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Research Report Prepared for
Auckland Transport

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# 2012 Auckland Region Manual Cycle Monitor

## - Albany Ward -

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## 1.1 Introduction

### *The Need For Reliable Cycle Trip Data*

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

Cycle traffic data will help inform a major programme of improvements for cycling in the Auckland region. In 2007, over $100 million was planned to be invested in building over 50% of the Regional Cycle Network by 2016. By mid 2009, 21% of the Regional Cycle Network had been built. Comprehensive cycle data assists with the development of the region's cycle network and prioritisation of projects.

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:

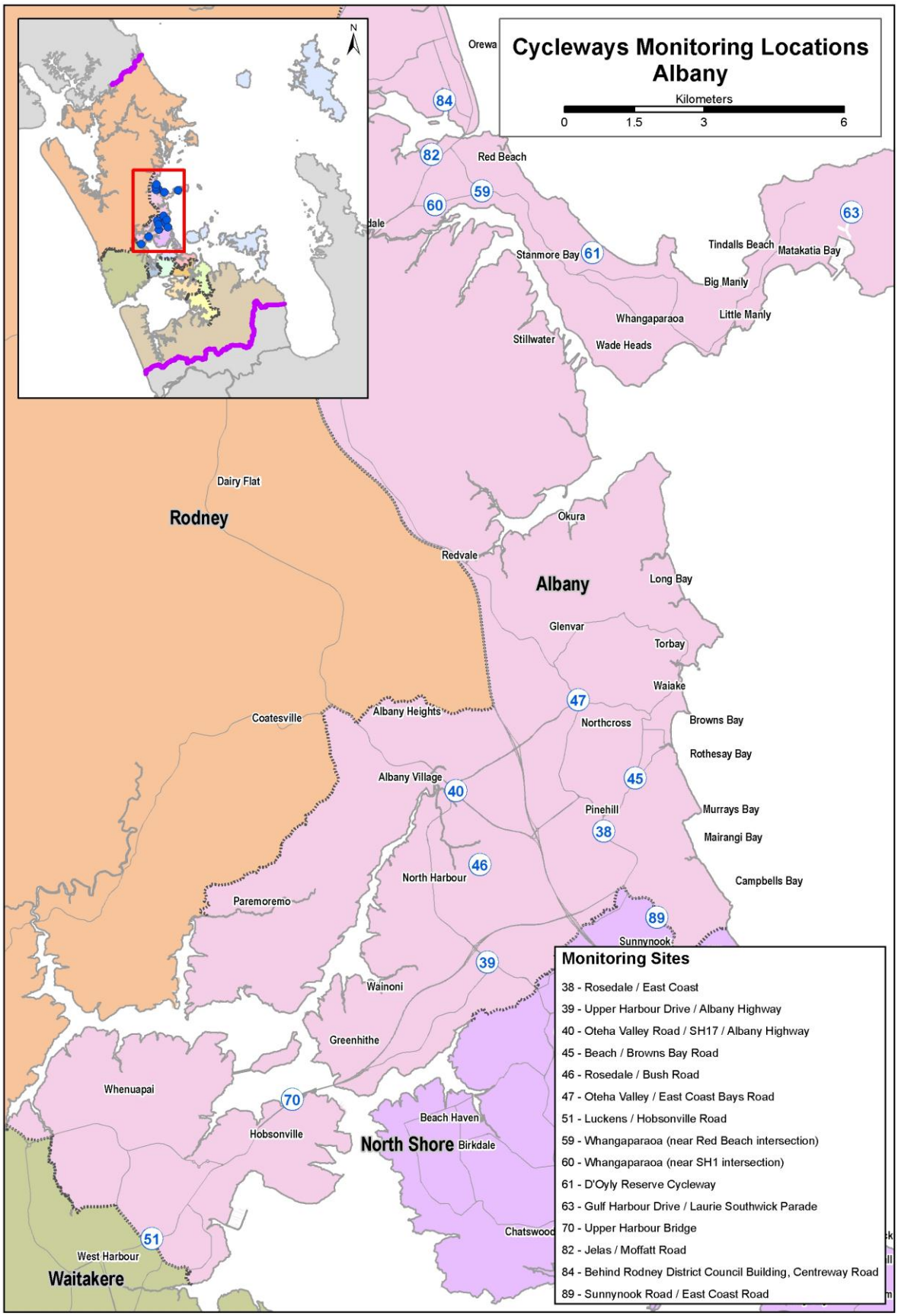
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and 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 2007, 2008, 2009, 2010 and/or 2011, 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: 2011 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 83 different sites throughout the region. Sites were distributed by ward as follows:

- Albany 15 sites
- Albert-Eden–Roskill 10 sites
- Franklin 2 sites
- Howick 5 sites
- Manukau 10 sites
- Manurewa-Papakura 4 sites
- Maungakiekie-Tamaki 7 sites
- North Shore 8 sites
- Orakei 2 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 6th of March and be conducted on the first three fine days of the 6th, 7th, 8th, 13th, 14th, or 15th of March.

Counts were conducted on the following days:

| | |
|---|---|
| • Tuesday 6th March | Albany, North Shore, Waitakere |
| • Wednesday 7th March | Whau, Albert-Eden-Roskill, Orakei, Manurewa-Papakura, Maungakiekie-Tamaki |
| • Tuesday 13th March | Howick, Franklin, Manukau, Waitemata & Gulf |

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

### *Weather and Daylight Conditions*

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

The weather on the three count days in 2012 was as follows:

**Tuesday 6th March**

- Sunrise: 7:11am; Sunset: 7:52pm.
- Highest temperature: 21.3 degrees Celsius.
- Mostly fine weather with some cloud for some sites in the morning and afternoon shifts.

**Wednesday 7th March**

- Sunrise: 7:12am; Sunset: 7:51pm.
- Highest temperature: 24.0 degrees Celsius.
- Mostly fine weather with some cloud for all sites in the morning, some sites experienced showers intermittently from 16:00 until the end of the evening monitoring period.

**Tuesday 13th March**

- Sunrise: 7:17am; Sunset: 7:43pm.
- Highest temperature: 21.3 degrees Celsius.
- Mostly fine weather with some cloud for some sites in the morning and afternoon 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.

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

### *Methodology*

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

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

2. This email was then sent to all eligible schools in Auckland region (n=317) 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 6th 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 2012, 233 responses were received, a response rate of 74 per cent. (This compares with 68 per cent in 2011).

## ***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 6th of March, 2012[9]. Sunrise was at 7:11am and sunset was at 7:52pm. The highest temperature was 21.3 degrees Celsius.

[9] The only exception was Squardron Drive/Buckley Avenue which was monitored on Tuesday 13th of March, 2012. This was due to the site needing to be re-scoped as a result of road layout changes.

## 1.4 Morning Peak

### *Environmental Conditions*

- All sites monitored in Albany ward had fine weather in the morning.
- At the Rosedale Rd/Bush Rd site, major roadworks were recorded less than 1km down the eastern side of Rosedale Road. There were no other road works or accidents that may affect cycle counts.

### *Key Points*

- A total of 574 cyclist movements were recorded across the monitoring sites in the Albany ward during the morning peak period (between 6:30am and 9:00am) in 2012. This represents a 5 per cent increase from 2011 (548 movements).
- Eleven per cent of all cycle movements in the morning peak (n=65) were made by those riding as groups. This compares with 3 per cent in 2011.
- The average volume of morning cyclist movements across all 15 monitoring sites in the Albany ward is 38 cycle movements. This is stable from 2011 (37 movements).
- The busiest site during the morning peak is the Sunnynook Road/East Coast Road intersection (95 movements), while the quietest site is at Whangaparaoa Road near the SH1 intersection, with only 10 movements across the entire morning monitoring period.
- Nine sites recorded increases this year compared to 2011. The top three most notable increases occurred at:
  - Luckens/Hobsonville Road – up 200 per cent;
  - Oteha Valley/SH17/Albany Highway – up 54 per cent; and
  - Whangaparaoa Road near SH1 intersection – up 43 per cent.
- Five sites recorded decreases this year compared to 2011. The top two most notable increases occurred at:
  - Beach/Browns Bay Road – down 40 per cent; and
  - Rosedale/Bush Road – down 24 per cent.

**Table 1.1: Summary of Morning Cyclist Movements**

**2007 – 2012 (n)**

| *Site No.* | *Locations* | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 | Change 07-12 |
|---|---|---|---|---|---|---|---|---|---|
| 47 | Oteha Valley/East Coast Road | 42 | 40 | 69 | 87 | 53 | **68** | **28%** | **62%** |
| 38 | Rosedale/East Coast Road | 54 | 52 | 105 | 93 | 73 | **67** | **-8%** | **24%** |
| 39 | Upper Harbour Drive/Albany Highway | 14 | 54 | 63 | 65 | 57 | **51** | **-11%** | **264%** |
| 51 | Luckens/Hobsonville Road | 20 | 25 | 26 | 41 | 14 | **42** | **200%** | **110%** |
| 40 | Oteha Valley/SH17/Albany Highway | 4 | 20 | 25 | 29 | 26 | **40** | **54%** | **900%** |
| 45 | Beach/Browns Bay Road | 11 | 26 | 29 | 50 | 47 | **28** | **-40%** | **155%** |
| 46 | Rosedale/Bush Road | 15 | 36 | 26 | 48 | 29 | **22** | **-24%** | **47%** |
| 59 | Whangaparaoa Road near Red Beach intersection | 13 | 15 | 15 | 21 | 11 | **15** | **36%** | **15%** |
| 61 | D'Oyly Reserve cycleway | 14 | 19 | 5 | 31 | 13 | **14** | **8%** | **0%** |
| 63 | Gulf Harbour Drive/Laurie Southwick Parade | 17 | 14 | 5 | 14 | 12 | **13** | **8%** | **-24%** |
| 60 | Whangaparaoa Road near SH1 intersection | 11 | 9 | 6 | 13 | 7 | **10** | **43%** | **-9%** |
| | **Average per site (11 sites since 2007)** | **20** | **28** | **34** | **45** | **31** | **34** | **10%** | **70%** |
| | **Total (11 sites since 2007)** | **215** | **310** | **374** | **492** | **342** | **370** | **8%** | **72%** |
| 84 | Behind Rodney District Council Building | - | - | 75 | 73 | 72 | **61** | **-15%** | **-** |
| 70 | Squadron Drive/Buckley Avenue* | - | 17 | 23 | 37 | 34 | **28** | **-18%** | **-** |
| 82 | Jelas/Moffatt Road | - | - | 15 | 24 | 19 | **20** | **5%** | **-** |
| | **Average per site (12 sites in 2008, 14 sites in 2009 and 2010)** | **-** | **27** | **35** | **45** | **33** | **34** | **3%** | **-** |
| | **Total (12 sites in 2008, 14 sites in 2009 and 2010)** | **-** | **327** | **487** | **626** | **467** | **479** | **3%** | **-** |
| 89 | Sunnynook Road/East Coast Road | - | - | - | - | 81 | **95** | **17%** | **-** |
| | **Average per site (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites in 2011)** | **-** | **27** | **35** | **45** | **37** | **38** | **3%** | **-** |
| | **Total (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites in 2011 and 2012)** | **-** | **327** | **487** | **626** | **548** | **574** | **5%** | **-** |

** 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, 71 per cent of cyclists are adults (stable from 72 per cent in 2011).
- Nearly all of the cyclists were wearing a helmet (96 per cent, up slightly from 93 per cent in 2011).
- The majority of cyclists were male (82 per cent).
- On average, two-thirds of cyclists were riding on the road (69 per cent, up slightly from 66 per cent in 2011). Off-road cycleway riders comprise 18 per cent of all cycle movements, down from 20 per cent last year.

**Table 1.2: Summary of Morning Cyclist Characteristics**

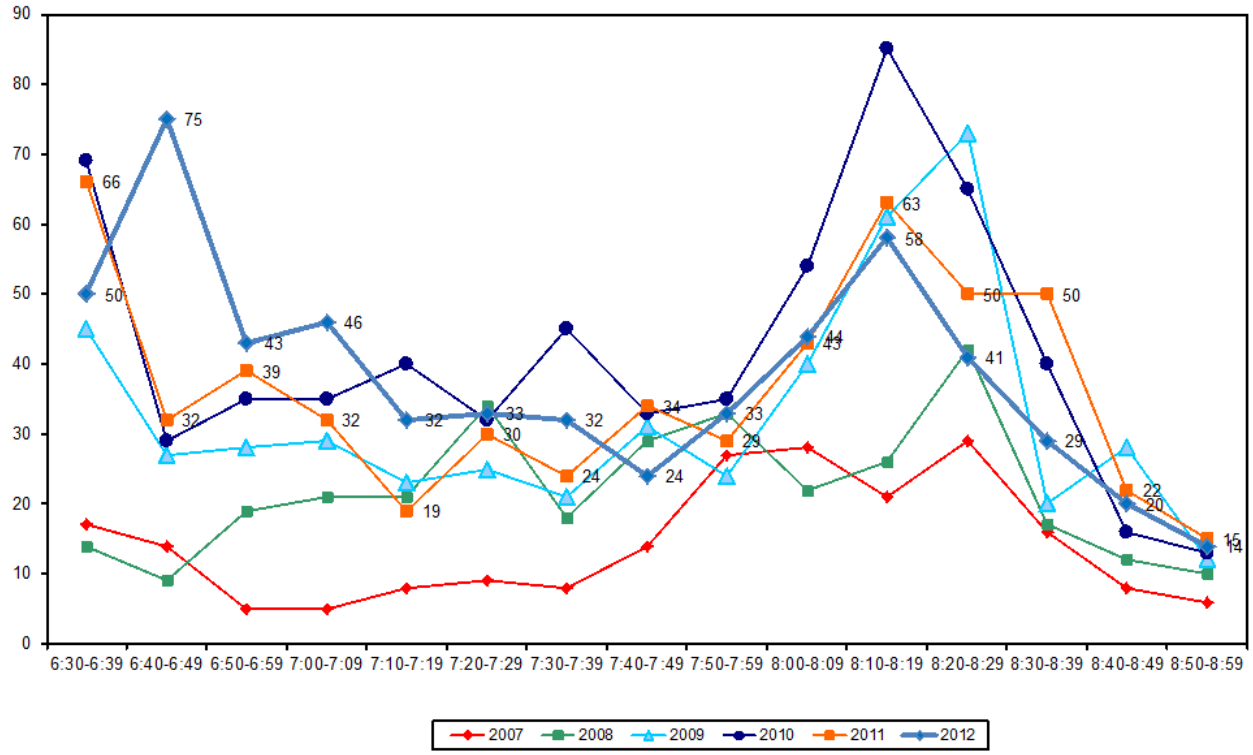
**2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 56 | 69 | 60 | 60 | 72 | **71** | **-1** |
| School child | 44 | 31 | 40 | 40 | 28 | **29** | **1** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 91 | 91 | 91 | 92 | 93 | **96** | **3** |
| No helmet | 9 | 9 | 9 | 8 | 7 | **4** | **-3** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 83 | **82** | **-1** |
| Female | - | - | - | - | 14 | **16** | **2** |
| Can't tell | - | - | - | - | 3 | **2** | **-1** |
| **Where Riding** | | | | | | | |
| Road | 47 | 67 | 56 | 56 | 66 | **69** | **3** |
| Footpath | 46 | 26 | 25 | 20 | 14 | **13** | **-1** |
| Off-road cycleway | 7 | 7 | 19 | 24 | 20 | **18** | **-2** |
| ***Base:*** | ***215*** | ***327*** | ***487*** | ***626*** | ***548*** | ***574*** | |

- Figure 1.2 illustrates the total number of cyclists in the morning peak by time of movement for all 15 sites monitored in 2012. The volume of morning cycle movements peaks sharply between 6:40am and 6:49am (75 movements), and again between 8:10am and 8:19am (58 movements). These peaks occurred at similar times as the peaks recorded in 2011.

**Figure 1.2: Total Cyclist Frequency**

**Morning Peak 2007 – 2012**



## 1.5 Evening Peak

### *Environmental Conditions*

- All sites monitored in Albany ward had fine weather in the evening.
- At the Rosedale Rd/Bush Rd site, major roadworks were recorded less than 1km down the eastern side of Rosedale Road. There were no other road works or accidents that may affect cycle counts.

### *Key Points*

- A total of 736 cyclist movements were recorded across the 15 sites monitored during the evening peak period (between 4:00pm and 7:00pm) in 2012. This is unchanged from 2011.
- Fifteen per cent of all evening cycle movements (n=111) were made by cyclists riding as groups. This compares with 5 per cent in 2011.
- As with last year, the average volume of evening cyclist movements across all 15 monitoring sites in the Albany ward is 49 movements.
- The busiest site in the evening peak is the Upper Harbour Drive/Albany Highway intersection (136 movements), while the quietest site is at Whangaparaoa Road near SH1 intersection with only 10 movements across the entire evening monitoring period.
- Cycle movements across nine of the 15 sites decreased this year. The most notable decreases occurred:
  - Behind Rodney District Council Building – down 58 per cent; and
  - D'Oyly Reserve cycleway – down 53 per cent.
- In contrast, cycle movements increased most notably at:
  - Luckens/Hobsonville Road – up 84 per cent; and
  - Oteha Valley/SH17/Albany Highway – up 57 per cent.

**Table 1.3: Summary Of Evening Cyclist Movements**

**2007 – 2012 (n)**

| *Site No.* | *Locations* | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 | Change 07-12 |
|---|---|---|---|---|---|---|---|---|---|
| 39 | Upper Harbour Drive/Albany Highway | 11 | 44 | 75 | 93 | 91 | **136** | **49%** | **1136 %** |
| 40 | Oteha Valley/SH17/Albany Highway | 15 | 28 | 47 | 62 | 56 | **88** | **57%** | **487%** |
| 51 | Luckens/Hobsonville Road | 12 | 16 | 51 | 54 | 38 | **70** | **84%** | **483%** |
| 47 | Oteha Valley/East Coast Road | 17 | 74 | 69 | 81 | 76 | **69** | **-9%** | **306%** |
| 38 | Rosedale/East Coast Road | 22 | 46 | 54 | 59 | 70 | **51** | **-27%** | **132%** |
| 46 | Rosedale/Bush Road | 16 | 37 | 46 | 61 | 56 | **41** | **-27%** | **156%** |
| 45 | Beach/Browns Bay Road | 8 | 19 | 30 | 27 | 28 | **33** | **18%** | **313%** |
| 61 | D'Oyly Reserve cycleway | 10 | 84 | 4 | 13 | 45 | **21** | **-53%** | **110%** |
| 63 | Gulf Harbour Drive/Laurie Southwick Parade | 39 | 30 | 17 | 23 | 27 | **20** | **-26%** | **-49%** |
| 59 | Whangaparaoa Road near Red Beach intersection | 16 | 16 | 11 | 8 | 15 | **13** | **-13%** | **-19%** |
| 60 | Whangaparaoa Road near SH1 intersection | 17 | 11 | 6 | 10 | 15 | **10** | **-33%** | **-41%** |
| | **Average per site (11 sites since 2007)** | **17** | **37** | **37** | **45** | **47** | **50** | **6%** | **194%** |
| | **Total (11 sites since 2007)** | **183** | **405** | **410** | **491** | **517** | **552** | **7%** | **202%** |
| 70 | Squadron Drive/Buckley Avenue* | - | 18 | 45 | 57 | 49 | **82** | **67%** | **-** |
| 84 | Behind Rodney District Council Building | - | - | 11 | 22 | 66 | **28** | **-58%** | **-** |
| 82 | Jelas/Moffatt Road | - | - | 23 | 15 | 11 | **14** | **27%** | **-** |
| | **Average per site (12 sites in 2008, 14 sites in 2009 and 2010)** | **-** | **35** | **35** | **42** | **46** | **48** | **4%** | **-** |
| | **Total (12 sites in 2008, 14 sites in 2009 and 2010)** | **-** | **423** | **489** | **585** | **643** | **676** | **5%** | **-** |
| 89 | Sunnynook Road/East Coast Road | - | - | - | **-** | 93 | **60** | **-35%** | **-** |
| | **Average per site (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites in 2011)** | **-** | **35** | **35** | **42** | **49** | **49** | **0%** | **-** |
| | **Total (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites in 2011 and 2012)** | **-** | **423** | **489** | **585** | **736** | **736** | **0%** | **-** |

** 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 (81 per cent, up slightly from 79 per cent in 2011).
- Nearly all the cyclists wore a helmet (92 per cent, stable from last year).
- The majority of cyclists were male (82 per cent).
- Four out of every five (80 per cent) of all evening cyclists were riding on the road (up from 66 per cent in 2011). The remainder rode on the off-road cycleway (9 per cent, down from 19 per cent last year) or the footpath (11 per cent, up from 15 per cent in 2011).

**Table 1.4: Summary of Evening Cyclist Characteristics**

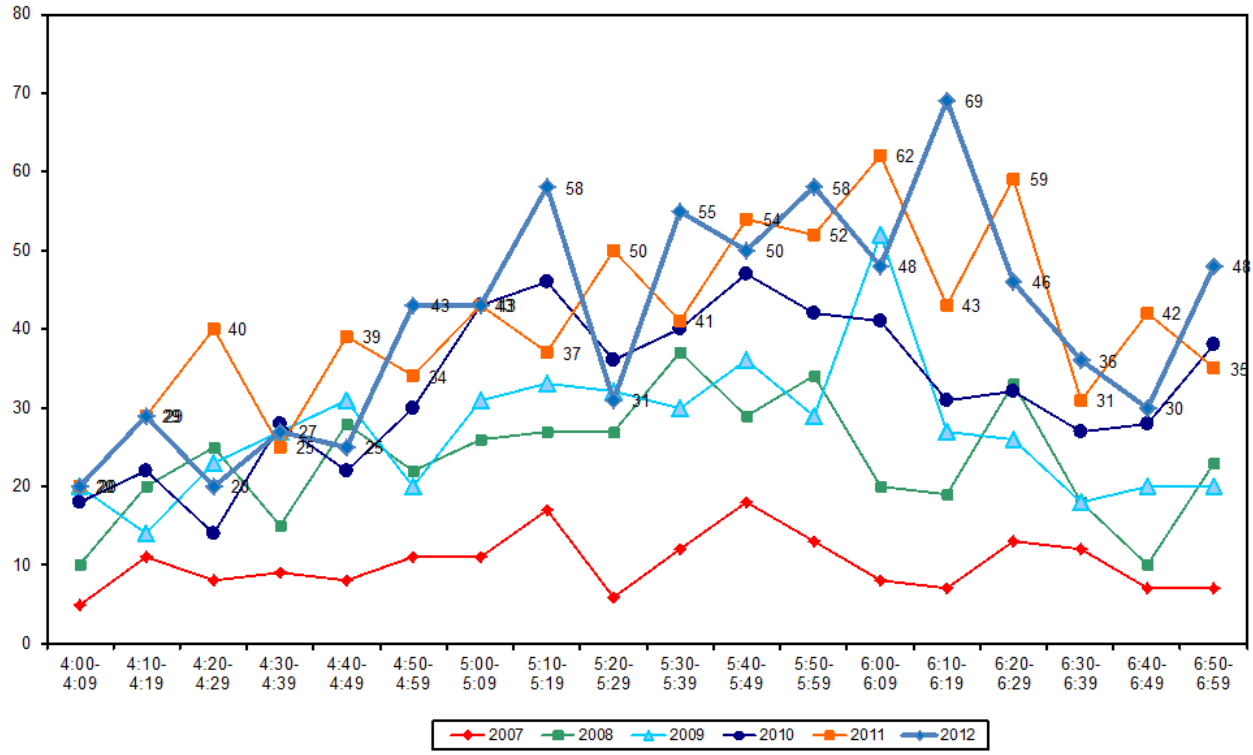
**2007 – 2012 (%)**

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

- 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 increases over the evening monitoring period to a peak of 69 movements between 6:10pm and 6:19pm. This compares with a peak of 62 movements between 6:00pm and 6:09pm in 2011.

**Figure 1.2: Total Cyclist Frequency**

**Evening Peak 2007 – 2012**



## 1.6 Aggregated Total

- A total of 1310 cyclist movements were recorded across the 15 sites monitored during the morning and evening peak periods in 2012. This represents a 2 per cent increase from 2011 (1284 movements).
- The average volume of evening cyclist movements across all 15 monitoring sites in the Albany ward is 87 movements. This compares with 86 movements in 2011.
- The busiest site in 2012 is the Upper Harbour Drive and Albany Highway intersection (187 movements), whereas the least number of cycle movements were observed at Whangaparaoa Road near the SH1 intersection (20 movements).
- Cycle movements at the just over half of sites (eight) decreased this year, whilst seven saw increases from 2011. The most notable decrease occurred at D'Oyly Reserve cycleway – down 40 per cent. In contrast, the most notable increase occurred at the Luckens and Hobsonville Road intersection – up 115 per cent.

**Table 1.5: Summary Of Total Cyclist Movements**

**2007 – 2012 (n)**

| *Site No.* | *Locations* | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 | Change 07-12 |
|---|---|---|---|---|---|---|---|---|---|
| 39 | Upper Harbour Drive/Albany Highway | 25 | 98 | 138 | 158 | 148 | **187** | **26%** | **648%** |
| 47 | Oteha Valley/East Coast Road | 59 | 114 | 138 | 168 | 129 | **137** | **6%** | **132%** |
| 40 | Oteha Valley/SH17/Albany Highway | 19 | 48 | 72 | 91 | 82 | **128** | **56%** | **574%** |
| 38 | Rosedale/East Coast Road | 76 | 98 | 159 | 152 | 143 | **118** | **-17%** | **55%** |
| 51 | Luckens/Hobsonville Road | 32 | 41 | 77 | 95 | 52 | **112** | **115%** | **250%** |
| 46 | Rosedale/Bush Road | 31 | 73 | 72 | 109 | 85 | **63** | **-26%** | **103%** |
| 45 | Beach/Browns Bay Road | 19 | 45 | 59 | 77 | 75 | **61** | **-19%** | **221%** |
| 61 | D'Oyly Reserve cycleway | 24 | 103∞ | 9 | 44 | 58 | **35** | **-40%** | **46%** |
| 63 | Gulf Harbour Drive/Laurie Southwick Parade | 56 | 44 | 22 | 37 | 39 | **33** | **-15%** | **-41%** |
| 59 | Whangaparaoa Road near Red Beach intersection | 29 | 31 | 26 | 29 | 26 | **28** | **8%** | **-3%** |
| 60 | Whangaparaoa Road near SH1 intersection | 28 | 20 | 12 | 23 | 22 | **20** | **-9%** | **-29%** |
| | **Average per site (11 sites since 2007)** | **36** | **65** | **71** | **89** | **78** | **84** | **8%** | **133%** |
| | **Total (11 sites since 2007)** | **398** | **715** | **784** | **983** | **859** | **922** | **7%** | **132%** |
| 70 | Squadron Drive/Buckley Avenue* | - | 35 | 68 | 94 | 83 | **110** | **33%** | **-** |
| 84 | Behind Rodney District Council Building | - | - | 86 | 95 | 138 | **89** | **-36%** | **-** |
| 82 | Jelas/Moffatt Road | - | - | 38 | 39 | 30 | **34** | **13%** | **-** |
| | **Average per site (12 sites in 2008, 14 sites in 2009 and 2010)** | **-** | **63** | **70** | **87** | **79** | **83** | **5%** | **-** |
| | **Total (12 sites in 2008, 14 sites in 2009 and 2010)** | **-** | **750** | **976** | **1211** | **1110** | **1155** | **4%** | **-** |
| 89 | Sunnynook Road/East Coast Road | - | - | - | - | 174 | **155** | **-11%** | **-** |
| | **Average per site (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites in 2011)** | **-** | **63** | **70** | **87** | **86** | **87** | **1%** | **-** |
| | **Total (12 sites in 2008, 14 sites in 2009 and 2010, 15 sites in 2011 and 2012)** | **-** | **750** | **976** | **1211** | **1284** | **1310** | **2%** | **-** |

∞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, 77 per cent of cyclists were adults (stable from 76 per cent in 2011).
- Nearly all cyclists wore a helmet (94 per cent, stable from 92 per cent in 2011).
- The greatest share of cyclists was male (82%).
- Three-quarters of cyclists were riding on the road (75 per cent, up from 66 per cent in 2011). The remainder rode on the off-road cycleway (13 per cent) and the footpath (12 per cent).

**Table 1.6: Summary of Total Cyclist Characteristics**

**2007 – 2012 (%)**

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

## 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 Upper Harbour Drive and Albany Highway intersection (265 daily movements) and the lowest is at Whangaparaoa Road near the SH1 intersection (29 daily movements).

**Table 1.7: Dry Weather Factor AADT Estimates Based on Morning and Evening Cyclist Movements 2007 – 2012 (n)**

| *Site No.* | *Locations* | *2007 AADT* | *2008 AADT* | *2009 AADT* | *2010 AADT* | *2011 AADT* | *2012 AADT* | Change 11-12 | Change 07-12 |
|---|---|---|---|---|---|---|---|---|---|
| 39 | Upper Harbour Drive/Albany Highway | 57 | 143 | 200 | 228 | 213 | **265** | **24%** | **365%** |
| 89 | Sunnynook Road/East Coast Road | - | - | - | - | 252 | **228** | **-10%** | **-** |
| 47 | Oteha Valley/East Coast Road | 137 | 163 | 201 | 245 | 186 | **199** | **7%** | **45%** |
| 40 | Oteha Valley/SH17/Albany Highway | 42 | 69 | 103 | 130 | 117 | **182** | **56%** | **333%** |
| 38 | Rosedale/East Coast Road | 176 | 143 | 235 | 224 | 208 | **173** | **-17%** | **-2%** |
| 51 | Luckens/Hobsonville Road | 47 | 60 | 110 | 137 | 74 | **161** | **118%** | **243%** |
| 70 | Squadron Drive/Buckley Avenue* | - | 51 | 97 | 135 | 120 | **156** | **30%** | **-** |
| 84 | Behind Rodney District Council Building | - | - | 130 | 142 | 201 | **132** | **-34%** | **-** |
| 46 | Rosedale/Bush Road | 70 | 106 | 103 | 157 | 121 | **90** | **-26%** | **29%** |
| 45 | Beach/Browns Bay Road | 44 | 66 | 86 | 114 | 107 | **88** | **-18%** | **100%** |
| 61 | D'Oyly Reserve cycleway | 35 | 145 | 13 | 65 | 82 | **50** | **-39%** | **43%** |
| 82 | Jelas/Moffatt Road | - | - | 55 | 57 | 44 | **50** | **14%** | **-** |
| 63 | Gulf Harbour Drive/Laurie Southwick Parade | 80 | 63 | 31 | 53 | 56 | **47** | **-16%** | **-41%** |
| 59 | Whangaparaoa Road near Red Beach intersection | 42 | 45 | 38 | 43 | 37 | **41** | **11%** | **-2%** |
| 60 | Whangaparaoa Road near SH1 intersection | 40 | 29 | 17 | 34 | 31 | **29** | **-6%** | **-28%** |

** 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 School Bike Shed Count Summary

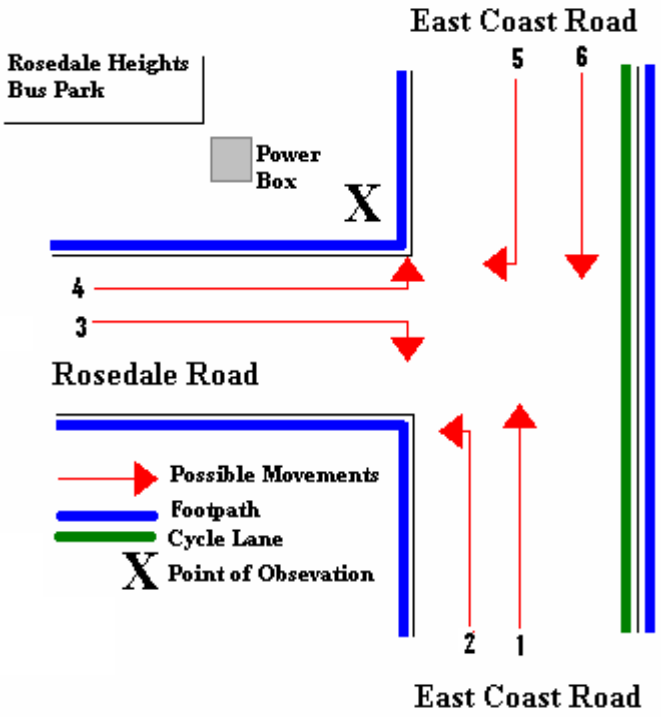
### *Key Points*

- Among the surveyed schools, of those eligible to cycle at school, on average, one per cent of students are cycling to their schools. This is unchanged from 2011 (1 per cent).
- Among the 19 responding schools, n=192 students were identified as cycling to school.
- This year, Gulf Harbour Primary reported the highest share of cyclists – 5 per cent of all eligible students currently cycling.
- Of the 19 schools that responded, six (32 per cent) had no students cycling to school.
- Rates of cycling to school are highest among combined intermediate/secondary, primary and composite schools all with 2 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** |

## 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 decreased (67 movements, down from 73 movements in 2011).
- The key movement in the morning is straight along East Coast Road in a southerly direction (Movement 6 = 52 cyclists).
- The most notable decreases since 2011 were at Movement 3 (down 6 movements) and Movement 6 (down 3 movements).

**Table 2.1: Morning Cyclist Movements**

**Rosedale/East Coast Road 2007 – 2012 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 |
|---|---|---|---|---|---|---|---|
| 1 | 7 | 5 | 12 | 14 | 5 | 8 | **3** |
| 2 | 1 | 2 | 5 | 8 | 4 | 4 | **0** |
| 3 | 3 | 4 | 3 | 5 | 6 | 0 | **-6** |
| 4 | 0 | 0 | 1 | 0 | 0 | 1 | **1** |
| 5 | 2 | 2 | 6 | 3 | 3 | 2 | **-1** |
| 6 | 41 | 39 | 78 | 63 | 55 | 52 | **-3** |
| **Total** | **54** | **52** | **105** | **93** | **73** | **67** | **-6** |

- This year, a higher proportion of morning cyclists using this intersection were adults (83 per cent, up from 75 per cent in 2011).
- Nearly all cyclists were wearing a helmet (98 per cent, stable from 97 per cent in 2011).
- Four-fifth of cyclists were male (82 per cent).
- Most cyclists were riding on the road (80 per cent, up from 78 per cent in 2011).

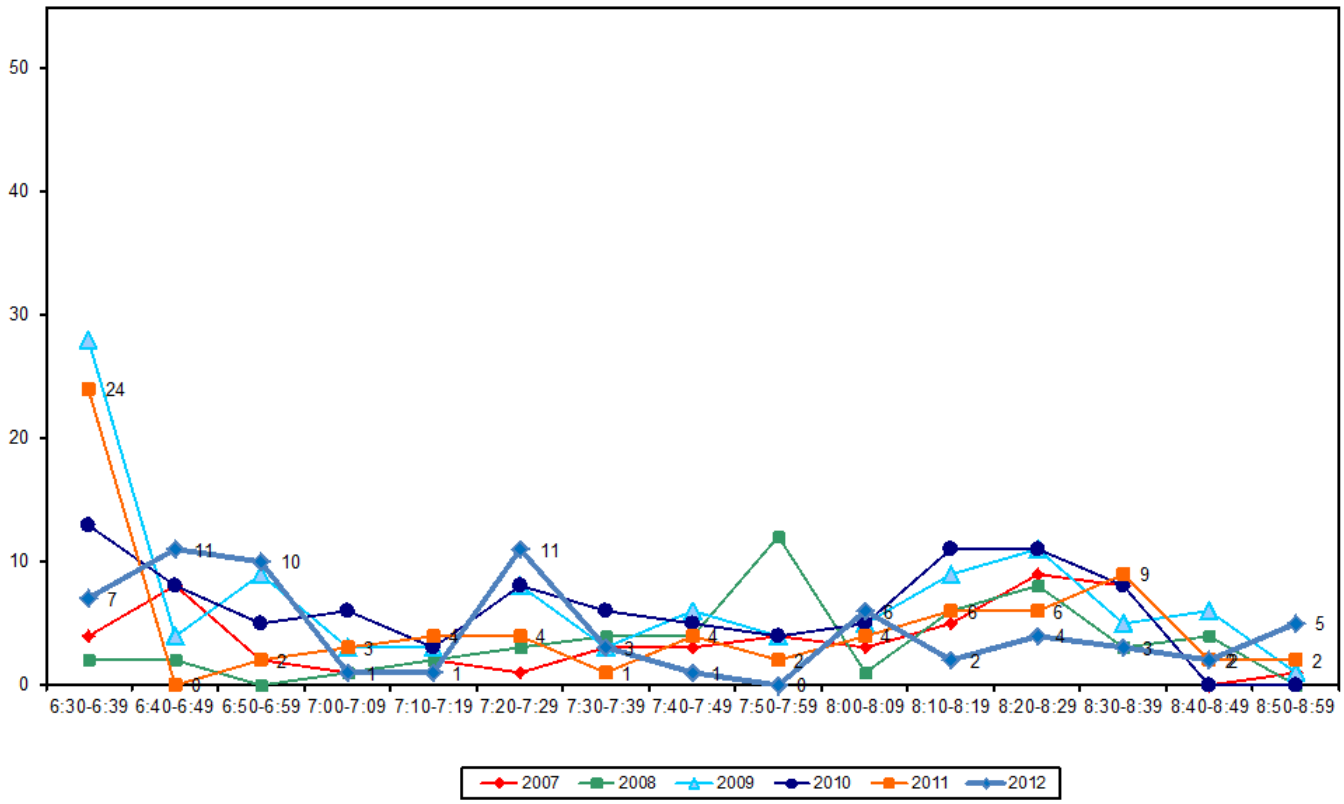
**Table 2.2: Morning Cyclist Characteristics**

**Rosedale/East Coast Road 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 57 | 63 | 71 | 65 | 73 | 83 | **10** |
| School child | 43 | 37 | 29 | 35 | 27 | 17 | **-10** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 85 | 94 | 93 | 91 | 97 | 98 | **1** |
| No helmet | 15 | 6 | 7 | 9 | 3 | 2 | **-1** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 75 | 82 | **8** |
| Female | - | - | - | - | 18 | 16 | **-2** |
| Can't tell | - | - | - | - | 7 | 1 | **-6** |
| **Where Riding** | | | | | | | |
| Road | 46 | 69 | 68 | 62 | 78 | 80 | **2** |
| Footpath | 54 | 31 | 32 | 38 | 22 | 20 | **-2** |
| ***Base:*** | ***54*** | ***52*** | ***105*** | ***93*** | ***73*** | ***67*** | |

- Morning cyclist movement volumes show peaks, the first between 6:40am and 6:49am (11 movements) and 6:50am and 6:59am (10 movements) then again between 7:20am and 7:29am (11 movements).

**Figure 2.2: Morning Peak Cyclist Frequency**
**Rosedale/East Coast Road 2007 – 2012 (n)**



## 2.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- The volume of evening cyclists decreased in 2012 (51 movements, down from 70 in 2011).
- The most common movement in the evening is straight along East Coast Road heading north (Movement 1 = 26 cyclists).
- The most notable decreases since 2011 were at Movement 6 (down 9 movements) and Movement 1 (down 6 movements).

**Table 2.3: Evening Cyclist Movements**

**Rosedale/East Coast Road 2007 – 2012 (n)**

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

- Over the evening shift, most cyclists using this intersection were adults (82 per cent, stable from 81 per cent in 2011).
- Most cyclists were wearing a helmet (92 per cent, down from 100 per cent in 2011).
- The majority of cyclists were male (86 per cent, down from 89 per cent in 2011).
- Most evening cyclists were riding on the road (86 per cent, up from 83 per cent in 2011).

**Table 2.4: Evening Cyclist Characteristics**

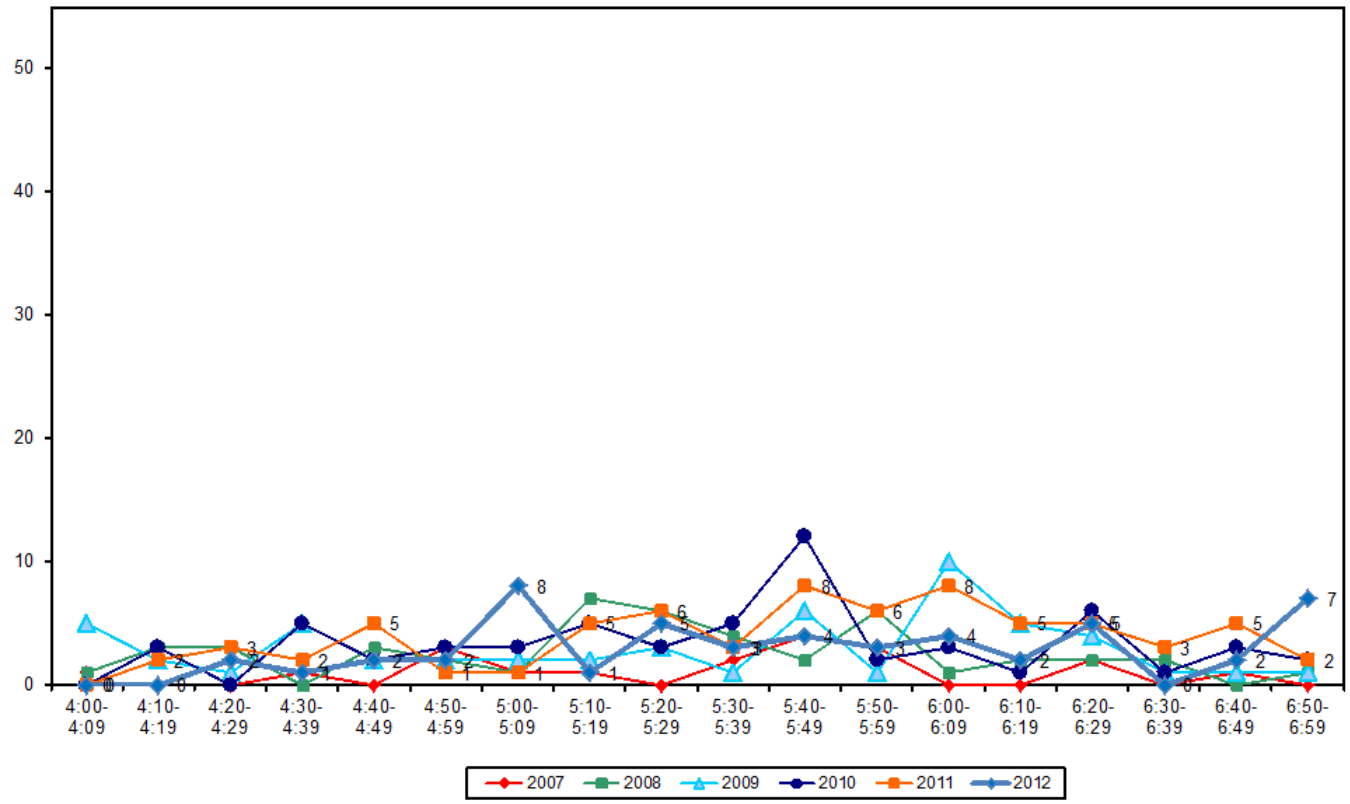
**Rosedale/East Coast Road 2007 – 2012 (%)**

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

- Evening cyclist movement volumes are relatively low over the entire monitoring period. A slight peak occurs between 5:00pm and 5:09pm (8 movements). A second slight peak occurs between 6:50pm and 6:59pm (7 movements).

**Figure 2.3: Evening Peak Cyclist Frequency**

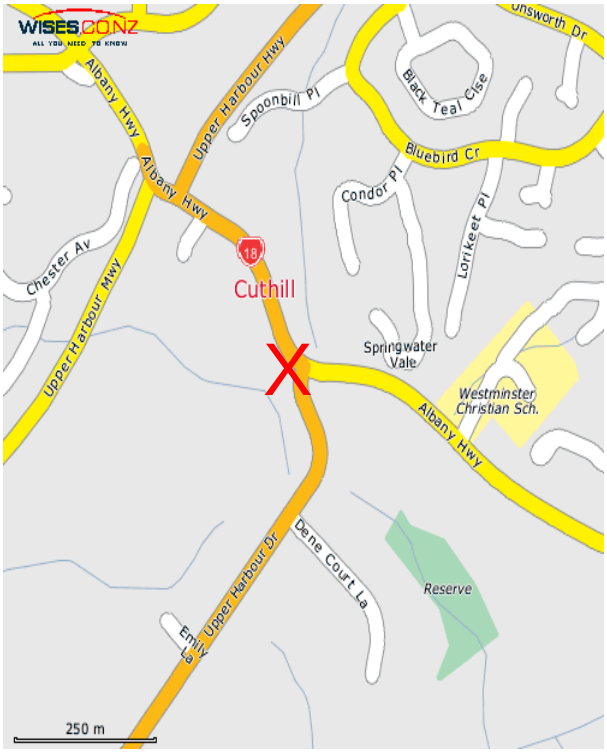
**Rosedale/East Coast Road 2007 – 2012 (n)**

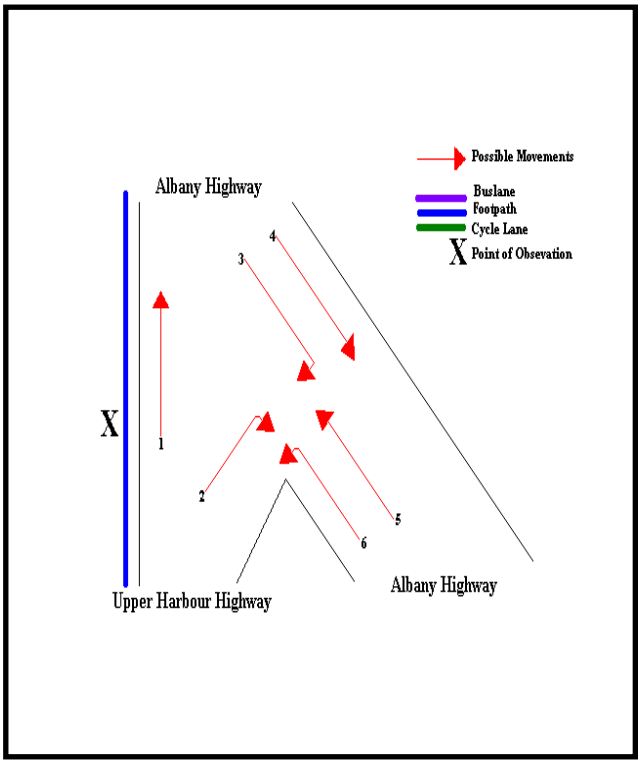


# 3. UPPER HARBOUR DRIVE/ALBANY HIGHWAY, GREENHITE (SITE 39)

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** |

## 3.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- The volume of morning cyclists at the Upper Harbour Drive/Albany Highway intersection decreased in 2012 (51 movements, down from 57 in 2011).
- The most common movement in the morning is left from the Albany Highway into Upper Harbour Drive (Movement 6 = 16 cyclists).
- Morning cyclist volumes differ most notably from last year at Movement 2 (down 7 movements).

**Table 3.1: Morning Cyclist Movements**

**Upper Harbour Drive/Albany Highway 2007 – 2012 (n)**

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

- Over the morning peak, nearly half (49 per cent) of cyclists at this intersection were identified as adults (down significantly from 98 per cent in 2011).
- All cyclists were wearing a helmet (100 per cent, up from 81 per cent in 2011).
- The majority of cyclists were male (82 per cent).
- Nearly all cyclists were riding on the road (98 per cent, stable from 100 per cent in 2011).

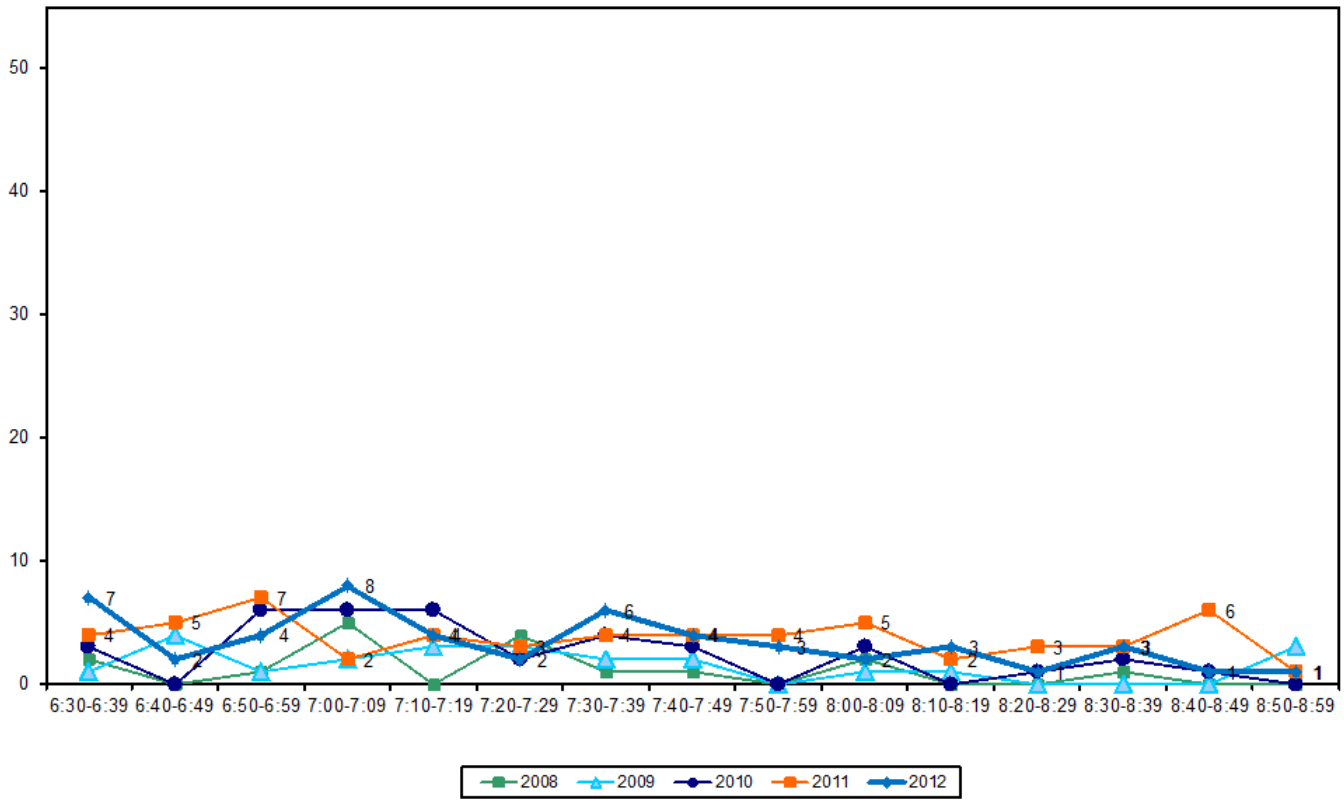
**Table 3.2: Morning Cyclist Characteristics**

**Upper Harbour Drive/Albany Highway 2007 – 2012 (%)**

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

- The volume of morning cyclist movements is stable throughout the morning shift. This trend is similar to that identified in 2011. A slight peak occurred between 6:30am and 6:39am (7 movements), and between 7:00am and 7:09am (8 movements).

**Figure 3.2: Morning Peak Cyclist Frequency**
**Upper Harbour Drive/Albany Highway 2008 – 2012 (n)**




- *Note: In 2012, 6 cyclists were observed riding together at 6:37pm. This equates to 12 per cent of all morning peak cycle movements at this site.*

## 3.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- Evening cyclist volumes at the Upper Harbour Drive/Albany Highway intersection increased in 2012 (136 movements, up from 91 movements in 2011).
- The most common movement in the evening is turning right onto Albany Highway from Upper Harbour Highway (Movement 2 = 31 movements).
- Of the six movements possible at this site, the most notable increase is at Movement 2 (up 19 movements).

**Table 3.3: Evening Cyclist Movements**

**Upper Harbour Drive/Albany Highway 2007 – 2012 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 20 | 19 | 25 | 20 | 29 | **9** |
| 2 | 2 | 9 | 5 | 11 | 12 | 31 | **19** |
| 3 | 3 | 4 | 13 | 10 | 5 | 16 | **11** |
| 4 | 4 | 6 | 15 | 17 | 28 | 16 | **-12** |
| 5 | 1 | 2 | 9 | 15 | 11 | 19 | **8** |
| 6 | 0 | 3 | 14 | 15 | 15 | 25 | **10** |
| **Total** | **11** | **44** | **75** | **93** | **91** | **136** | **45** |

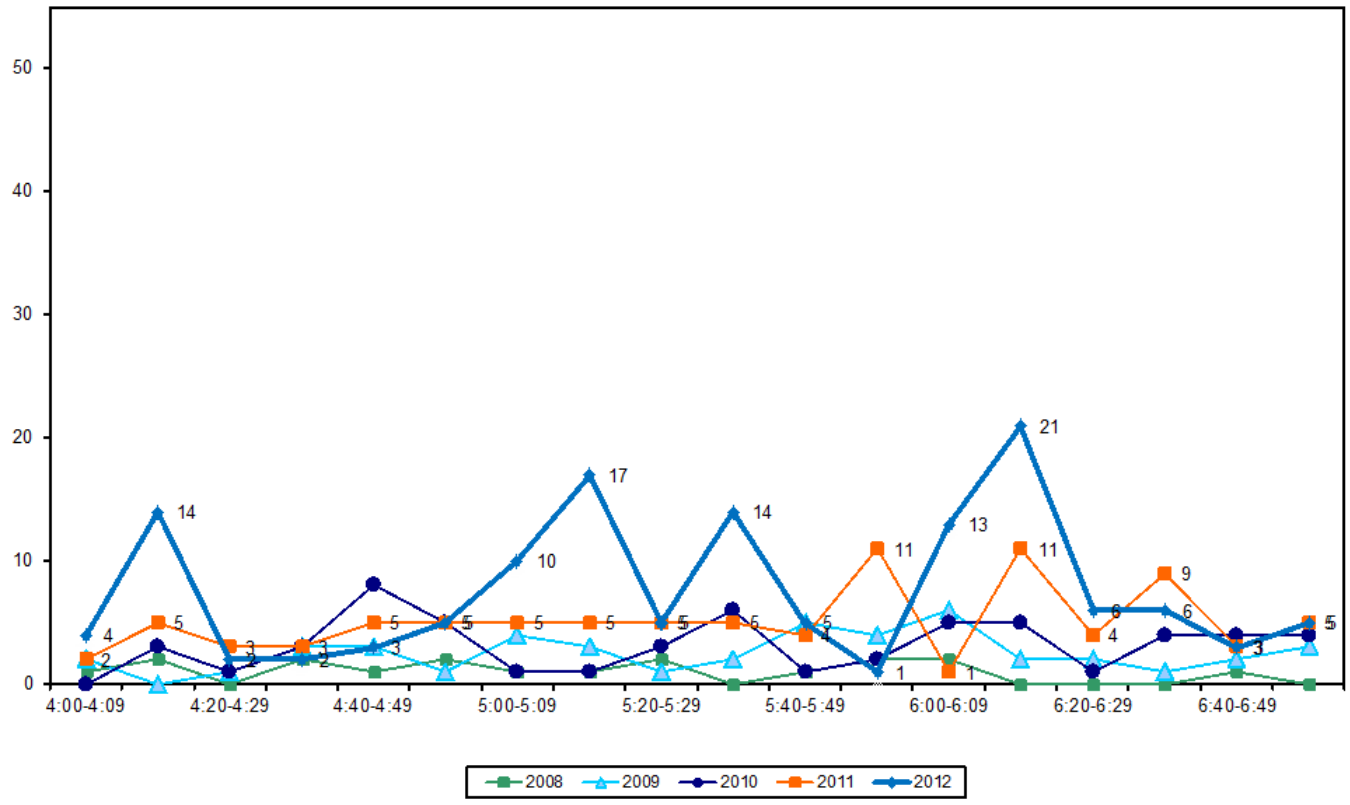
- Over the evening peak, the majority of cyclists using this intersection were adults (79 per cent, down from 97 per cent in 2011).
- All cyclists were wearing a helmet (100 per cent, unchanged from 2011).
- The majority of cyclists were male (68 per cent, down from 79 per cent in 2011).
- Nearly all cyclists were riding on the road (98 per cent, stable from 97 per cent in 2011).

**Table 3.4: Evening Cyclist Characteristics**
**Upper Harbour Drive/Albany Highway 2007 – 2012 (%)**

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

- Evening cyclist movement volumes are variable over the evening monitoring period. Four peaks occurred – between 4:10pm and 4:19pm (14 movements), 5:10pm and 5:19pm (17 movements), 5:30pm and 5:39pm (14 movements) and 6.10pm and 6.19pm (21 movements). This compares to relatively stable evening cyclist movement volumes in 2011 with peaks between 5:50pm and 5:59pm, 6:10pm and 6:19pm (11 movements per ten minute interval) and 6:30pm and 6:39pm (9 movements).

**Figure 3.3: Evening Peak Cyclist Frequency**
**Upper Harbour Drive/Albany Highway 2008 – 2012 (n)**



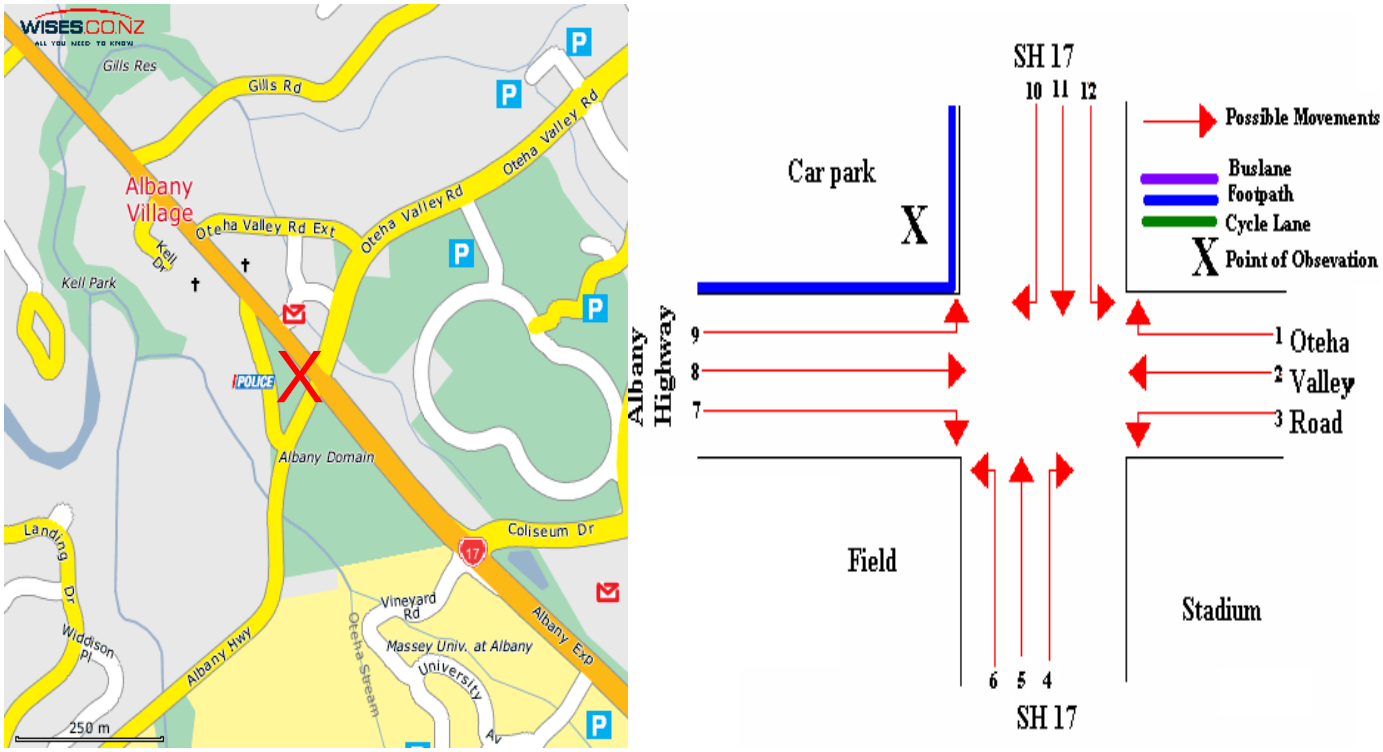

*Note: In 2012, thirty per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:*

- *Seven cyclists at 4:14pm*
- *Ten cyclists at 5:13pm*
- *Ten cyclists at 5:30pm*
- *Four cyclists at 5:45pm*
- *Three cyclists at 6:04pm*
- *Three cyclists at 6:10pm*
- *Four cyclists at 6:14pm*
- *Three cyclists at 6:39pm.*

# 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** |

## 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 increased in 2012 (40 cycle movements, up from 26 movements in 2011).
- The two key movements in the morning is riding left from Albany Highway onto State Highway 17 (Movement 9 = 10 movements) and riding straight along Oteha Valley Road onto Albany Highway (Movement 2 = 9 movements).
- Of the 12 movements possible at this site, the most notable increase is at Movement 9 (up 10 movements from 2011).

**Table 4.1: Morning Cyclist Movements**

**Oteha Valley Road/SH17/Albany Highway 2007 – 2012 (n)**

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

- Over the morning peak, most cyclists riding through this intersection were adults (95 per cent, up from 81 per cent in 2011).
- All cyclists were wearing a helmet (100 per cent, up from 96 per cent last year).
- The majority of cyclists were male (70 per cent, up from 65 per cent in 2011).
- The share of road riders at this site has increased over the last 12 months – up 28 percentage points to 90 per cent.

**Table 4.2: Morning Cyclist Characteristics**

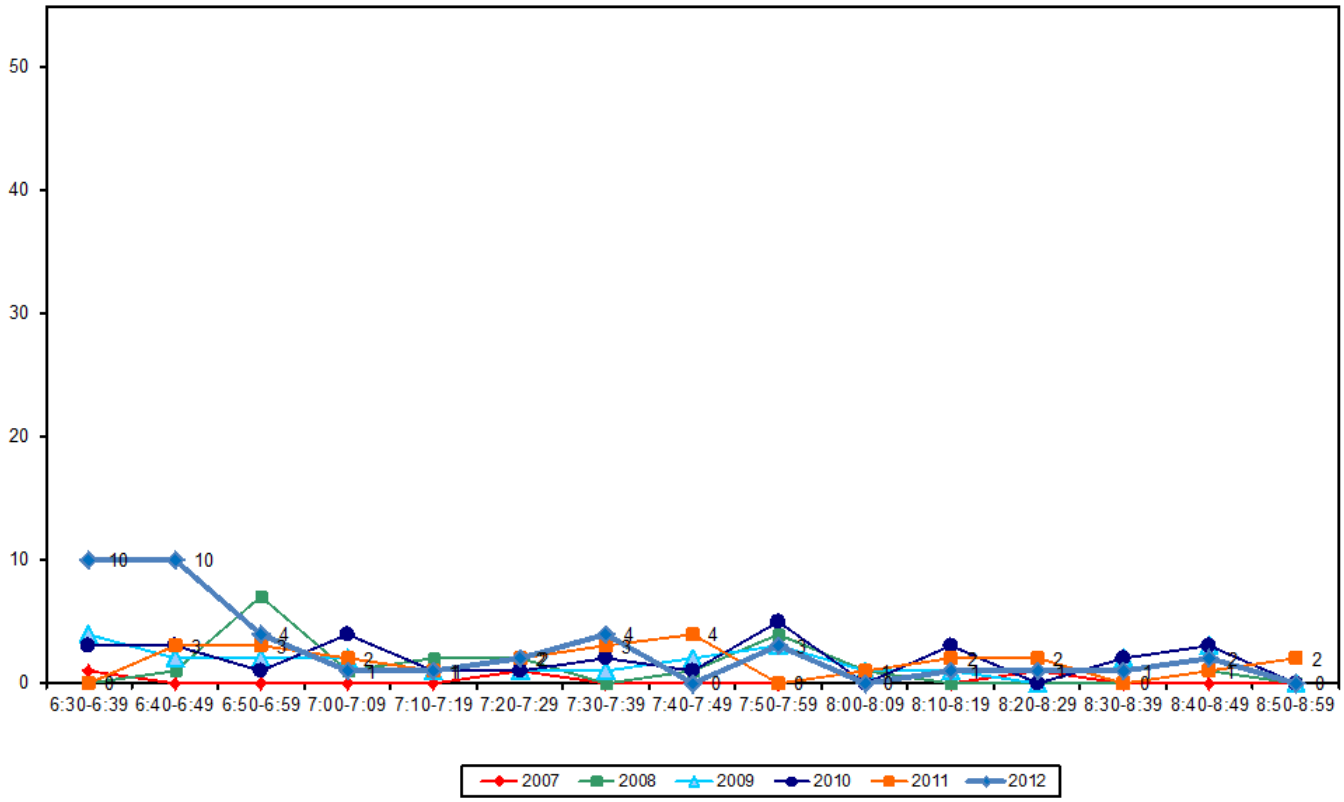
**Oteha Valley Road/SH17/Albany Highway 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 100 | 80 | 92 | 83 | 81 | 95 | **14** |
| School child | 0 | 20 | 8 | 17 | 19 | 5 | **-14** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 100 | 100 | 88 | 100 | 96 | 100 | **4** |
| No helmet | 0 | 0 | 12 | 0 | 4 | 0 | **-4** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 65 | 70 | **5** |
| Female | - | - | - | - | 35 | 30 | **-5** |
| Can't tell | - | - | - | - | 0 | 0 | **0** |
| **Where Riding** | | | | | | | |
| Road | 50 | 100 | 92 | 76 | 62 | 90 | **28** |
| Footpath | 50 | 0 | 8 | 24 | 38 | 10 | **-28** |
| ***Base:*** | ***4*** | ***20*** | ***25*** | ***29*** | ***26*** | ***40*** | |

- Like last year, morning cyclist movement volumes were low over the entire monitoring period. A slight peak occurred at the beginning of the monitoring period, between 6:30am and 6:49am (10 movements per 10 minute interval). In comparison, last year cyclist movements remained at 4 or less throughout the duration of the monitoring period.

**Figure 4.2: Morning Peak Cyclist Frequency**

**Oteha Valley Road/SH17/Albany Highway 2007 – 2012 (n)**




*Note: In 2012, 40 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:*

- *Ten cyclists at 6:30am*
- *Three cyclists at 6:42am*
- *Three cyclists at 7:37am.*

## 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 recorded at the Oteha Valley Road/SH17/Albany Highway intersection increased in 2012 (88 movements, up from 56 movements in 2011).
- The most common movement in the evening was riding straight along Albany Highway into Oteha Valley Road (Movement 8 = 36 movements).
- The most notable change in evening cyclist movement volumes occurred at Movement 8 (up 9 movements).

**Table4.3: Evening Cyclist Movements**

**Oteha Valley Road/SH17/Albany Highway 2007 – 2012 (n)**

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

- Most cyclists using this site were adults (95 per cent, stable from 93 per cent in 2011).
- Most cyclists were wearing a helmet (92 per cent, down from 98 per cent in 2011).
- The majority of cyclists were male (83 per cent, up from 80 per cent in 2011).
- Consistent with the morning peak, the share of road riders has increased – up 5 percentage points to 89 per cent.

**Table 4.4: Evening Cyclist Characteristics**

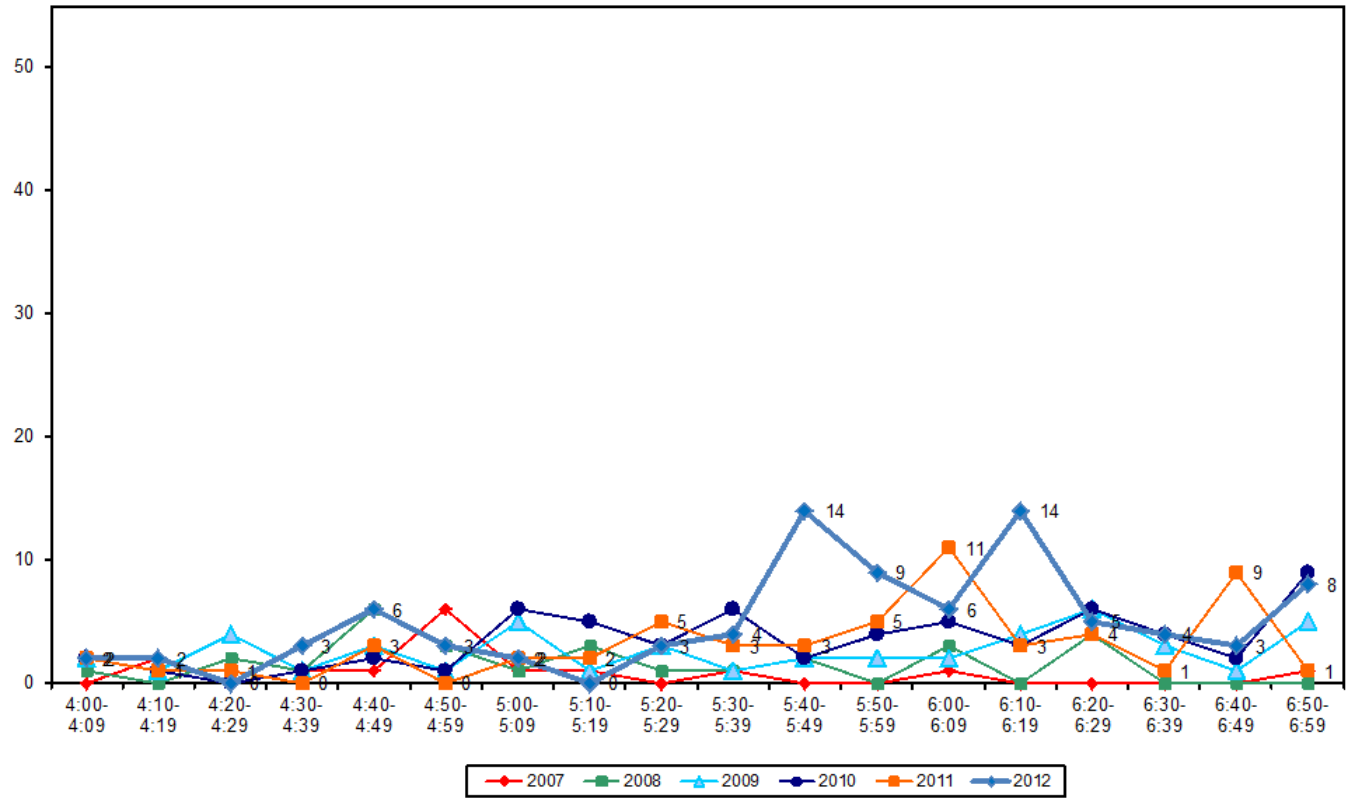
**Oteha Valley Road/SH17/Albany Highway 2007 – 2012 (%)**

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

- The volume of evening cyclist movements remained stable over most of the monitoring period peaking between 5:40pm and 5:49pm (14 movements) and 6:10pm and 6:19pm (14 movements). This compares with 2011 when two peaks were recorded – between 6:00pm and 6:09pm (11 movements) and between 6:40pm and 6:49pm (9 movements).

**Figure 4.3: Evening Peak Cyclist Frequency**

**Oteha Valley Road/SH17/Albany Highway 2007 – 2012 (n)**



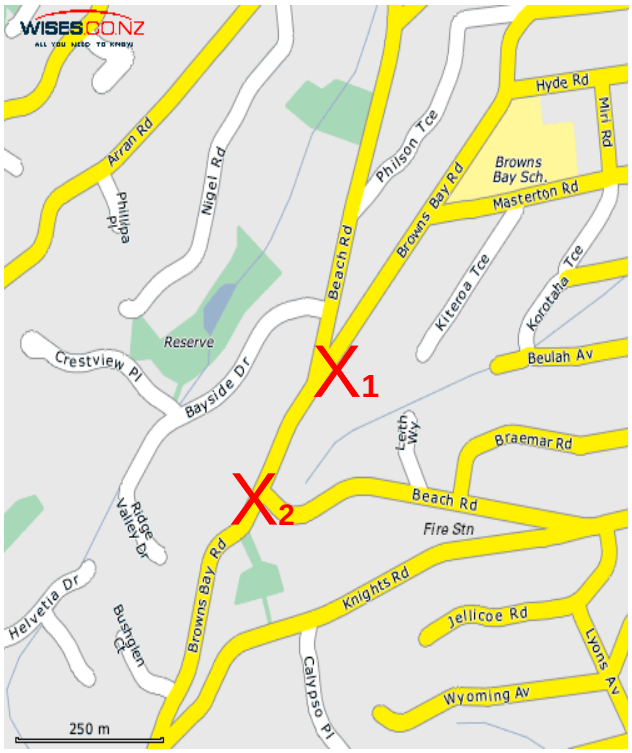

*Note: In 2012, 22 per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:*

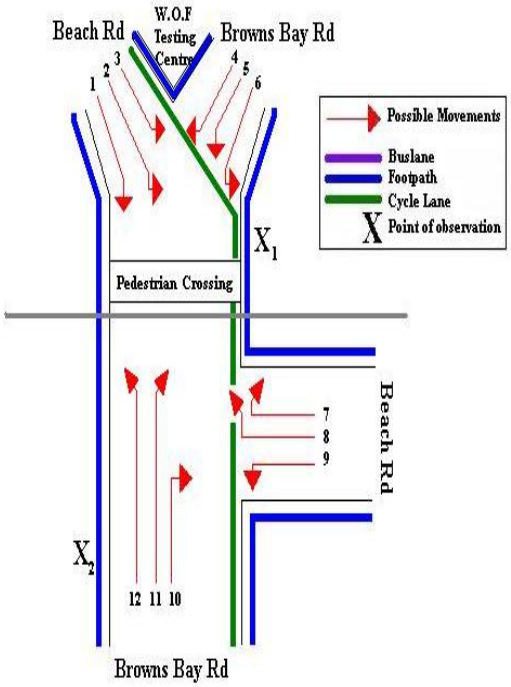
- *Three cyclists at 4:46pm*
- *Ten cyclists at 5:42pm*
- *Six cyclists at 6:18pm*

# 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** |

## 5.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- In 2012, the morning cyclist traffic at the intersection of Beach/Browns Bay Road decreased (28 movements, down from 47 in 2011).
- The key movement in the morning is travelling south along Beach Road (Movement 2 = 13 movements).
- Morning cyclist volumes at this site decreased most notably at Movement 5 (down 20 movements).

**Table 5.1: Morning Cyclist Movements**

**Beach/Browns Bay Road 2007 – 2012 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 4 | 7 | 0 | 1 | 4 | **3** |
| 2 | 2 | 4 | 0 | 1 | 8 | 13 | **5** |
| 3 | 3 | 0 | 0 | 2 | 3 | 1 | **-2** |
| 4 | 3 | 0 | 0 | 1 | 0 | 0 | **0** |
| 5 | 0 | 4 | 7 | 22 | 20 | 0 | **-20** |
| 6 | 2 | 3 | 0 | 1 | 0 | 0 | **0** |
| 7 | 0 | 0 | 5 | 7 | 7 | 2 | **-5** |
| 8 | 0 | 9 | 6 | 3 | 0 | 2 | **2** |
| 9 | 0 | 0 | 0 | 3 | 0 | 1 | **1** |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 11 | 0 | 0 | 3 | 8 | 5 | 4 | **-1** |
| 12 | 0 | 2 | 1 | 2 | 3 | 1 | **-2** |
| **Total** | **11** | **26** | **29** | **50** | **47** | **28** | **-19** |

- Over the morning peak in 2012, adults comprise three quarters of the total cyclists (75 per cent, stable from 74 per cent in 2011).
- Almost all cyclists recorded were wearing a helmet (96 per cent, down slightly from 100 per cent in 2011).
- The majority of cyclists were male (96 per cent, stable from 94 per cent last year).
- Approximately four in five cyclists are riding on the road (79 per cent, up from 74 per cent last year), while the remaining 21 per cent are riding on the footpath.

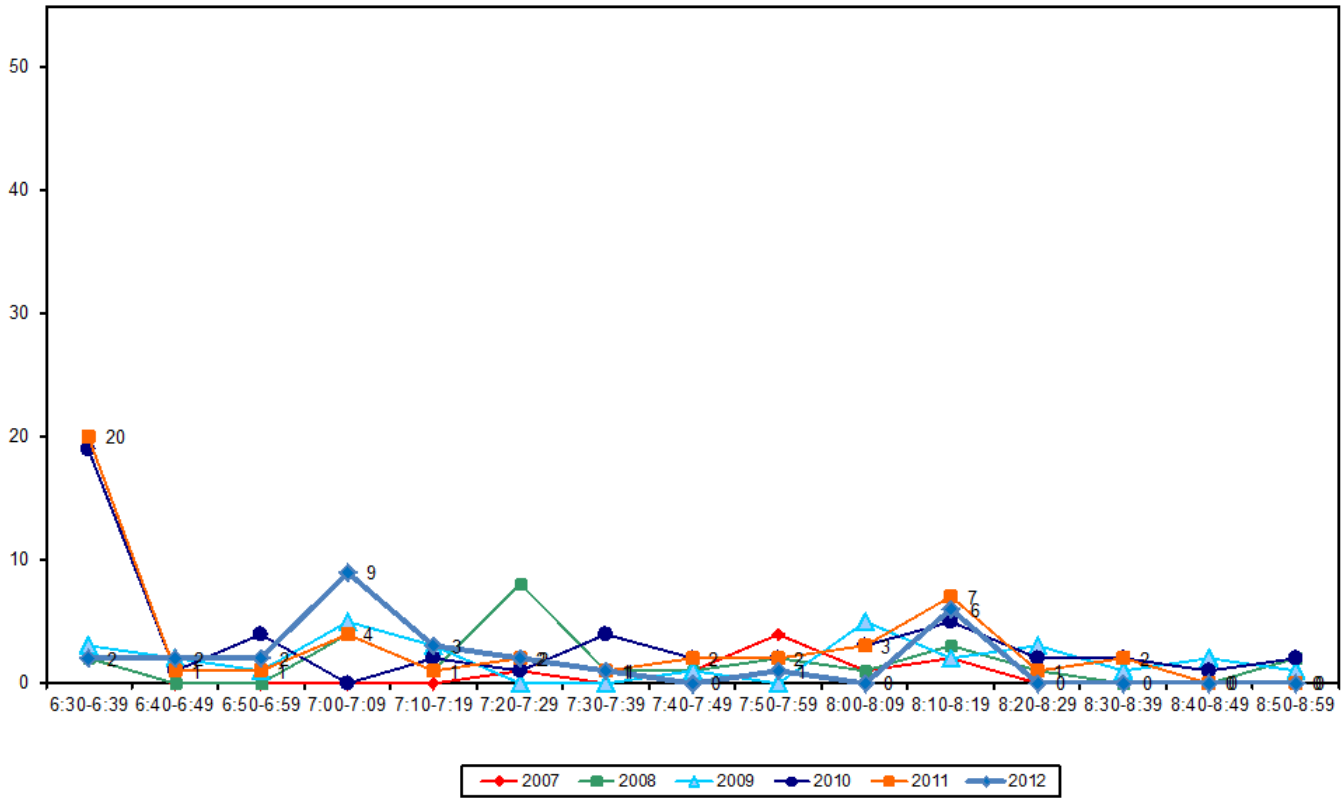
**Table 5.2: Morning Cyclist Characteristics**

**Beach/Browns Bay Road 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 36 | 88 | 69 | 80 | 74 | 75 | **1** |
| School child | 64 | 12 | 31 | 20 | 26 | 25 | **-1** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 91 | 96 | 93 | 98 | 100 | 96 | **-4** |
| No helmet | 9 | 4 | 7 | 2 | 0 | 4 | **4** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 94 | 96 | **-2** |
| Female | - | - | - | - | 6 | 4 | **2** |
| Can't tell | - | - | - | - | 0 | 0 | **0** |
| **Where Riding** | | | | | | | |
| Road | 45 | 88 | 42 | 80 | 74 | 79 | **5** |
| Footpath | 55 | 12 | 34 | 6 | 26 | 21 | **-5** |
| Off-road cycleway | - | - | 24 | 14 | 0 | 0 | **0** |
| ***Base:*** | ***11*** | ***26*** | ***29*** | ***50*** | ***47*** | ***28*** | |

- The volume of morning cyclist movements remains low over the morning monitoring period with no more than three movements per ten minute monitoring interval. The exceptions to this the peaks between 7:00am and 7:09 am (9 movements) and between 8:10am and 8:19am (6 movements). This compares to a sharp peak between 6:30am and 6:39am (20 movements) in 2011.

**Figure 5.2: Morning Peak Cyclist Frequency**
**Beach/Browns Bay Road 2007 – 2012 (n)**




*Note: In 2012, 4 cyclists were observed riding together at 8:18am. This equates to 14 per cent of all morning peak cycle movements at this site.*

*It should also be noted that two groups of cyclists were observed in the ten minute interval before the start of the morning monitoring period at 6:23am and 6:29am, with 8 and 6 cyclists in each group respectively.*

## 5.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- The volume of cycle movements at the Beach/Browns Bay Road intersection has increased from last year (33 cycle movements, up from 28 movements in 2011).
- The key movement in the evening is riding north along Browns Bay Road turning left into Beach Road (Movement 12 = 9 movements).
- Compared with last year, the volume of evening cyclists is lower at Movement 9 (down 3 movements) and higher at Movements 8 and 11 (up 3 movements each).

**Table 5.3: Evening Cyclist Movements**

**Beach/Browns Bay Road 2007 – 2012 (n)**

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

- Most cyclists were adults (91 per cent, up from 82 per cent in 2011).
- Nearly all cyclists were wearing a helmet (91 per cent, down from 96 per cent last year).
- Almost all cyclists continue to be male (88 per cent).
- Approximately three-quarters of cyclists are riding on the road (76 per cent, stable from 75 per cent at the previous measure). The remaining 24 per cent of cyclists are riding on the footpath.

**Table 5.4: Evening Cyclist Characteristics**

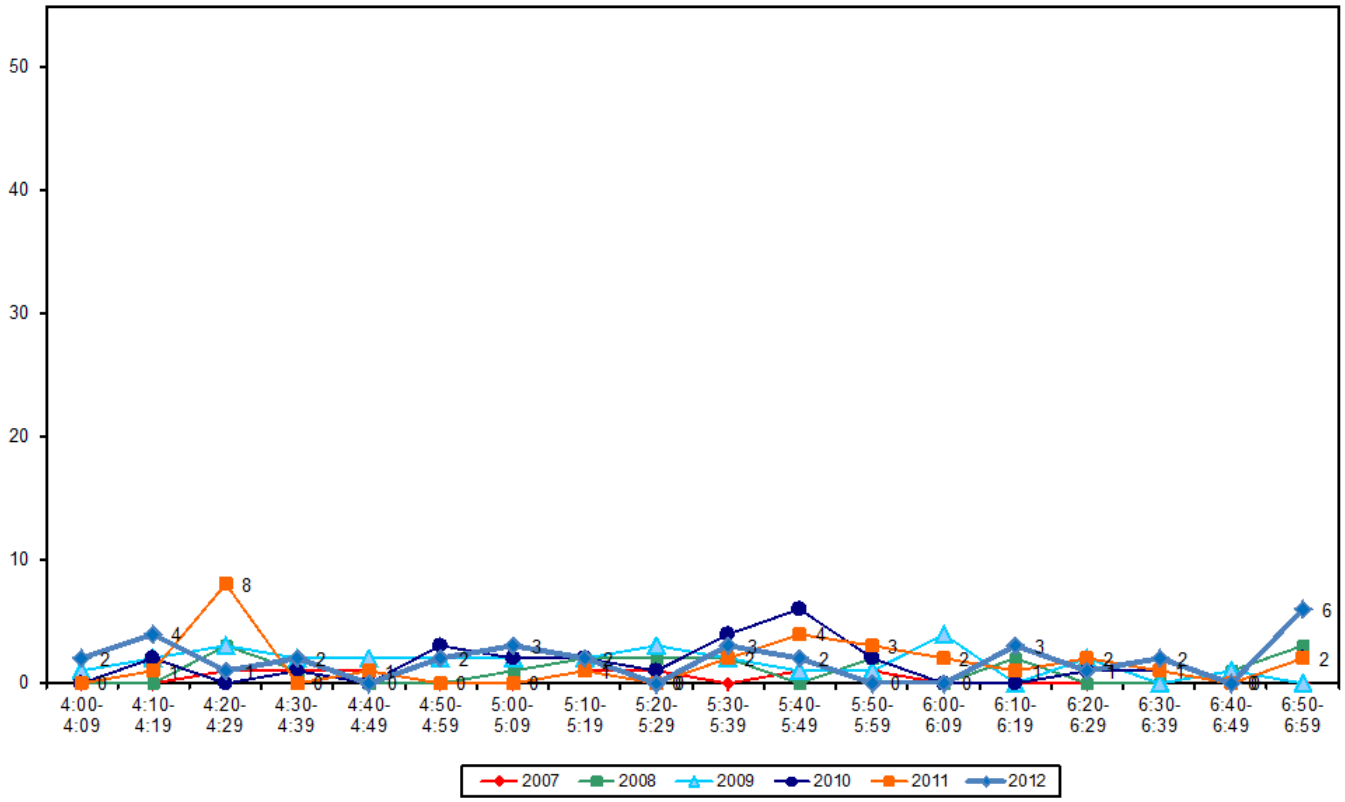
**Beach/Browns Bay Road 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 100 | 58 | 60 | 85 | 82 | 91 | **9** |
| School child | 0 | 42 | 40 | 15 | 18 | 9 | **-9** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 100 | 95 | 100 | 89 | 96 | 91 | **-5** |
| No helmet | 0 | 5 | 0 | 11 | 4 | 9 | **5** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 89 | 88 | **-1** |
| Female | - | - | - | - | 11 | 9 | **-2** |
| Can't tell | - | - | - | - | 0 | 3 | **3** |
| **Where Riding** | | | | | | | |
| Road | 87 | 63 | 33 | 81 | 75 | 76 | **1** |
| Footpath | 13 | 37 | 44 | 15 | 25 | 24 | **-1** |
| Off-road cycleway | - | - | 23 | 4 | 0 | 0 | **0** |
| ***Base:*** | ***8*** | ***19*** | ***30*** | ***27*** | ***28*** | **33** | |

- Evening cyclist movement volumes are relatively low over the entire monitoring period, with no more than four cyclists recorded during most ten minute intervals. There is a slight peak that occurred between 6:50pm and 6:59pm (6 movements). This compares to a slight peak between 5:20pm and 5:29pm (8 movements) in 2011.

**Figure 5.3: Evening Peak Cyclist Frequency**

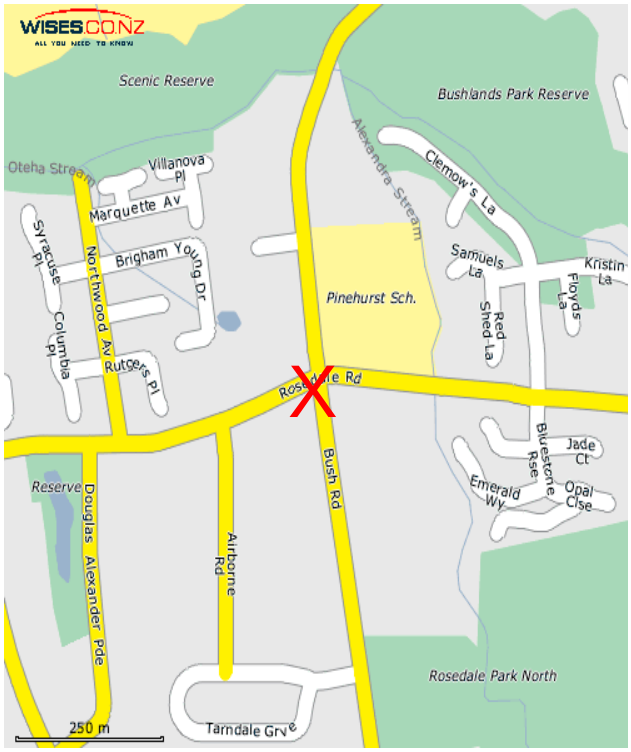
**Beach/Browns Bay Road 2007 – 2012 (n)**

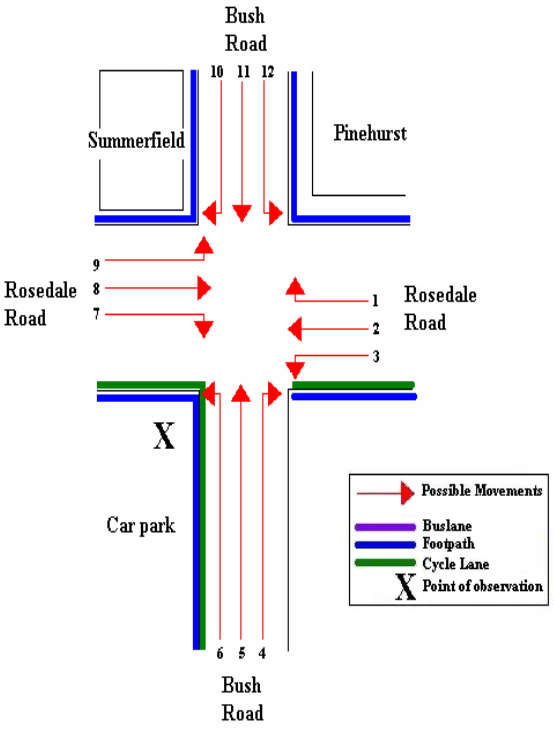


# 6. ROSEDALE ROAD/BUSH ROAD, ALBANY (SITE 46)

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** |

## 6.2 Morning Peak

### *Environmental Conditions*

- The weather was fine until 7:30am, when light drizzle began which persisted throughout the remainder of the morning peak.
- Major road works were noted approximately 1 km down the eastern side of Rosedale Road which may have affected cycle counts this year.

### *Key Points*

- Since last year, the volume of morning cyclists at the Rosedale/Bush Road intersection has decreased, from 29 in 2011 to 22 movements this year.
- The most common movement in the morning is straight along Rosedale Road heading west (Movement 2 = 6 cyclists).
- The most notable changes since last year are at Movements 2 and 6 (down 3 cyclists each).

**Table 6.1: Morning Cyclist Movements**

**Rosedale/Bush Road 2007 – 2012 (n)**

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

- Over the morning peak, a high percentage of cyclists at this site are adults (82 per cent, a decrease from 93 per cent last year).
- Most cyclists are wearing a helmet (95 per cent, stable from 97 per cent in 2011).
- The majority of cyclists continue to be male (86 per cent, up from 69 per cent last year).
- Most cyclists are riding on the road (82 per cent, stable from 83 per cent last year).

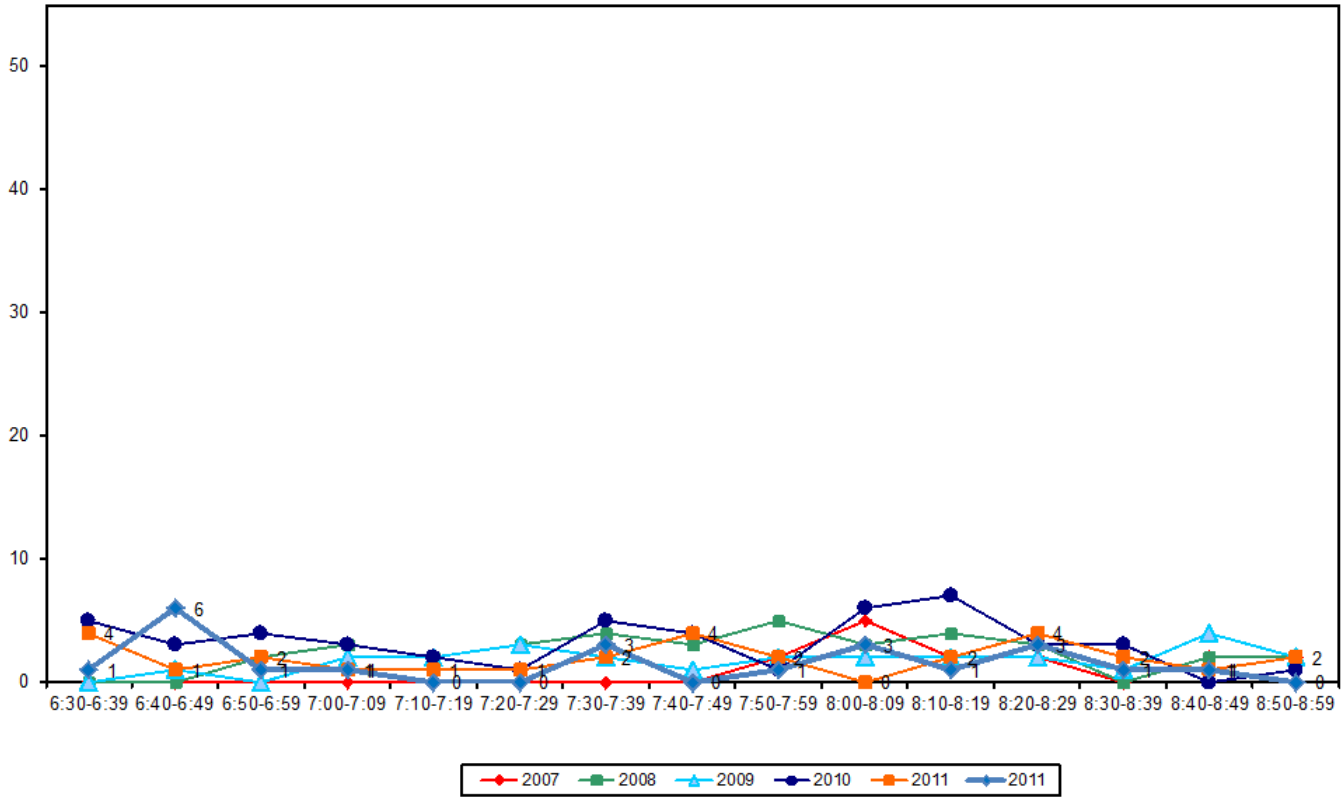
**Table 6.2: Morning Cyclist Characteristics**

**Rosedale/Bush Road 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 40 | 81 | 81 | 81 | 93 | 82 | **-11** |
| School child | 60 | 19 | 19 | 19 | 7 | 18 | **11** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 100 | 92 | 92 | 96 | 97 | 95 | **-2** |
| No helmet | 0 | 8 | 8 | 4 | 3 | 5 | **2** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 69 | 86 | **17** |
| Female | - | - | - | - | 24 | 14 | **-10** |
| Can't tell | - | - | - | - | 7 | 0 | **-7** |
| **Where Riding** | | | | | | | |
| Road | 33 | 61 | 69 | 73 | 83 | 82 | **-1** |
| Footpath | 67 | 39 | 31 | 27 | 17 | 18 | **1** |
| ***Base:*** | ***15*** | ***36*** | ***26*** | ***48*** | ***29*** | **22** | |

- Cyclist volumes are low throughout the monitoring period with a slight peak between 6:40am and 6:49am (6 movements), ten minutes earlier than the first slight peak observed in 2011 (4 movements). Two further slight peaks also occurred in 2011 between 7:40am and 7:49 am and between 8:20am and 8:29am (4 movements per ten minute interval).

**Figure 6.2: Morning Peak Cyclist Frequency**
**Rosedale/Bush Road 2007 – 2012 (n)**




*Note: In 2012, three cyclists were observed riding together at 6:44am. This equates to 14 per cent of all morning peak cycle movements at this site.*

## 6.3 Evening Peak

### *Environmental Conditions*

- The weather was fine throughout the monitoring period.
- Major road works were noted approximately 1 km down the eastern side of Rosedale Road which may have affected cycle counts this year.

### *Key Points*

- The total number of cycle movements recorded at the Rosedale/Bush Road intersection over the evening shift has decreased this measure, from 56 cyclists last year to 41 cyclists this year.
- The key evening movement is travelling straight along Rosedale Road heading east (Movement 8 = 7 movements).
- The most notable changes since 2011 are at Movement 2 and Movement 11 (down 10 and 8 cyclist movements respectively).

**Table 6.3: Evening Cyclist Movements**

**Rosedale/Bush Road 2007 – 2012 (n)**

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

- Consistent with the previous measure, the majority of evening cyclists using this intersection are adults (80 per cent, down notably from 95 per cent in 2011).
- Helmet wearing has decreased slightly among evening cyclists (93 per cent, down from 98 per cent last year).
- The greatest share of cyclists continue to be male (93 per cent, up from 88 per cent last year).
- Eighty-five per cent of cyclists are travelling on the road (stable from 84 per cent last year).

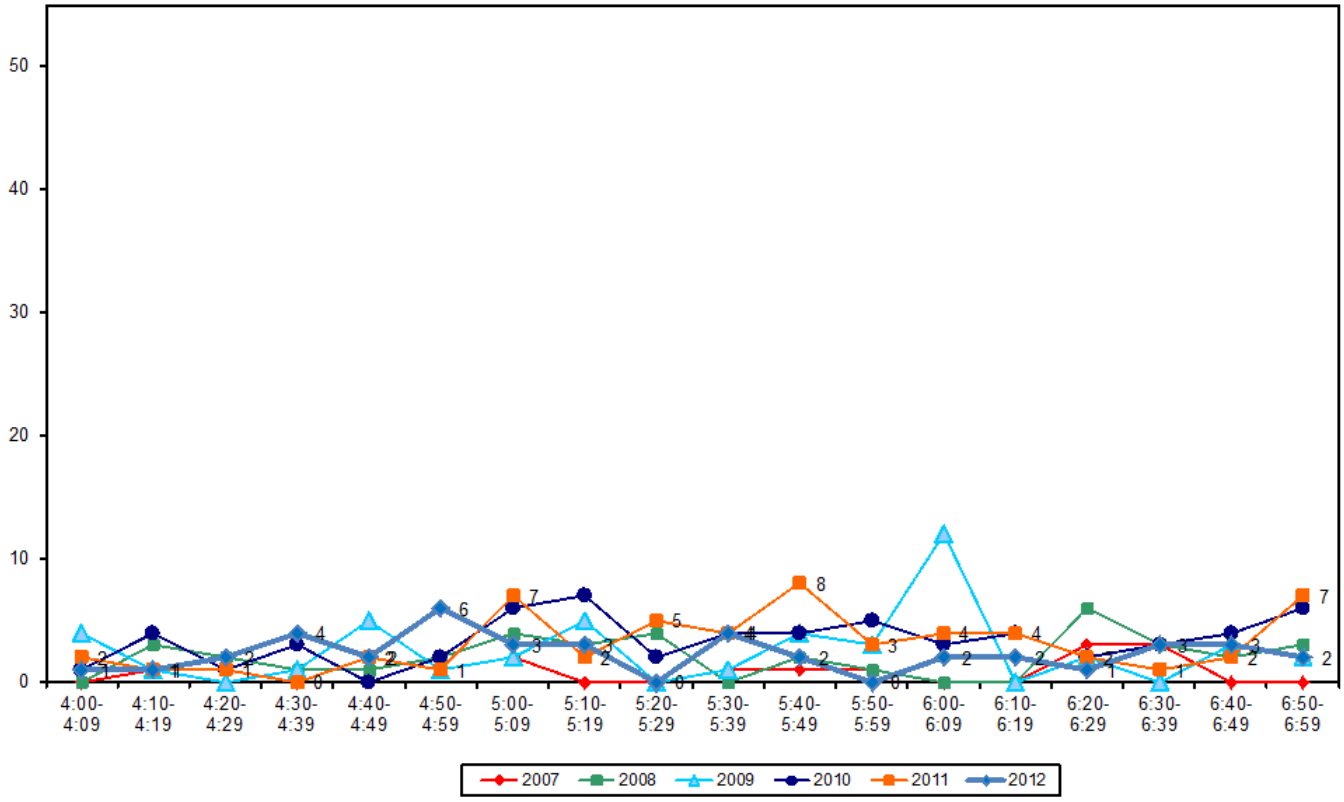
**Table 6.4: Evening Cyclist Characteristics**

**Rosedale/Bush Road 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 81 | 78 | 76 | 80 | 95 | 80 | **-15** |
| School child | 19 | 22 | 24 | 20 | 5 | 20 | **15** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 94 | 92 | 93 | 84 | 98 | 93 | **-5** |
| No helmet | 6 | 8 | 7 | 16 | 2 | 7 | **5** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 88 | 93 | **5** |
| Female | - | - | - | - | 13 | 7 | **-5** |
| Can't tell | - | - | - | - | 0 | 0 | **0** |
| **Where Riding** | | | | | | | |
| Road | 62 | 76 | 61 | 69 | 84 | 85 | **1** |
| Footpath | 38 | 24 | 39 | 31 | 16 | 15 | **-1** |
| ***Base:*** | ***16*** | ***37*** | ***46*** | ***61*** | ***56*** | ***41*** | |

- Evening cyclist volumes were low throughout the monitoring period, with no more than four cyclists recorded over any ten minute interval. The exception to this was the slight peak observed between 4:50pm and 4:59pm (6 movements). This compares with three slight peaks in cycle movements recorded in 2011, between 5:00pm and 5:09pm, and 6:50pm and 6:59pm (7 cyclists in each ten minute period) and another between 5:40pm and 5:49pm (8 cyclists).

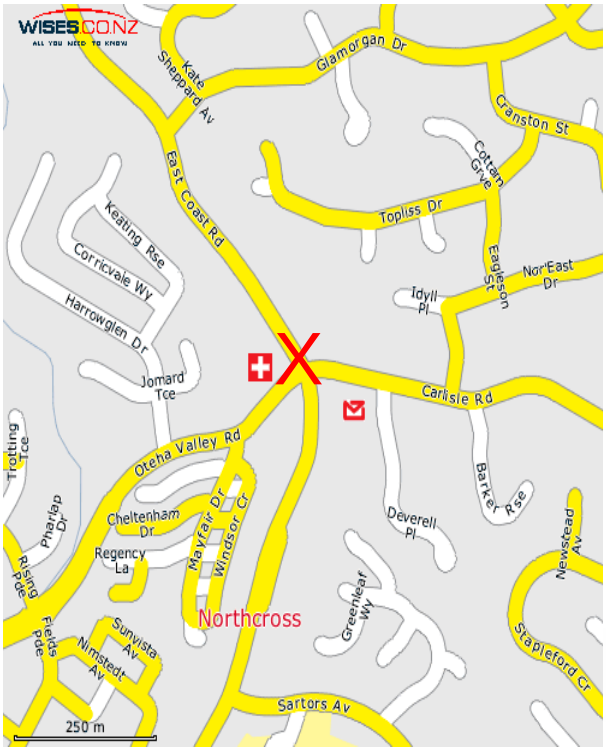
**Figure 6.3: Evening Peak Cyclist Frequency**
**Rosedale/Bush Road 2007 – 2012 (n)**

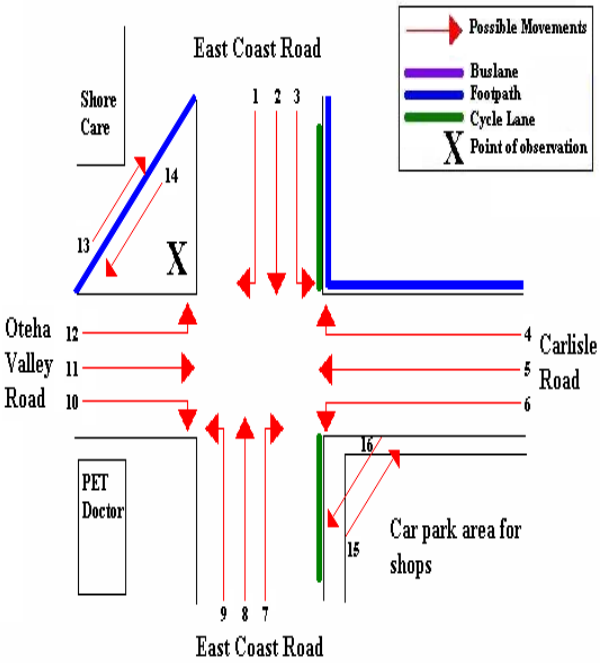


# 7. OTEHA VALLEY ROAD/EAST COAST ROAD, ALBANY (SITE 47)

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** |

## 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 with the previous year, the volume of morning cyclists at the Oteha Valley/East Coast Road intersection has increased, from 53 movements in 2011 to 68 movements this year.
- The most common movement in the morning is cycling straight through East Coast Road north to south (Movement 2 = 24 cyclists).
- The most notable increase is at Movement 2 (up 16 cyclists).

**Table 7.1: Morning Cyclist Movements**

**Oteha Valley/East Coast Road 2007 – 2012 (n)**

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

- Over the morning peak, the greatest share of cyclists are adults (78 per cent, up from 74 per cent in 2011).
- Almost all cyclists are wearing a helmet (98 per cent, stable from 96 per cent last year).
- Three-quarters of cyclists are recorded as male (74 per cent).
- Seventy-four per cent of cyclists are riding on the road (up from 62 per cent in 2011).

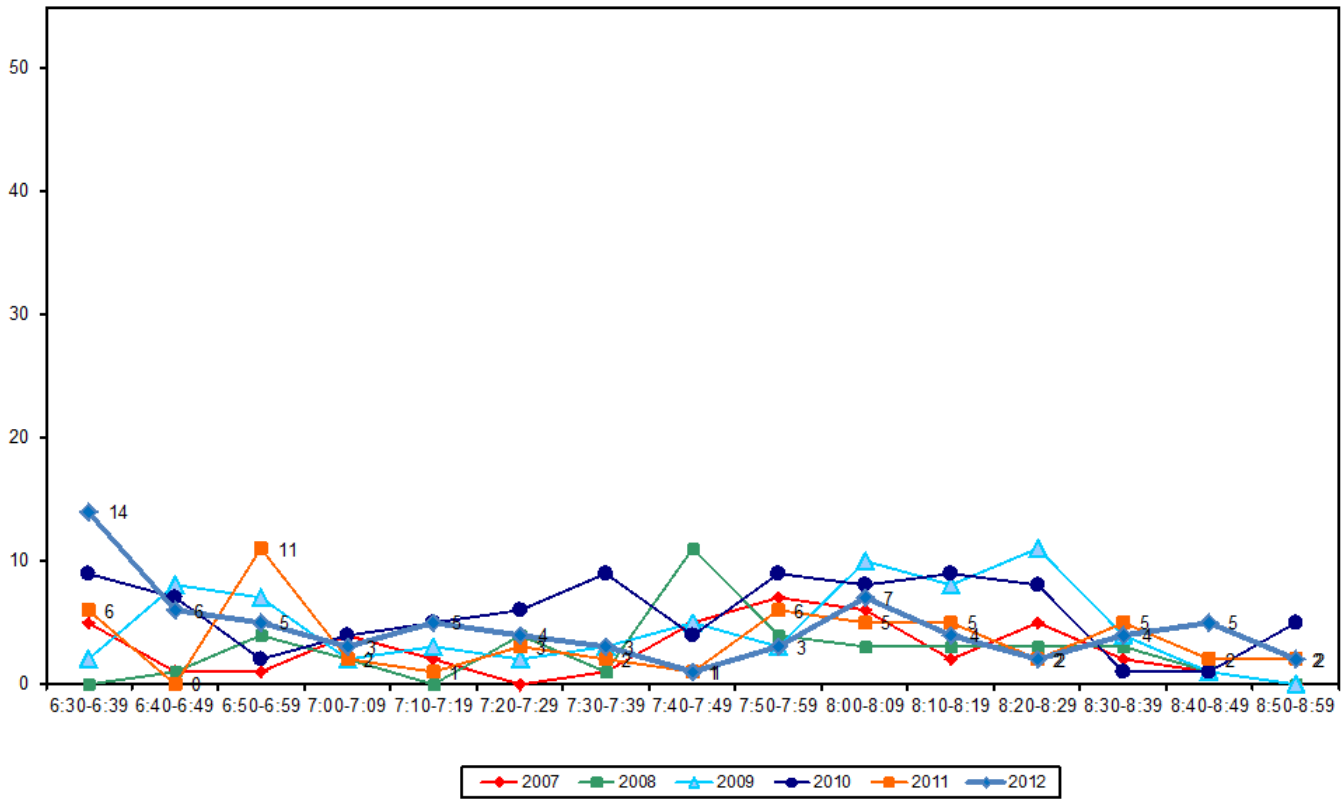
**Table 7.2: Morning Cyclist Characteristics**

**Oteha Valley/East Coast Road 2007 – 2012 (%)**

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

- The morning cycle movements are relatively stable throughout this shift. There is however a peak that occurs between 6:30am and 6:39am (14 cyclists). This compares to the peak occurring between 6:50 and 6:59am (11 cyclists) in 2011.

***Figure 7.2: Morning Peak Cyclist Frequency***
***Oteha Valley/East Coast Road 2007 – 2012 (n)***




*Note: In 2012, 19 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:*

- *Seven cyclists at 6:33am*
- *Three cyclists at 6:52am*
- *Three cyclists at 8:33am.*

## 7.3 Evening Peak

### *Environmental Conditions*

- The weather was fine throughout the evening peak.
- 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 76 movements last year to 69 movements in 2012.
- The key evening movement is riding straight along East Coast Road in a northerly direction (Movement 8 = 13 cyclists).
- The most notable decrease this year is at Movement 2 (down 10 cyclists).

**Table 7.3: Evening Cyclist Movements**

**Oteha Valley/East Coast Road 2007 – 2012 (n)**

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

- Over the evening peak, the majority of cyclists using this site are adults (80 per cent, compared with 91 per cent in 2011).
- Most cyclists are wearing a helmet (93 per cent, down from 96 per cent last year).
- Most cyclists are male (89 per cent).
- Seventy-five per cent of cyclists are riding on the road, a decrease from 83 per cent at the previous measure.

**Table 7.4: Evening Cyclist Characteristics**

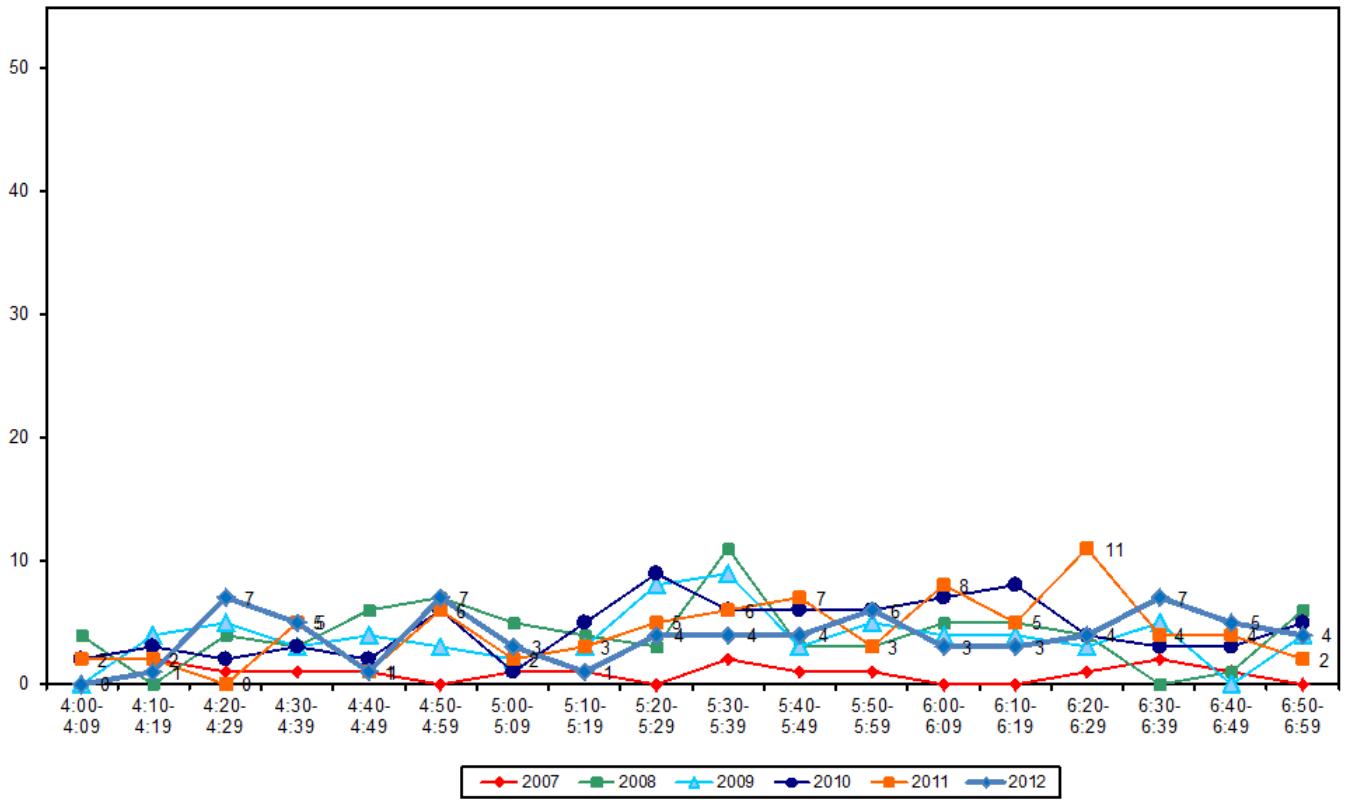
**Oteha Valley/East Coast Road 2007 – 2012(%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 76 | 81 | 75 | 80 | 91 | 80 | **-11** |
| School child | 24 | 19 | 25 | 20 | 9 | 20 | **11** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 88 | 96 | 94 | 90 | 96 | 93 | **-3** |
| No helmet | 12 | 4 | 6 | 10 | 4 | 7 | **3** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 93 | 89 | **-4** |
| Female | - | - | - | - | 7 | 10 | **3** |
| Can't tell | - | - | - | - | 0 | 1 | **1** |
| **Where Riding** | | | | | | | |
| Road | 71 | 72 | 74 | 67 | 83 | 75 | **-8** |
| Footpath | 29 | 28 | 26 | 33 | 17 | 25 | **8** |
| ***Base:*** | ***17*** | ***74*** | ***69*** | ***81*** | ***76*** | ***69*** | |

- The volume of cycle movements remains relatively stable throughout the evening period, with peaks between 4:20pm and 4:29pm, 4:50pm and 4:59pm, and 6:30pm and 6:39pm (7 movements per each 10 minute interval).

**Figure 7.3: Evening Peak Cyclist Frequency**

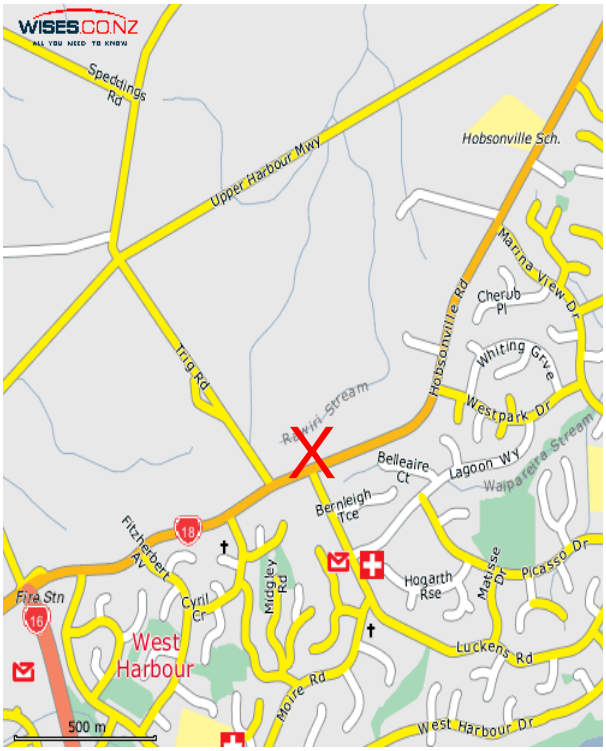
**Oteha Valley/East Coast Road 2007 – 2012 (n)**

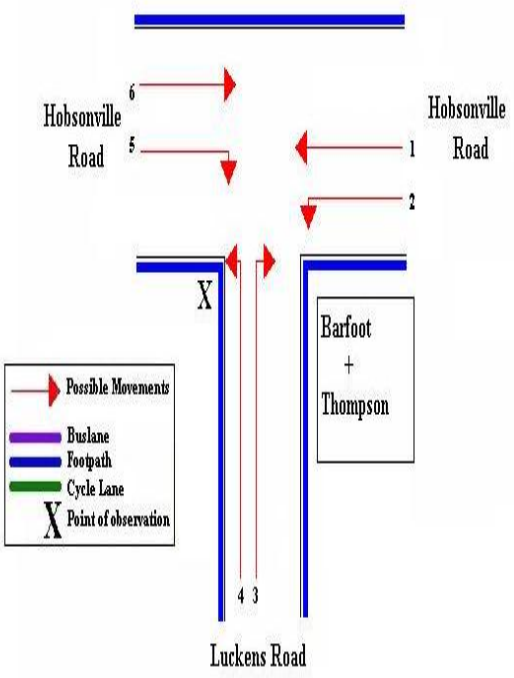


# 8. LUCKENS ROAD/HOBSONVILLE ROAD, WEST HARBOUR (SITE 51)

Figure 5.1 shows the possible cyclist movements at this intersection.

**Figure 5.1: 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** |

## 8.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- The volume of morning cyclists at the Luckens/Hobsonville Road intersection has increased notably from previous counts (42 cycle movements, compared with 14 movements in 2011).
- The key morning movement is travelling straight along Hobsonville Road heading southwest (Movement 1 = 15 cyclists).
- Of the six movements possible at this intersection, the most notable change is at Movement 1 (up 8 cyclists).

**Table 5.1: Morning Cyclist Movements**

**Luckens/Hobsonville Road 2007 – 2012 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| 1 | 5 | 3 | 7 | 7 | 7 | **15** | **8** |
| 2 | 3 | 8 | 9 | 9 | 4 | **11** | **7** |
| 3 | 2 | 7 | 1 | 6 | 0 | **3** | **3** |
| 4 | 2 | 3 | 6 | 7 | 2 | **5** | **3** |
| 5 | 0 | 2 | 2 | 1 | 0 | **1** | **1** |
| 6 | 8 | 2 | 1 | 11 | 1 | **7** | **6** |
| **Total** | **20** | **25** | **26** | **41** | **14** | **42** | **28** |

- Over the morning peak, adults comprise the greatest share of cycle movements (93 per cent, up from 86 per cent in 2011).
- Almost all cyclists are wearing a helmet (95 per cent, stable from 93 per cent of cyclists in 2011).
- The majority of cyclists recorded were male (83 per cent, down from 100 per cent last year).
- Eighty-six per cent of cyclists are riding on the road (up from 79 per cent last year).

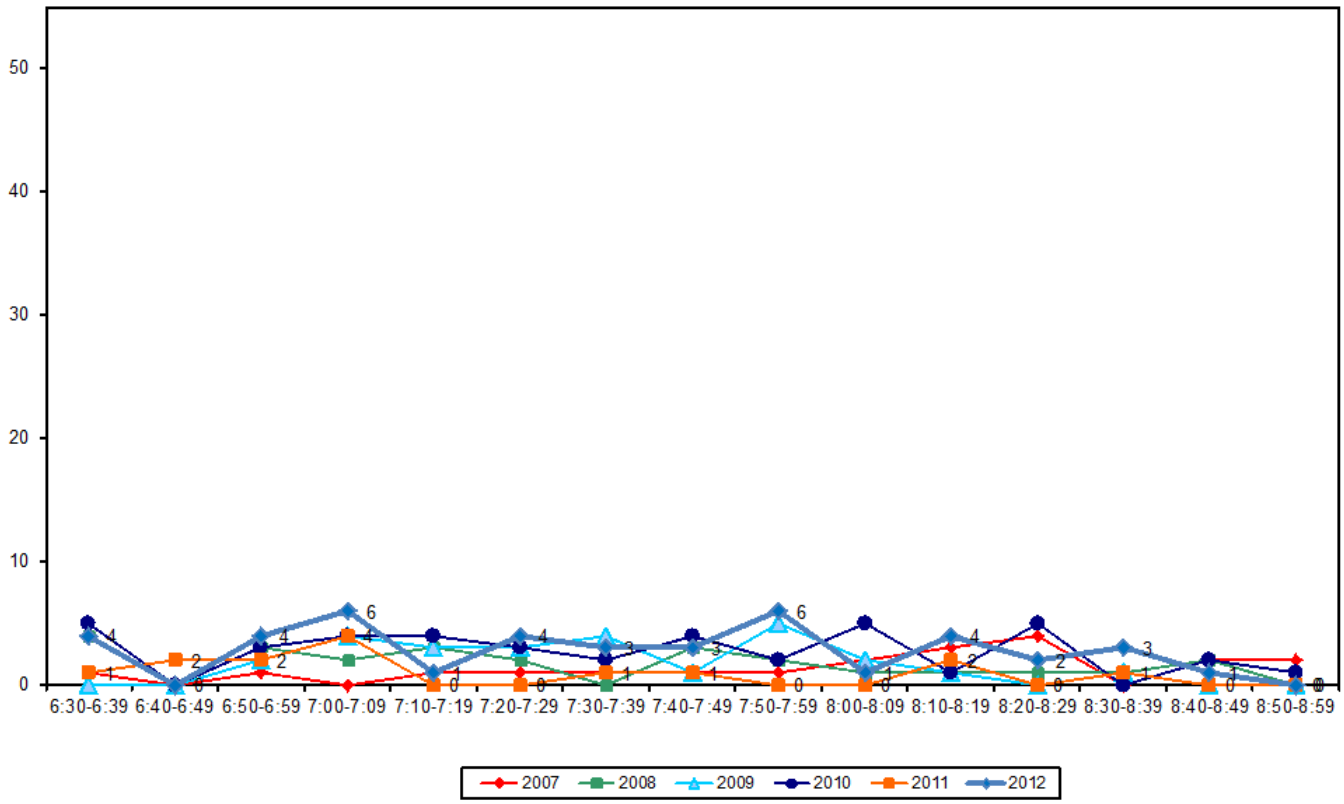
**Table 5.2: Morning Cyclist Characteristics**

**Luckens/Hobsonville Road 2007 – 2012 (%)**

| | ***2007*** | ***2008*** | ***2009*** | ***2010*** | ***2011*** | ***2012*** | **Change 11-12** |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 75 | 88 | 88 | 83 | 86 | **93** | **7** |
| School child | 25 | 12 | 12 | 17 | 14 | **7** | **-7** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 100 | 100 | 96 | 98 | 93 | **95** | **2** |
| No helmet | 0 | 0 | 4 | 2 | 7 | **5** | **-2** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 100 | **83** | **-17** |
| Female | - | - | - | - | 0 | **17** | **17** |
| Can't tell | - | - | - | - | 0 | **0** | **0** |
| **Where Riding** | | | | | | | |
| Road | 70 | 80 | 81 | 80 | 79 | **86** | **7** |
| Footpath | 30 | 20 | 19 | 20 | 21 | **14** | **-7** |
| ***Base:*** | ***20*** | ***25*** | ***26*** | ***41*** | ***14*** | ***42*** | |

- The volume of cycle movements was low throughout the morning peak monitoring period. The highest volume of cyclist movements was between 7:00am and 7:09am (6 cyclist movements) and again between 7:50am and 7:59am (6 movements).

**Figure 5.2: Morning Peak Cyclist Frequency**
**Luckens/Hobsonville Road 2007 – 2012 (n)**




*Note: In 2012, three cyclists were observed travelling as a group at this site at 6:56am. This equates to 7 per cent of all morning peak cyclists.*

## 8.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- The total number of evening cycle movements at the Luckens/Hobsonville Road intersection has increased from last year, with 70 movements recorded compared with 38 movements in 2011.
- The most common movement in the evening is turning into right Hobsonville Road from Luckens (Movement 3 = 28 cyclists).
- Of the six possible movements, the most notable change this year was at Movement 3 (up 22 cyclists).

**Table 5.3: Evening Cyclist Movements**

**Luckens/Hobsonville Road 2007 – 2012 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| 1 | 6 | 1 | 8 | 12 | 13 | 13 | **0** |
| 2 | 3 | 6 | 4 | 6 | 4 | 1 | **-3** |
| 3 | 1 | 2 | 13 | 10 | 6 | 28 | **22** |
| 4 | 2 | 2 | 2 | 5 | 4 | 4 | **0** |
| 5 | 0 | 0 | 3 | 4 | 6 | 8 | **2** |
| 6 | 0 | 5 | 21 | 17 | 5 | 16 | **11** |
| **Total** | **12** | **16** | **51** | **54** | **38** | **70** | **32** |

- Most cyclists using this intersection are adults (89 per cent, up notably from 66 per cent in the previous year).
- A notable increase in helmet-wearing is evident (97 per cent, up from 74 per cent last year).
- Most cyclists are male (87 per cent).
- The majority of cyclists are riding on the road (91 per cent, up notably from 53 per cent in 2011).

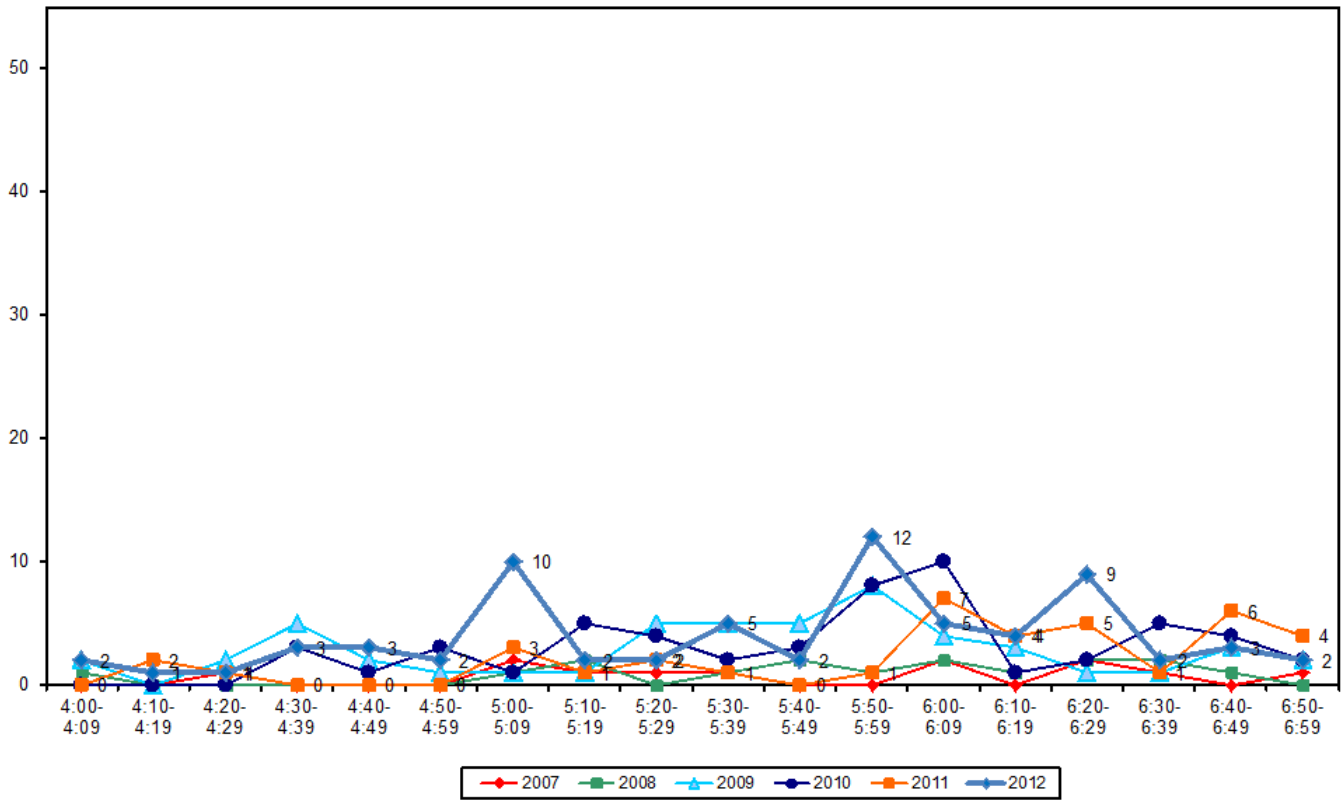
**Table 5.4: Evening Cyclist Characteristics**

**Luckens/Hobsonville Road 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 100 | 94 | 100 | 91 | 66 | **89** | **23** |
| School child | 0 | 6 | 0 | 9 | 34 | **11** | **-23** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 100 | 69 | 98 | 94 | 74 | **97** | **23** |
| No helmet | 0 | 31 | 2 | 6 | 26 | **3** | **-23** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 87 | **87** | **0** |
| Female | - | - | - | - | 5 | **13** | **8** |
| Can't tell | - | - | - | - | 8 | **0** | **-8** |
| **Where Riding** | | | | | | | |
| Road | 100 | 81 | 90 | 81 | 53 | **91** | **38** |
| Footpath | 0 | 19 | 10 | 19 | 47 | **9** | **-38** |
| ***Base:*** | ***12*** | ***16*** | ***51*** | ***54*** | ***38*** | ***70*** | |

- This year, cycle volumes peak three times – between 5:00pm and 5:09pm (10 cyclists), 5:50pm and 5:59pm (12 cyclists) and again between 6:20pm and 6:29pm (9 cyclists).

**Figure 5.3: Evening Peak Cyclist Frequency**
**Luckens/Hobsonville Road 2007 – 2012 (n)**



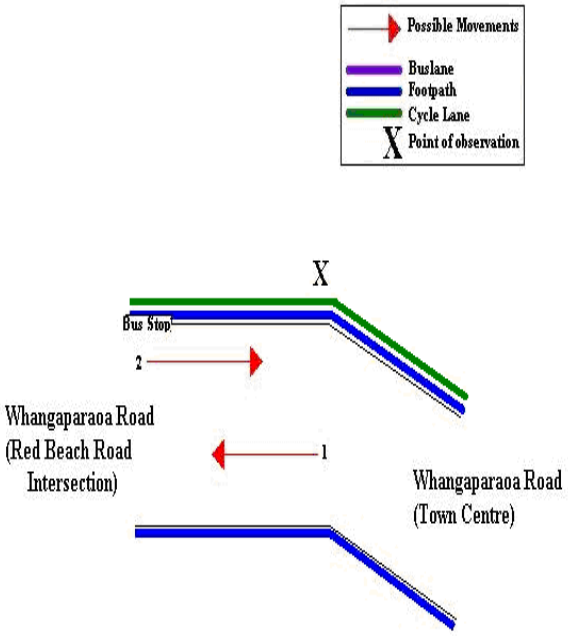

*Note: In 2012, 23 per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:*

- *Nine cyclists at 5:07pm*
- *Four cyclists at 5:50pm*
- *Three cyclists at 6:26pm.*

# 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/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** |

## 9.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- The volume of morning cyclists at Whangaparaoa Road near the Red Beach intersection has increased to 15 movements in 2012 (up from 11 movements in 2011).
- The key morning movement is straight along Whangaparaoa Road heading west towards the Red Beach intersection (Movement 1 = 12 cyclists, stable from 10 last year).

**Table 9.1: Morning Cyclist Movements**

**Whangaparaoa Road/Red Beach Intersection 2007 – 2012 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| 1 | 10 | 13 | 12 | 18 | 10 | 12 | 2 |
| 2 | 3 | 2 | 3 | 3 | 1 | 3 | 2 |
| **Total** | **13** | **15** | **15** | **21** | **11** | **15** | **4** |

- Over the morning peak, school children comprise of 53 per cent of cycle movements (up from 45 per cent in 2011).
- Most cyclists are wearing a helmet (93 per cent, down from 100 per cent last year).
- Predominantly male cyclists used this site (93 per cent).
- From 2011, riding on the road was split into riding on the road and riding on the off-road cycleway. Seventy-three per cent were recorded as riding on the off-road cycleway. The incidence of riding on the road has increased at this site (27 per cent, up from 18 per cent at the previous measure).

**Table 9.2: Morning Cyclist Characteristics**

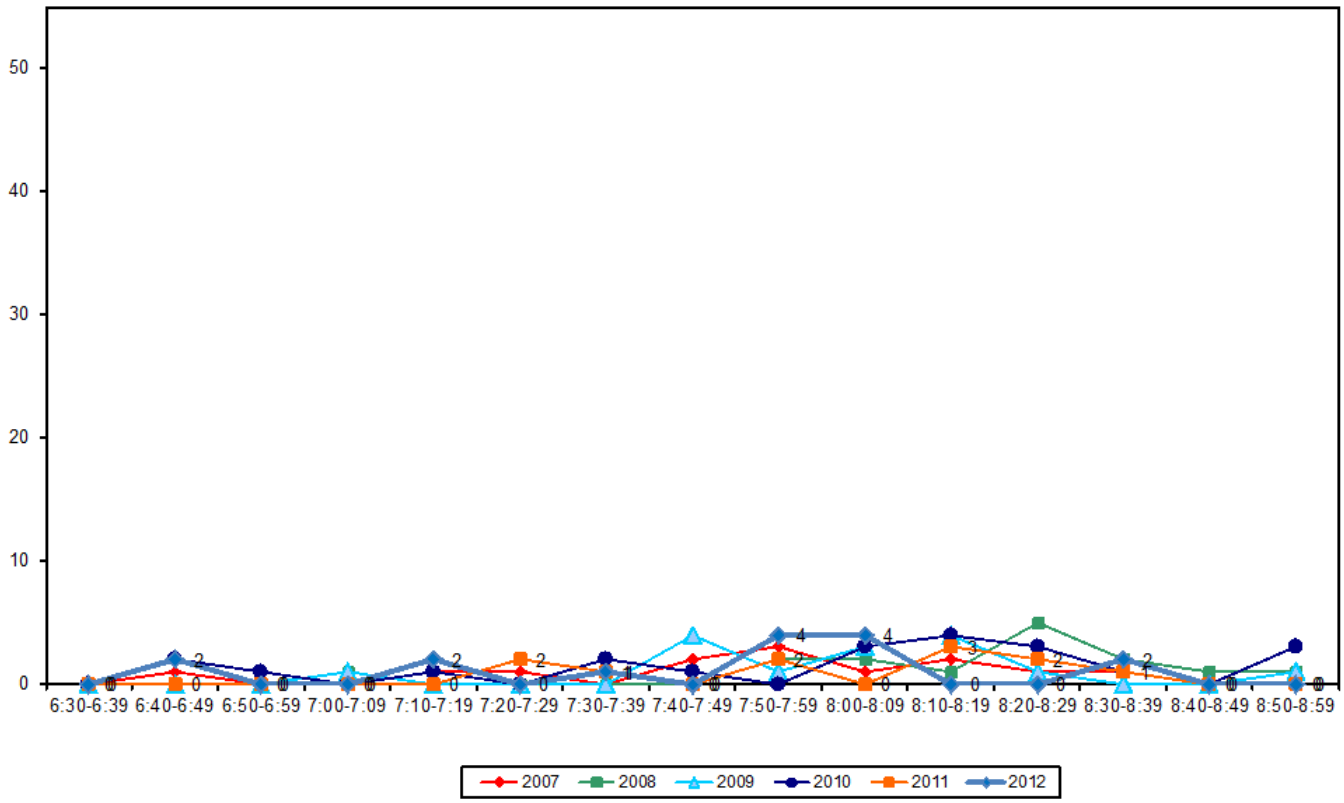
**Whangaparaoa Road/Red Beach Intersection 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 62 | 27 | 20 | 48 | 55 | **47** | **-8** |
| School child | 38 | 73 | 80 | 52 | 45 | **53** | **8** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 92 | 100 | 93 | 76 | 100 | **93** | **-7** |
| No helmet | 8 | 0 | 7 | 24 | 0 | **7** | **7** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 91 | **93** | **2** |
| Female | - | - | - | - | 9 | **7** | **-2** |
| Can't tell | - | - | - | - | 0 | **0** | **0** |
| **Where Riding** | | | | | | | |
| Road | 15 | 20 | 13 | 33 | 18 | **27** | **9** |
| Footpath | 85 | 80 | 87 | 67 | 9 | **0** | **-9** |
| Off-road cycle way | - | - | - | - | 73 | **73** | **0** |
| ***Base:*** | ***13*** | ***15*** | ***15*** | ***21*** | ***11*** | ***15*** | |

- The volume of morning cycle movements increases over the monitoring period to slightly peak between 7:50am and 8:09am (4 cyclists per 10 minute interval).

**Figure 9.2: Morning Peak Cyclist Frequency**

**Whangaparaoa Road /Red Beach Intersection 2007 – 2012 (n)**



## 9.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- The total number of cycle movements recorded at the Whangaparaoa Road/Red Beach intersection is down from 2011, with 13 movements recorded compared with 15 movements last year.
- In contrast to the morning shift, the most common movement in the evening is east along Whangaparaoa Road heading towards the Town Centre (Movement 2 = 8 cyclists, stable from 9 cyclists recorded in 2011).

**Table 9.3: Evening Cyclist Movements**

**Whangaparaoa Road /Red Beach Intersection 2007 – 2012 (n)**

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

- In the evening period, the greatest share of cyclists using Whangaparaoa Road are adults (92 per cent, stable from last year).
- Most cyclists are wearing a helmet (85 per cent, down from 100 per cent in 2011).
- Ninety-two per cent of cyclists are male.
- From 2011, riding on the road was split into riding on the road and riding on the off-road cycleway. No cyclists are riding on the footpath (stable from last year).

**Table 9.4: Evening Cyclist Characteristics**

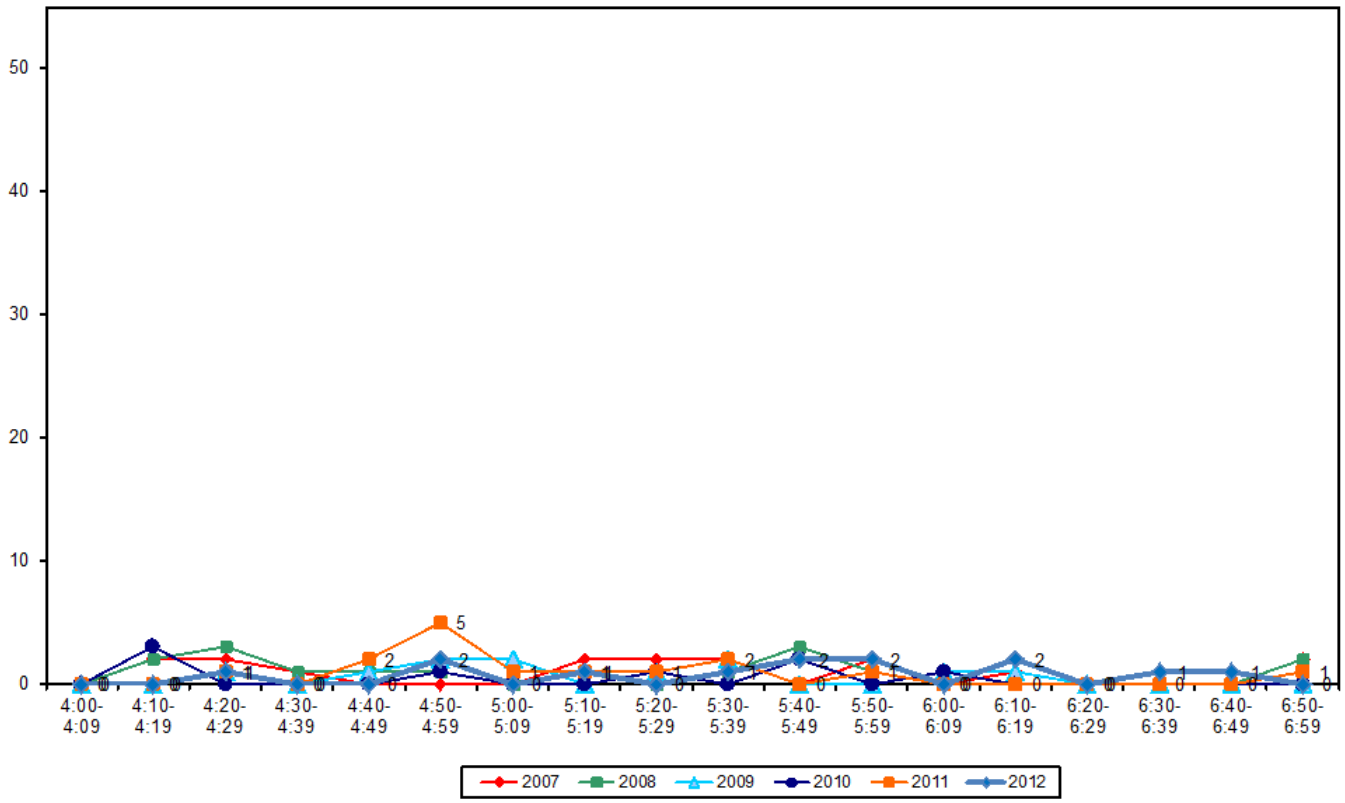
**Whangaparaoa Road /Red Beach Intersection 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 75 | 88 | 64 | 75 | 93 | **92** | **-1** |
| School child | 25 | 12 | 36 | 25 | 7 | **8** | **1** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 87 | 94 | 100 | 63 | 100 | **85** | **-15** |
| No helmet | 13 | 6 | 0 | 37 | 0 | **15** | **15** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 87 | **92** | **5** |
| Female | - | - | - | - | 13 | **8** | **-5** |
| Can't tell | - | - | - | - | 0 | **0** | **0** |
| **Where Riding** | | | | | | | |
| Road | 25 | 37 | 36 | 12 | 67 | **62** | **-5** |
| Footpath | 75 | 63 | 64 | 88 | 0 | **0** | **0** |
| Off-road cycle way | - | - | - | - | 33 | **38** | **5** |
| ***Base:*** | ***16*** | ***16*** | ***11*** | ***8*** | ***15*** | **13** | |

- Evening cyclist numbers remain relatively low over the entire peak period, with no more than two cyclist recorded over any ten minute interval.

**Figure 9.3: Evening Peal Cyclist Frequency**

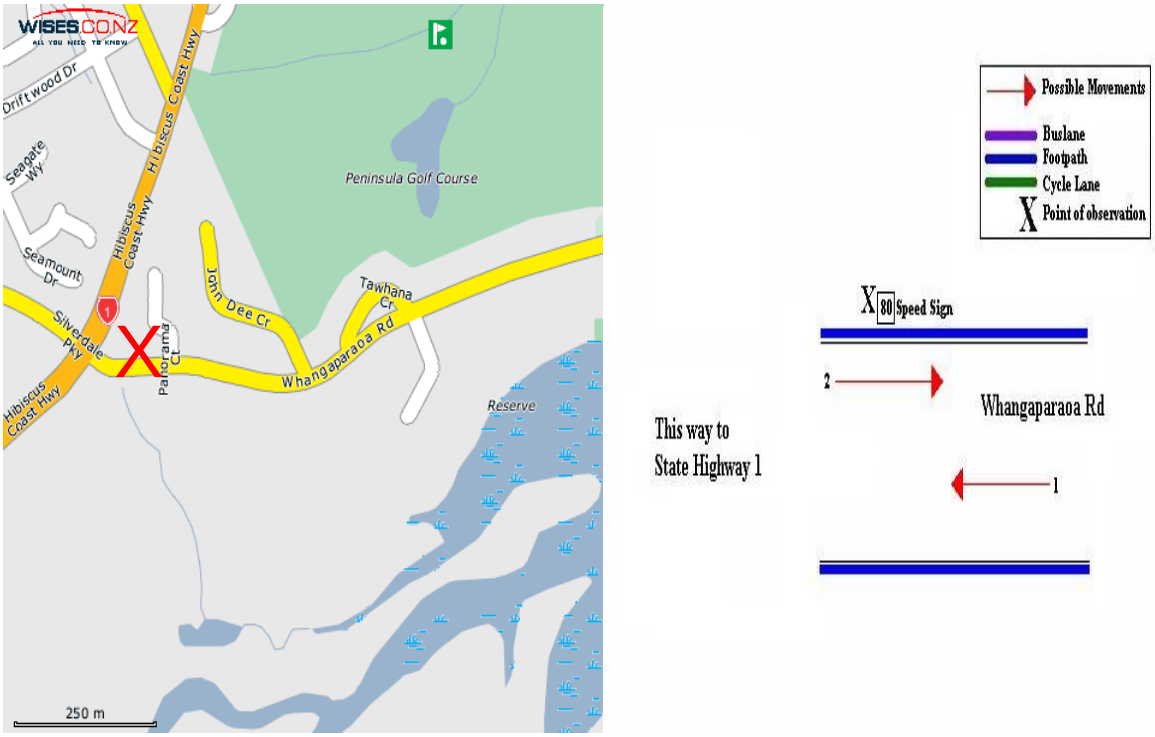
**Whangaparaoa Road /Red Beach Intersection 2007 – 2012 (n)**



# 10. WHANGAPARAOA ROAD – NEAR SH1 INTERSECTION, WHANGAPARAOA (SITE 60)

Figure 10.1 shows the possible cyclist movements at this site.

**Figure 10.1: Cycle Movements: Whangaparaoa Road near SH1 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** |

## 10.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- The level of morning cyclist traffic at Whangaparaoa Road near the State Highway 1 intersection increased slightly in 2012 (10 movements, up from 7 movements in 2011).
- The majority of cyclists at this site were moving straight along Whangaparaoa Road heading towards the State Highway 1 intersection (Movement 1 = 8 cyclists).

**Table 10.1: Morning Cyclist Movements**

**Whangaparaoa Road near SH1 Intersection 2007 – 2012 (n)**

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

- Over the morning peak, adults comprise 60 per cent of the cyclists (up from 29 per cent in 2011).
- All cyclists were wearing a helmet (unchanged from 2010).
- Two-thirds (70 per cent) of all cyclists were recorded as male.
- The greatest share of cyclists continue ride on the footpath (60 per cent, down from 71 per cent last year).

**Table 10.2: Morning Cyclist Characteristics**

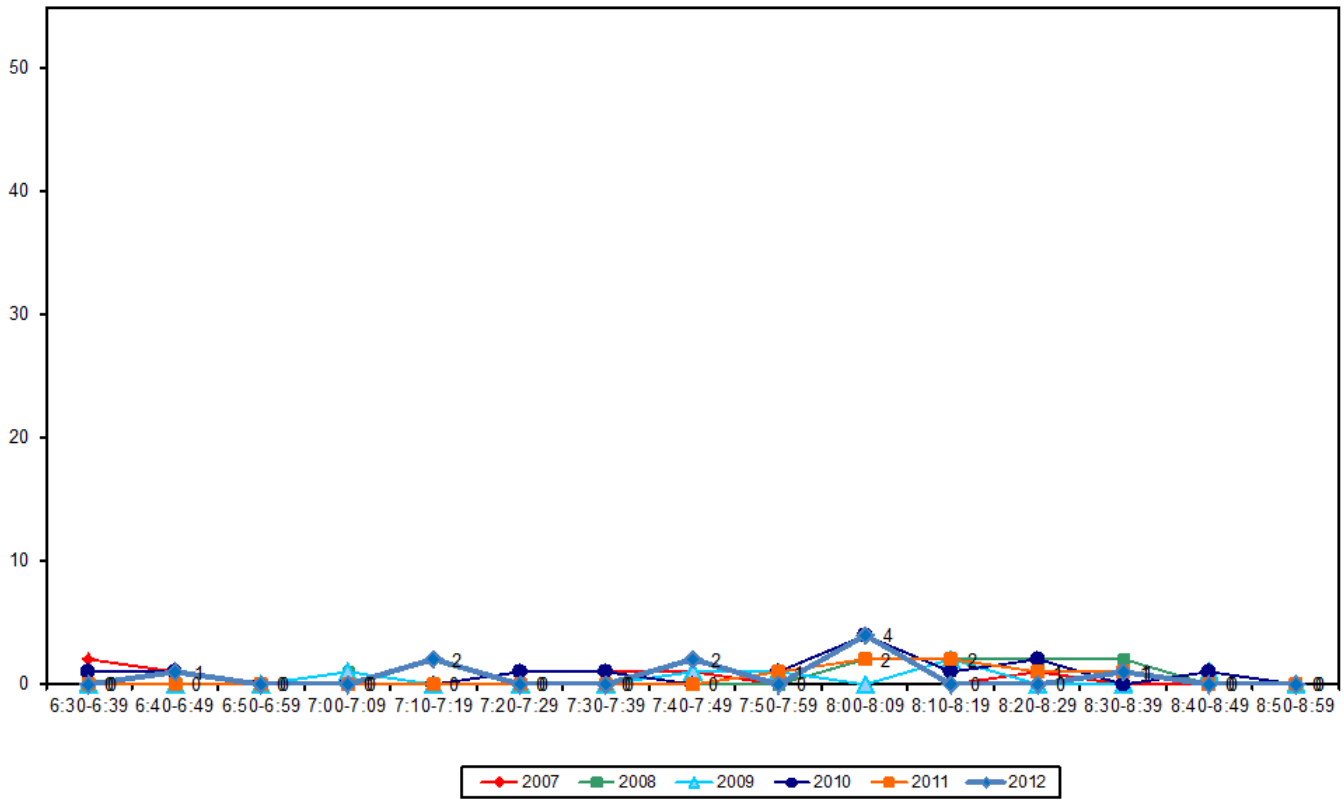
**Whangaparaoa Road near SH1 Intersection 2007 – 2012 (%)**

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

- As in previous years, cyclist movement volumes are low with no movements observed during most ten minutes intervals. Morning cyclist movements peak slightly between 8:00am and 8:09pm (4 movements).

**Figure 10.2: Morning Peak Cyclist Frequency**

**Whangaparaoa Road near SH1 Intersection 2007 – 2012 (n)**



## 10.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- The volume of evening cyclists recorded at Whangaparaoa Road near the State Highway 1 intersection decreased in 2012 (10 movements, down from 15 movements in 2011).
- The most common movement in the evening monitoring period is straight along Whangaparaoa Road heading east (Movement 2 = 7 cycle movements).
- The number of cyclists at Movement 1 has decreased, from 8 movements in 2011 to 3 movements this year.

**Table 10.3: Evening Cyclist Movements**

**Whangaparaoa Road near SH1 Intersection 2007 – 2012 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | 2012 | Change 11-12 |
|---|---|---|---|---|---|---|---|
| 1 | 6 | 2 | 4 | 4 | 8 | **3** | **-5** |
| 2 | 11 | 9 | 2 | 6 | 7 | **7** | **0** |
| **Total** | **17** | **11** | **6** | **10** | **15** | **10** | **-5** |

- All cyclists using this site in the evening were adults (100 per cent, up from 67 per cent last year).
- Most cyclists were wearing a helmet (90 per cent, down from 93 per cent in 2011).
- The majority of cyclists were male (90 per cent).
- Half of the cyclists were riding on the road (50 per cent, down from 60 per cent in 2011).

**Table 10.4: Evening Cyclist Characteristics**

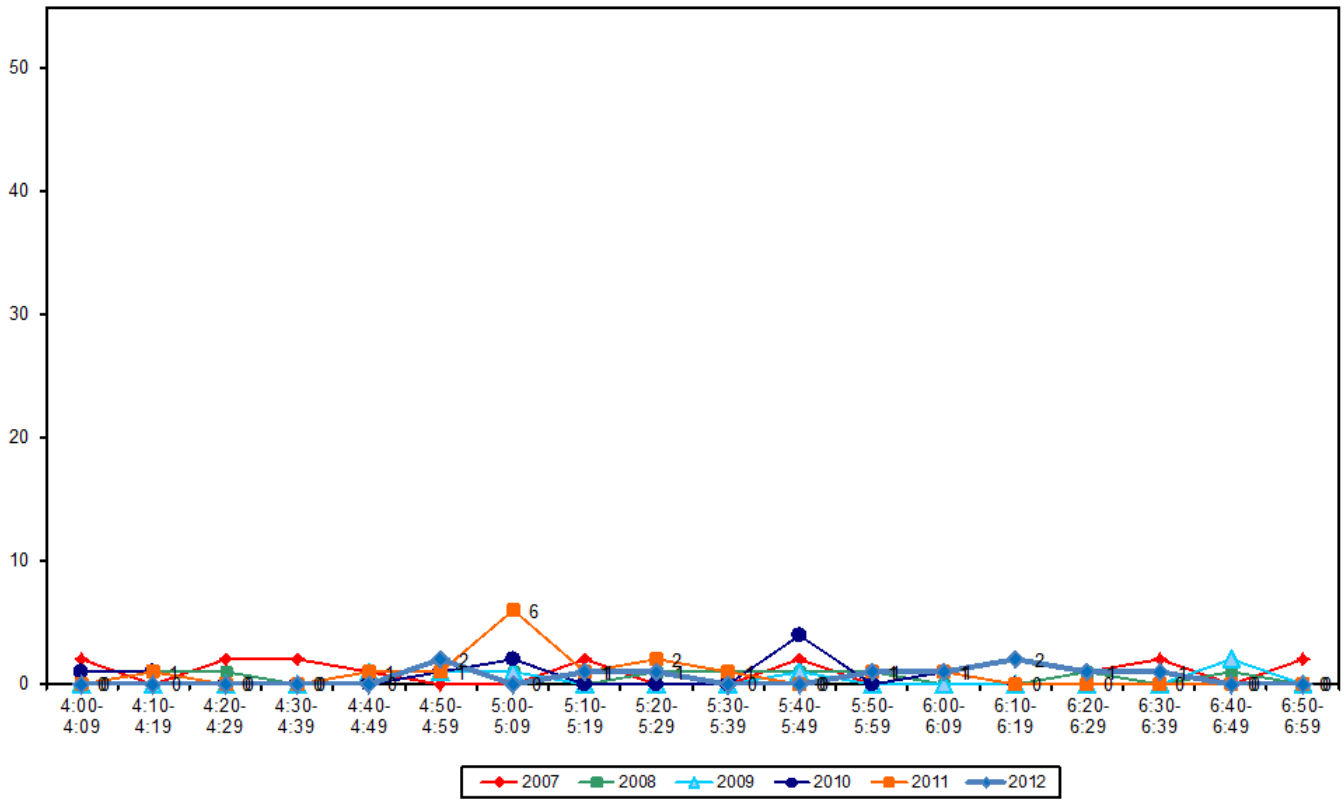
**Whangaparaoa Road near SH1 Intersection 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 53 | 82 | 67 | 60 | 67 | **100** | **33** |
| School child | 47 | 18 | 33 | 40 | 33 | **0** | **-33** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 82 | 100 | 100 | 90 | 93 | **90** | **-3** |
| No helmet | 18 | 0 | 0 | 10 | 7 | **10** | **3** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 80 | **90** | **10** |
| Female | - | - | - | - | 20 | **10** | **-10** |
| Can't tell | - | - | - | - | 0 | **0** | **0** |
| **Where Riding** | | | | | | | |
| Road | 35 | 45 | 50 | 30 | 60 | **50** | **-10** |
| Footpath | 65 | 55 | 50 | 70 | 40 | **50** | **10** |
| ***Base:*** | ***17*** | ***11*** | ***6*** | ***10*** | ***15*** | **10** | |

- Similar to previous years, the volume of evening cyclist movements remains low over the entire peak period, with no movements recorded during most ten minute intervals. This compares with a slight peak occurring between 5:00pm and 5:09pm (6 movements) in 2011.

**Figure 10.3: Evening Peak Cyclist Frequency**

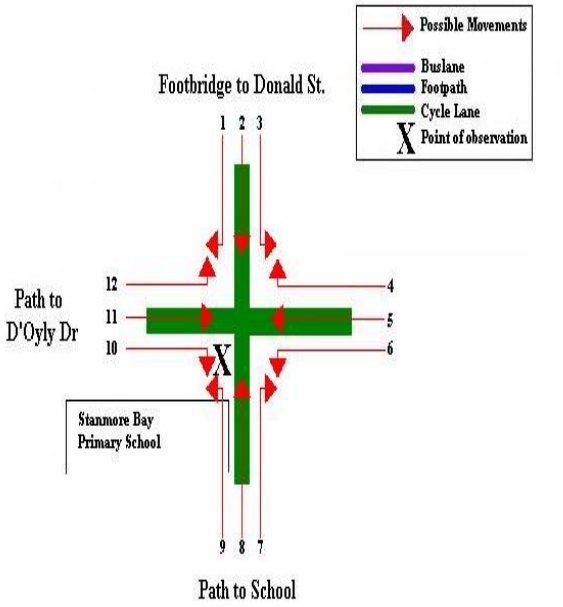
**Whangaparaoa Road near SH1 Intersection 2007 – 2012 (n)**



# 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** |

## 11.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- Morning cyclist traffic at the D'Oyly Reserve cycleway continues to be low this year, with 14 movements recorded during the morning shift (stable from 13 movements in 2011).
- The most common movements in the morning are the left turn from the Donald Street footbridge onto the cycleway (Movement 3), the left turn from the cycleway into the path to Stanmore Bay Primary School (Movement 6) and travelling along the cycleway heading southeast (Movement 11), each with four movements recorded.
- The most notable changes this year occurred at Movement 3 (up 2 movements) and Movement 6 (down 2 movements).

**Table 11.1: Morning Cyclist Movements**

**D'Oyly Reserve Cycleway 2007 – 2012 (n)**

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

- As in previous years, the majority of cyclists at this site are children (71 per cent, down from 92 per cent last year).
- Approximately four in five cyclists were wearing helmets (79 per cent, up from 62 per cent in 2011).
- The majority of cyclists continue to be male (71 per cent, stable from 69 per cent in 2011).

**Table 11.2: Morning Cyclist Characteristics**

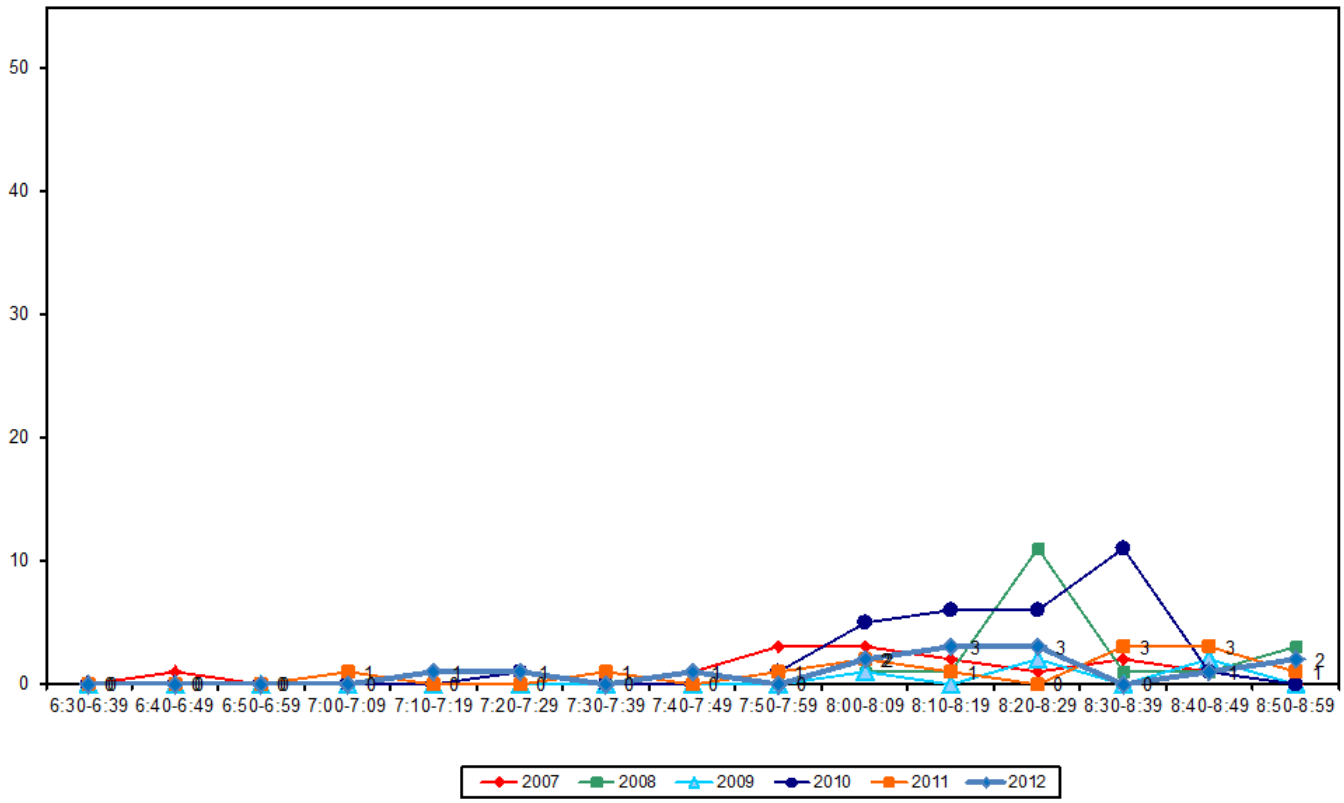
**D'Oyly Reserve Cycleway 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 21 | 16 | 0 | 10 | 8 | 29 | **21** |
| School child | 79 | 84 | 100 | 90 | 92 | 71 | **-21** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 64 | 58 | 20 | 65 | 62 | 79 | **17** |
| No helmet | 36 | 42 | 80 | 35 | 38 | 21 | **-17** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 69 | 71 | **2** |
| Female | - | - | - | - | 31 | 29 | **-2** |
| Can't tell | - | - | - | - | 0 | 0 | **0** |
| **Where Riding** | | | | | | | |
| Off-road cycleway | 100 | 100 | 100 | 100 | 100 | 100 | **0** |
| ***Base:*** | ***14*** | ***19*** | ***5*** | ***31*** | ***13*** | ***14*** | |

- The volume of morning cycle movements is relatively low throughout the morning monitoring period. Cycle volumes peak slightly between 8:10am and 8:29am (3 movements per ten minute interval). This peak occurs 20 minutes earlier than the peak observed in 2011.

**Figure 11.2: Morning Peak Cyclist Frequency**

**D'Oyly Reserve Cycleway 2007 – 2012 (n)**



## 11.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- The number of cyclist movements observed at this site has decreased notably this year (21 movements, down from 45 movements in 2011).
- The most common movements in the evening are the left turn from the Donald Street footbridge onto the cycleway (Movement 3), the left turn from the cycleway into the path to Stanmore Bay Primary School (Movement 6) and travelling along the cycleway heading southeast (Movement 11), each with four movements recorded.
- The most notable changes this year occurred at Movement 5 (down 13 movements).

**Table 11.3: Evening Cyclist Movements**

**D'Oyly Reserve Cycleway 2007 – 2012 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| 1 | 0 | 10 | 0 | 0 | 1 | 0 | **-1** |
| 2 | 0 | 3 | 0 | 0 | 6 | 2 | **-4** |
| 3 | 2 | 17 | 0 | 0 | 1 | 4 | **3** |
| 4 | 0 | 15 | 0 | 1 | 2 | 1 | **-1** |
| 5 | 4 | 14 | 2 | 6 | 16 | 3 | **-13** |
| 6 | 2 | 1 | 0 | 0 | 2 | 4 | **2** |
| 7 | 1 | 6 | 0 | 1 | 3 | 0 | **-3** |
| 8 | 1 | 0 | 0 | 0 | 4 | 0 | **-4** |
| 9 | 0 | 0 | 1 | 0 | 0 | 0 | **0** |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 11 | 0 | 9 | 1 | 4 | 10 | 4 | **-6** |
| 12 | 0 | 9 | 0 | 1 | 0 | 3 | **-3** |
| **Total** | **10** | **84** | **4** | **13** | **45** | **21** | **-24** |

- This year, more than half the cyclists using the D'Oyly Reserve cycleway were children (57 per cent, down from 62 per cent in 2011).
- There is a decrease in cyclists using helmets (57 per cent, down from 69 per cent in 2011).
- The majority of cyclists continue to be male (71 per cent, up from 64 per cent in 2011).

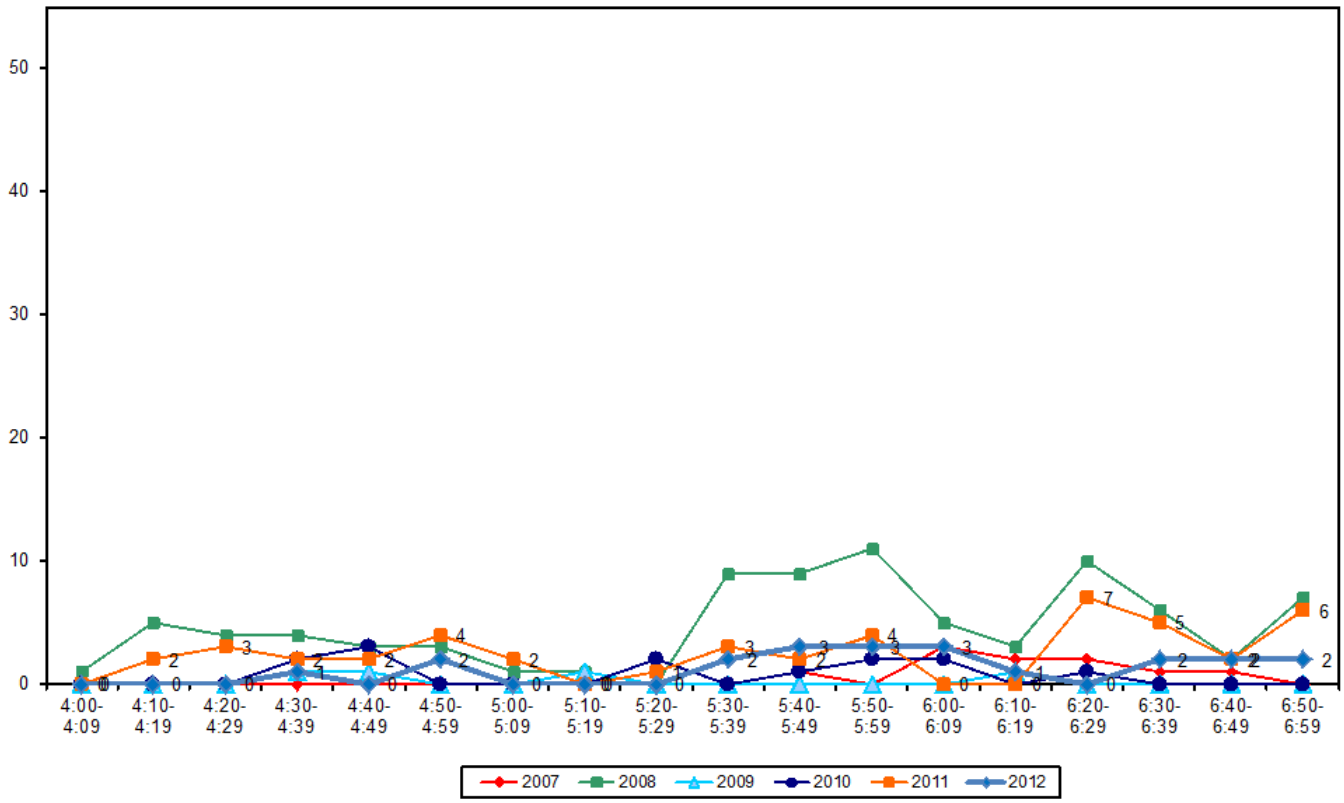
**Table 11.4: Evening Cyclist Characteristics**

**D'Oyly Reserve Cycleway 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 50 | 17 | 0 | 54 | 38 | 43 | **5** |
| School child | 50 | 83 | 100 | 46 | 62 | 57 | **-5** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 70 | 33 | 75 | 54 | 69 | 57 | **-12** |
| No helmet | 30 | 67 | 25 | 46 | 31 | 43 | **12** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 64 | 71 | **7** |
| Female | - | - | - | - | 36 | 29 | **-7** |
| Can't tell | - | - | - | - | 0 | 0 | |
| **Where Riding** | | | | | | | |
| Off-road cycleway | 100 | 100 | 100 | 100 | 100 | 100 | **0** |
| ***Base:*** | ***10*** | ***84*** | **4** | **13** | ***45*** | ***21*** | |

- Cycle volumes were low throughout the monitoring period, with a slight peak between 5:40pm and 6:09pm (3 movements per ten minute interval). This compares with a peak between 6:20pm and 6:29pm (7 movements) and between 6:50pm and 6:59pm (6 movements) in 2011.

**Figure 11.3: Evening Peak Cyclist Frequency**
**D'Oyly Reserve Cycleway 2007 – 2012 (n)**



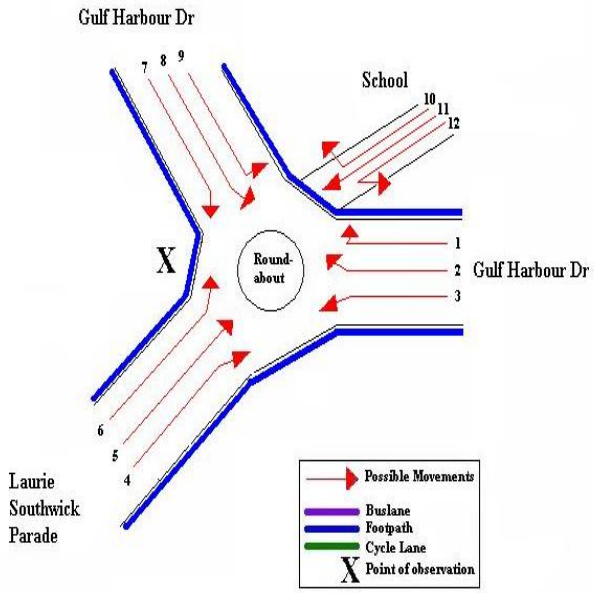

*Note: In 2012, 29 per cent of the total cycle movements in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:*

- *Three cyclists at 5:54pm*
- *Three cyclists at 6:03pm.*

# 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** |

## 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 remains stable from last year (13 movements, stable 12 movements in 2011).
- The key morning movement is turning right out of Gulf Harbour Drive on to Laurie Southwick Parade (Movement 7 = 4 movements).
- Morning cyclist movement volumes at all movements at this site remain relatively stable from last year, with the most notable decrease at Movement 3 (down 3 movements) and the most notable increase at Movement 7 (up 2 movements).

**Table 12.1: Morning Cyclist Movements**

**Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2012 (n)**

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

- Over the morning peak, two-thirds of the cyclists were adults (67 per cent, down from 75 per cent in 2011).
- Most cyclists were wearing a helmet (85 per cent, up from 75 per cent in 2011).
- The majority of cyclists were male (69 per cent, down from 92 per cent last year).
- The share of cyclists riding on the footpath has increases (up from 25 per cent in 2011 to 46 per cent this year).

**Table 12.2: Morning Cyclist Characteristics**

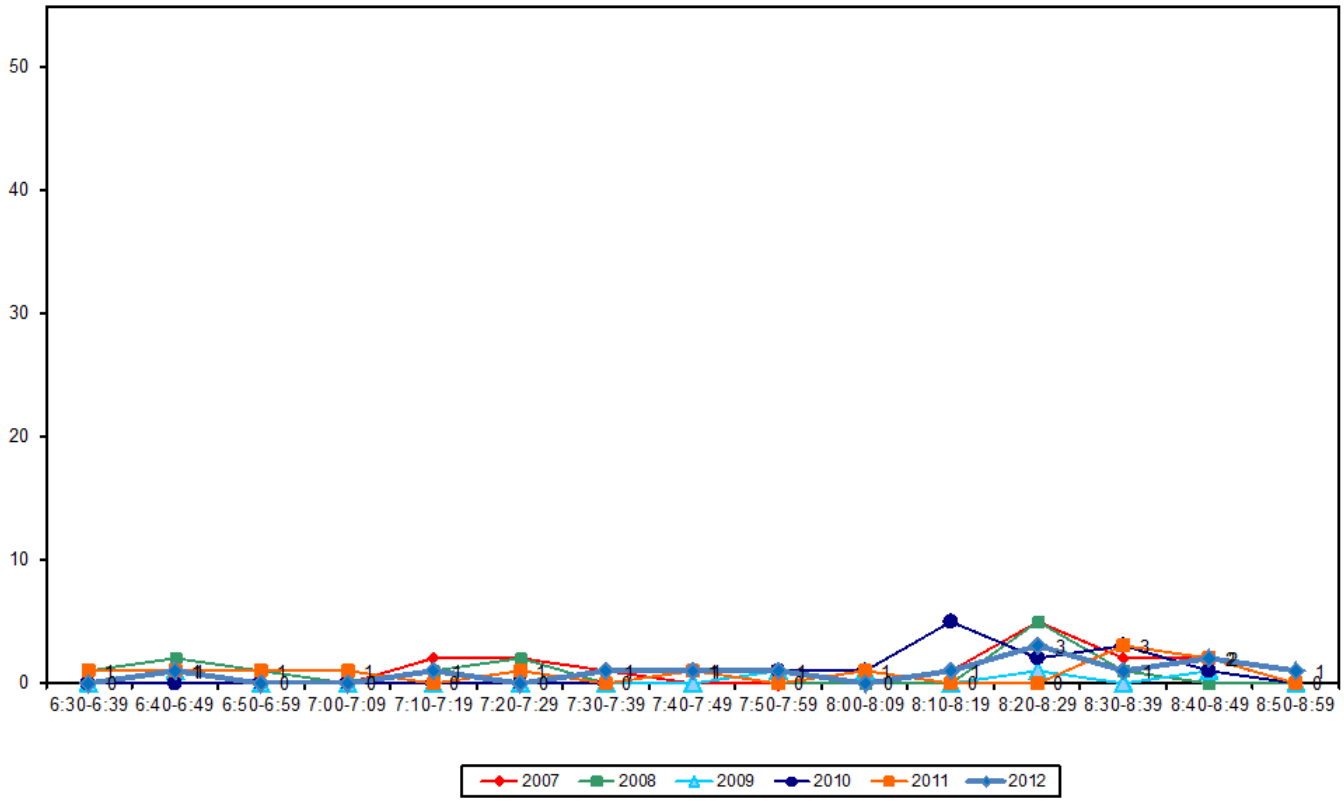
**Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 53 | 43 | 40 | 36 | 75 | **67** | **-8** |
| School child | 47 | 57 | 60 | 64 | 25 | **33** | **8** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 88 | 50 | 80 | 71 | 75 | **85** | **10** |
| No helmet | 12 | 50 | 20 | 29 | 25 | **15** | **-10** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 92 | **69** | **-23** |
| Female | - | - | - | - | 8 | **31** | **23** |
| Can't tell | - | - | - | - | 0 | **0** | **0** |
| **Where Riding** | | | | | | | |
| Road | 41 | 50 | 0 | 36 | 75 | **54** | **-21** |
| Footpath | 59 | 50 | 100 | 64 | 25 | **46** | **21** |
| ***Base:*** | ***17*** | ***14*** | ***5*** | ***14*** | ***12*** | **13** | |

- The volume of cyclist movements is low across the monitoring period. No more than one movement was recorded during most ten minute intervals. Cycle volumes peaked slightly between 8:20am and 8:29am (3 movements). This compares to a peak of 3 movements occurring between 8:30am and 8:39am in 2011.

**Figure 12.2: Morning Peak Cyclist Frequency**

**Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2012 (n)**



## 12.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- Evening cyclist volumes at the Gulf Harbour Drive/Laurie Southwick Parade intersection decreased this year (20 movements, down from 27 movements in 2011).
- The most common movement in the evening was the left turn from Laurie Southwick Parade onto Gulf Harbour Drive (Movement 6 = 5 cyclists).
- Evening cyclist volumes are relatively stable from 2011, with the largest change occurring at Movement 2 (down 4 cyclists).

**Table 11.3: Evening Cyclist Movements**

**Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2012 (n)**

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

- The majority of cyclists at the Gulf Harbour/Laurie Southwick Parade site during the evening peak were adult (70 per cent, up notablyfrom 41 per cent in 2011).
- Three-quarters of the cyclists were wearing a helmet (75 per cent, up from 59 per cent in 2011).
- Approximately two thirds of cyclists were male (70 per cent).
- The number of cyclists using the road increased from last year (50 per cent, up from 33 per cent in 2011).

**Table 12.4: Evening Cyclist Characteristics**

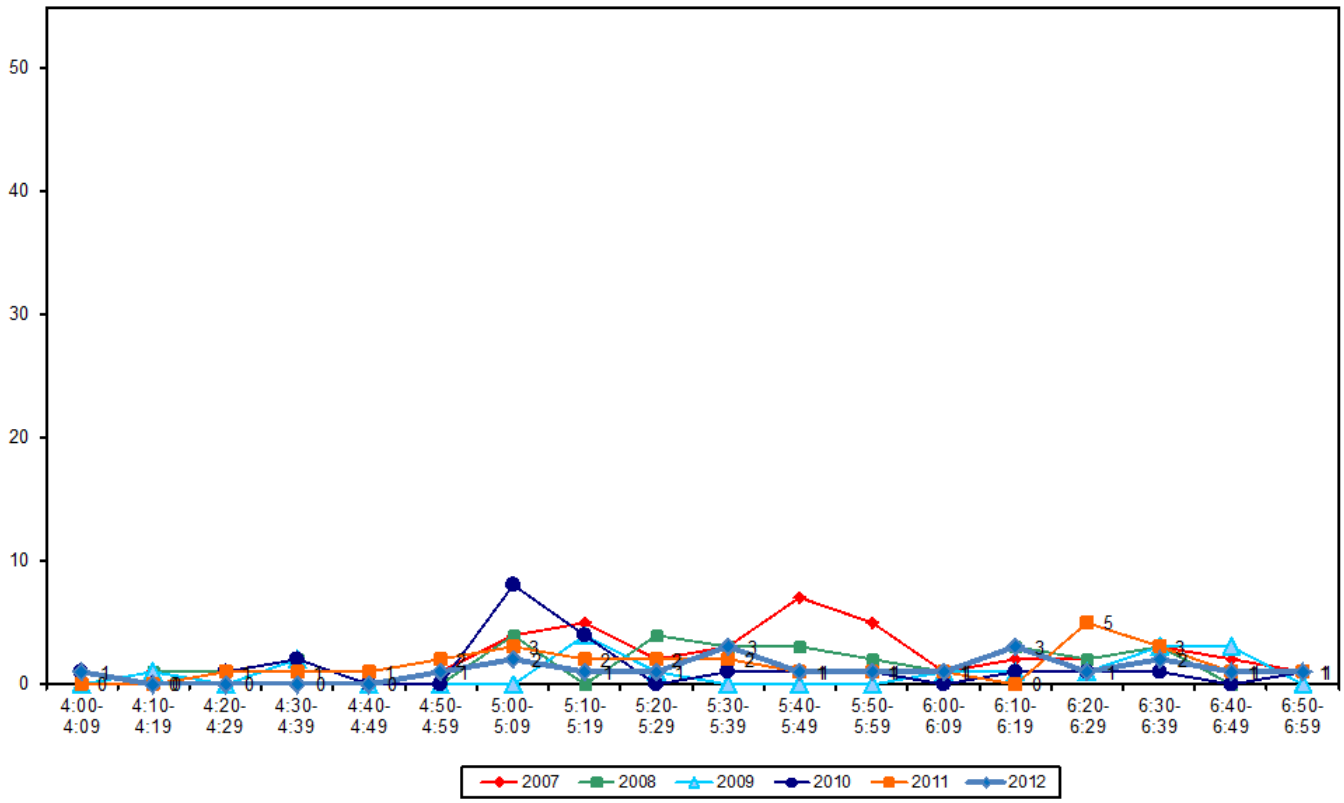
**Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2012 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | |
| Adult | 72 | 77 | 65 | 74 | 41 | **70** | **29** |
| School child | 28 | 23 | 35 | 26 | 59 | **30** | **-29** |
| **Helmet Wearing** | | | | | | | |
| Helmet on head | 77 | 73 | 47 | 70 | 59 | **75** | **16** |
| No helmet | 23 | 27 | 53 | 30 | 41 | **25** | **-16** |
| **Gender** | | | | | | | |
| Male | - | - | - | - | 63 | **70** | **7** |
| Female | - | - | - | - | 37 | **30** | **-7** |
| Can't tell | - | - | - | - | 0 | **0** | |
| **Where Riding** | | | | | | | |
| Road | 54 | 80 | 53 | 74 | 33 | **50** | **17** |
| Footpath | 46 | 20 | 47 | 26 | 67 | **50** | **-17** |
| ***Base:*** | ***39*** | ***30*** | ***17*** | ***23*** | ***27*** | **20** | |

- In 2012 the volume of cyclist movements is consistently low, with no more than 3 movements recorded in most 10 minute interval. A slight peak occurred between 5:30pm and 5:39pm (3 movements) and again between 6:10pm and 6:19pm (3 movements).

**Figure 12.3: Evening Peak Cyclist Frequency**

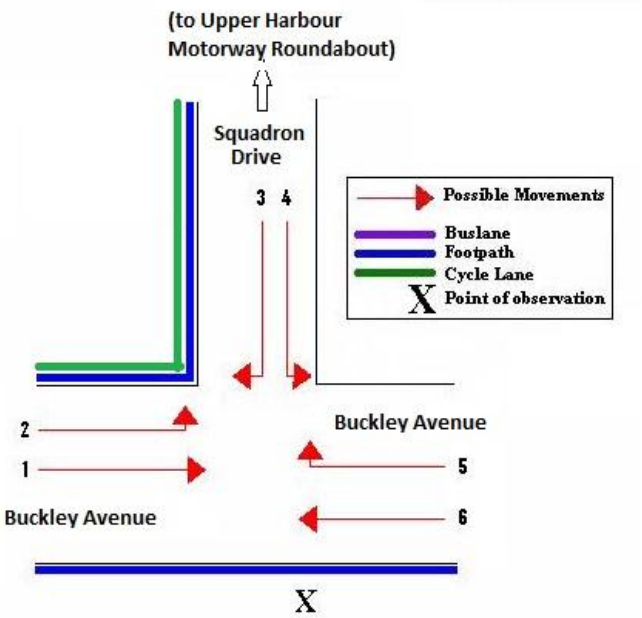
**Gulf Harbour Drive/Laurie Southwick Parade 2007 – 2012 (n)**



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

Figure 13.1 shows the possible cyclist movements at this intersection.

**Figure 13.1: Cycle Movements: Upper Harbour 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** |

## 13.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- Cyclist volumes at the Squadron Drive/Buckley Avenue were recorded at 28 movements
- The key morning movement is turning right from Squadron Drive west on to Buckley Avenue (Movement 3 = 14 cyclists).

**Table 13.1: Morning Cyclist Movements**

**Squadron Drive/Buckley Avenue 2010 – 2012 (n)**

| *Movement* | *2010* | *2011* | *2012* |
|---|---|---|---|
| 1 | - | - | **2** |
| 2 | - | - | **8** |
| 3 | - | - | **14** |
| 4 | - | - | **4** |
| 5 | - | - | **0** |
| 6 | - | - | **0** |
| **Total** | **37** | **34** | **28** |

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

- All the cyclists recorded at this site were adults (100 per cent).
- All cyclists were wearing a helmet (100 per cent).
- The majority of cyclists were recorded as male (93 per cent).
- Most were riding on the road (93 per cent).

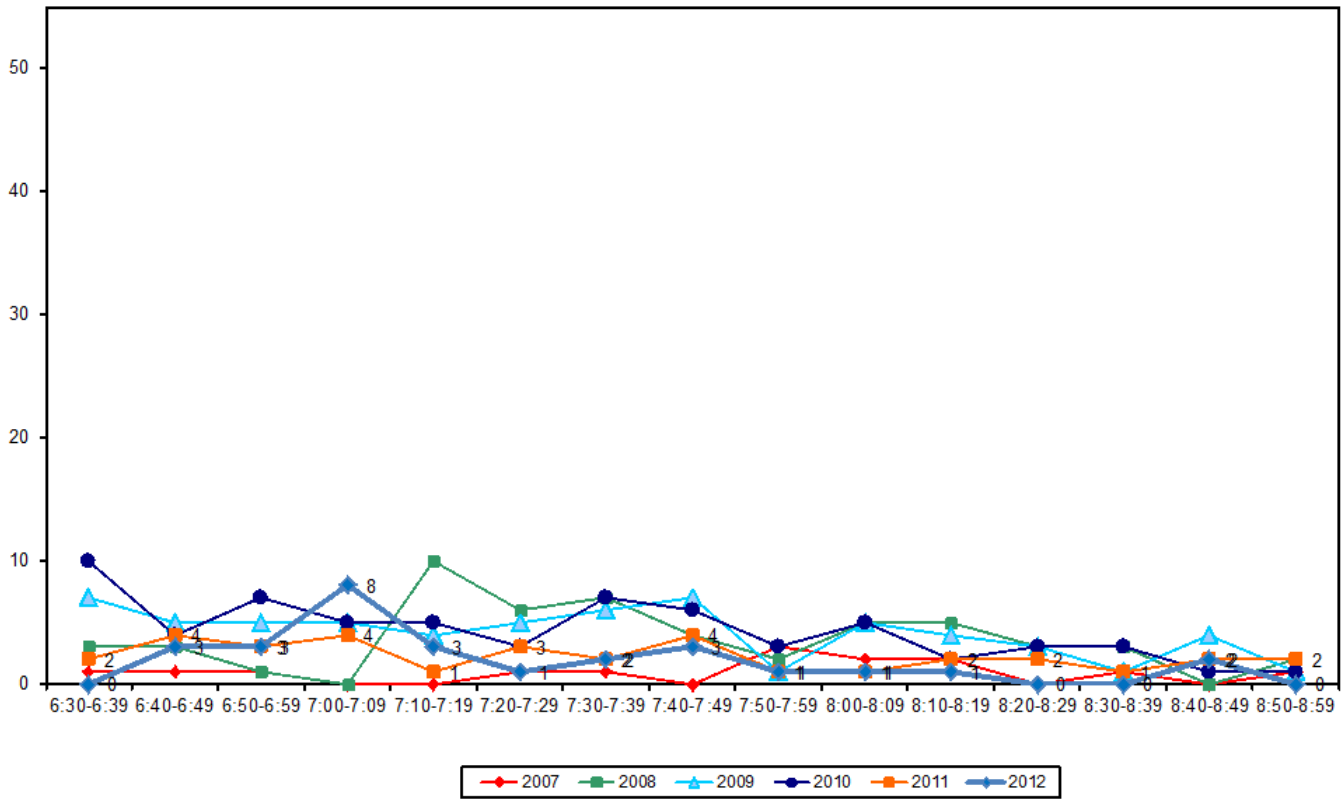
**Table 13.2: Morning Cyclist Characteristics**

**Squadron Drive/Buckley Avenue 2010 – 2012 (%)**

| | ***2010*** | ***2011*** | ***2012*** |
|---|---|---|---|
| **Cyclist Type** | | | |
| Adult | 65 | 97 | **100** |
| School child | 35 | 3 | **0** |
| **Helmet Wearing** | | | |
| Helmet on head | 97 | 97 | **100** |
| No helmet | 3 | 3 | **0** |
| **Gender** | | | |
| Male | - | 97 | **93** |
| Female | - | 0 | **7** |
| Can't tell | - | 3 | **0** |
| **Where Riding** | | | |
| Road | 19 | 85 | **93** |
| Footpath | 0 | 15 | **0** |
| Off-road cycleway | 81 | 0 | **7** |
| ***Base:*** | ***37*** | ***34*** | **28** |

- Morning cyclist movement volumes remained fairly stable throughout the monitoring period and peaked between 7:00am and 7:10am (8 movements).

**Figure 13.2: Morning Peak Cyclist Frequency**
**Squadron Drive/Buckley Avenue 2007 – 2012 (n)**



## 13.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- The total number of cycle movements recorded at the Squadron Drive/Buckley Avenue site is 82.
- The most common movement was turning left from Buckley Avenue on to Squadron Drive (Movement 2 = 46 movements).

**Table 13.3: Evening Cyclist Movements**

**Squadron Drive/Buckley Avenue 2010 – 2012 (n)**

| *Movement* | *2010* | *2011* | *2012* |
|---|---|---|---|
| 1 | - | - | **1** |
| 2 | - | - | **46** |
| 3 | - | - | **19** |
| 4 | - | - | **5** |
| 5 | - | - | **7** |
| 6 | - | - | **4** |
| **Total** | **57** | **49** | **82** |

*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, most cyclists using this site were adults (72 per cent).
- The majority of evening cyclists at this site were wearing a helmet (99 per cent).
- The majority of cyclists were male (87 per cent).
- Most cyclists were riding on the road (94 per cent.

**Table 13.4: Evening Cyclist Characteristics**

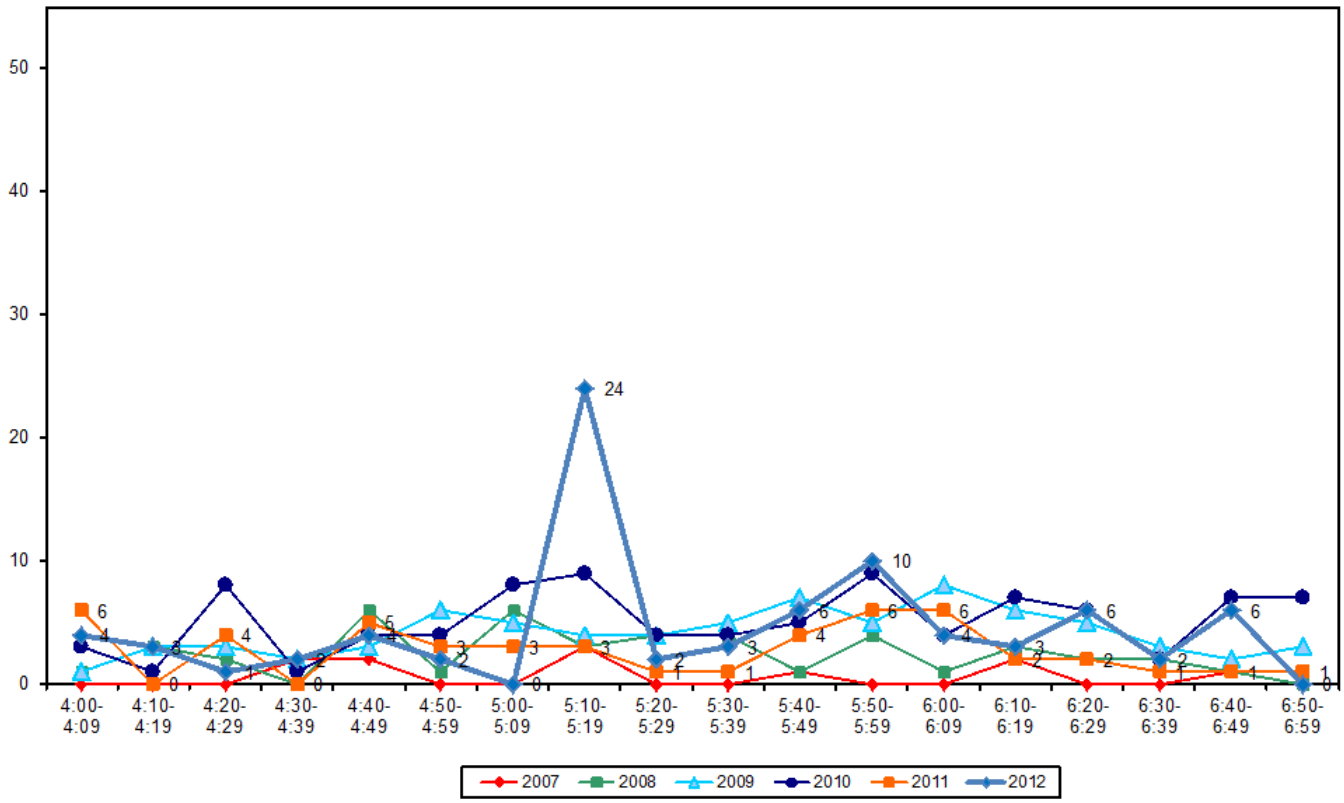
**Upper Harbour Drive/Buckley Avenue 2010 – 2012 (%)**

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

- Evening cyclist volumes were variable throughout the monitoring period. Cyclists peaked between 5:10pm and 5:19pm (24 movements).

**Figure 14.3: Evening Peak Cyclist Frequency**

**Upper Harbour Drive/Buckley Avenue 2007 – 2012 (n)**

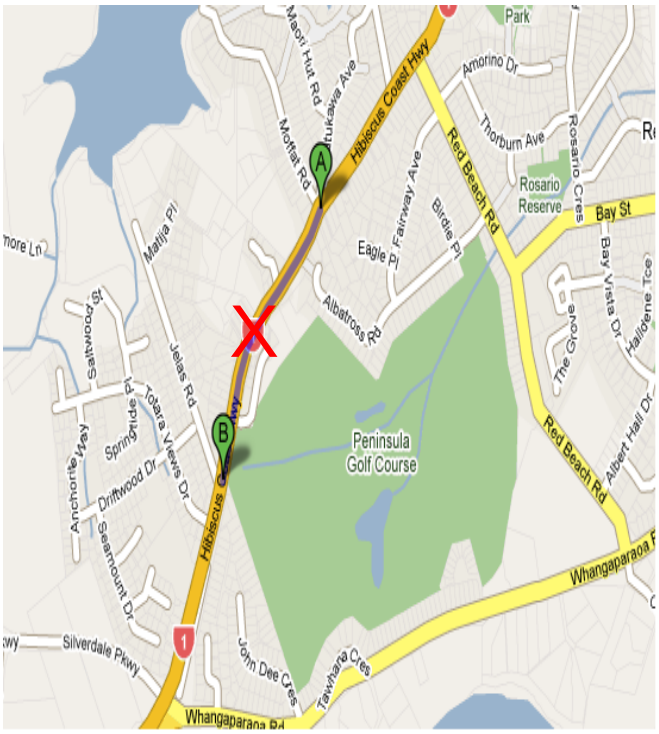


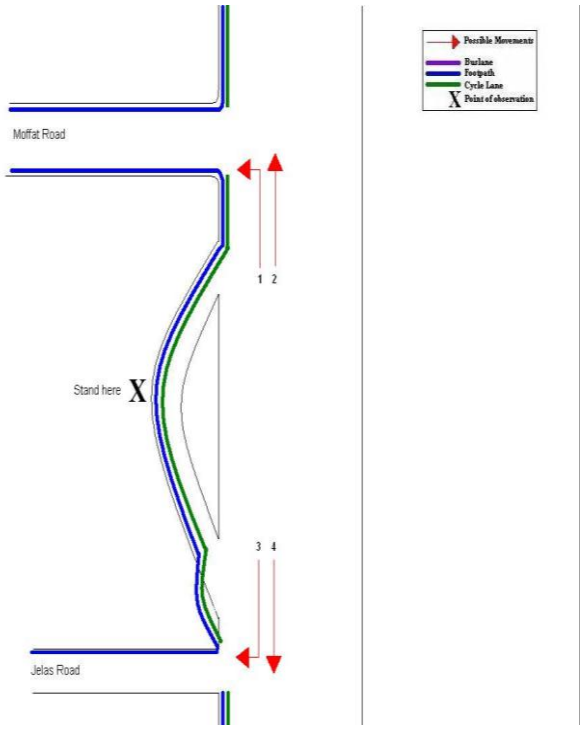

*Note: In 2012, twenty cyclists were observed riding together as a group at 5:19pm. This equates to 24 per cent of all evening peak cycle movements at this site.*

# 14. JELAS/MOFFATT ROAD (SITE 82)

Figure 14.1 shows the possible cyclist movements at this site.

**Figure 14.1: Cycle Movements: Jelas/Moffatt Road**




## 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** |

*Note: Local users commented that the "new" pedestrian/cycleway from Silverdale to Orewa Bridge around the estuary is very busy. Most use it as it is flat, safer and quicker than this site.*

## 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 Jelas/Moffatt Road site was relatively light (20 movements, stable from 19 movements in 2011).
- The most common movement in the morning was travelling straight along the Hibiscus Coast Highway heading north (Movement 2 = 12 cyclists).
- Cyclist volumes increased most notably at Movement 2 (up 10 cyclists). Cyclist volumes decreased notable at Movement 1 (down 7 cyclists).

**Table 14.1: Morning Cyclist Movements**

**Jelas/Moffatt Road 2009 – 2012 (n)**

| *Movement* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|
| 1 | 8 | 8 | 7 | 0 | **-7** |
| 2 | 4 | 8 | 2 | 12 | **10** |
| 3 | 1 | 5 | 2 | 4 | **2** |
| 4 | 2 | 3 | 8 | 4 | **-4** |
| **Total** | **15** | **24** | **19** | **20** | **1** |

*Note: The surveyor at this site noted that due to vegetation growth on the western side of the Hibiscus Highway it was not always possible to distinguish Movement 1 from Movement 2.*

- Over the morning peak, 60 per cent of cyclists using this site were children (up from 47 per cent in 2011).
- Almost all cyclists were wearing a helmet (95 per cent, down from 100 per cent in 2011).
- Most cyclists were male (85 per cent, down from 100 per cent in 2011).
- Sixty-five per cent of cyclists were riding on the off-road cycleway (up notably from 47 per cent in 2011), while the remaining 35 per cent were riding on the road.

**Table 14.2: Morning Cyclist Characteristics**

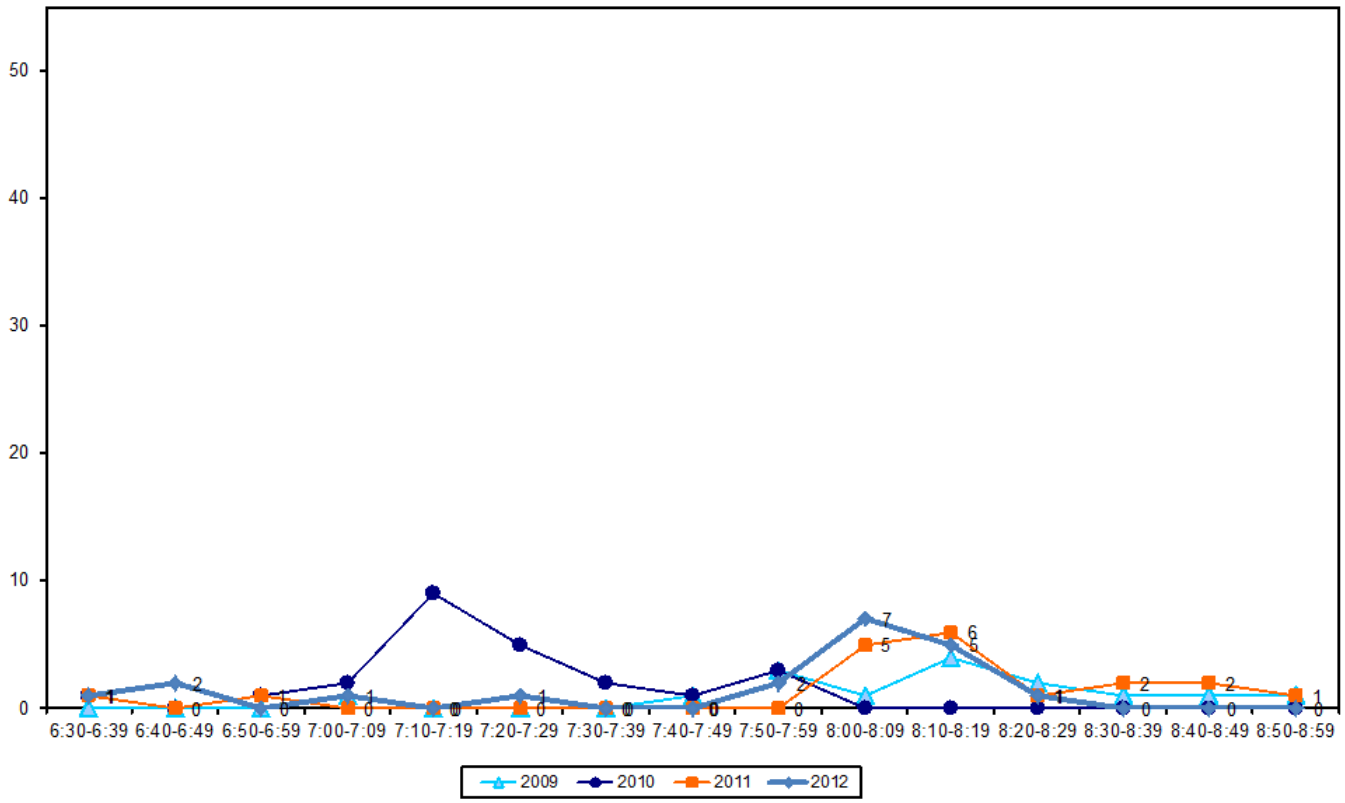
**Jelas/Moffatt Road 2009 – 2012 (%)**

| | ***2009*** | ***2010*** | ***2011*** | ***2012*** | **Change 11-12** |
|---|---|---|---|---|---|
| **Cyclist Type** | | | | | |
| Adult | 27 | 25 | 53 | 40 | **-13** |
| School child | 73 | 75 | 47 | 60 | **13** |
| **Helmet Wearing** | | | | | |
| Helmet on head | 93 | 88 | 100 | 95 | **-5** |
| No helmet | 7 | 12 | 0 | 5 | **5** |
| **Gender** | | | | | |
| Male | - | | 100 | 85 | **-15** |
| Female | - | | 0 | 15 | **15** |
| Can't tell | - | | 0 | 0 | **0** |
| **Where Riding** | | | | | |
| Road | 67 | 71 | 53 | 35 | **-18** |
| Footpath | 0 | 0 | 0 | 0 | **0** |
| Off-road cycleway | 33 | 29 | 47 | 65 | **18** |
| ***Base:*** | ***15*** | ***24*** | ***19*** | ***20*** | |

- Cyclist volumes at the Jelas/Moffatt Road site are relatively low throughout the monitoring period aside from a peak between 8:00am and 8:09am (7 movements). This compares to a peak between 8:10am and 8:19am (6 movements) in 2011.

**Figure 14.2: Morning Peak Cyclist Frequency**

**Jelas/Moffatt Road 2009 – 2012 (n)**



## 14.2 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 traffic at Jelas/Moffatt Road remains relatively low, with 14 movements recorded in 2011 (up from 11 movements in 2011).
- The key movement in the evening is travelling straight from Hibiscus Coast Highway heading north (Movement 2 = 8 movements).
- Changes in evening cyclist volumes at this site since 2011 are most notable at Movement 2 (up 8 movements).

**Table 14.3: Evening Cyclist Movements**

**Jelas/Moffatt Road 2009 – 2012 (n)**

| *Movement* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|
| 1 | 12 | 5 | 6 | 0 | **-6** |
| 2 | 2 | 4 | 0 | 8 | **8** |
| 3 | 8 | 3 | 3 | 0 | **-3** |
| 4 | 1 | 3 | 2 | 6 | **4** |
| **Total** | **23** | **15** | **11** | **14** | **3** |

*Note: The surveyor at this site noted that due to vegetation growth on the western side of the Hibiscus Highway it was not always possible to distinguish Movement 1 from Movement 2.*

- Most cyclists using the Jelas/Moffatt Road site were adults (79 per cent, up from 73 per cent in 2011).
- Most cyclists were wearing a helmet (79 per cent, up from 73 per cent in 2011).
- The majority of the cyclists were male (79 per cent, down from 91 per cent last year).
- More than half of the cyclists using the site are riding on the road (57 per cent, stable from 55 per cent last year). The remaining cyclists are riding on the off-road cycleway (43 per cent).

**Table 14.4: Evening Cyclist Characteristics**

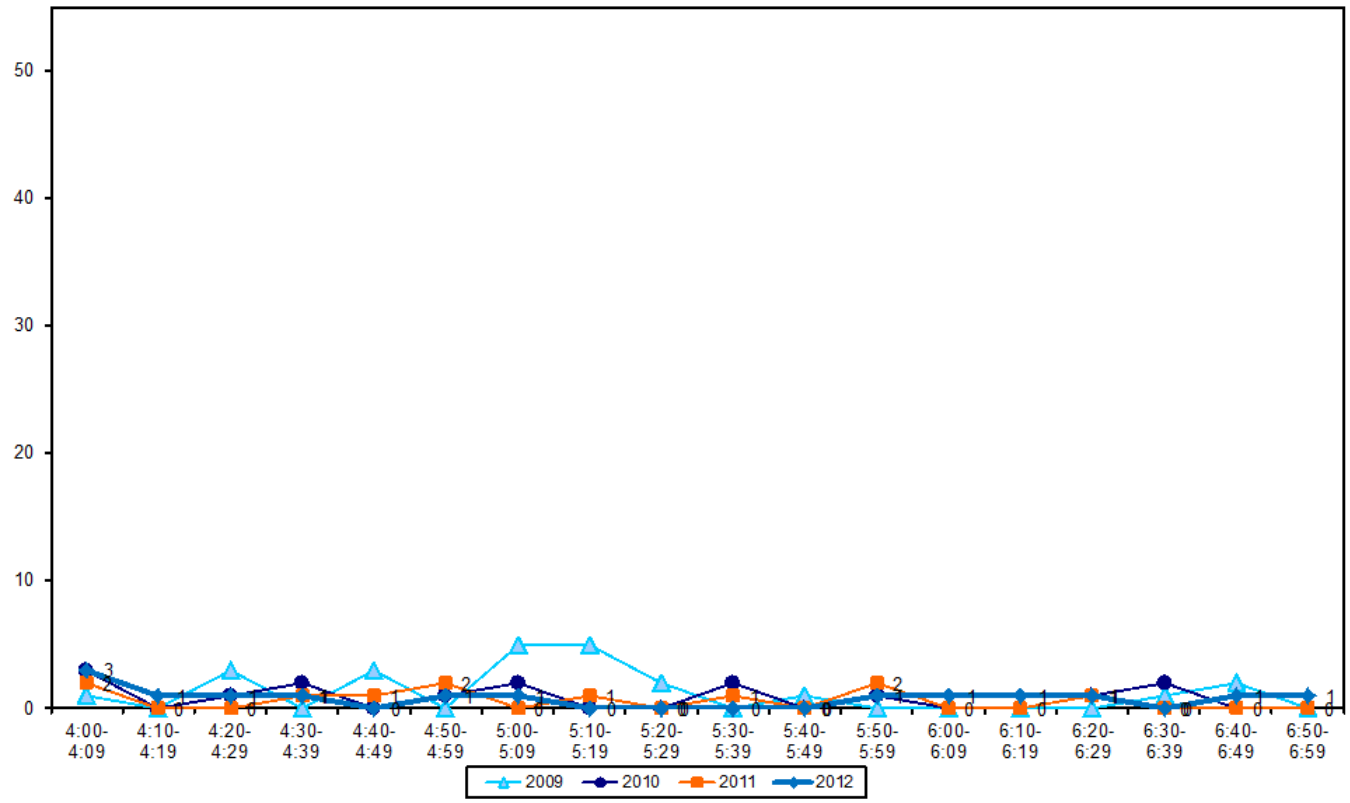
**Jelas/Moffatt Road 2009 – 2012 (%)**

| | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|
| **Cyclist Type** | | | | | |
| Adult | 17 | 53 | 73 | 79 | **6** |
| School child | 83 | 47 | 27 | 21 | **-6** |
| **Helmet Wearing** | | | | | |
| Helmet on head | 74 | 93 | 73 | 79 | **6** |
| No helmet | 26 | 7 | 27 | 21 | **-6** |
| **Gender** | | | | | |
| Male | - | - | 91 | 79 | **-12** |
| Female | - | - | 9 | 21 | **12** |
| Can't tell | - | - | 0 | 0 | **0** |
| **Where Riding** | | | | | |
| Road | 22 | 67 | 55 | 57 | **2** |
| Footpath | 0 | 0 | 0 | 0 | **0** |
| Off-road cycleway | 78 | 33 | 45 | 43 | **-2** |
| ***Base:*** | ***23*** | ***15*** | ***11*** | ***14*** | |

- Cyclist volumes are low throughout the evening monitoring period, with no more than one cyclist recorded over any ten minute interval, with the exception of 3 cyclists recorded between 4:00pm and 4:09pm. This compares to a similar trend in 2011.

**Figure 14.3: Evening Peak Cyclist Frequency**

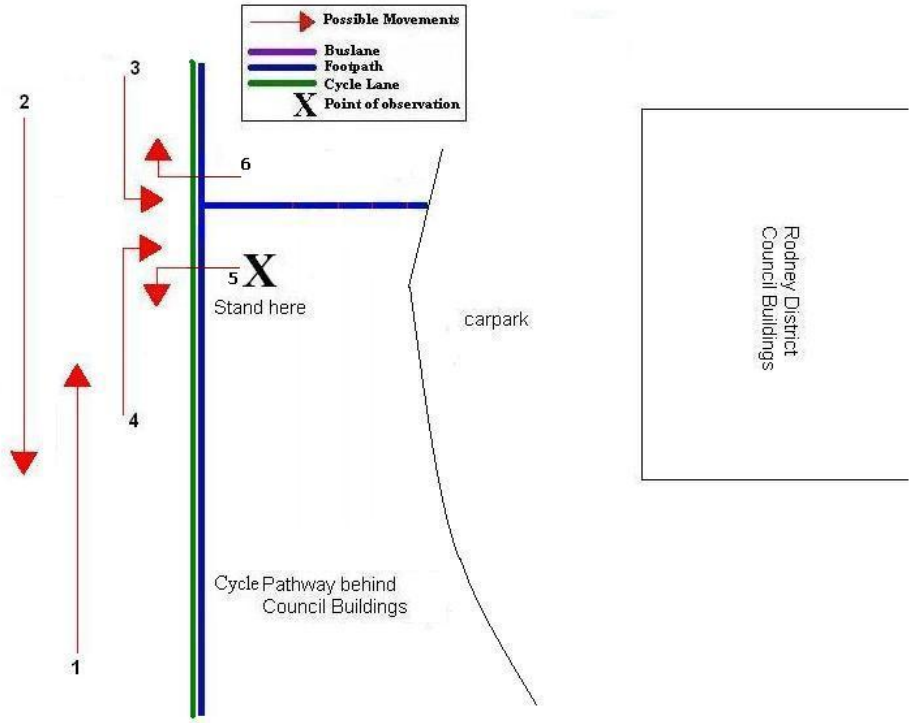
**Jelas/Moffatt Road 2009 – 2012 (n)**



# 15. BEHIND RODNEY DISTRICT COUNCIL BUILDING, OREWA (SITE 84)

Figure 15.1 shows the possible cyclist movements at this site.

**Figure 15.1: Cycle Movements: Behind Rodney District Council Building**




## 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** |

## 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 2012 has decreased from last year (61 movements, down from 72 movements in 2011).
- Most of the movements in the morning were heading north along the cycleway (Movement 1 = 54 cyclists).
- Changes in evening cyclist volumes at this site since 2011 are most notable at Movement 1 (down 17 movements).

**Table 15.1: Morning Cyclist Movements**

**Behind Rodney District Council Building 2009 – 2012 (n)**

| *Movement* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|
| 1 | 73 | 70 | 71 | **54** | **-17** |
| 2 | 1 | 3 | 1 | **2** | **1** |
| 3 | 0 | 0 | 0 | **1** | **1** |
| 4 | 1 | 0 | 0 | **2** | **2** |
| 5 | 0 | 0 | 0 | **2** | **2** |
| 6 | 0 | 0 | 0 | **0** | **0** |
| **Total** | **75** | **73** | **72** | **61** | **-11** |

- Few adults were seen cycling at this site (18 per cent, up from 11 per cent in 2011).
- Four out of every five cyclists were wearing a helmet (80 per cent, down from 89 per cent in 2011).
- Most of the cyclists were male (80 per cent).

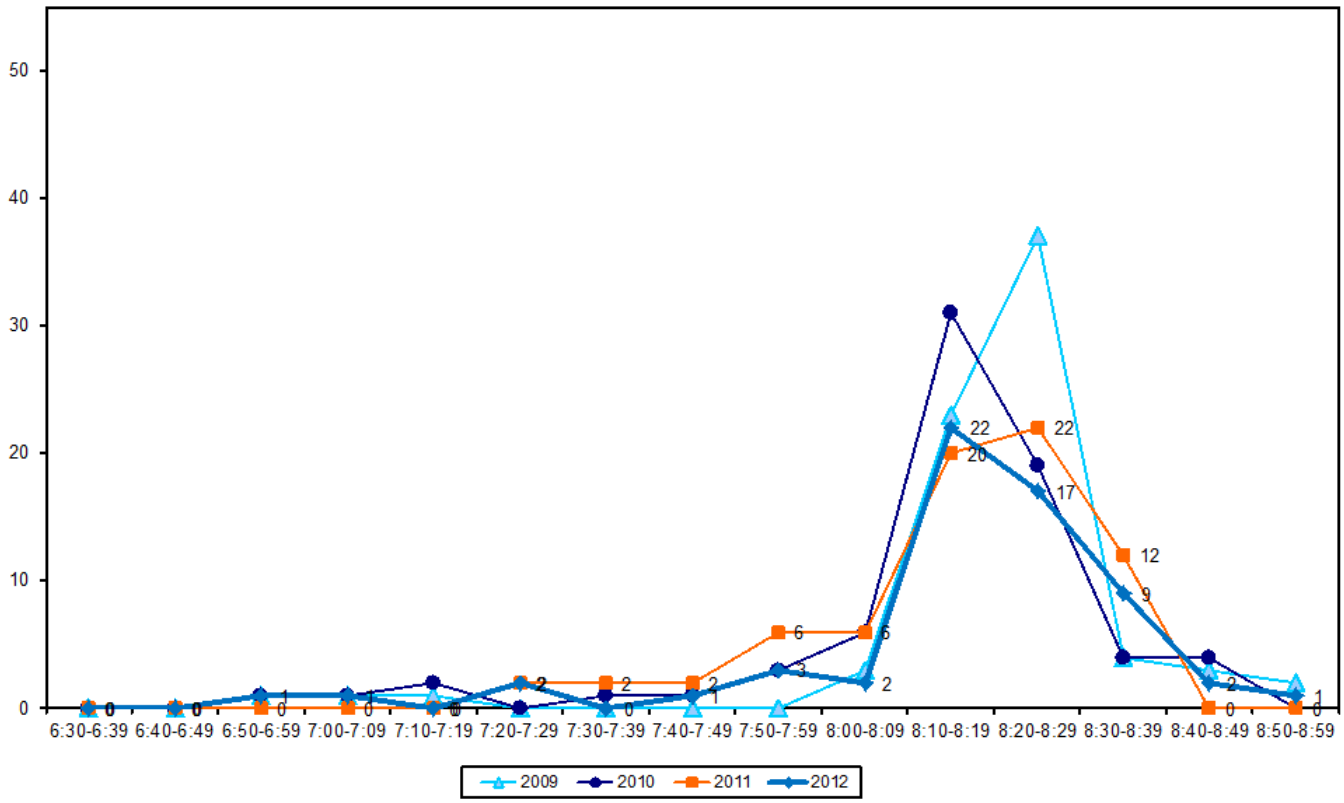
**Table 15.2: Morning Cyclist Characteristics**

**Behind Rodney District Council Building 2009 – 2012 (%)**

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

- The volume of morning cyclist movements is very low until 8:00 am. Movements peak between 8:10am and 8:19am (22 movements). This is similar to previous year's results.

**Figure 15.2: Morning Peak Cyclist Frequency**
**Behind Rodney District Council Building 2009 – 2012 (n)**



## 15.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- Twenty-eight cycle movements were recorded during the evening peak at this site, notably lower than the 66 movements recorded in 2011.
- The key movement is heading south (Movement 2 = 14 cyclists).
- The most notable change in movements from 2011 is Movement 1 (down 26 movements) and Movement 2 (down 17 movements).

**Table 15.3: Evening Cyclist Movements**
**Behind Rodney District Council Building 2009 – 2012 (n)**

| *Movement* | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|
| 1 | 5 | 10 | 28 | **2** | **-26** |
| 2 | 4 | 12 | 31 | **14** | **-17** |
| 3 | 0 | 0 | 1 | **0** | **-1** |
| 4 | 1 | 0 | 1 | **3** | **2** |
| 5 | 1 | 0 | 4 | **9** | **5** |
| 6 | 0 | 0 | 1 | **0** | **-1** |
| **Total** | **11** | **22** | **66** | **28** | **-38** |

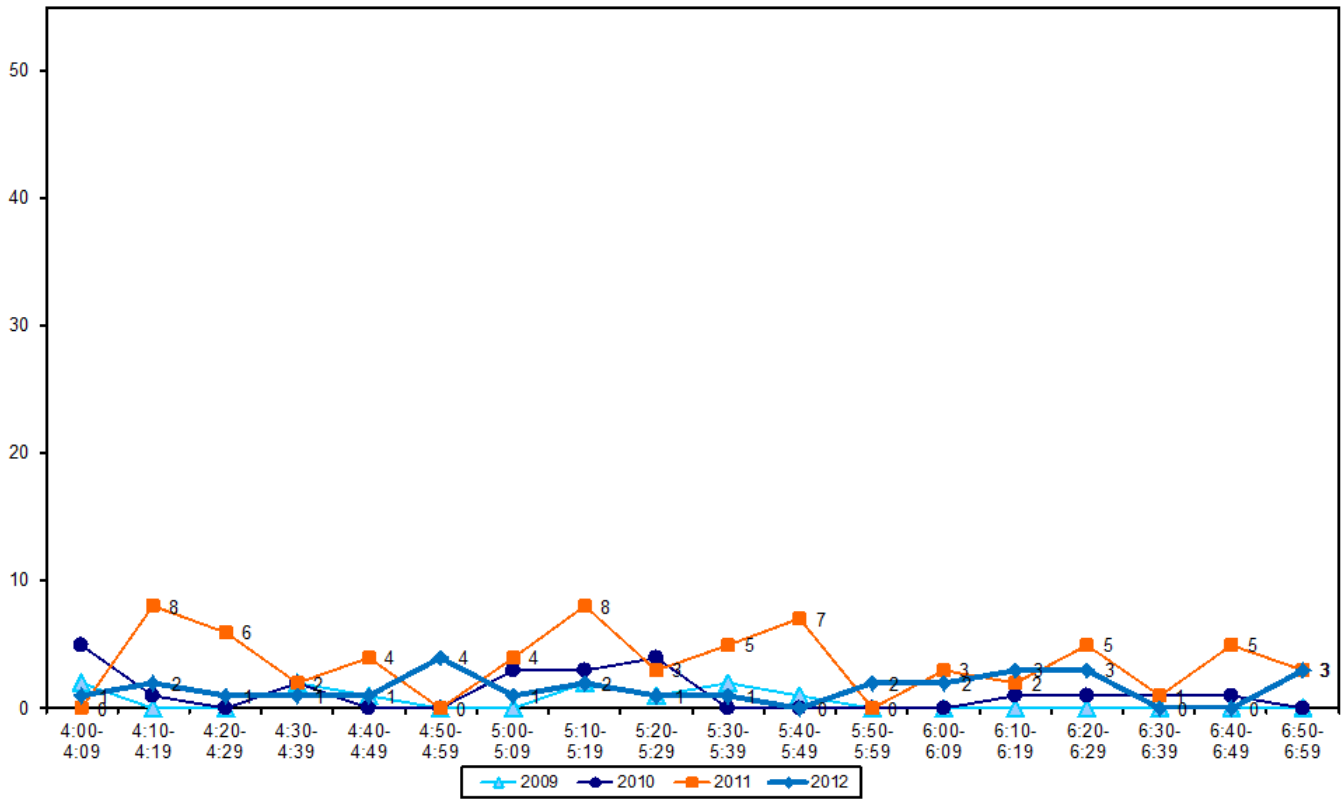
- The majority of cyclists at this site in the evening were adults (64 per cent, an increase from 52 per cent in 2011).
- Over half (57 per cent) of the cyclists were wearing a helmet (down notably from 77 per cent in 2011).
- Most of the cyclists were male (71 per cent).

**Table 14.4: Evening Cyclist Characteristics**
**Behind Rodney District Council Building 2009 – 2012 (%)**

| | *2009* | *2010* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|---|---|
| **Cyclist Type** | | | | | |
| Adult | 91 | 55 | 52 | **64** | **12** |
| School child | 9 | 45 | 48 | **36** | **-12** |
| **Helmet Wearing** | | | | | |
| Helmet on head | 82 | 59 | 77 | **57** | **-20** |
| No helmet | 18 | 41 | 23 | **43** | **20** |
| **Gender** | | | | | |
| Male | - | - | 71 | **71** | **0** |
| Female | - | - | 29 | **29** | **0** |
| Can't tell | - | - | 0 | **0** | **0** |
| **Where Riding** | | | | | |
| Off-road cycleway | 100 | 100 | 100 | **100** | **0** |
| ***Base:*** | ***11*** | ***22*** | ***66*** | **28** | |

- Cyclist movement volumes are lower in 2012 than in 2011 and vary throughout the observation period.

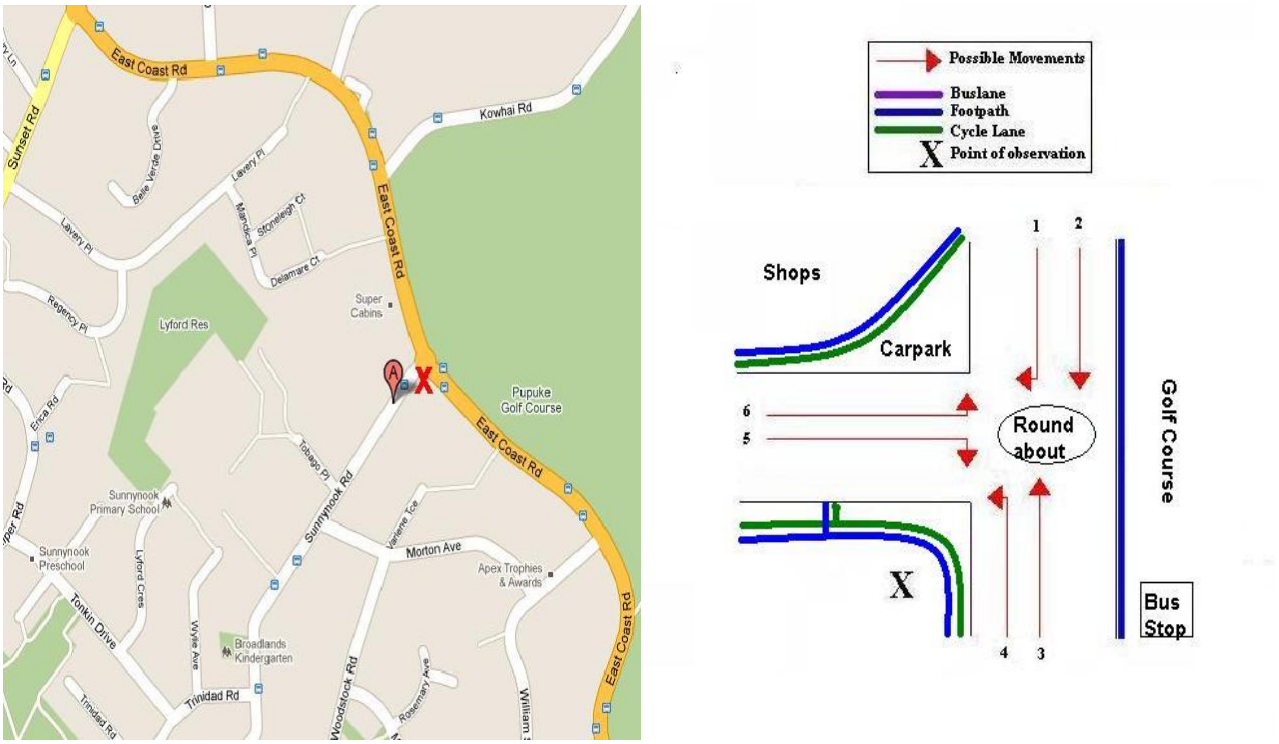
**Figure 15.3: Evening Peak Cyclist Frequency**
**Behind Rodney District Council Building 2009 – 2012 (n)**



# 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** |

## 16.2 Morning Peak

### *Environmental Conditions*

- The weather was fine throughout the morning shift, with the exception of light rain between 8:19am and 8:26am and again between 8:43am and 8:52am.
- 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 2012 has increased since last year (95 movements, up from 81 movements in 2011).
- The key morning movement is continuing straight on East Coast Road travelling in a south-easterly direction (Movement 2 = 74 movements).
- The most notable change in morning cyclist movements was as Movement 2 (up 32 movements from 2011).

**Table 16.1: Morning Cyclist Movements**

**Sunnynook Road/East Coast Road, Sunnynook 2011 – 2012 (n)**

| *Movement* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|
| 1 | 5 | **1** | **-4** |
| 2 | 42 | **74** | **32** |
| 3 | 25 | **17** | **-8** |
| 4 | 6 | **0** | **-6** |
| 5 | 0 | **2** | **2** |
| 6 | 3 | **1** | **-2** |
| **Total** | **81** | **95** | **14** |

- Over the morning peak, the majority of cyclists were adults (93 per cent, up from 88 per cent at the previous measure).
- All cyclists were wearing a helmet this year (100 per cent, stable from 99 per cent last year).
- The majority of cyclists continue to be male (84 per cent, up from 77 per cent in 2011).
- Most cyclists were riding on the road (88 per cent, up from 79 per cent last year).

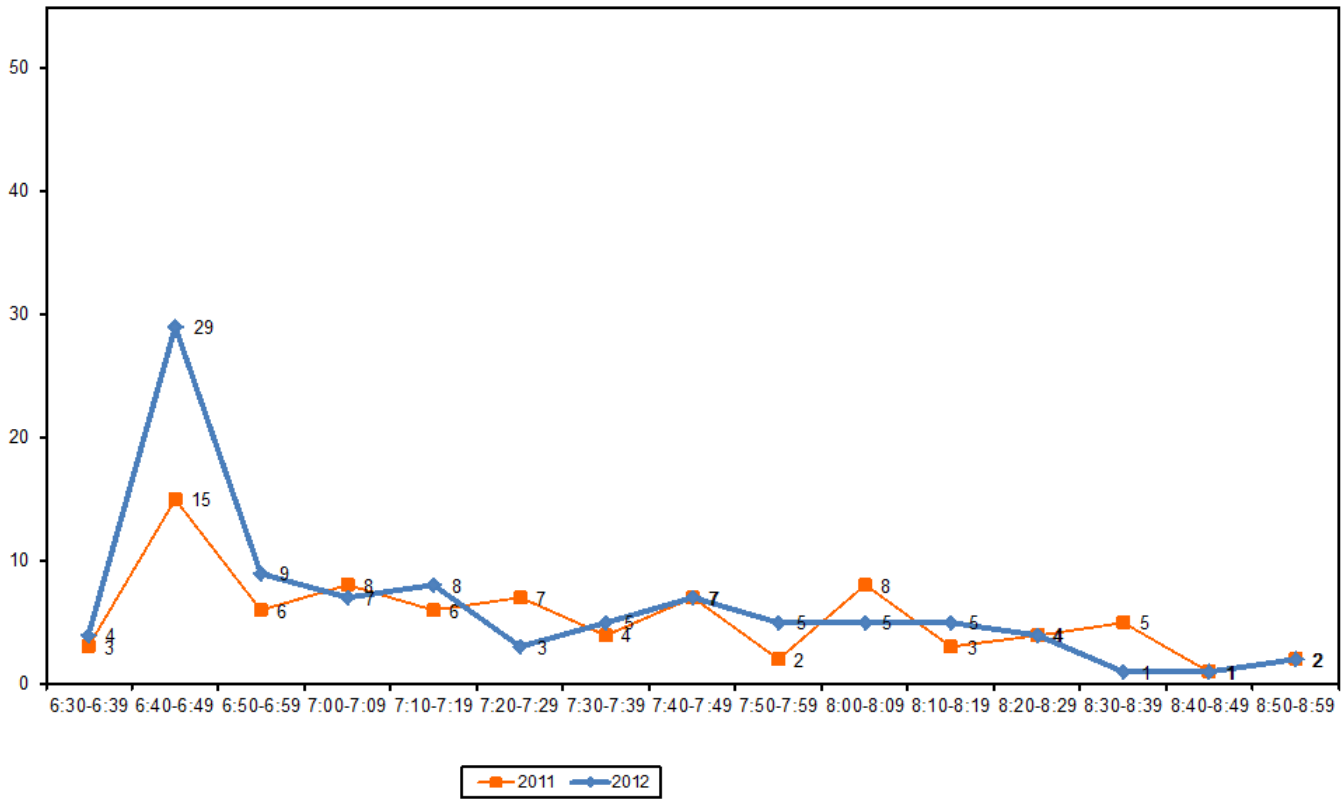
**Table 16.2: Morning Cyclist Characteristics**

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

| | *2011* | *2012* | *Change 11-12* |
|---|---|---|---|
| **Cyclist Type** | | | |
| Adult | 88 | **93** | **5** |
| School child | 12 | **7** | **-5** |
| **Helmet Wearing** | | | |
| Helmet on head | 99 | **100** | **1** |
| No helmet | 1 | **0** | **-1** |
| **Gender** | | | |
| Male | 77 | **84** | **7** |
| Female | 23 | **16** | **-7** |
| Can't tell | 0 | **0** | **0** |
| **Where Riding** | | | |
| Road | 79 | **88** | **9** |
| Footpath | 2 | **12** | **10** |
| Off-road cycle way | 19 | **0** | **-19** |
| ***Base:*** | ***81*** | ***95*** | |

- Morning cyclist movement volumes reached the largest peak early in the observation period (6:40am and 6:49am = 29 movements), then remain relatively stable. This is the same time as the peak observed in 2011 (15 movements).

**Figure 9.2: Morning Peak Cyclist Frequency**
**Sunnynook Road/East Coast Road, Sunnynook 2011 – 2012 (n)**




*Note: In 2012, 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:*

- *Six cyclists at 6:46am*
- *Nine cyclists at 6:48am*
- *Five cyclists at 6:49am*

## 16.3 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*

- Cyclist movement volumes have decreased notably this year, from 93 in 2011 to 60 movements.
- The key movements include continuing straight along East Coast Road in a north/north westerly direction (Movement 3 = 35 movements) and continuing straight on East Coast Road travelling in a south-easterly direction (Movement 2 = 22 movements).
- Evening cyclist volumes have decreased most notably at Movements 3 (down 14 movements) and 2 (down 11 movements).

**Table 9.3: Evening Cyclist Movements**

**Sunnynook Road/East Coast Road, Sunnynook 2011 – 2012 (n)**

| *Movement* | *2011* | *2012* | Change 11-12 |
|---|---|---|---|
| 1 | 2 | **1** | **-1** |
| 2 | 33 | **22** | **-11** |
| 3 | 49 | **35** | **-14** |
| 4 | 2 | **0** | **-2** |
| 5 | 4 | **0** | **-4** |
| 6 | 3 | **2** | **-1** |
| **Total** | ***93*** | ***60*** | ***-33*** |

- Approximately four in five cyclists at this site were adults (78 per cent, down slightly from 82 per cent at the previous measure).
- Almost all cyclists were wearing a helmet (98 per cent, stable from 97 per cent in 2011).
- The majority of cyclists continue to be male (83 per cent, down from 91 per cent last year).
- More than three quarters of cyclists were riding on the road (79 per cent, stable from 78 per cent in 2011), while the remaining 21 per cent were riding on the footpath (up from 7 per cent in 2011).

**Table 9.4: Evening Cyclist Characteristics**

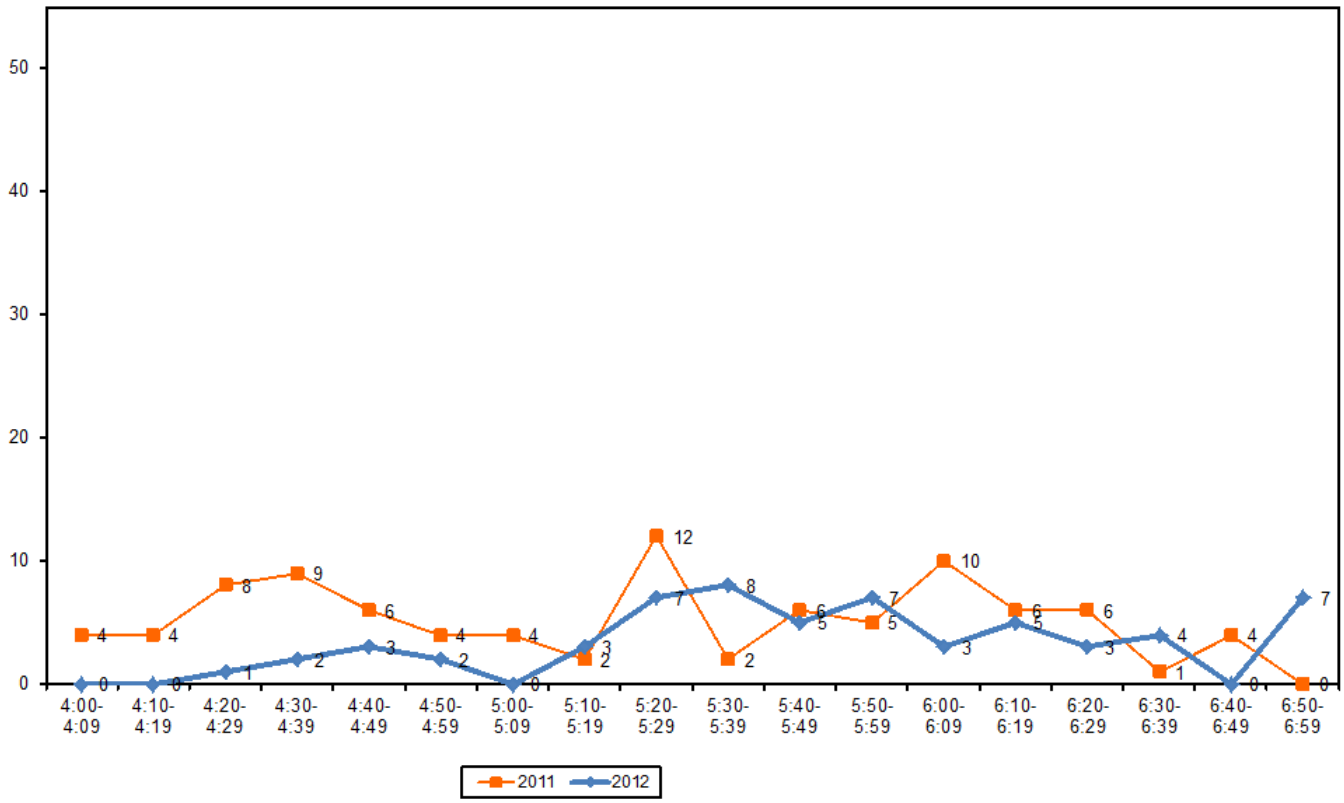
**Sunnynook Road/East Coast Road, Sunnynook 2011 – 2012 (%)**

| | *2011* | *2012* | Change 11-12 |
|---|---|---|---|
| **Cyclist Type** | | | |
| Adult | 82 | **78** | **-4** |
| School child | 18 | **22** | **4** |
| **Helmet Wearing** | | | |
| Helmet on head | 97 | **98** | **1** |
| No helmet | 3 | **2** | **-1** |
| **Gender** | | | |
| Male | 91 | **83** | **-8** |
| Female | 9 | **17** | **8** |
| Can't tell | 0 | **0** | **0** |
| **Where Riding** | | | |
| Road | 78 | **79** | **1** |
| Footpath | 7 | **21** | **14** |
| Off-road cycle way | 15 | **0** | **-15** |
| ***Base:*** | ***93*** | ***60*** | |

- Cyclist movement volumes reach a slight peak between 5:30pm and 5:39pm (8 movements), ten minutes later than the peak observed in 2011.

**Figure 9.3: Evening Peak Cyclist Frequency**

**Sunnynook Road/East Coast Road, Sunnynook 2011 – 2012 (n)**




*Note: In 2012, six cyclists were observed riding together at this site at 5:30pm. This equates to 10 per cent of all evening peak cyclists at this site.*

# 17. 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 2012. 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 6th of March[12].

### *Key Points*

- Among the surveyed schools, of those eligible to cycle, on average, one per cent of students are cycling to their schools (unchanged from 2011).
- Among the 19 responding schools, n=192 students were identified as cycling to school.
- This year, Gulf Harbour Primary and Albany Junior High School reported the highest share of cyclists – 5 per cent of all eligible students currently cycling.
- Of the schools that participated in the count in both 2011 and 2012 only one (Pinehurst School) reported an increase in the share of students cycling to school.
- Of the 19 schools that responded, six (32 per cent) had no students cycling to school.

[10] Silverdale School reported that only students 10 years or older are permitted to cycle without adult supervision.
[11] The following schools reported events or issues that had an effect on the cycle count:
- Kingsway School *"The weather was overcast, usually would have approximately 25 cycles"*
- Wentworth College *"Year 7 is currently away on camp"*

[12] The following schools conducted their counts on alternative days:
- City Impact Church School (Secondary) and City Impact Church School – Friday 2nd March
- Gulf Harbour School – Wednesday 4th April
- Stella Maris Primary School – Thursday 5th April
- The Corelli School of the Arts – Tuesday 13th March

Table 17.1 shows the results of the 19 schools surveyed in Albany ward.

**Table 17.1: Summary Table Of School Bike Count 2007 – 2012 (n)**

| *School Name* | *School Type* | *School Roll Eligible To Cycle* | *No. of Cycles Counted* | *Cyclists as share of those eligible*[13] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | *2012* | *2011* | *2010* | *2009* | *2008* | *2007* |
| Albany Junior High School | Composite | 1200 | 57 | **5%** | - | - | - | - | - |
| Gulf Harbour Primary | Full Primary | 411 | 20 | **5%** | 6% | - | - | - | - |
| Kingsway School | Composite | 1073 | 18 | **2%** | 2% | 1% | 1% | 1% | <1% |
| Northcross Intermediate School | Intermediate | 1080 | 20 | **2%** | 2% | - | 4% | 0% | 5% |
| Orewa College | Intermediate/Secondary | 1800 | 35 | **2%** | 4% | 7% | 5% | 5% | 6% |
| Silverdale Primary School | Full Primary | 313 | 6 | **2%** | 8% | - | - | - | - |
| Albany Senior High School | Secondary | 781 | 4 | **1%** | 1% | 2% | - | - | - |
| Kristin School | Composite | 1572 | 3 | **<1%** | <1% | <1% | 1% | - | - |
| Long Bay College | Secondary | 1700 | 3 | **<1%** | <1% | <1% | 0% | 1% | - |
| Murrays Bay Intermediate | Intermediate | 1000 | 6 | **1%** | 2% | 3% | 2% | 2% | 5% |
| Pinehurst School | Composite | 650 | 6 | **1%** | <1% | 1% | 0% | 1% | 1% |
| Rangitoto College | Secondary | 3150 | 12 | **<1%** | 1% | 1% | 1% | <1% | 1% |
| Wentworth College | Intermediate/Secondary | 213 | 2 | **1%** | 2% | 3% | 4% | <1% | 3% |
| City Impact Church School | Full Primary | 98 | 0 | **0%** | - | - | - | - | - |
| City Impact Church School (Secondary) | Secondary | 27 | 0 | **0%** | - | - | - | - | - |
| Dairy Flat School | Full Primary | 199 | 0 | **0%** | 0% | - | - | - | - |
| Stella Maris Primary School | Full Primary | 400 | 0 | **0%** | 1% | - | - | - | - |
| Te Kura Kaupapa Maori o Te Raki Paewhenua | Composite | 80 | 0 | **0%** | 0% | - | - | - | - |
| The Corelli School of the Arts | Composite | 78 | 0 | **0%** | - | - | - | - | - |
| **Total** | | **15825** | **192** | **1%** | - | - | - | - | - |

[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.

Table 17.2 illustrate the rates of cycling to school at different school levels. Rates of cycling to school are highest among combined intermediate/secondary schools, composite and full primary schools all with 2 per cent. Rates are lowest for secondary schools (less than 1 per cent).

**Table 17.2: Summary Table Of School Bike Count by School Type**

**2007 – 2012 (%)**

| *School Type* | *Number of Schools Responded in 2012 (n)* | *Cyclists as share of those eligible* | | | | | | Change 11-12 |
|---|---|---|---|---|---|---|---|---|
| | | *2007* | *2008* | *2009* | *2010* | 2011 | 2012 | |
| Composite | 6 | <1% | 1% | 1% | 1% | 1% | **2%** | 1 |
| Full primary | 5 | - | - | - | - | 3% | **2%** | -1 |
| Intermediate/Secondary | 2 | 5% | 3% | 5% | 5% | 4% | **2%** | -2 |
| Intermediate | 2 | 5% | 1% | 3% | 3% | 2% | **1%** | -1 |
| Secondary | 4 | 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% |