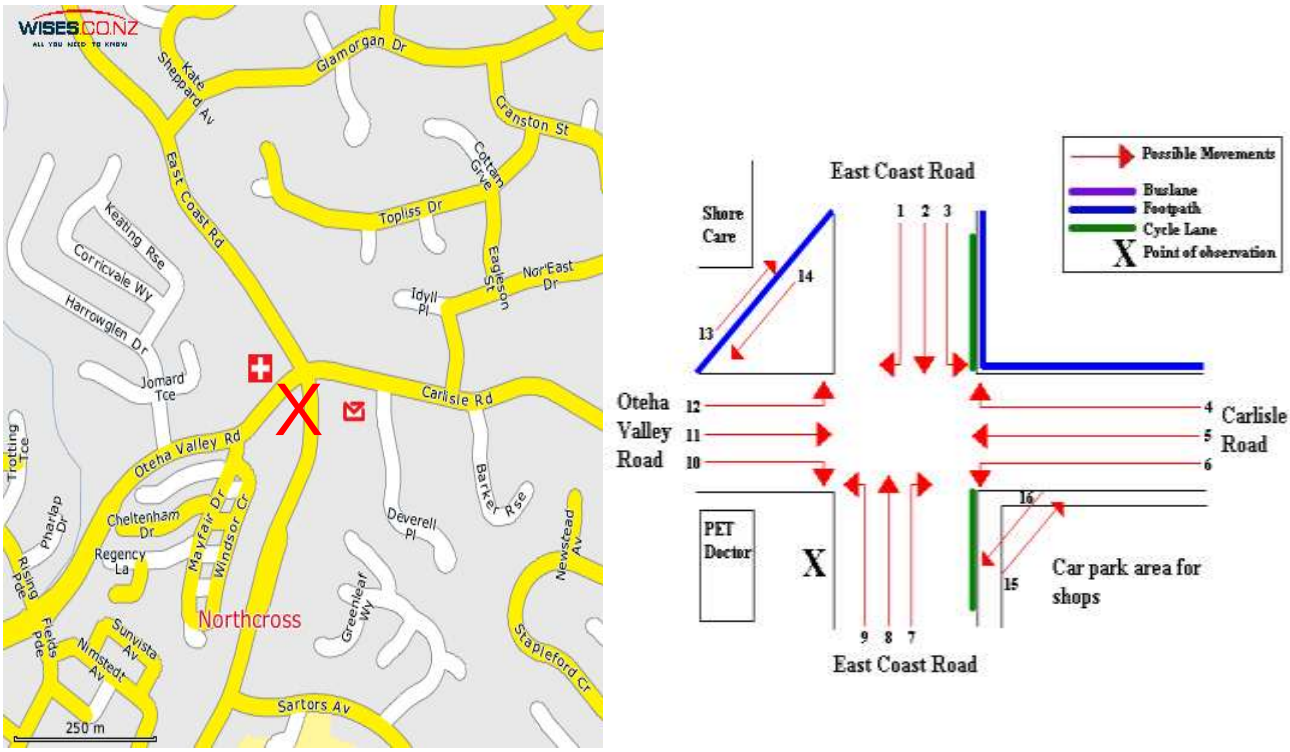
Figure 6.3: Evening Peak Cyclist Frequency
Rosedale/Bush Road 2007 – 2013 (n)



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/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**

7.2 Morning 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

- Compared to last year, the volume of morning cyclists at the Oteha Valley/East Coast Road intersection has decreased, from 68 movements last year to 60 movements this year.
- The most common movement in the morning continued to be cycling straight through East Coast Road north to south (Movement 2 = 20 cyclists).

Table 7.1: Morning Cyclist Movements

Oteha Valley/East Coast Road 2007 – 2013 (n)

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

- Over the morning peak, the greatest share of cyclists was adults (88 per cent, up from 78 per cent in 2012).
- All cyclists are wearing a helmet.
- Two-thirds of cyclists were recorded as male (68 per cent). However, female cyclists have been increasing since 2011.
- Eighty-seven per cent of cyclists are riding on the road (up from 74 per cent in 2012).

Table 7.2: Morning Cyclist Characteristics

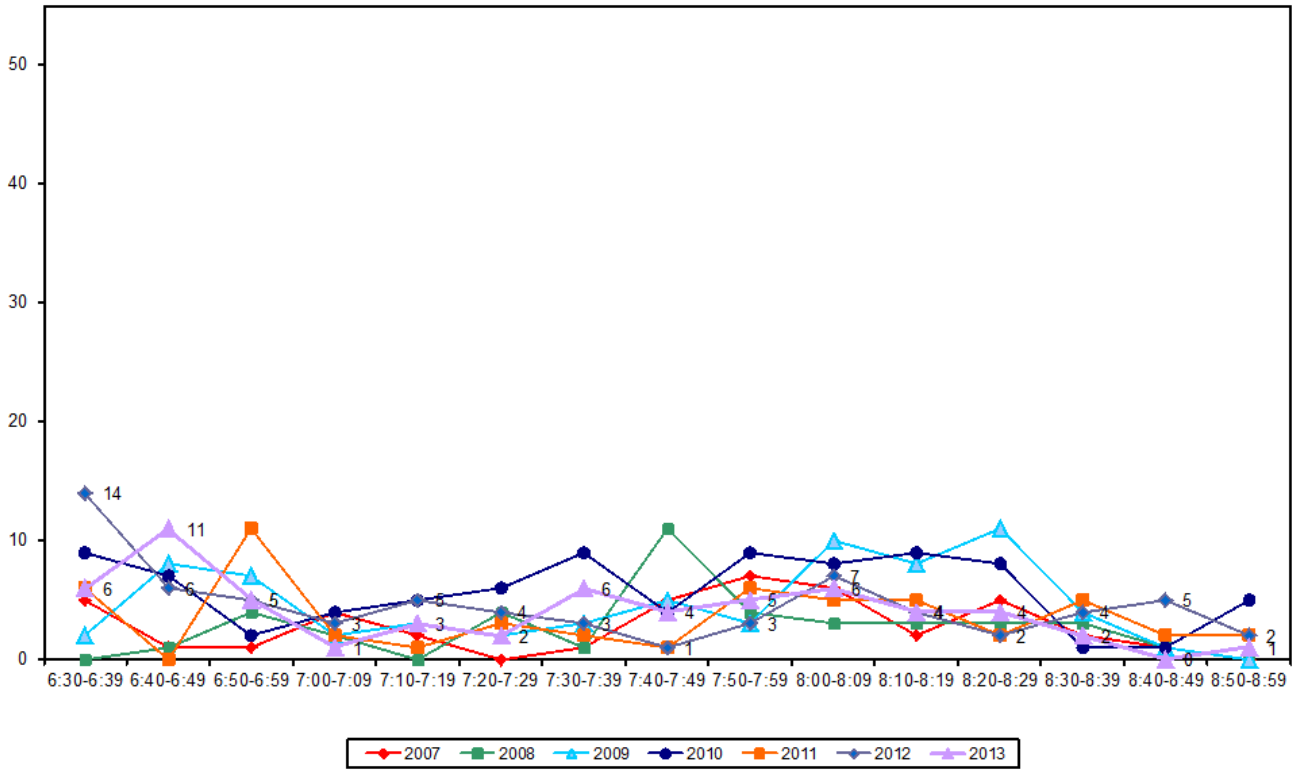
Oteha Valley/East Coast Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	48	68	59	64	74	78	**88**	**11**
School child	52	32	41	36	26	22	**12**	**-11**
Helmet Wearing								
Helmet on head	95	90	97	98	96	98	**100**	**2**
No helmet	5	10	3	2	4	2	**0**	**-2**
Gender								
Male	-	-	-	-	79	74	**68**	**-6**
Female	-	-	-	-	15	18	**27**	**9**
Can't tell	-	-	-	-	6	8	**5**	**-3**
Where Riding								
Road	62	60	59	70	62	74	**87**	**13**
Footpath	38	40	41	30	38	26	**13**	**-13**
Base:	***42***	***40***	***69***	***87***	***53***	***68***	***60***	

- Morning cycle volumes started off relatively high, with a peak of 11 movements between 6:40pm and 6:49pm. Cycle activities then remained at or below seven movements in any ten-minute interval until the end of the shift.

Figure 7.2: Morning Peak Cyclist Frequency

Oteha Valley/East Coast Road 2007 – 2013 (n)



7.3 Evening Peak

Environmental Conditions

- The weather was overcast in the evening. Intermittent showers were experienced between 4:00pm and 6:00pm.
- 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 decreased, from 69 movements last year to 46 movements in 2013.
- The key evening movement was riding straight along East Coast Road in a northerly direction (Movement 8 = 14 cyclists).
- The most noticeable decrease this year was at Movement 5 (down 6 cyclists).

Table 7.3: Evening Cyclist Movements

Oteha Valley/East Coast Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	6	0	2	2	1	**1**	**0**
2	3	13	3	10	17	7	**2**	**-5**
3	1	3	4	3	3	3	**3**	**0**
4	0	2	1	1	3	1	**1**	**0**
5	0	3	4	6	4	6	**0**	**-6**
6	1	3	6	7	3	4	**3**	**-1**
7	2	6	10	12	6	7	**3**	**-4**
8	5	15	12	14	14	13	**14**	**1**
9	1	3	6	3	5	9	**5**	**-4**
10	0	3	2	3	2	4	**2**	**-2**
11	1	6	7	9	6	5	**8**	**3**
12	2	8	4	0	2	7	**3**	**-4**
13	0	0	0	4	7	0	**0**	**0**
14	0	0	0	0	0	0	**0**	**0**
15	1	1	7	4	2	2	**1**	**-1**
16	0	2	3	3	0	0	**0**	**0**
Total	**17**	**74**	**69**	**81**	**76**	**69**	**46**	**-23**

- Over the evening peak, the majority of cyclists using this site were adults (91 per cent, up from 80 per cent in 2012).
- Most cyclists were wearing a helmet (98 per cent, up from 93 per cent in 2012).
- Eighty-nine per cent of the cyclists were male, unchanged from last year.
- Eighty-seven per cent of cyclists were riding on the road (a 12 percentage point increase from last year).

Table 7.4: Evening Cyclist Characteristics

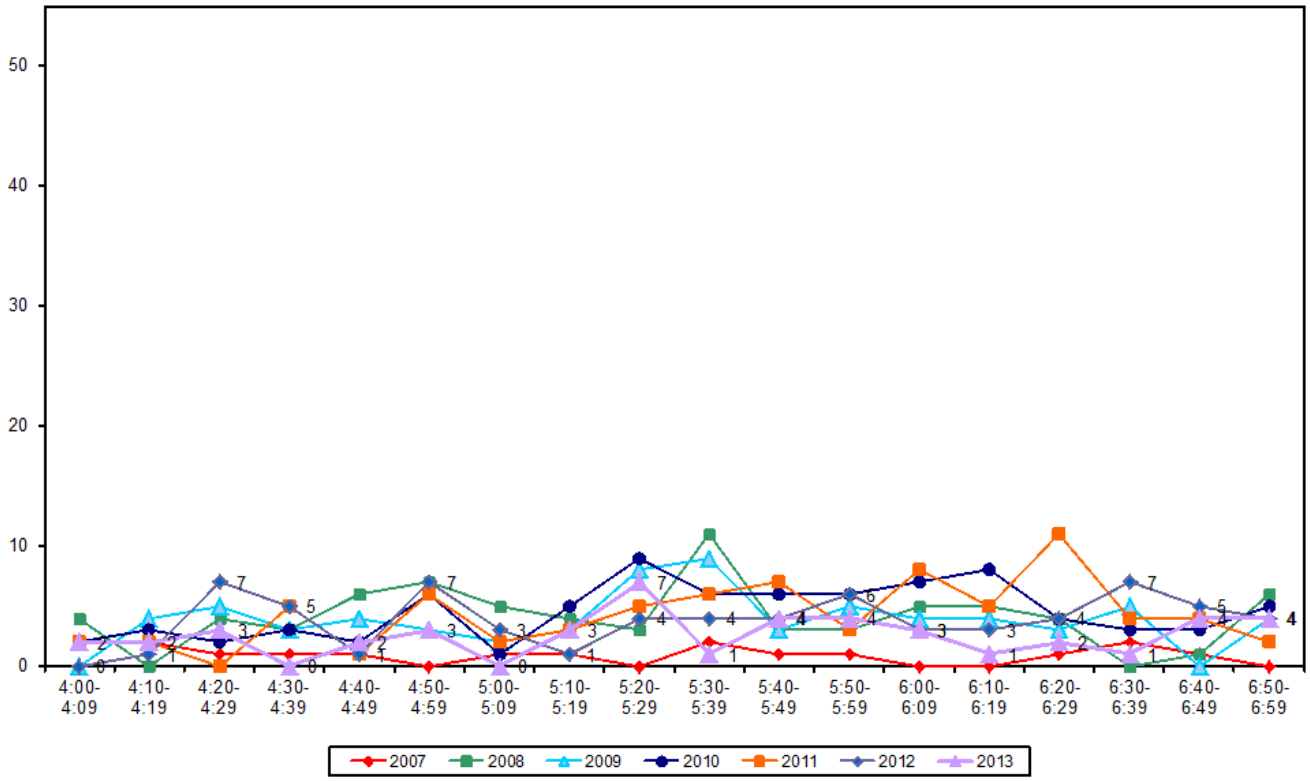
Oteha Valley/East Coast Road 2007 – 2013(%)

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

- The volume of cycle movements was low throughout the evening period, with a small peak between 5:20pm and 5:29pm (7 movements). The overall trend was fairly consistent with previous years, but with a smaller traffic volume overall this year.

Figure 7.3: Evening Peak Cyclist Frequency

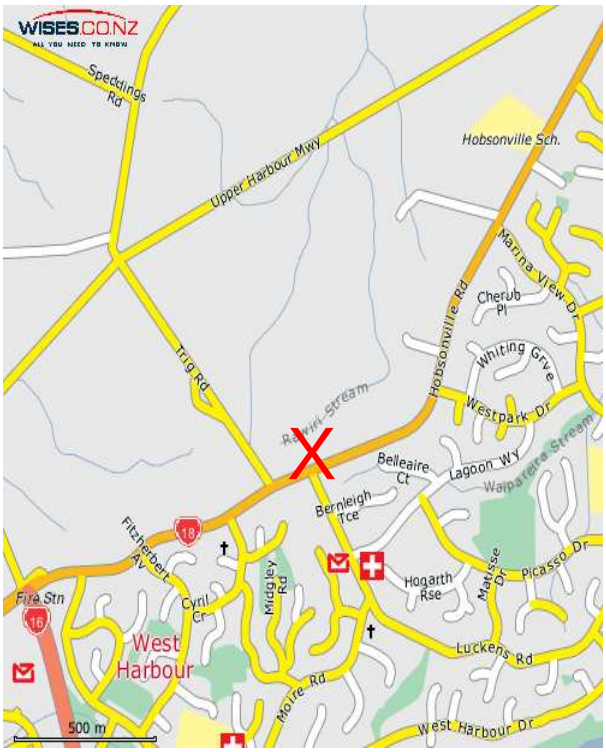
Oteha Valley/East Coast Road 2007 – 2013 (n)

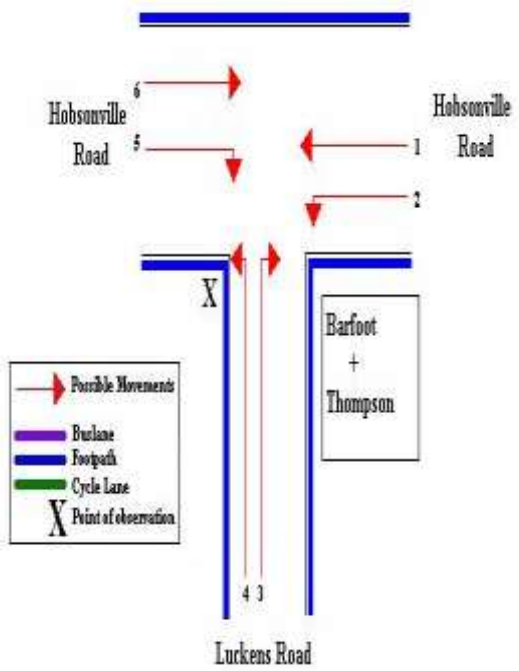


8. LUCKENS ROAD/HOBSONVILLE ROAD, WEST HARBOUR (SITE 51)

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**

8.2 Morning Peak

Environmental Conditions

- The weather was overcast throughout the morning shift. Light drizzle was reported at 6.55am, 8.22am, 8.35am, and at 8.50am.
- At 7:16am a cyclist had to ride on the road because a bus was stopped on the cycleway. There were no other road works or accidents that may affect cycle counts.

Key Points

- The volume of morning cyclists at the Luckens/Hobsonville Road intersection has remained stable (44 cycle movements, compared with 42 movements in 2012).
- The key morning movement was travelling straight along Hobsonville Road heading southwest (Movement 1 = 14 cyclists).
- Of the six movements possible at this intersection, the most noticeable change was at Movement 4 – turning left from Luckens Road onto Hobsonville Road (up 5 movements).

Table 8.1: Morning Cyclist Movements

Luckens/Hobsonville Road 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	5	3	7	7	7	15	**14**	**-1**
2	3	8	9	9	4	11	**10**	**-1**
3	2	7	1	6	0	3	**3**	**0**
4	2	3	6	7	2	5	**10**	**5**
5	0	2	2	1	0	1	**0**	**-1**
6	8	2	1	11	1	7	**7**	**0**
Total	**20**	**25**	**26**	**41**	**14**	**42**	**44**	**2**

- Over the morning peak, adults comprised the greatest share of cycle movements (98 per cent, up slightly from 93 per cent in 2012).
- Almost all cyclists were wearing a helmet (98 per cent, slightly up from 95 per cent of cyclists in 2012).
- The majority of cyclists recorded were male (90 per cent).
- Almost all of the cyclists were riding on the road (98 per cent, a 12 percentage point increase from 2012).

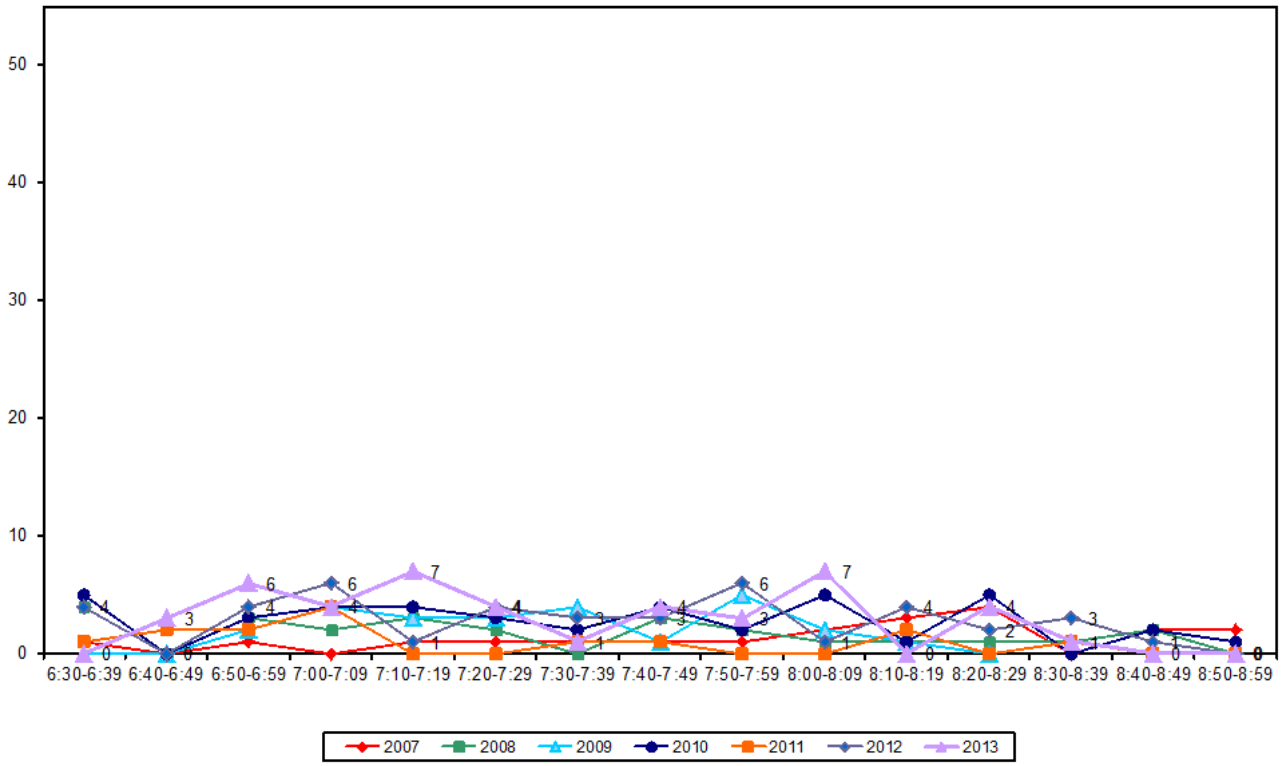
Table 8.2: Morning Cyclist Characteristics

Luckens/Hobsonville Road 2007 – 2013 (%)

	2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	**Change 12-13**
Cyclist Type								
Adult	75	88	88	83	86	93	**98**	**5**
School child	25	12	12	17	14	7	**2**	**-5**
Helmet Wearing								
Helmet on head	100	100	96	98	93	95	**98**	**3**
No helmet	0	0	4	2	7	5	**2**	**-3**
Gender								
Male	-	-	-	-	100	83	**90**	**7**
Female	-	-	-	-	0	17	**5**	**-12**
Can't tell	-	-	-	-	0	0	**5**	**5**
Where Riding								
Road	70	80	81	80	79	86	**98**	**12**
Footpath	30	20	19	20	21	14	**2**	**-12**
Base:	***20***	***25***	***26***	***41***	***14***	***42***	***44***	

- The volume of cycle movements was low throughout the morning peak monitoring period. The highest volumes of cyclist movements were between 7:10am and 7:19am (7 movements) and again between 8:00am and 8:09am (7 movements). Both peaks occurred 10 minutes later than the ones from last year.

Figure 8.2: Morning Peak Cyclist Frequency
Luckens/Hobsonville Road 2007 – 2013 (n)



8.3 Evening Peak

Environmental Conditions

- The weather was cloudy with spells of light showers from time to time throughout the evening. Towards the end of the shift, the sky was gradually clearing up.
- 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/Hobsonville Road intersection has decreased from last year, with 60 movements recorded, compared with 70 movements in 2012.
- The most common movement in the evening was turning right into Hobsonville Road from Luckens Road (Movement 3 = 19 cyclists).
- Of the six possible movements, the most noticeable change this year was at Movement 3 (down 9 cyclists) and Movement 6 (down 8). Both movements were heading north onto Hobsonsville Road.

Table 8.3: Evening Cyclist Movements

Luckens/Hobsonville Road 2007 – 2013 (n)

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

- Most cyclists using this intersection were adults (90 per cent, stable from the previous year).
- Helmet-wearing continued to be wide-spread (92 per cent, a slight decrease from 97 per cent last year).
- Most cyclists were male (90 per cent).
- The majority of cyclists were riding on the road (83 per cent, down from 91 per cent in 2012).

Table 5.4: Evening Cyclist Characteristics

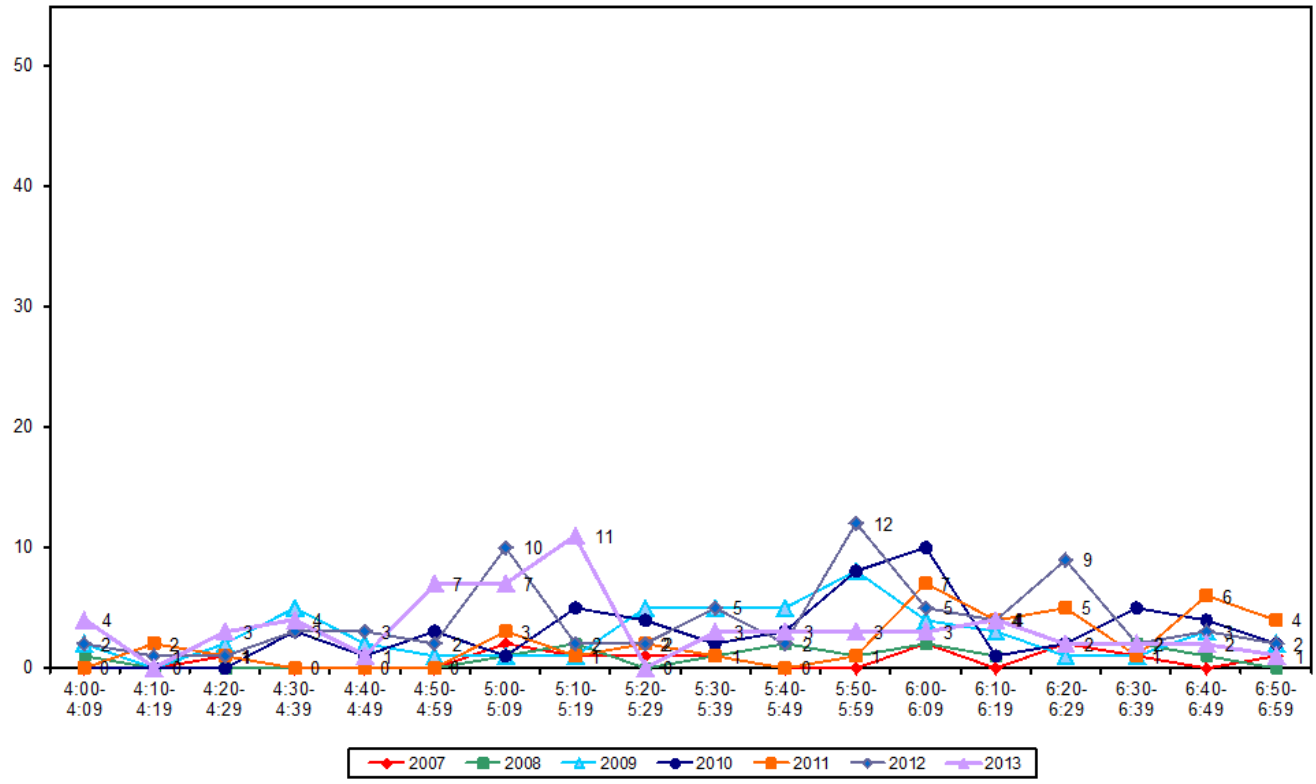
Luckens/Hobsonville Road 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	100	94	100	91	66	89	**90**	**1**
School child	0	6	0	9	34	11	**10**	**-1**
Helmet Wearing								
Helmet on head	100	69	98	94	74	97	**92**	**-5**
No helmet	0	31	2	6	26	3	**8**	**5**
Gender								
Male	-	-	-	-	87	87	**90**	**3**
Female	-	-	-	-	5	13	**10**	**-3**
Can't tell	-	-	-	-	8	0	**0**	**0**
Where Riding								
Road	100	81	90	81	53	91	**83**	**-8**
Footpath	0	19	10	19	47	9	**17**	**8**
Base:	***12***	***16***	***51***	***54***	***38***	***70***	***60***	

- Cycle volumes have been low this year, except for the half an hour from 4:40pm to 5:19pm. Within this time frame, there was a peak from 5:10pm to 5:19pm (11 cyclists recorded).

Figure 8.3: Evening Peak Cyclist Frequency

Luckens/Hobsonville Road 2007 – 2013 (n)

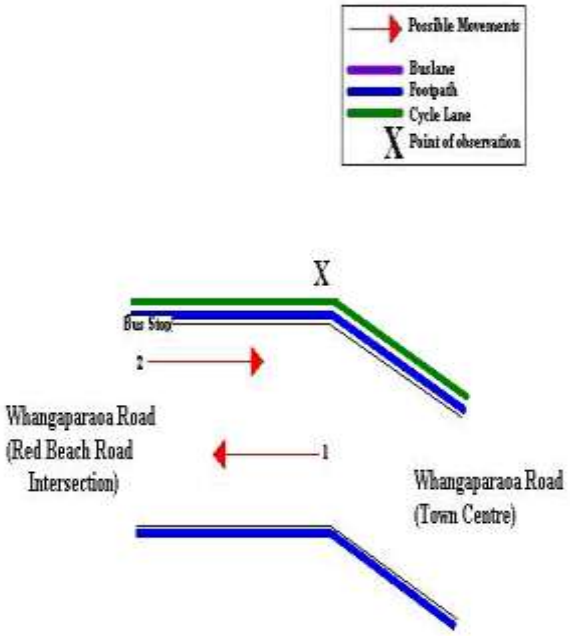


Note: Six cycle movements (10 per cent) in the evening peak were identified as cycling in groups/pelotons. The group passed the site at 5:11pm. This compared with 23 per cent (n=16) last year.

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**

9.2 Morning Peak

Environmental Conditions

- The weather was overcast throughout the morning monitoring period, with light drizzle from 8:45am until the end of the shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of morning cyclists at Whangaparaoa Road near the Red Beach intersection has not changed since last year.
- The key morning movement was straight along Whangaparaoa Road heading west towards the Red Beach intersection (Movement 1 = 13 cyclists, stable from 12 cyclists last year).

Table 9.1: Morning Cyclist Movements

Whangaparaoa Road, near Red Beach intersection 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	10	13	12	18	10	12	**13**	**1**
2	3	2	3	3	1	3	**2**	**-1**
Total	**13**	**15**	**15**	**21**	**11**	**15**	**15**	**0**

- Over the morning peak, school children comprised of 60 per cent of cycle movements (up from 50 per cent in 2012).
- All cyclists were wearing a helmet (up from 93 per cent last year).
- Predominantly male cyclists used this site (87 per cent).
- Since 2011, riding on the road was split into riding on the road and riding on the off-road cycleway. In 2013, 80 per cent were recorded as riding on the off-road cycleway. Use of the road by cyclists has decreased at this site this year (20 per cent, down from 27 per cent in 2012).

Table 9.2: Morning Cyclist Characteristics

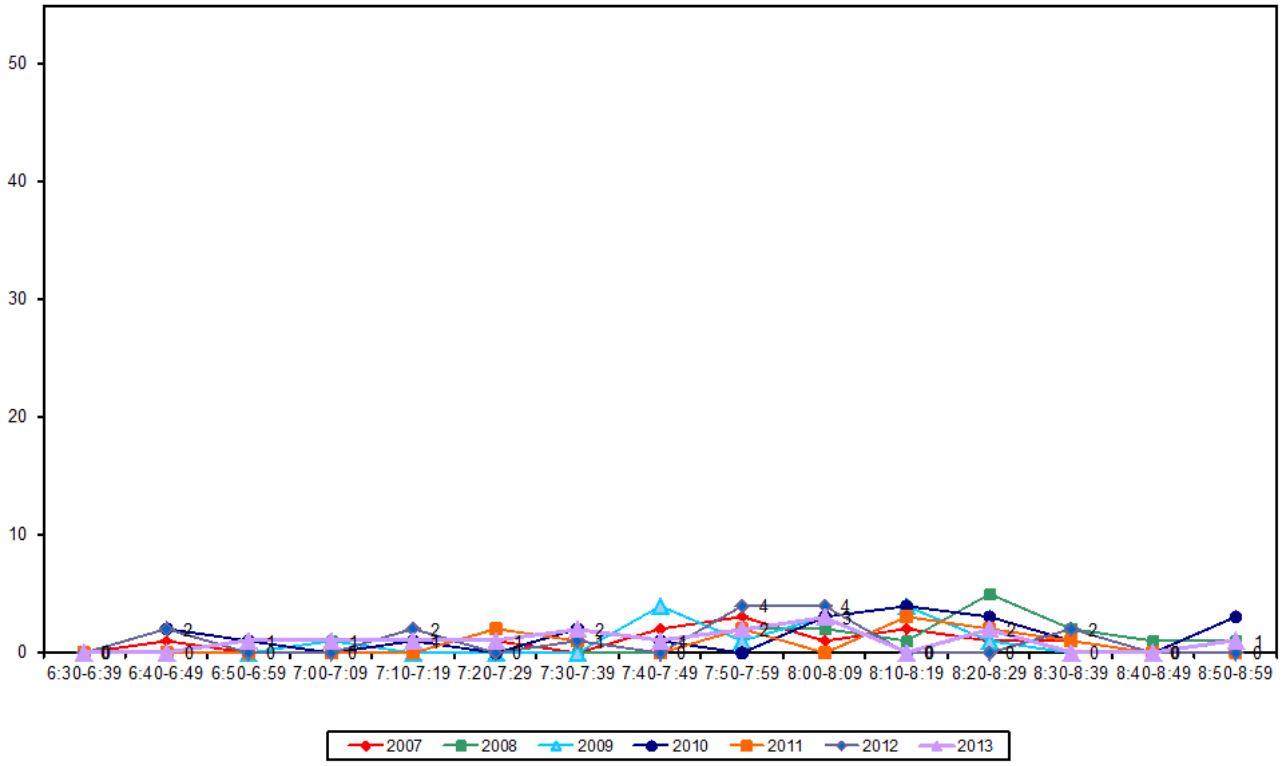
Whangaparaoa Road, near Red Beach intersection 2007 – 2013 (%)

	2007	***2008***	***2009***	***2010***	***2011***	***2012***	***2013***	**Change 12-13**
Cyclist Type								
Adult	62	27	20	48	55	47	**40**	**-7**
School child	38	73	80	52	45	53	**60**	**7**
Helmet Wearing								
Helmet on head	92	100	93	76	100	93	**100**	**7**
No helmet	8	0	7	24	0	7	**0**	**-7**
Gender								
Male	-	-	-	-	91	93	**87**	**-6**
Female	-	-	-	-	9	7	**13**	**6**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Road	15	20	13	33	18	27	**20**	**-7**
Footpath	85	80	87	67	9	0	**0**	**0**
Off-road cycle way	-	-	-	-	73	73	**80**	**7**
Base:	***13***	***15***	***15***	***21***	***11***	***15***	***15***	

- The volume of morning cycle movements at Whangaparaoa Road, near Red Beach intersection was extremely low. It increased over the monitoring period to slightly peak between 8:00am and 8:09am (3 cyclists), similar to last year.

Figure 9.2: Morning Peak Cyclist Frequency

Whangaparaoa Road, near Red Beach intersection 2007 – 2013 (n)



9.3 Evening Peak

Environmental Conditions

- The weather was cloudy and windy throughout the evening shift. Intermittent showers were experienced between 4:00pm and 6:00pm.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The total number of cycle movements recorded at the Whangaparaoa Road, near Red Beach intersection was slightly down from 2012 (10 movements, down from 13 movements last year).
- In contrast to the morning shift, the most common movement in the evening was east along Whangaparaoa Road heading towards the Town Centre (Movement 2 = 7 cyclists).

Table 9.3: Evening Cyclist Movements

Whangaparaoa Road, near Red Beach intersection 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	6	3	4	3	6	5	**3**	**-2**
2	10	13	7	5	9	8	**7**	**-1**
Total	**16**	**16**	**11**	**8**	**15**	**13**	**10**	**-3**

- In the evening period, the majority of the cyclists using Whangaparaoa Road were adults (80 per cent). However, the share of cyclists who are school children has increased (from 8 per cent last year to 20 per cent this year).
- Ninety per cent cyclists were wearing a helmet.
- Ninety per cent of cyclists were male.
- From 2011, riding on the road was split into riding on the road and riding on the off-road cycleway. There has been a significant increase in the use of the off-road cycleway and decrease in the use of the main road (42 percentage points).

Table 9.4: Evening Cyclist Characteristics

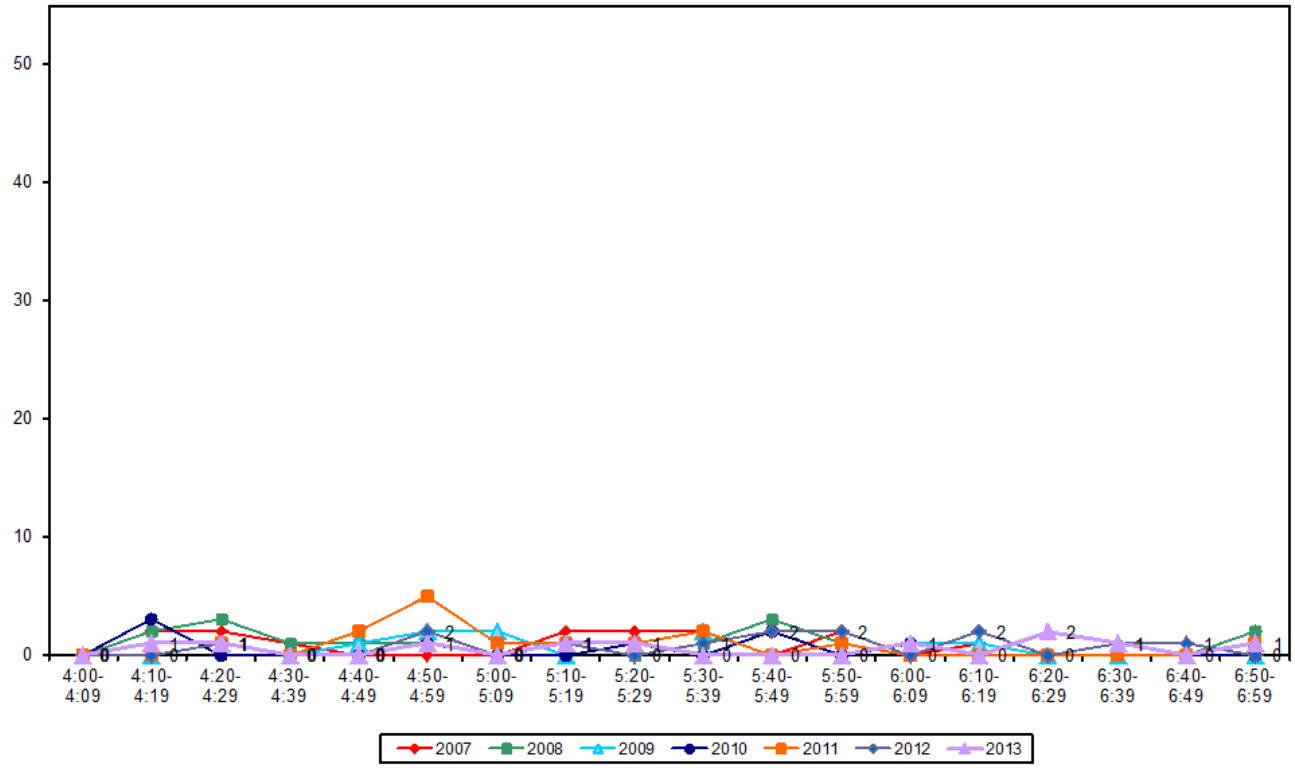
Whangaparaoa Road, near Red Beach Intersection 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	75	88	64	75	93	92	**80**	**-12**
School child	25	12	36	25	7	8	**20**	**12**
Helmet Wearing								
Helmet on head	87	94	100	63	100	85	**90**	**5**
No helmet	13	6	0	37	0	15	**10**	**-5**
Gender								
Male	-	-	-	-	87	92	**90**	**-2**
Female	-	-	-	-	13	8	**10**	**2**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Road	25	37	36	12	67	62	**20**	**-42**
Footpath	75	63	64	88	0	0	**0**	**0**
Off-road cycle way	-	-	-	-	33	38	**80**	**42**
Base:	***16***	***16***	***11***	***8***	***15***	***13***	***10***	

- Evening cyclist numbers remained relatively low over the entire peak period, with no more than two cyclists recorded over any ten minute interval. This trend was consistent with last year.

Figure 9.3: Evening Peal Cyclist Frequency

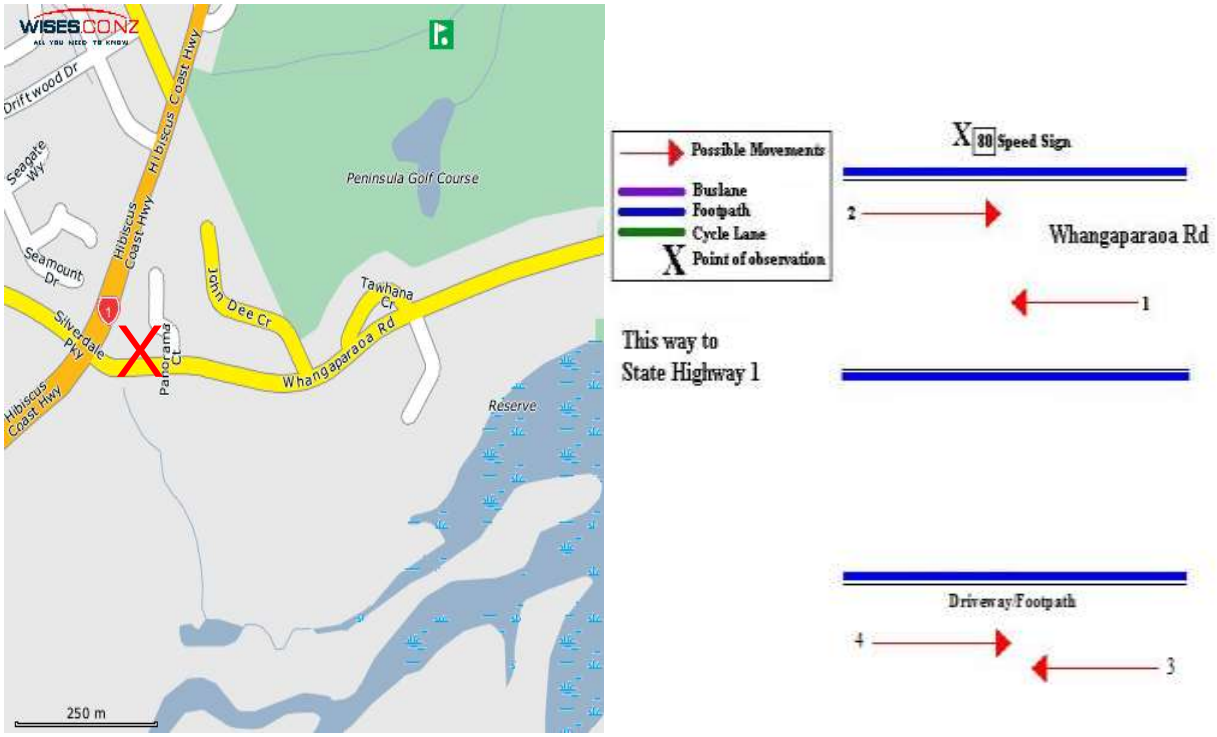
Whangaparaoa Road, near Red Beach Intersection 2007 – 2013 (n)



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**

10.2 Morning Peak

Environmental Conditions

- The weather was overcast throughout the morning monitoring period, with a spell of light drizzle from 7:38am to 7:40am.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The volume of morning cyclist traffic at Whangaparaoa Road, near the Hibiscus Coast Highway intersection has remained the same at 10 movements.
- The majority of cyclists at this site were moving straight along Whangaparaoa Road heading towards State Highway 1 (Movement 1 = 8 cyclists).

Table 10.1: Morning Cyclist Movements

Whangaparaoa Road, near Hibiscus Coast Highway intersection 2007 – 2013 (n)

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

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

- Over the morning peak, adults comprise 60 per cent of the cyclists (same as in 2012).
- All cyclists were wearing a helmet (unchanged from 2012).
- All cyclists were recorded as male, compared with 70 per cent last year.
- Half of the cyclists were riding on the road, while the other half were riding on the footpath.

Table 10.2: Morning Cyclist Characteristics

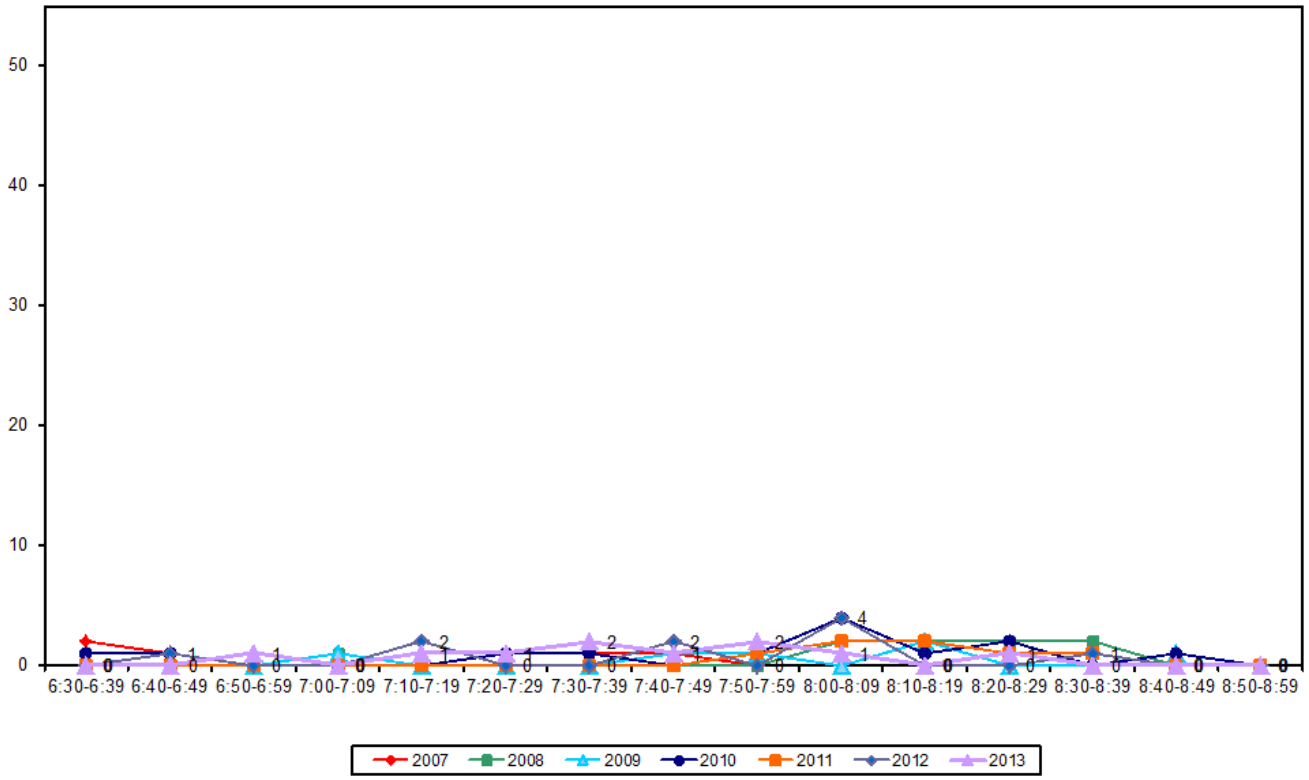
Whangaparaoa Road, near Hibiscus Coast Highway intersection 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	55	33	50	38	29	60	**60**	**0**
School child	45	67	50	62	71	40	**40**	**0**
Helmet Wearing								
Helmet on head	91	100	100	100	100	100	**100**	**0**
No helmet	9	0	0	0	0	0	**0**	**0**
Gender								
Male	-	-	-	-	100	70	**100**	**30**
Female	-	-	-	-	0	30	**0**	**-30**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Road	36	33	33	31	29	40	**50**	**10**
Footpath	64	67	67	69	71	60	**50**	**-10**
Base:	***11***	***9***	***6***	***13***	***7***	***10***	***10***	

- As in previous years, morning cyclist movement volumes were low, with no movements observed outside the 70 minutes between 7:00am and 8:09am.

Figure 10.2: Morning Peak Cyclist Frequency

Whangaparaoa Road, near Hibiscus Coast Highway intersection 2007 – 2013 (n)



10.3 Evening Peak

Environmental Conditions

- The weather was cloudy and windy throughout the evening shift. Intermittent showers were experienced between 4:00pm and 6:00pm.
- 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 remained stable over the last twelve months (9 movements, compared with 10 movements in 2012).
- The most common movement in the evening monitoring period was straight along Whangaparaoa Road heading east (Movement 2 = 5 cycle movements).

Table 10.3: Evening Cyclist Movements

Whangaparaoa Road, near Hibiscus Coast Highway intersection 2007 – 2013 (n)

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

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

- Most cyclists using this site in the evening were adults (78 per cent, down from 100 per cent last year).
- All cyclists were wearing a helmet (100 per cent, up from 90 per cent in 2012).
- All cyclists this year were male (100 per cent).
- Fifty-six per cent of cyclists were riding on the footpath (up from 50 per cent in 2012).

Table 10.4: Evening Cyclist Characteristics

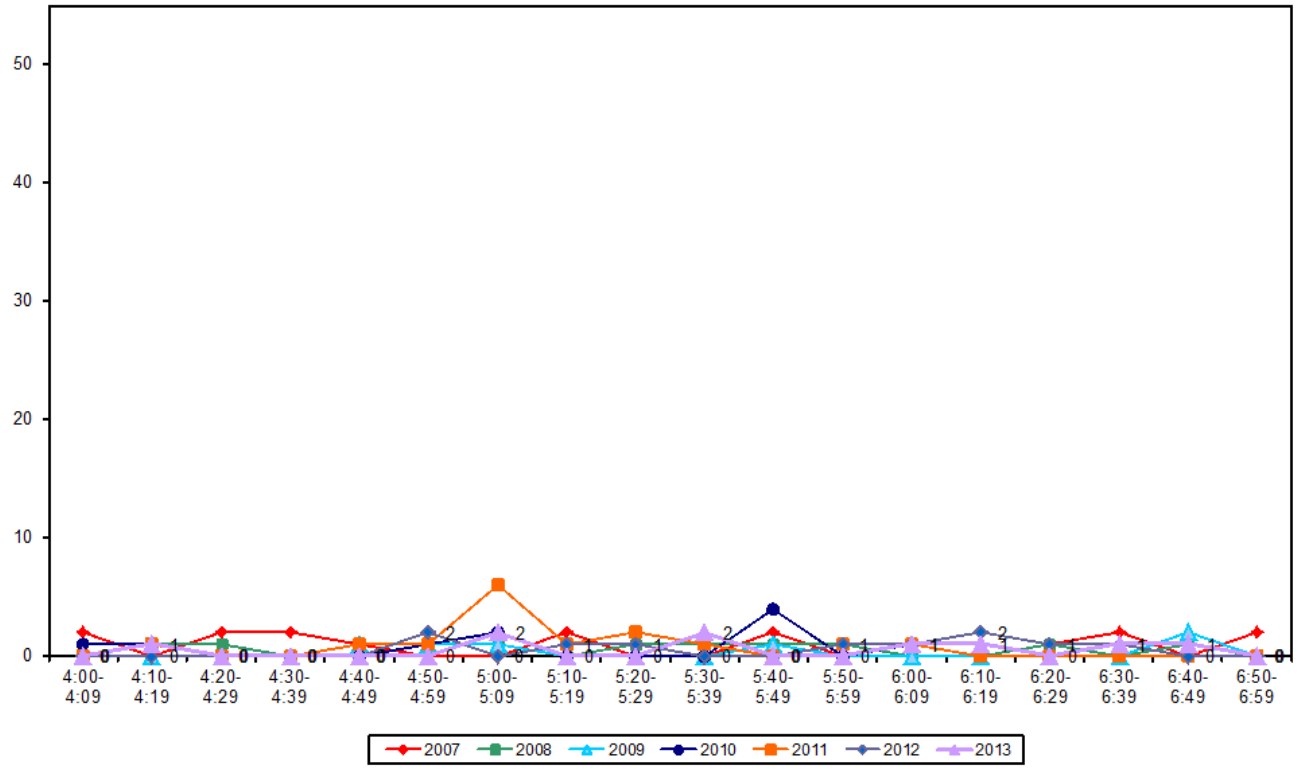
Whangaparaoa Road, near Hibiscus Coast Highway intersection 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	53	82	67	60	67	100	**78**	**-22**
School child	47	18	33	40	33	0	**22**	**22**
Helmet Wearing								
Helmet on head	82	100	100	90	93	90	**100**	**10**
No helmet	18	0	0	10	7	10	**0**	**-10**
Gender								
Male	-	-	-	-	80	90	**100**	**10**
Female	-	-	-	-	20	10	**0**	**-10**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Road	35	45	50	30	60	50	**44**	**-6**
Footpath	65	55	50	70	40	50	**56**	**6**
Base:	***17***	***11***	***6***	***10***	***15***	**10**	**9**	

- Similar to previous years, the volume of evening cyclist movements remained low over the entire peak period, with no movements recorded during most ten minute intervals.

Figure 10.3: Evening Peak Cyclist Frequency

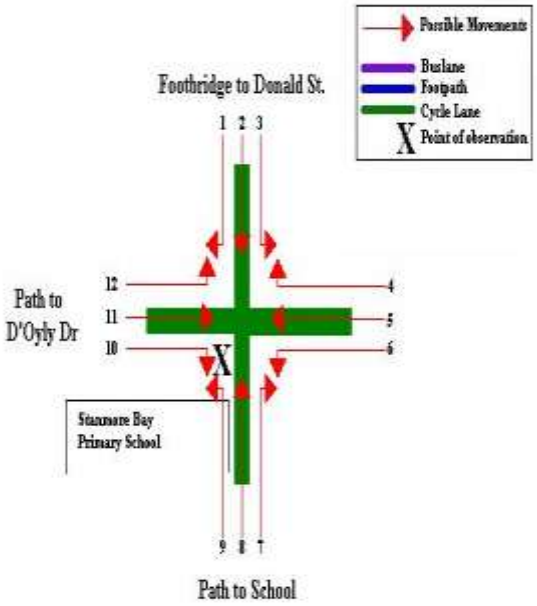
Whangaparaoa Road, near Hibiscus Coast Highway intersection 2007 – 2013 (n)



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**

11.2 Morning Peak

Environmental Conditions

- The weather was cloudy 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 13 movements recorded during the morning shift (stable from 14 movements in 2012).
- The most common movement in the morning was the left turn from the cycleway into the path to Stanmore Bay Primary School (Movement 6 = 7 cyclists).

Table 11.1: Morning Cyclist Movements

D'Oyly Reserve Cycleway 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	0	0	0	0	0	**0**	**0**
2	0	0	0	3	0	0	**0**	**0**
3	2	2	0	1	2	4	**1**	**-3**
4	0	0	0	0	0	0	**1**	**1**
5	3	5	0	1	1	2	**2**	**0**
6	3	5	4	15	6	4	**7**	**3**
7	0	0	0	2	1	0	**0**	**0**
8	0	0	0	0	0	0	**0**	**0**
9	1	0	0	0	0	0	**0**	**0**
10	0	0	0	7	0	0	**0**	**0**
11	5	7	1	2	3	4	**2**	**-2**
12	0	0	0	0	0	0	**0**	**0**
Total	**14**	**19**	**5**	**31**	**13**	**14**	**13**	**-1**

- As in previous years, the majority of cyclists at this site were children (62 per cent, down from 71 per cent last year).
- Almost all cyclists were wearing helmets (92 per cent, up from 79 per cent in 2012).
- Approximately half of the cyclists were female (46 per cent, up from 29 per cent in 2012).

Table 11.2: Morning Cyclist Characteristics

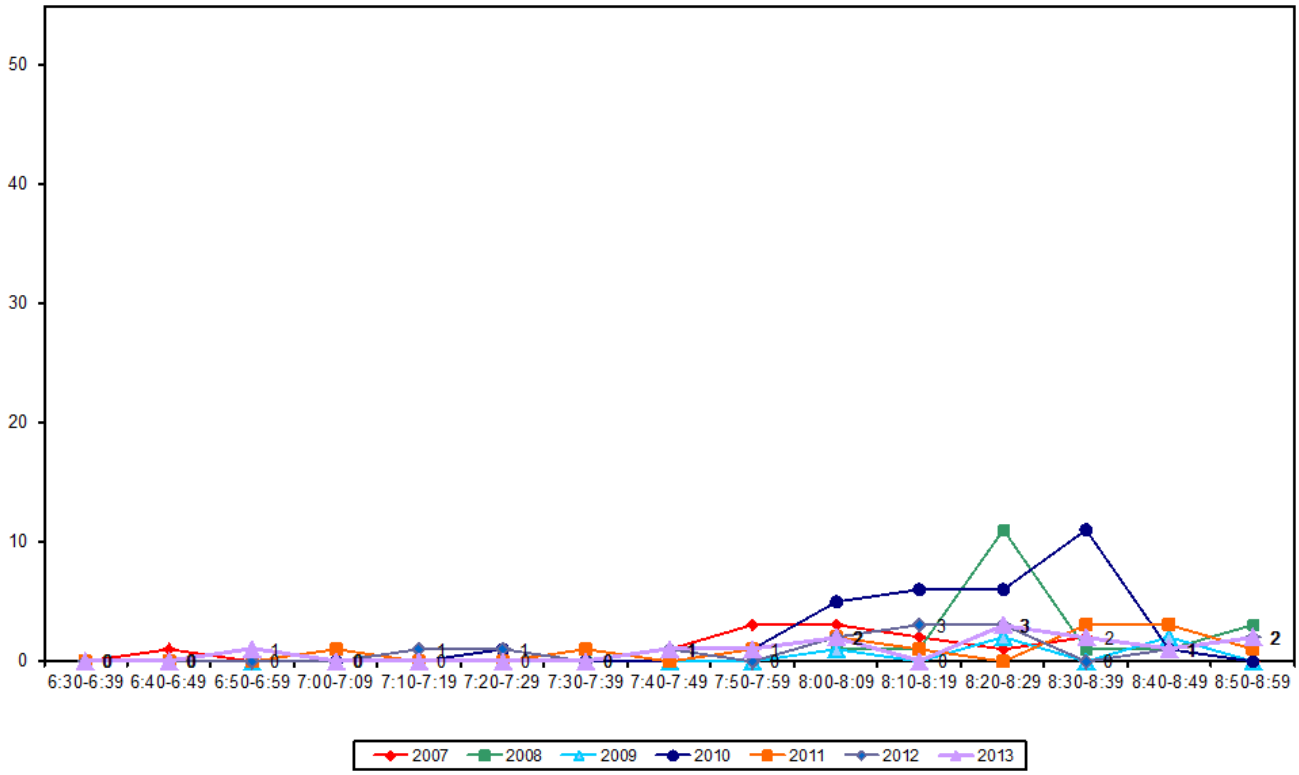
D'Oyly Reserve Cycleway 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	21	16	0	10	8	29	**38**	**9**
School child	79	84	100	90	92	71	**62**	**-9**
Helmet Wearing								
Helmet on head	64	58	20	65	62	79	**92**	**-13**
No helmet	36	42	80	35	38	21	**8**	**13**
Gender								
Male	-	-	-	-	69	71	**54**	**-17**
Female	-	-	-	-	31	29	**46**	**17**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Off-road cycleway	100	100	100	100	100	100	**100**	**0**
Base:	***14***	***19***	***5***	***31***	***13***	***14***	***13***	

- The volume of morning cycle movements was extremely low throughout the morning monitoring period, with no movements recorded for the first half of shift. Cycle volume picked up slightly from 7:40 onwards.

Figure 11.2: Morning Peak Cyclist Frequency

D'Oyly Reserve Cycleway 2007 – 2013 (n)



11.3 Evening Peak

Environmental Conditions

- The weather was overcast throughout the evening shift. Intermittent showers were experienced between 4:00pm and 6:00pm.
- There were no road works or accidents that may affect cycle counts.

Key Points

- The number of cyclist movements observed at this site has decreased, from 21 movements in 2012 to 14 movements this year.
- The most common movement in the evening was travelling along the cycleway heading towards D'Oyly Drive (Movement 5 = 6 movements).

Table 11.3: Evening Cyclist Movements

D'Oyly Reserve Cycleway 2007 – 2013 (n)

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

- More than half the cyclists using the D'Oyly Reserve cycleway were children (unchanged from 2012).
- There has been an increase in helmet-wearing this year (86 per cent, up 29 percentage points from 57 per cent last year).
- Just less than half of the cyclists were female (43 per cent, up from 29 per cent in 2012)

Table 11.4: Evening Cyclist Characteristics

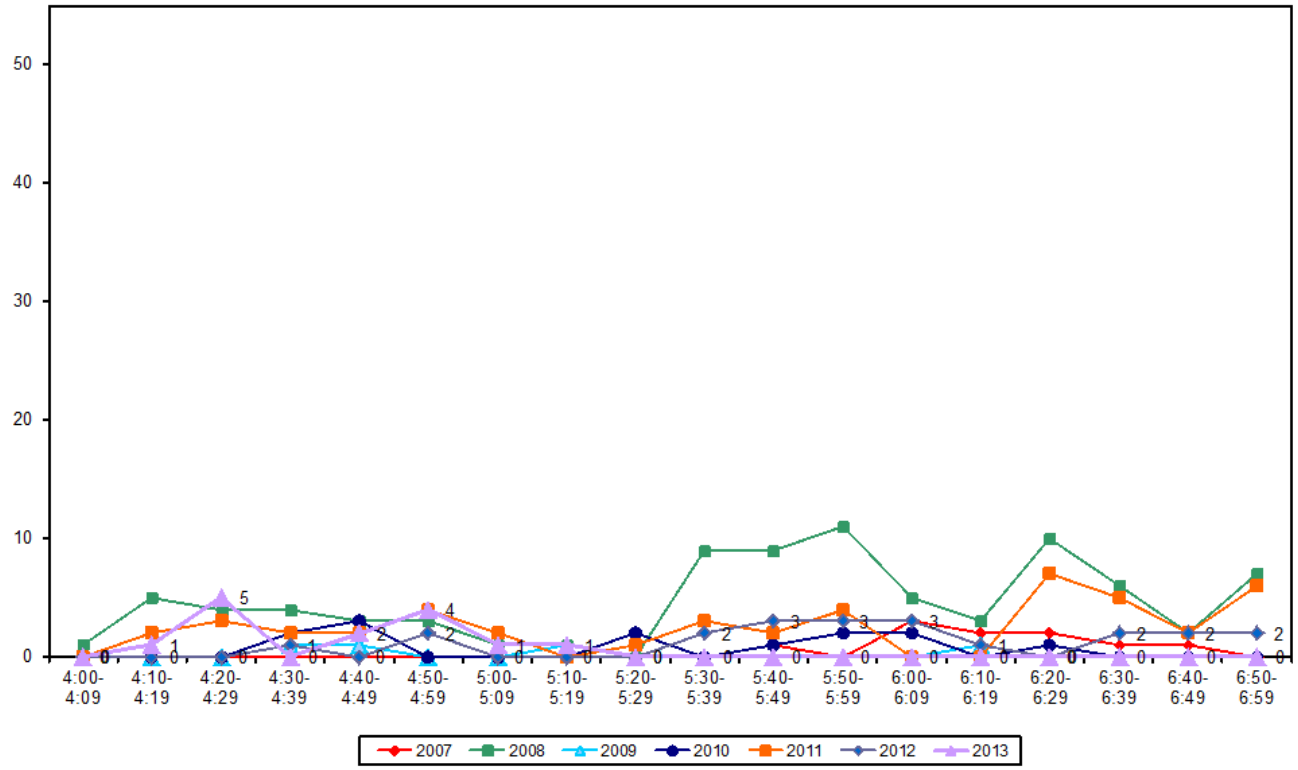
D'Oyly Reserve Cycleway 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	50	17	0	54	38	43	**43**	**0**
School child	50	83	100	46	62	57	**57**	**0**
Helmet Wearing								
Helmet on head	70	33	75	54	69	57	**86**	**29**
No helmet	30	67	25	46	31	43	**14**	**-29**
Gender								
Male	-	-	-	-	64	71	**57**	**-14**
Female	-	-	-	-	36	29	**43**	**14**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Off-road cycleway	100	100	100	100	100	100	**100**	**0**
Base:	***10***	***84***	***4***	***13***	***45***	***21***	***14***	

- Evening cycle volumes started off with two peaks, between 4:20pm and 4:29pm (5 movements) and again between 4:50pm to 4:59pm (4 movements). From there until the end of the shift, no more cyclists rode past the site.

Figure 11.3: Evening Peak Cyclist Frequency

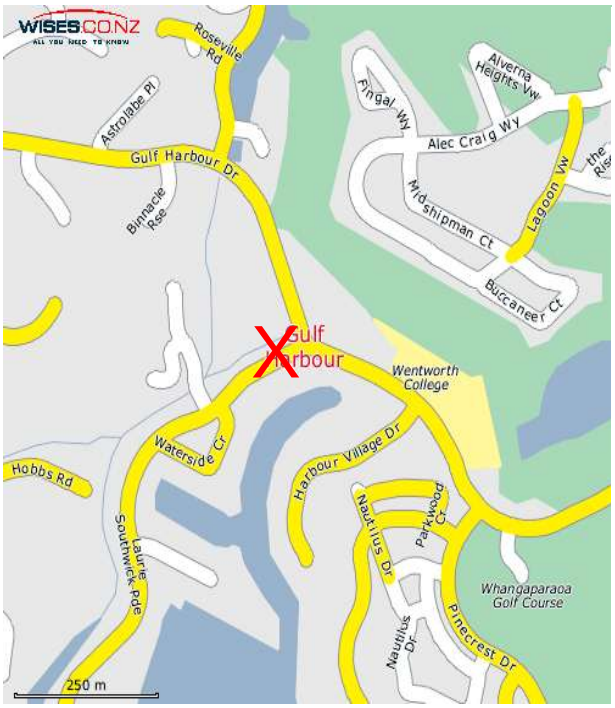
D'Oyly Reserve Cycleway 2007 – 2013 (n)

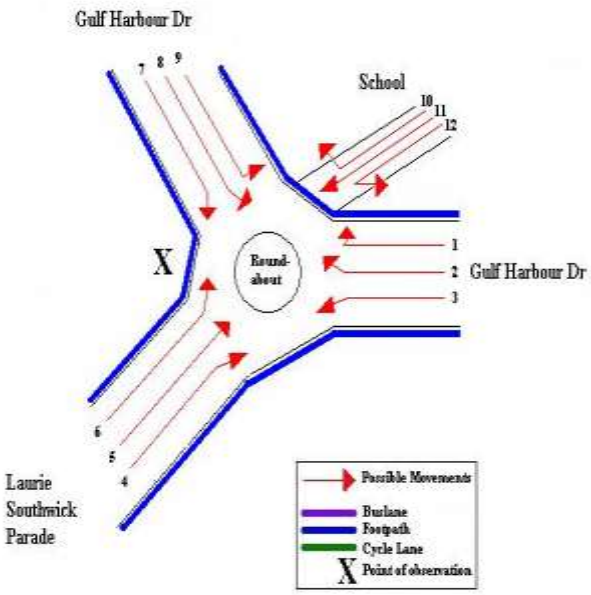


12. GULF HARBOUR DRIVE/LAURIE SOUTHWICK PARADE, WHANGAPARAOA (SITE 63)

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**

12.2 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 number of morning cyclist movements at the Gulf Harbour Drive/Laurie Southwick Parade intersection has almost doubled (13 movements last year, 24 movements this year).
- The key morning movement was turning left from Gulf Harbour Drive on to Laurie Southwick Parade (Movement 3 = 8 movements).
- Morning cyclist movement volumes at all movements at this site remained relatively stable from last year; the most noticeable increase was at Movement 3 (up 6 movements).

Table 12.1: Morning Cyclist Movements

Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2013 (n)

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

- Over the morning peak, the majority of the cyclists were adults (88 per cent, up from 67 per cent in 2012).
- Most cyclists were wearing a helmet (88 per cent, stable from 85 per cent in 2012).
- The majority of cyclists were male (83 per cent, up from 69 per cent last year).
- The share of cyclists riding on the footpath has decreased by 38 percentage points this year, to eight per cent.

Table 12.2: Morning Cyclist Characteristics

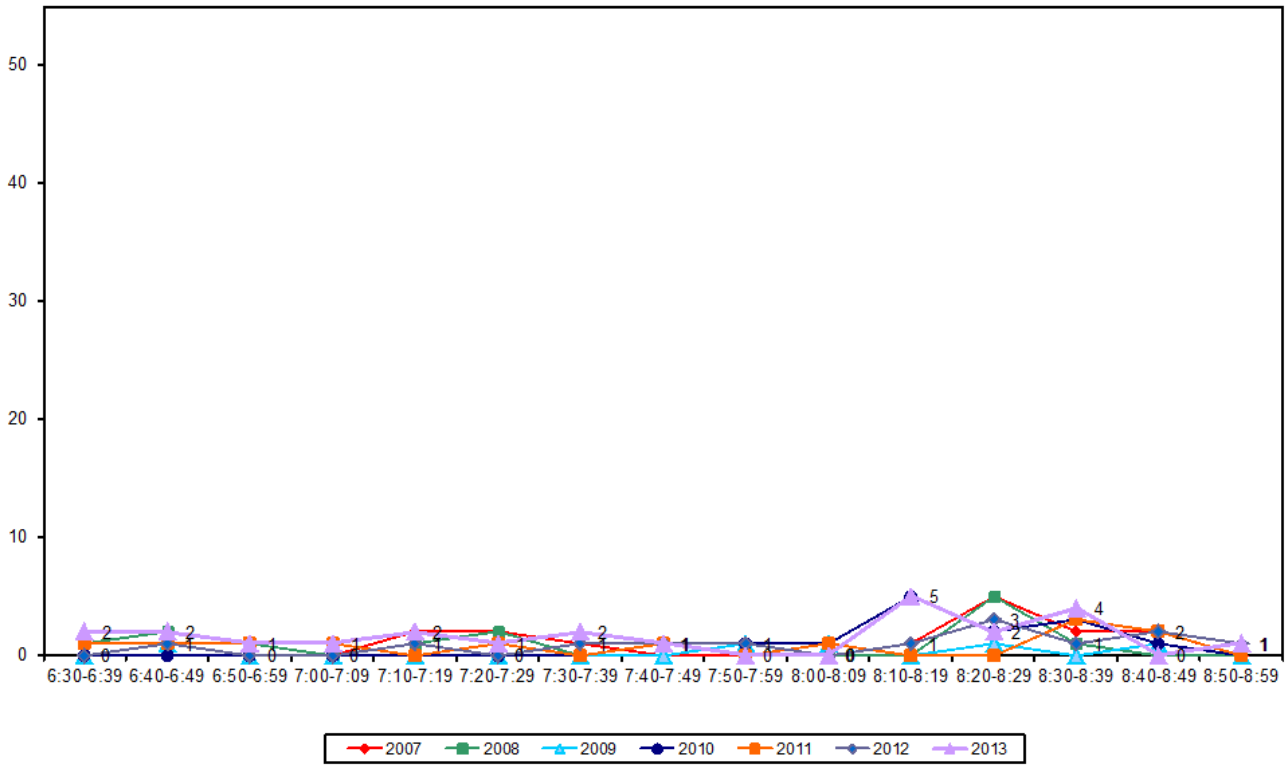
Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	53	43	40	36	75	67	**88**	**21**
School child	47	57	60	64	25	33	**12**	**-21**
Helmet Wearing								
Helmet on head	88	50	80	71	75	85	**88**	**3**
No helmet	12	50	20	29	25	15	**12**	**-3**
Gender								
Male	-	-	-	-	92	69	**83**	**14**
Female	-	-	-	-	8	31	**17**	**-14**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Road	41	50	0	36	75	54	**92**	**38**
Footpath	59	50	100	64	25	46	**8**	**-38**
Base:	***17***	***14***	***5***	***14***	***12***	**13**	**24**	

- The volume of cyclist movements was extremely low across the monitoring period. No more than one movement was recorded during most ten minute intervals. Cycle volumes peaked slightly between 8:10am and 8:19am (5 movements) and between 8:30am and 8:39am (4 movements).

Figure 12.2: Morning Peak Cyclist Frequency

Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2013 (n)



12.3 Evening Peak

Environmental Conditions

- The weather was rainy 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 decreased this year (16 movements, down from 20 movements in 2012).
- The most common movement in the evening was the right turn from Laurie Southwick Parade onto Gulf Harbour Drive (Movement 4 = 4 cyclists).
- Evening cyclist volumes were relatively stable over the last 12 months.

Table 11.3: Evening Cyclist Movements

Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2013 (n)

Movement	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	0	0	0	1	1	0	**2**	**2**
2	4	4	2	1	5	1	**2**	**1**
3	8	7	1	2	3	1	**1**	**0**
4	6	7	3	3	4	2	**4**	**2**
5	0	0	0	0	0	0	**0**	**0**
6	8	3	3	3	6	5	**2**	**-3**
7	6	2	6	7	4	4	**2**	**-2**
8	6	6	2	5	3	3	**2**	**-1**
9	0	0	0	0	0	2	**0**	**-2**
10	0	0	0	0	0	1	**0**	**-1**
11	0	0	0	0	1	0	**0**	**0**
12	1	1	0	1	0	1	**0**	**-1**
DK	-	-	-	-	-	-	**1**	**1**
Total	**39**	**30**	**17**	**23**	**27**	**20**	**16**	**-4**

- The majority of cyclists at the Gulf Harbour/Laurie Southwick Parade site during the evening peak were adults (63 per cent, down from 70 per cent in 2012).
- Sixty-three per cent of the cyclists were wearing a helmet (down from 75 per cent in 2012).
- Approximately four in five cyclists were male (81 per cent, up from 70 per cent last year).
- The share of cyclists using the road has increased from last year (56 per cent, up slightly from 50 per cent in 2012).

Table 12.4: Evening Cyclist Characteristics

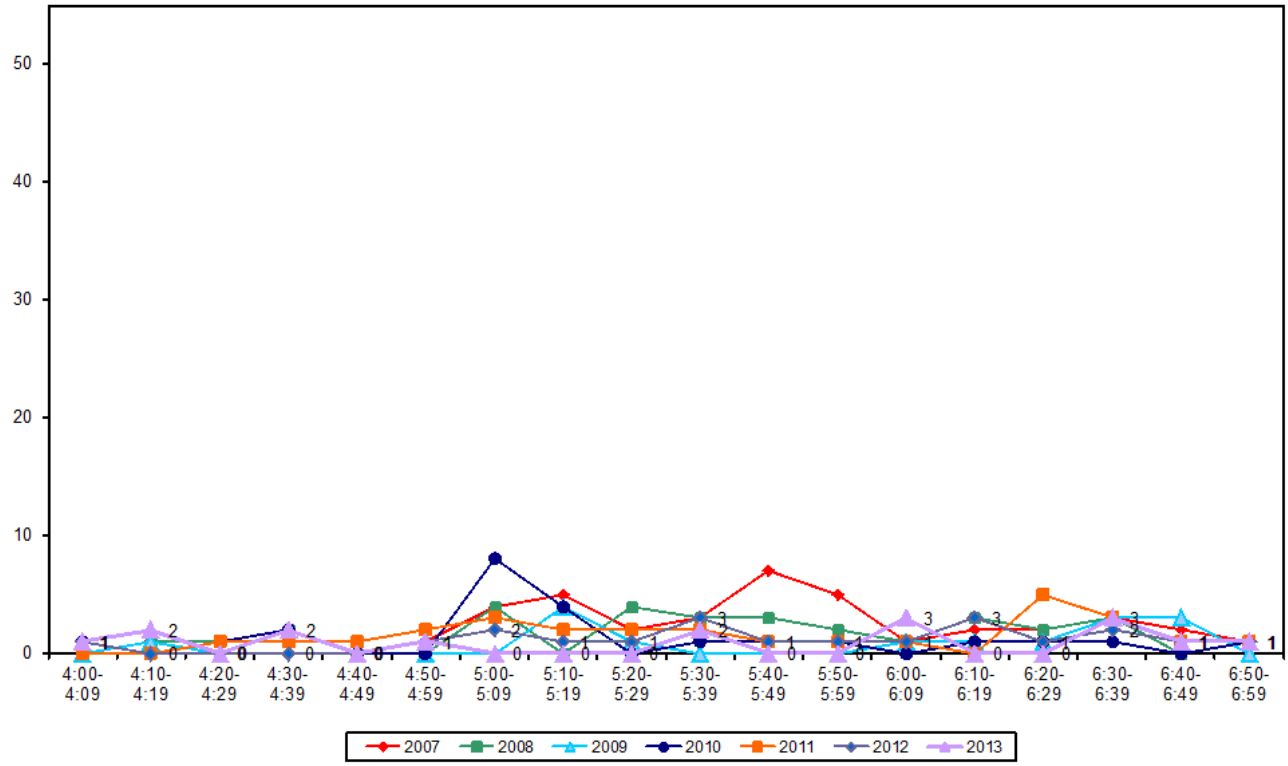
Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2013 (%)

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type								
Adult	72	77	65	74	41	70	**63**	**-7**
School child	28	23	35	26	59	30	**37**	**7**
Helmet Wearing								
Helmet on head	77	73	47	70	59	75	**63**	**-12**
No helmet	23	27	53	30	41	25	**37**	**12**
Gender								
Male	-	-	-	-	63	70	**81**	**11**
Female	-	-	-	-	37	30	**19**	**-11**
Can't tell	-	-	-	-	0	0	**0**	**0**
Where Riding								
Road	54	80	53	74	33	50	**56**	**6**
Footpath	46	20	47	26	67	50	**44**	**-6**
Base:	***39***	***30***	***17***	***23***	***27***	***20***	***16***	

- In 2013 the volume of cyclist movements was consistently low, with no more than 3 movements recorded in most 10 minute intervals.

Figure 12.3: Evening Peak Cyclist Frequency

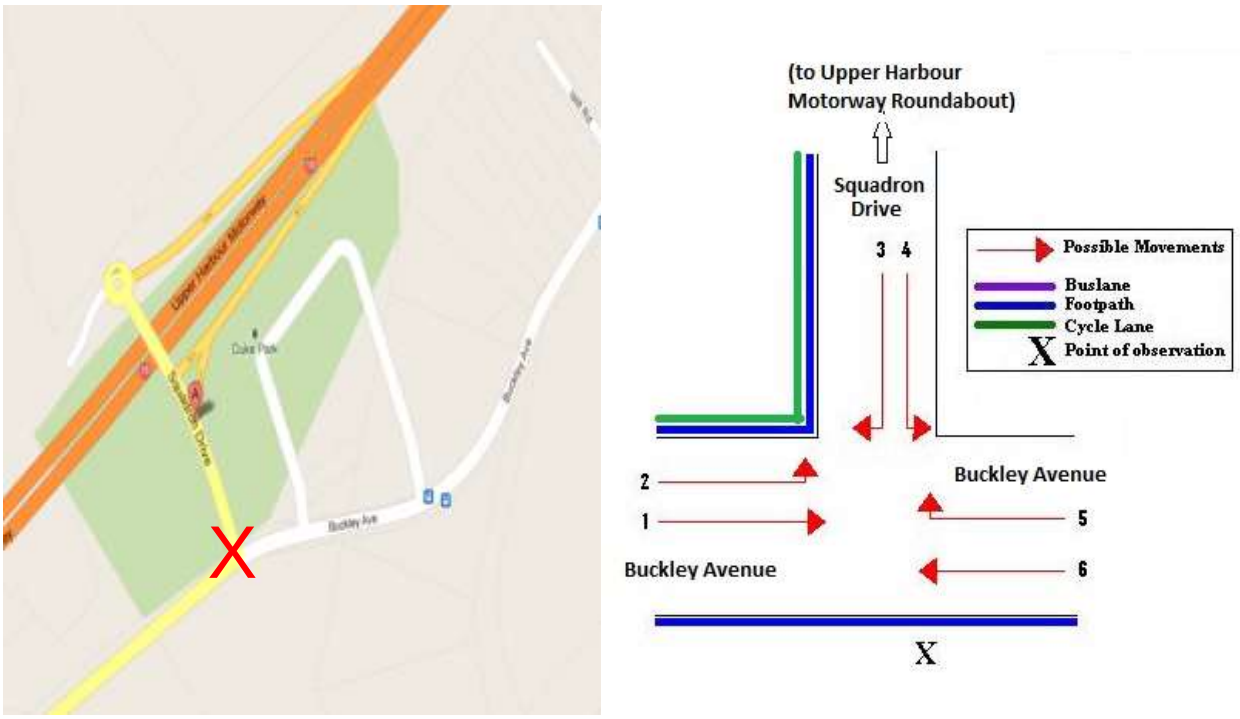
Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2013 (n)



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: 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.

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**

13.2 Morning Peak

Environmental Conditions

- The weather was fine throughout most of the morning shift. At 8:50am, light drizzle started and continued until the end of the shift.
- There were no road works or accidents that may affect cycle counts.

Key Points

- Forty-six cycle movements were recorded at the Squadron Drive/Buckley Avenue site, 18 more than last year.
- The key morning movement was turning right from Squadron Drive west on to Buckley Avenue (Movement 3 = 25 cyclists).

Table 13.1: Morning Cyclist Movements

Squadron Drive/Buckley Avenue 2010 – 2013 (n)

Movement	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	-	-	2	**2**	**0**
2	-	-	8	**15**	**7**
3	-	-	14	**25**	**11**
4	-	-	4	**1**	**-3**
5	-	-	0	**1**	**1**
6	-	-	0	**2**	**2**
Total	**37**	**34**	**28**	**46**	**18**

In 2012, due to a change in road layout, this site was re-located. Consequently results from previous years are not directly comparable.

- Almost all cyclists recorded at this site were adults (98 per cent, stable from last year).
- Almost all cyclists were wearing a helmet (98 per cent, stable from last year).
- The majority of cyclists were male (91 per cent, stable from 93 per cent in 2012).
- There has been an increase in use of the off-road cycleway (22 per cent, up from 7 per cent last year).

Table 13.2: Morning Cyclist Characteristics

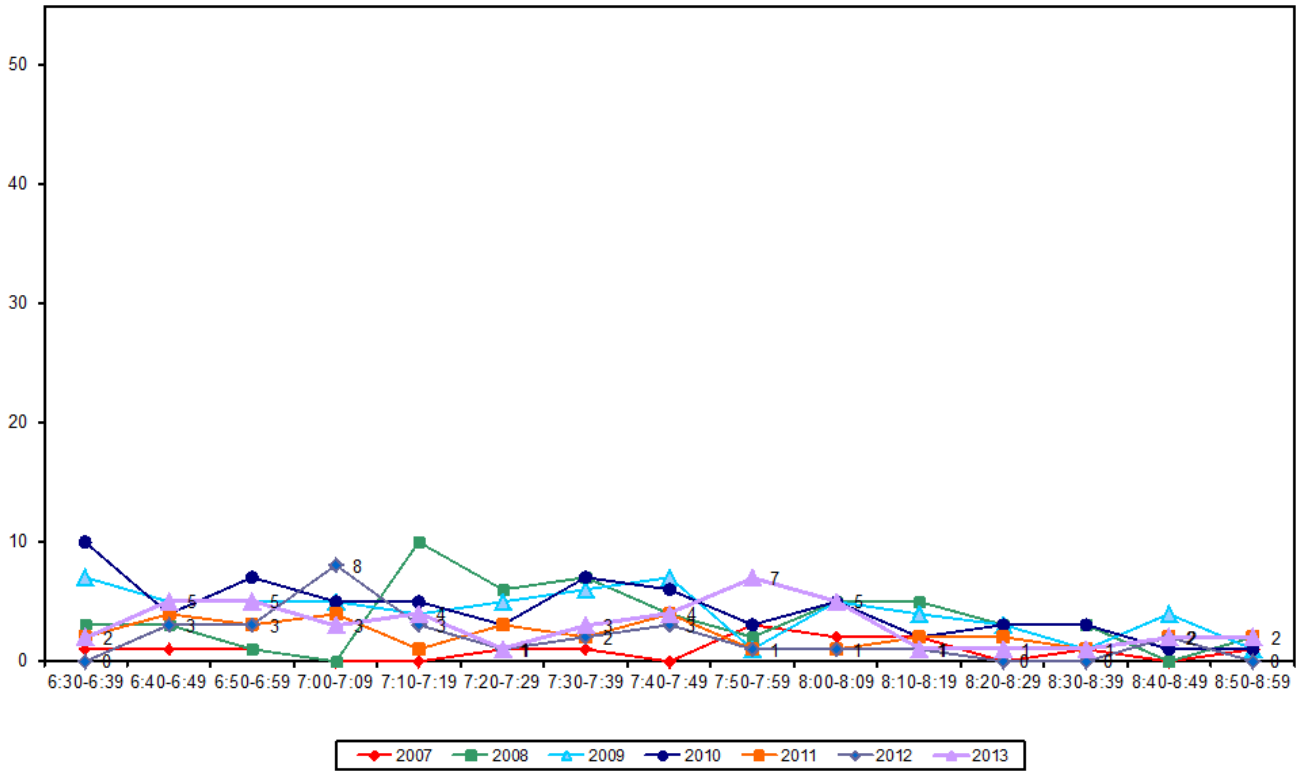
Squadron Drive/Buckley Avenue 2010 – 2013 (%)

	2010	***2011***	***2012***	***2013***	**Change 12-13**
Cyclist Type					
Adult	65	97	100	**98**	**-2**
School child	35	3	0	**2**	**2**
Helmet Wearing					
Helmet on head	97	97	100	**98**	**-2**
No helmet	3	3	0	**2**	**2**
Gender					
Male	-	97	93	**91**	**-2**
Female	-	0	7	**9**	**2**
Can't tell	-	3	0	**0**	**0**
Where Riding					
Road	19	85	93	**76**	**-17**
Footpath	0	15	0	**2**	**2**
Off-road cycleway	81	0	7	**22**	**15**
Base:	***37***	***34***	***28***	***46***	

- Two peaks were observed in the morning cycle traffic. The first occurred between 6:40am and 6:49am with five movements, the second once occurred about an hour later, between 7:50am and 7:59am with seven movements.

Figure 13.2: Morning Peak Cyclist Frequency

Squadron Drive/Buckley Avenue 2007 – 2013 (n)



13.3 Evening Peak

Environmental Conditions

- The weather was cloudy throughout the shift. Intermittent showers were experienced between 4:00pm and 5:00pm.
- 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 60, 22 less than the previous count.
- The most common movement was turning left from Buckley Avenue on to Squadron Drive (Movement 2 = 30 movements).

Table 13.3: Evening Cyclist Movements

Squadron Drive/Buckley Avenue 2010 – 2013 (n)

Movement	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	-	-	1	**1**	**0**
2	-	-	46	**30**	**-16**
3	-	-	19	**23**	**4**
4	-	-	5	**2**	**-3**
5	-	-	7	**1**	**-6**
6	-	-	4	**3**	**-1**
Total	**57**	**49**	**82**	**60**	**-22**

In 2012, due to a change in road layout, this site was re-located. Consequently results from previous years are not directly comparable.

- Over the evening peak, all cyclists using this site were adults (100 per cent).
- The majority of evening cyclists at this site were wearing a helmet (97 per cent).
- The majority of cyclists were male (92 per cent, up slightly from 87 per cent last year).
- There has been an increase in use of the off-road cycleway (25 per cent, compared to 6 per cent last year).

Table 13.4: Evening Cyclist Characteristics

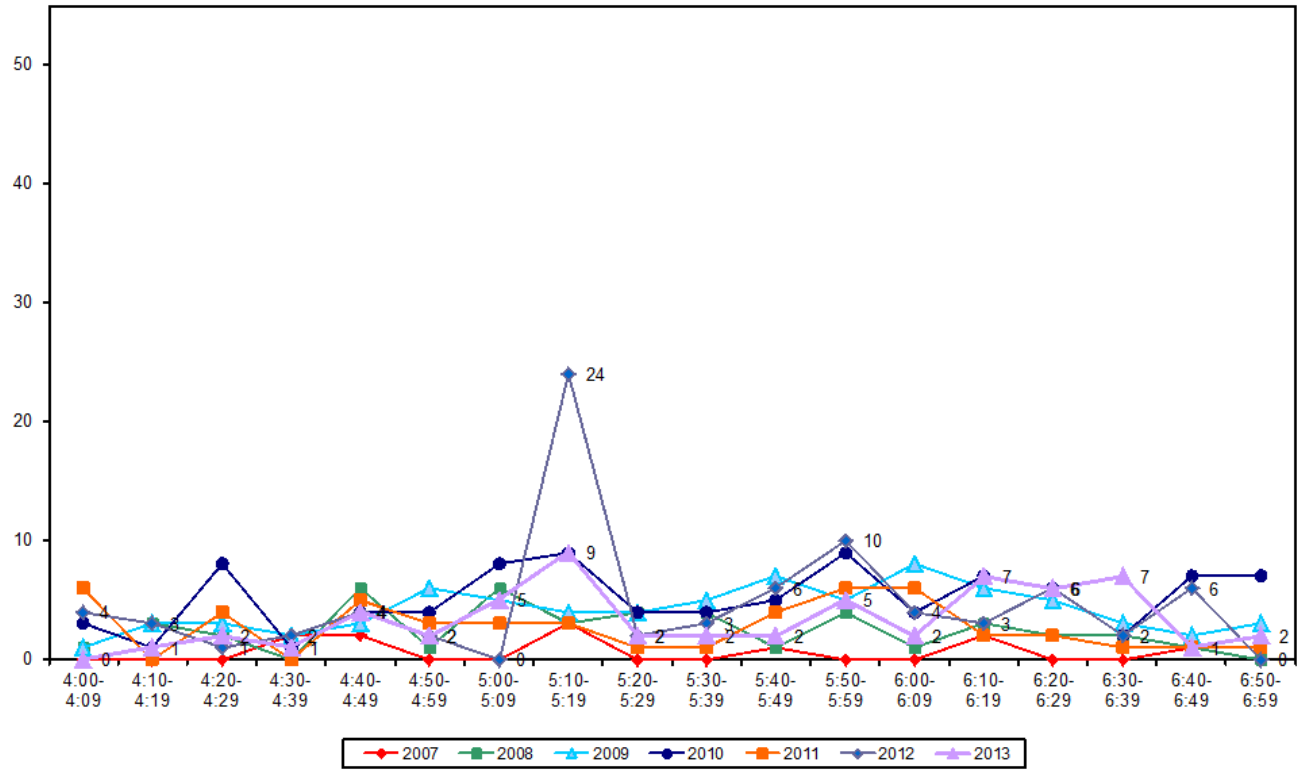
Squadron Drive/Buckley Avenue 2010 – 2013 (%)

	2010	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type					
Adult	100	92	72	**100**	**28**
School child	0	8	28	**0**	**-28**
Helmet Wearing					
Helmet on head	100	98	99	**97**	**-2**
No helmet	0	2	1	**3**	**2**
Gender					
Male	-	90	87	**92**	**5**
Female	-	6	13	**8**	**-5**
Can't tell	-	4	0	**0**	**0**
Where Riding					
Road	32	73	94	**72**	**-22**
Footpath	0	27	0	**3**	**3**
Off-road cycleway	68	0	6	**25**	**19**
Base:	***57***	***49***	***82***	***60***	

- Evening cyclist volumes were variable throughout the monitoring period. Cycle volume peaked between 5:10pm and 5:19pm (9 movements). A similar peak was found last year, occurring at the same time but with a greater volume (24 movements).

Figure 14.3: Evening Peak Cyclist Frequency

Squadron Drive/Buckley Avenue 2007 – 2013 (n)



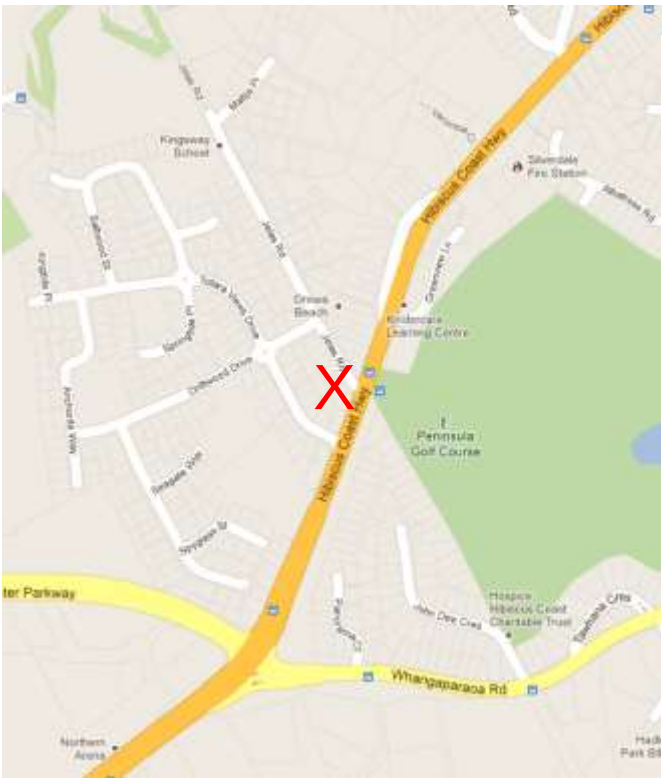
Note: In 2013, 23 per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

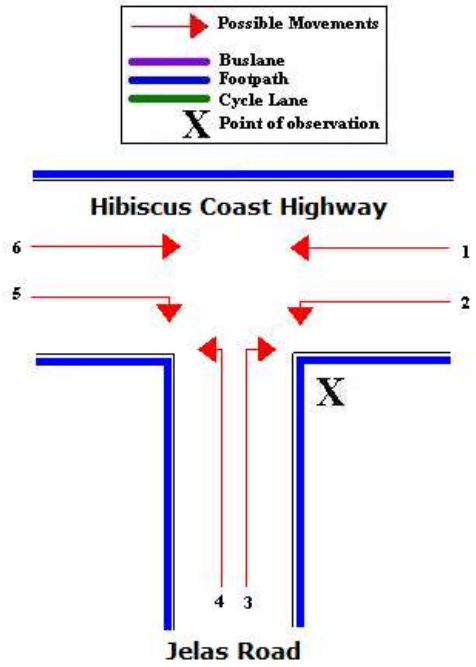
- *8 cyclists at 5:17pm*
- *3 cyclists at 5:53pm*
- *3 cyclists at 6:39pm.*

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 from previous years are not directly comparable.

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**

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 increased this year (28 movements, up from 20 movements in 2012).
- The most common movement in the morning was straight along Hibiscus Coast Highway heading northeast (Movement 1 = 14 cyclists).

Table 14.1: Morning Cyclist Movements

Hibiscus Coast Highway/Jelas Road 2009 – 2013 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	-	-	-	-	14	**14**
2	-	-	-	-	0	**-12**
3	-	-	-	-	0	**-4**
4	-	-	-	-	3	**-1**
5	-	-	-	-	3	**3**
6	-	-	-	-	8	**8**
Total	**15**	**24**	**19**	**20**	**28**	**8**

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, half of the cyclists using this site were children (50 per cent, down from 60 per cent in 2012).
- Most cyclists were wearing a helmet (89 per cent, down from 95 per cent in 2012).
- Most cyclists were male (89 per cent, up slightly from 85 per cent in 2012).
- The greatest share of cyclists (57 per cent) were riding on the footpath.

Table 14.2: Morning Cyclist Characteristics

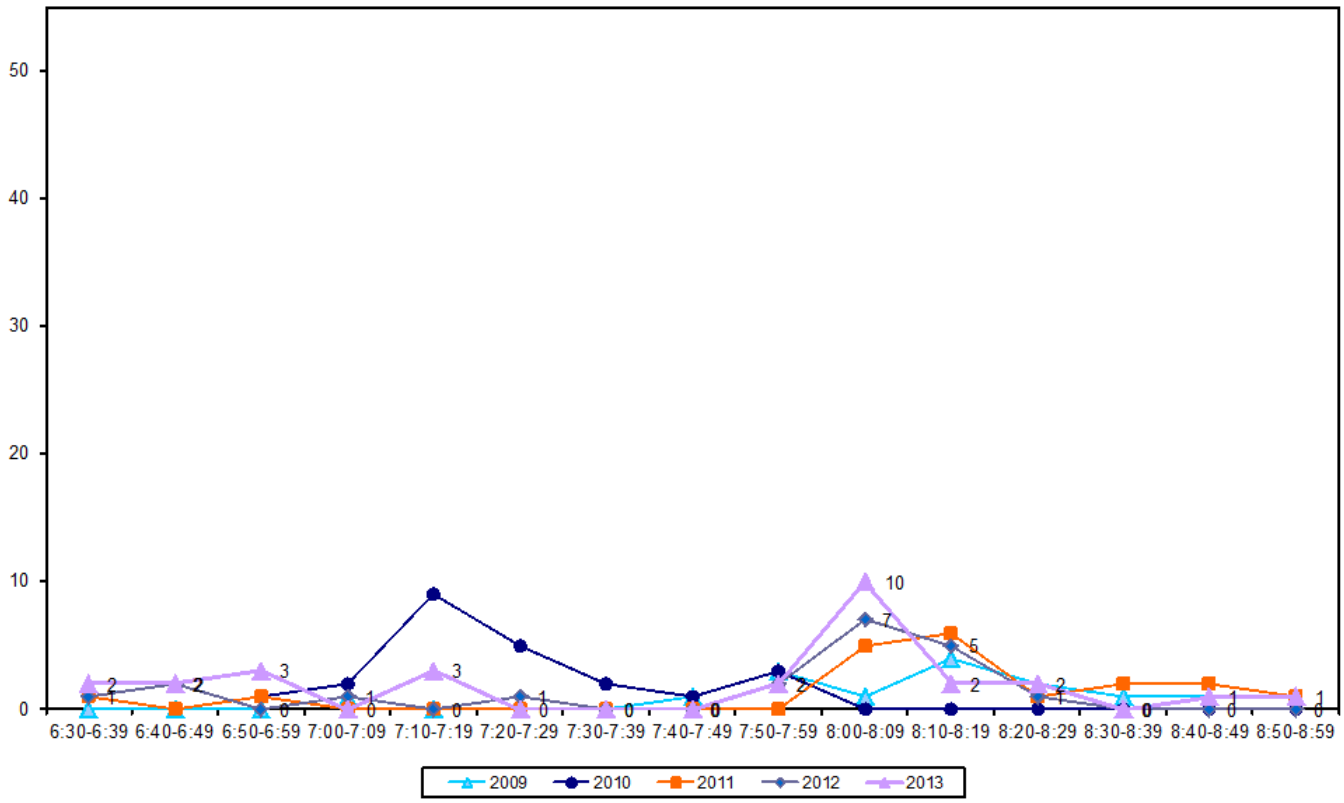
Hibiscus Coast Highway/Jelas Road 2009 – 2013 (%)

	2009	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type						
Adult	27	25	53	40	**50**	**10**
School child	73	75	47	60	**50**	**-10**
Helmet Wearing						
Helmet on head	93	88	100	95	**89**	**-6**
No helmet	7	12	0	5	**11**	**6**
Gender						
Male	-		100	85	**89**	**4**
Female	-		0	15	**11**	**-4**
Can't tell	-		0	0	**0**	**0**
Where Riding						
Road	-	-	-	-	**43**	**-**
Footpath	-	-	-	-	**57**	**-**
Off-road cycleway	-	-	-	-	**0**	**-**
Base:	***15***	***24***	***19***	***20***	***28***	

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, aside from a peak between 8:00am and 8:09am (10 movements). A similar peak was observed last year (7 movements).

Figure 14.2: Morning Peak Cyclist Frequency
Hibiscus Coast Highway/Jelas Road 2009 – 2013 (n)



Note: In 2013, 21 per cent of the total cycle movements in the morning peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- *3 cyclists at 6:55am*
- *3 cyclists at 8:03am.*

14.3 Evening Peak Morning Peak

Environmental Conditions

- The weather was cloudy throughout the evening shift.
- The police were conducting breath tests from 6.57pm on Hibiscus Coast Highway.
- 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 relatively low, with 15 movements recorded in 2013 (stable from 14 movements in 2012).
- The key movement in the evening is travelling straight along Hibiscus Coast Highway heading northeast (Movement 1 = 7 movements).

Table 14.3: Evening Cyclist Movements

Hibiscus Coast Highway/Jelas Road 2009 – 2013 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	-	-	-	-	7	**7**
2	-	-	-	-	1	**-7**
3	-	-	-	-	2	**2**
4	-	-	-	-	3	**-3**
5	-	-	-	-	1	**1**
6	-	-	-	-	1	**1**
Total	**23**	**15**	**11**	**14**	**15**	**1**

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.

- The greatest share of cyclists using the Hibiscus Coast Highway/Jelas Road site were adults (67 per cent, down from 79 per cent in 2012).
- Three-quarters of cyclists were wearing a helmet (73 per cent, down from 79 per cent in 2012).
- The majority of cyclists were male (80 per cent, stable from last year).
- The greatest share of cyclists (53 per cent) were riding on the footpath.

Table 14.4: Evening Cyclist Characteristics

Hibiscus Coast Highway/Jelas Road 2009 – 2013 (%)

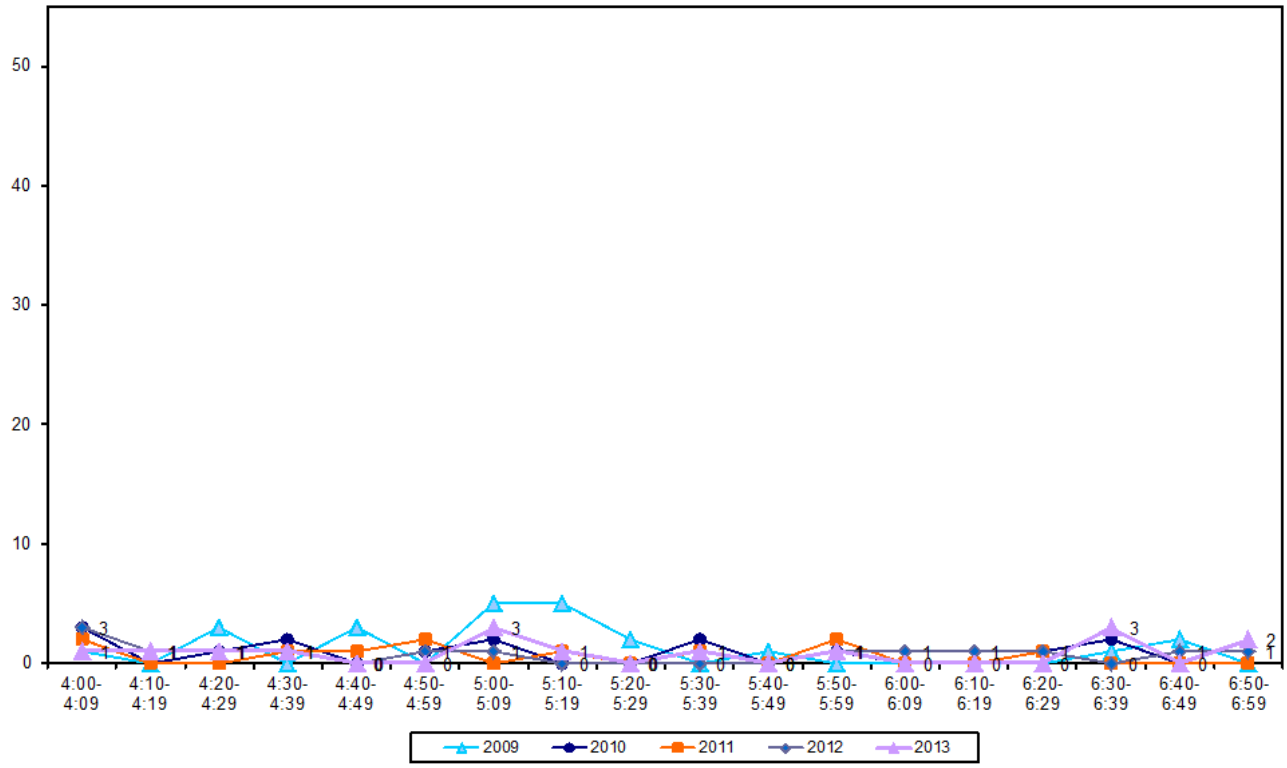
	2009	***2010***	***2011***	***2012***	***2013***	**Change 12-13**
Cyclist Type						
Adult	17	53	73	79	**67**	**-12**
School child	83	47	27	21	**33**	**12**
Helmet Wearing						
Helmet on head	74	93	73	79	**73**	**-6**
No helmet	26	7	27	21	**27**	**6**
Gender						
Male	-	-	91	79	**80**	**1**
Female	-	-	9	21	**20**	**-1**
Can't tell	-	-	0	0	**0**	**0**
Where Riding						
Road	-	-	-	-	**47**	**-**
Footpath	-	-	-	-	**53**	**-**
Off-road cycleway	-	-	-	-	**0**	**-**
Base:	***23***	***15***	***11***	***14***	***15***	

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.

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

Figure 14.3: Evening Peak Cyclist Frequency

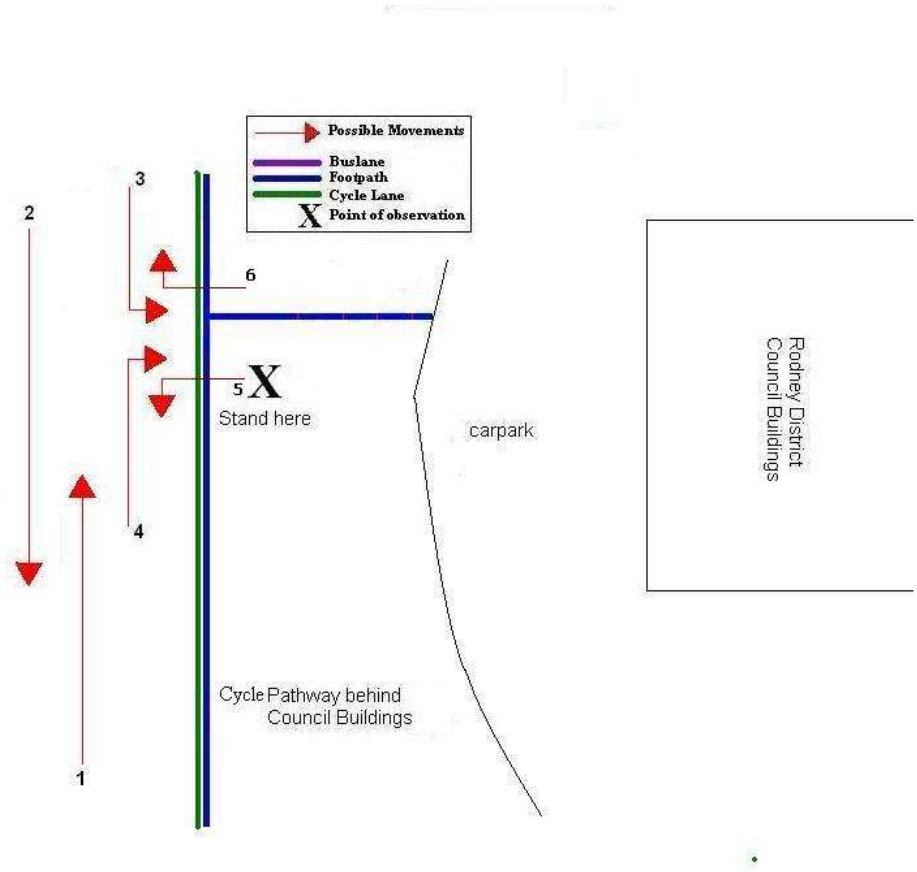
Hibiscus Coast Highway/Jelas Road 2009 – 2013 (n)



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**

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 2013 has increased slightly from last year (66 movements, up from 61 movements in 2012).
- Most of the movements in the morning were heading north along the cycleway (Movement 1 = 58 cyclists).
- Changes in morning cyclist volumes at this site since 2012 were most noticeable at Movement 1 and Movement 2 (up 4 movements each).

Table 15.1: Morning Cyclist Movements

Behind Auckland Council Building, Orewa 2009 – 2013 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	73	70	71	54	**58**	**4**
2	1	3	1	2	**6**	**4**
3	0	0	0	1	**0**	**-1**
4	1	0	0	2	**1**	**-1**
5	0	0	0	2	**0**	**-2**
6	0	0	0	0	**1**	**1**
Total	**75**	**73**	**72**	**61**	**66**	**5**

- The majority of morning cyclists at this site were school children (83 per cent, stable from 82 per cent in 2012).
- Eighty-nine per cent of the cyclists were wearing a helmet (up from 80 per cent in 2012).
- Most of the cyclists were male (86 per cent, up slightly from 80 per cent last year).

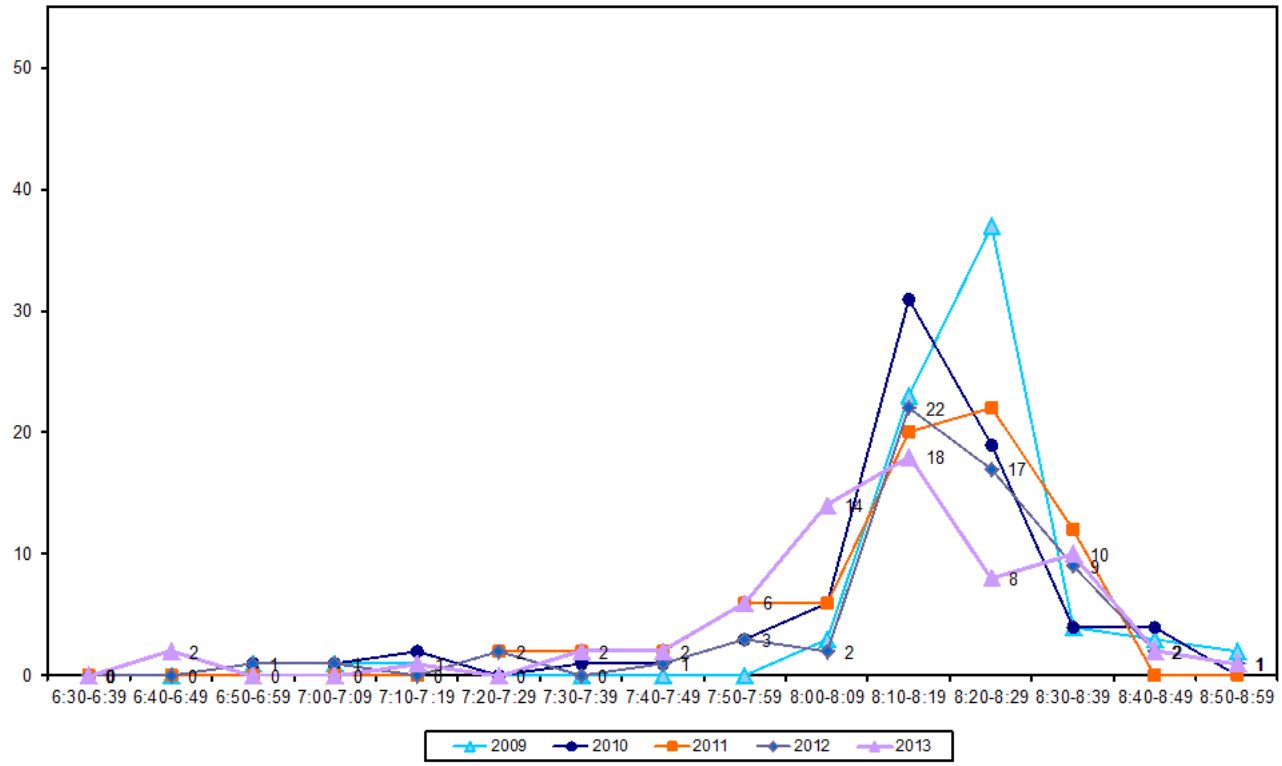
Table 15.2: Morning Cyclist Characteristics

Behind Auckland Council Building, Orewa 2009 – 2013 (%)

	2009	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type						
Adult	8	12	11	18	**17**	**-1**
School child	92	88	89	82	**83**	**1**
Helmet Wearing						
Helmet on head	84	88	89	80	**89**	**9**
No helmet	16	12	11	20	**11**	**-9**
Gender						
Male	-	-	89	80	**86**	**6**
Female	-	-	7	20	**14**	**-6**
Can't tell	-	-	4	0	**0**	**0**
Where Riding						
Off-road cycleway	100	100	100	100	**100**	**0**
Base:	***75***	***73***	***72***	***61***	***66***	

- The volume of morning cyclist movements was very low until 8:00 am, where it peaked between 8:10am and 8:19am (18 movements). The trend was consistent with previous years.

Figure 15.2: Morning Peak Cyclist Frequency
Behind Auckland Council Building, Orewa 2009 – 2013 (n)



Note: In 2013, 12 per cent of the total cycle movements in the morning peak (n=8) 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 8:15am*
- *4 cyclists at 8:31am.*

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-three cycle movements were recorded during the evening peak at this site, slightly lower than the 28 movements recorded in 2012.
- The key movement was to head south along the cycleway (Movement 2 = 11 cyclists).
- The most noticeable changes in movements from 2012 were Movement 5 (down 5 movements) and Movement 1 (up 4 movements).

Table 15.3: Evening Cyclist Movements
Behind Auckland Council Building, Orewa 2009 – 2013 (n)

Movement	*2009*	*2010*	*2011*	*2012*	*2013*	Change 12-13
1	5	10	28	2	**6**	**4**
2	4	12	31	14	**11**	**-3**
3	0	0	1	0	**0**	**0**
4	1	0	1	3	**0**	**-3**
5	1	0	4	9	**4**	**-5**
6	0	0	1	0	**2**	**2**
Total	**11**	**22**	**66**	**28**	**23**	**-5**

- The majority of cyclists at this site in the evening were adults (65 per cent, stable from last year).
- Three in four cyclists were wearing a helmet (74 per cent, a 17 percentage point increase from 57 per cent in 2012).
- Forty-three per cent of the cyclists were female (up from 29 per cent last year).

Table 14.4: Evening Cyclist Characteristics

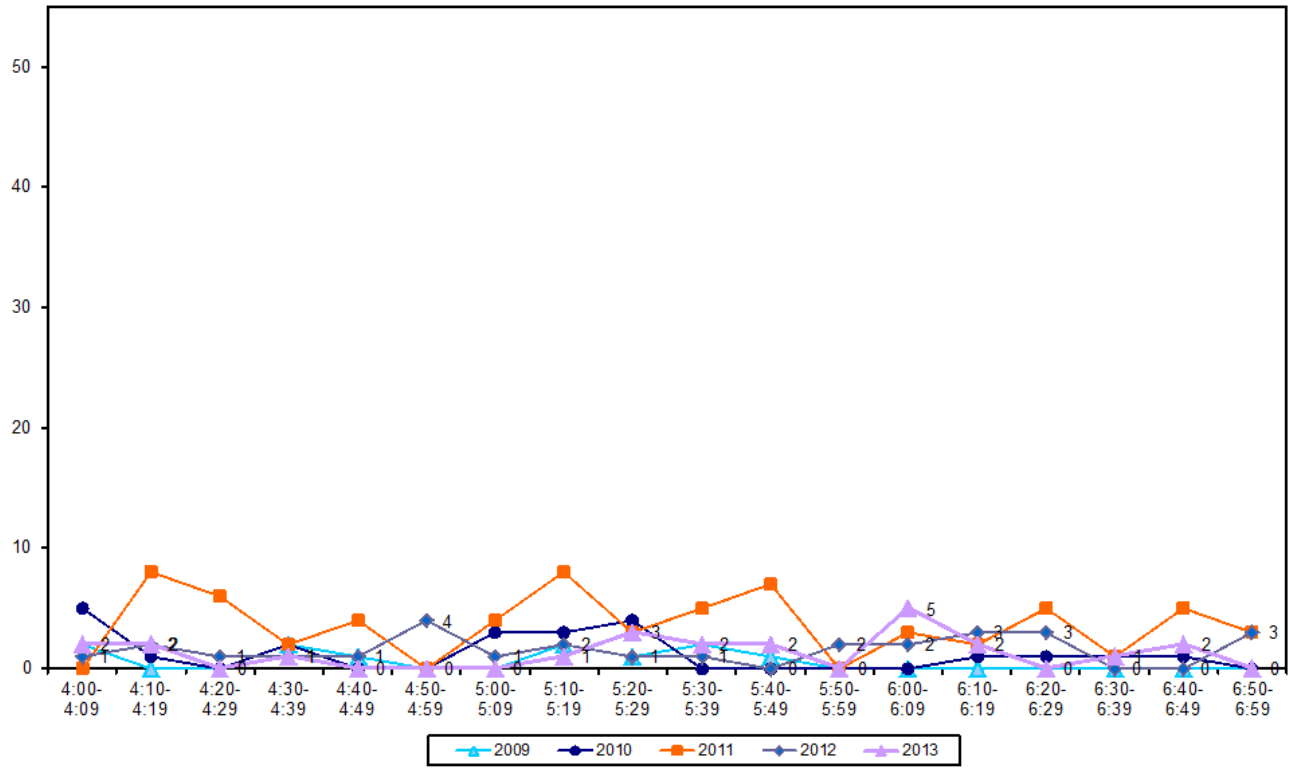
Behind Auckland Council Building, Orewa 2009 – 2013 (%)

	2009	*2010*	*2011*	*2012*	*2013*	Change 12-13
Cyclist Type						
Adult	91	55	52	64	**65**	**1**
School child	9	45	48	36	**35**	**-1**
Helmet Wearing						
Helmet on head	82	59	77	57	**74**	**17**
No helmet	18	41	23	43	**26**	**-17**
Gender						
Male	-	-	71	71	**57**	**-14**
Female	-	-	29	29	**43**	**14**
Can't tell	-	-	0	0	**0**	**0**
Where Riding						
Off-road cycleway	100	100	100	100	**100**	**0**
Base:	***11***	***22***	***66***	***28***	***23***	

- Similar to last year, cyclist movement volumes were low during most of the monitoring period. Volumes peaked slightly between 6:00pm and 6:09pm, with five movements.

Figure 15.3: Evening Peak Cyclist Frequency

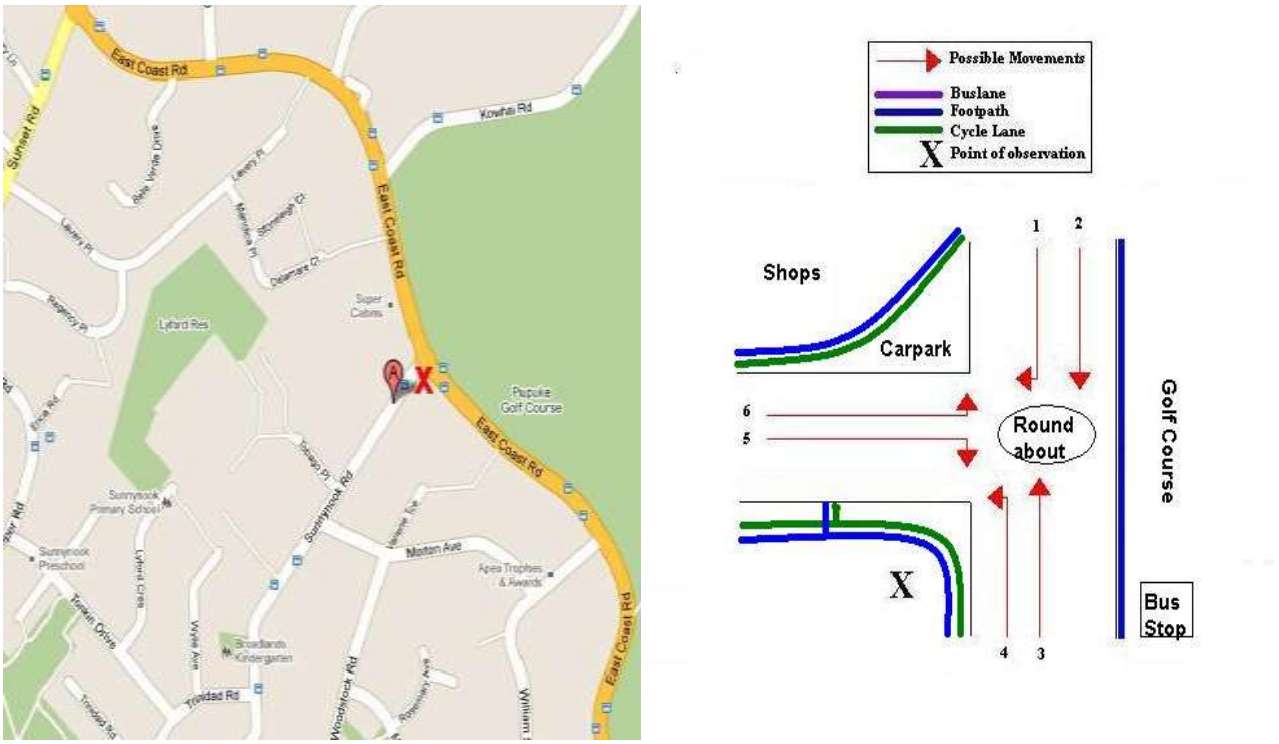
Behind Auckland Council Building, Orewa 2009 – 2013 (n)



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**	**220**

16.2 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 Sunnynook/East Coast Road intersection in 2013 has remained stable since last year (96 movements).
- The key morning movement was continuing straight on East Coast Road travelling in a south-easterly direction (Movement 2 = 65 movements).
- The most noticeable change in morning cyclist movements was as Movement 2 (down 9 movements from 2012).

Table 16.1: Morning Cyclist Movements

Sunnynook Road/East Coast Road, Sunnynook 2011 – 2013 (n)

Movement	*2011*	*2012*	*2013*	Change 12-13
1	5	1	**2**	**1**
2	42	74	**65**	**-9**
3	25	17	**22**	**5**
4	6	0	**0**	**0**
5	0	2	**3**	**1**
6	3	1	**4**	**3**
Total	**81**	**95**	**96**	**1**

- Over the morning peak, the majority of cyclists were adults (84 per cent, down from 93 per cent at the previous measure).
- Almost all cyclists were wearing a helmet (98 per cent).
- The majority of cyclists continued to be male (84 per cent, unchanged from 2012).
- Most cyclists were riding on the road (75 per cent, down from 88 per cent last year).

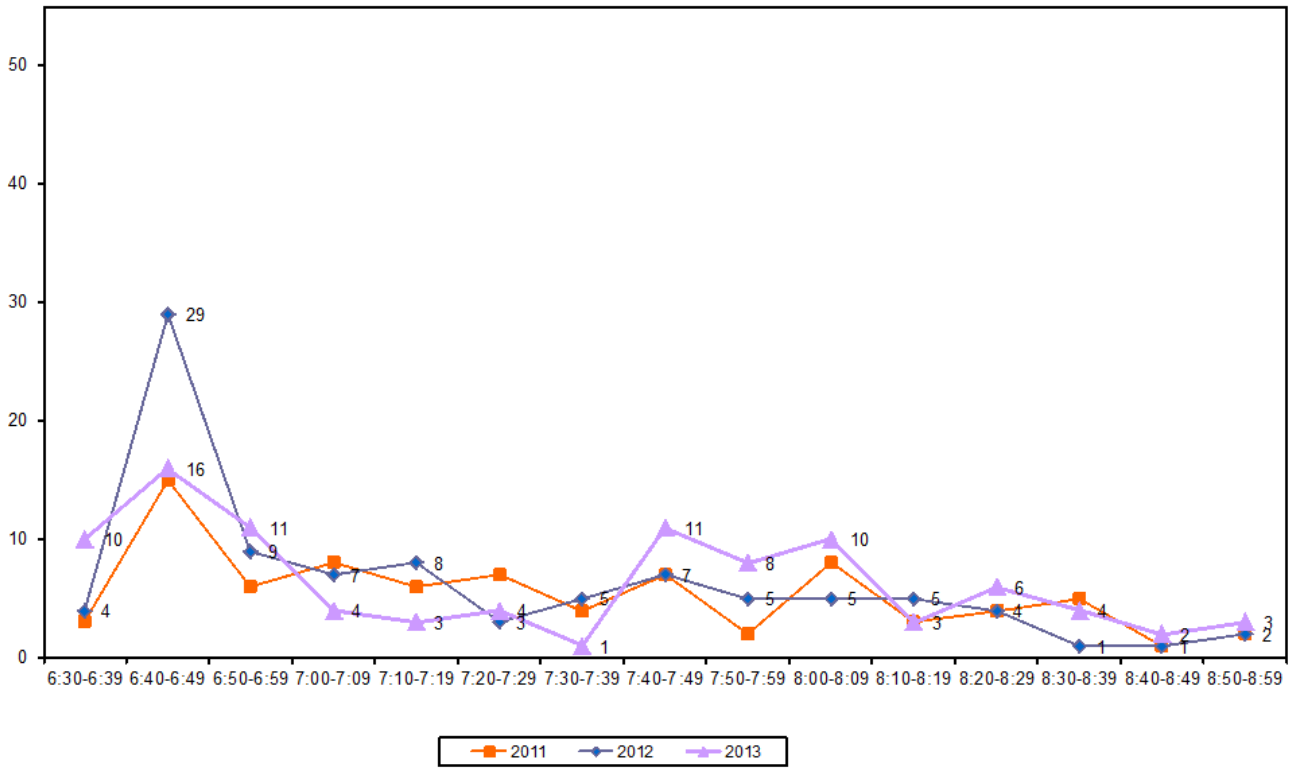
Table 16.2: Morning Cyclist Characteristics

Sunnynook Road/East Coast Road, Sunnynook 2011 – 2013 (%)

	2011	*2012*	*2013*	*Change 12-13*
Cyclist Type				
Adult	88	93	**84**	**-9**
School child	12	7	**16**	**9**
Helmet Wearing				
Helmet on head	99	100	**98**	**-2**
No helmet	1	0	**2**	**2**
Gender				
Male	77	84	**84**	**0**
Female	23	16	**15**	**-1**
Can't tell	0	0	**1**	**1**
Where Riding				
Road	79	88	**75**	**-13**
Footpath	2	12	**25**	**13**
Off-road cycle way	19	0	**0**	**0**
Base:	***81***	***95***	***96***	

- Morning cyclist movement volumes reached their largest peak early in the observation period (6:40am and 6:49am = 16 movements), then decreased in the next hour before reaching a smaller peak between 7:40am and 8:09am (3 ten-minute intervals with a total of 29 movements). Cycle traffic this year resembled the trends from previous years.

Figure 16.2: Morning Peak Cyclist Frequency
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2013 (n)



16.3 Evening Peak

Environmental Conditions

- The weather was cloudy throughout the evening shift. Intermittent showers were recorded between 4:00pm and 5:00pm.
- There were no road works or accidents that may affect cycle counts.

Key Points

- Cyclist movement volumes have decreased slightly this year, from 60 in 2012 to 53 movements.
- The key movements were to continue straight along East Coast Road in a north/north westerly direction (Movement 3 = 29 movements) and straight on East Coast Road travelling in a south-easterly direction (Movement 2 = 19 movements).
- Evening cyclist volumes have decreased most noticeably at Movement 3 (down 6 movements).

Table 16.3: Evening Cyclist Movements

Sunnynook Road/East Coast Road, Sunnynook 2011 – 2013 (n)

Movement	*2011*	*2012*	*2013*	Change 11-12
1	2	1	**1**	**0**
2	33	22	**19**	**-3**
3	49	35	**29**	**-6**
4	2	0	**2**	**2**
5	4	0	**1**	**1**
6	3	2	**1**	**-1**
Total	***93***	***60***	***53***	***-7***

- Almost all cyclists at this site were adults (92 per cent, up 14 percentage points relative to the previous measure).
- Almost all cyclists were wearing a helmet (98 per cent, unchanged from 2012).
- The majority of cyclists continued to be male (91 per cent, up from 83 per cent last year).
- More than three quarters of cyclists were riding on the road (81 per cent, stable from 79 per cent in 2012), while the remaining 19 per cent were riding on the footpath (compared with 21 per cent in 2012).

Table 16.4: Evening Cyclist Characteristics

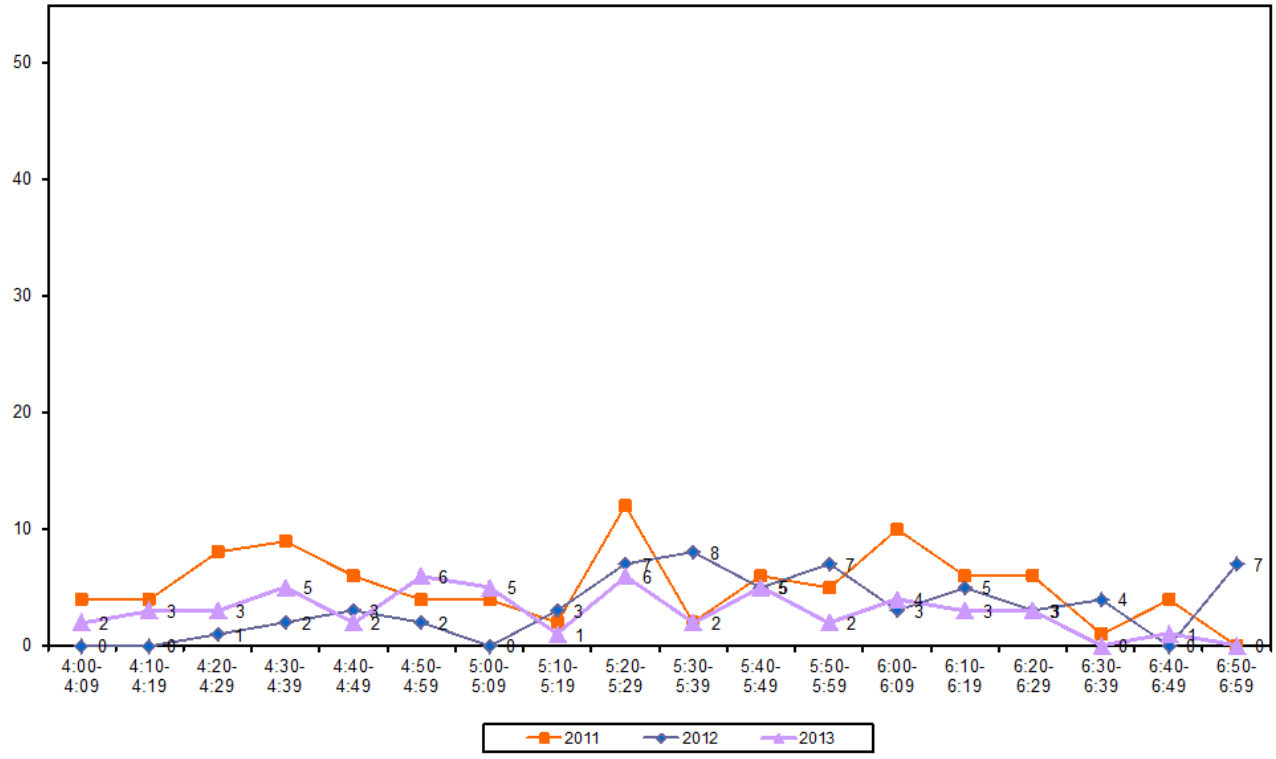
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2012 (%)

	2011	***2012***	***2013***	**Change 11-12**
Cyclist Type				
Adult	82	78	**92**	**14**
School child	18	22	**8**	**-14**
Helmet Wearing				
Helmet on head	97	98	**98**	**0**
No helmet	3	2	**2**	**0**
Gender				
Male	91	83	**91**	**8**
Female	9	17	**9**	**-8**
Can't tell	0	0	**0**	**0**
Where Riding				
Road	78	79	**81**	**2**
Footpath	7	21	**19**	**-2**
Off-road cycle way	15	0	**0**	**0**
Base:	***93***	***60***	***53***	

- Cyclist movement volumes in the evening were low, with no obvious peak periods in the traffic flow. The highest number of cyclists recorded per ten-minute interval was six.

Figure 16.3: Evening Peak Cyclist Frequency

Sunnynook Road/East Coast Road, Sunnynook 2011 – 2013 (n)



17. HOBSONVILLE FERRY WHARF

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.

Key Points

- In the morning, one cycle was observed at the Hobsonville Ferry Wharf at 9:10am.
- The same cycle was still on-site at the wharf at both 3:30 and 7:10 pm.

Table 7.1: Hobsonville Ferry Wharf Counts 2013 (n)

	2013
Morning Peak	
6:10am	**0**
9:10am	**1**
Evening Peak	
3:30pm	**1**
7:10pm	**1**

18. SCHOOL BIKE SHED COUNT

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

Background Information

- A total of 19 schools in the Albany ward participated in the school bike shed count in 2013. Most schools do not have policies that restrict students cycling to school[10].
- Of the schools that responded to the survey, most did not report any events or issues that may affect cycle counts[11].
- The designated count day was Tuesday 5th of March 2013[12].

Key Points

- Among the surveyed schools, of those eligible to cycle, on average, two per cent of students are cycling to their schools (an increase from 1 per cent in 2012).
- Among the 19 responding schools, n=251 students were identified as cycling to school.
- This year, Hobsonville Point School reported the highest share of cyclists – 31 per cent of all eligible students currently cycling.
- Of the n=16 schools that participated in the count in both 2012 and 2013, three (19 per cent) reported an increase in the share of students cycling to school:
  - Silverdale Primary School (6 per cent, up from 2 per cent)
  - Orewa College (5 per cent, up from 2 per cent)
  - Stella Maris Primary School (2 per cent, up from no cyclists last year).

[10] The following schools have policies restricting cycling to school:
- Dairy Flat School *"No one is allowed to bike - too dangerous"*
- Kingsway School *"It is not advisable for students below Year 5 to ride to school"*
- Marina View School *"Only Year 5 and up allowed to cycle"*
- Silverdale School *"Children under 10 years must be accompanied by an adult"*
- Stella Maris Primary *"Cycling from Year 4 except with a parent or guardian"*

[11] The following schools reported events or issues that had an effect on the cycle count:
- Wentworth College *"Year 7-8 are away on school camp"*

[12] The following schools conducted their counts on alternative days:
- Albany Junior High School – 12th March 2013
- The Corelli School – 13th March 2013
- Dairy Flat School – 13th March 2013
- Gulf Harbour School – 13th March 2013
- Long Bay College – 13th March 2013
- Marina View School – 13th March 2013
- Northcross Intermediate – 13th March 2013
- Pinehurst School – 6th March 2013
- Silverdale School – 7th March 2013
- Timatanga Community School – 13th March 2013

- Of the 16 schools that participated in the count in both 2012 and 2013, three (19 per cent) reported a decrease in the share of students cycling.
- Of the 19 schools that responded, four (21 per cent) had no students cycling to school.

Table 18.1 shows the results of the 19 schools surveyed in Albany ward.

Table 18.1: Summary Table Of School Bike Count

2007 – 2013 (n)

School Name	*School Type*	*School Roll Eligible To Cycle*	*No. of Cycles Counted*	*Cyclists as share of those eligible*[13]						
				2013	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
Hobsonville Point School	Full Primary	29	9	**31%**	-	-	-	-	-	-
Silverdale Primary School	Full Primary	175	10	**6%**	2%	8%	-	-	-	-
Orewa College	Intermediate/Secondary	2068	105	**5%**	2%	4%	7%	5%	5%	6%
Gulf Harbour Primary	Full Primary	400	17	**4%**	5%	6%	-	-	-	-
Albany Junior High School	Composite	1200	20	**2%**	5%	-	-	-	-	-
Marina View School	Full Primary	660	15	**2%**	-	-	-	-	-	-
KingsWay School	Composite	896	22	**2%**	2%	2%	1%	1%	1%	<1%
Northcross Intermediate School	Intermediate	1013	20	**2%**	2%	2%	-	4%	0%	5%
Stella Maris Primary School	Full Primary	320	6	**2%**	0%	1%	-	-	-	-
Pinehurst School	Composite	720	6	**1%**	1%	<1%	1%	0%	1%	1%
Wentworth College	Intermediate/Secondary	220	2	**1%**	1%	2%	3%	4%	<1%	3%
Albany Senior High School	Secondary	760	2	**<1%**	1%	1%	2%	-	-	-
Kristin School	Composite	1520	5	**<1%**	<1%	<1%	<1%	1%	-	-
Long Bay College	Secondary	1650	5	**<1%**	<1%	<1%	<1%	0%	1%	-
Rangitoto College	Secondary	3046	7	**<1%**	<1%	1%	1%	1%	<1%	1%
Timatanga Community School	Full Primary	17	0	**0%**	-	-	-	-	-	-
City Impact Church School	Composite	150	0	**0%**	0%	0%	-	-	-	-

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

School Name	*School Type*	*School Roll Eligible To Cycle*	*No. of Cycles Counted*	*Cyclists as share of those eligible*[13]						
				2013	*2012*	*2011*	*2010*	*2009*	*2008*	*2007*
Dairy Flat School	Full Primary	0	0	**0%**	0%	0%	-	-	-	-
The Corelli School	Composite	100	0	**0%**	0%	-	-	-	-	-
Total		**14944**	**251**	**2%**	1%	-	-	-	-	-

Table 18.2 illustrates the rates of cycling to school at different school levels. Rates of cycling to school are highest among combined intermediate/secondary schools and full primary schools, each with 4 per cent. Rates are lowest for secondary schools (less than 1 per cent).

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

2007 – 2013 (%)

School Type	*Number of Schools Responded in 2013 (n)*	*Cyclists as share of those eligible*							Change 12-13
		2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	
Full Primary	7	-	-	-	-	3%	2%	**4%**	**2%**
Intermediate/Secondary	3	5%	3%	5%	5%	4%	2%	**4%**	**2%**
Intermediate	1	5%	1%	3%	3%	2%	1%	**2%**	**1%**
Composite	5	<1%	1%	1%	1%	1%	2%	**1%**	**-1%**
Secondary	3	1%	<1%	<1%	1%	1%	<1%	**<1%**	**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[14] 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)[15], 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.

[14] Annual average daily traffic

[15] 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%