

2015 Auckland Region Manual Cycle Monitor

- North Shore Ward -





TABLE OF CONTENTS

| | |
|---|-----------|
| 1. NORTH SHORE WARD SUMMARY OF RESULTS | 1 |
| 1.1 Introduction..... | 1 |
| 1.2 Methodology..... | 4 |
| 1.3 Summary of Results..... | 11 |
| 1.4 Morning Peak | 12 |
| 1.5 Evening Peak..... | 16 |
| 1.6 Aggregated Total | 20 |
| 1.7 Average Annual Daily Traffic (AADT) Estimate | 22 |
| 1.8 North Shore Ferry Wharf Bike Count Summary | 23 |
| 1.9 School Bike Shed Count Summary..... | 24 |
| | |
| 2. LAKE ROAD, TAKAPUNA (SITE 35) | 25 |
| 2.1 Site Summary..... | 25 |
| 2.2 Morning Peak | 26 |
| 2.3 Evening Peak..... | 29 |
| | |
| 3. HURSTMERE ROAD/KILLARNEY STREET, TAKAPUNA (SITE 36) | 32 |
| 3.1 Site Summary..... | 32 |
| 3.2 Morning Peak | 33 |
| 3.3 Evening Peak..... | 36 |
| | |
| 4. TAHAROTO ROAD/NORTHCOTE ROAD, TAKAPUNA (SITE 37) | 39 |
| 4.1 Site Summary..... | 39 |
| 4.2 Morning Peak | 40 |
| 4.3 Evening Peak..... | 43 |
| | |
| 5. WAIRAU ROAD/GLENFIELD ROAD, GLENFIELD (SITE 41) | 46 |
| 5.1 Site Summary..... | 46 |
| 5.2 Morning Peak | 47 |
| 5.3 Evening Peak..... | 50 |
| | |
| 6. SHAKESPEARE ROAD/EAST COAST ROAD, MILFORD (SITE 42) | 53 |
| 6.1 Site Summary..... | 53 |
| 6.2 Morning Peak | 54 |
| 6.3 Evening Peak..... | 57 |



- 7. GLENFIELD ROAD/CORONATION ROAD, HILLCREST (SITE 43) 60**
 - 7.1 Site Summary.....60
 - 7.2 Morning Peak61
 - 7.3 Evening Peak.....64

- 8. BIRKENHEAD AVENUE/MOKOIA ROAD, BIRKENHEAD (SITE 44) 67**
 - 8.1 Site Summary.....67
 - 8.2 Morning Peak68
 - 8.3 Evening Peak.....71

- 9. SUNNYNOOK ROAD/EAST COAST ROAD, SUNNYNOOK (SITE 89)..... 74**
 - 9.1 Site Summary.....74
 - 9.2 Morning Peak75
 - 9.3 Evening Peak.....78

- 10. NORTH SHORE FERRY WHARVES 81**

- 11. SCHOOL BIKE SHED COUNT 85**
 - 11.1 Cycle Count Background Information85
 - 11.2 Cycle Count Key Points85
 - 11.3 Scooter Count Background Information88
 - 11.4 Scooter Count Key Points88

APPENDICES

Appendix One: Annual Average Daily Traffic (AADT) Calculation



1. NORTH SHORE WARD SUMMARY OF RESULTS

1.1 Introduction

The Need For Reliable Cycle Trip Data

Monitoring cycle movements and cycle traffic is important to Auckland Transport, to identify where investment may be needed to improve infrastructure for cycling. Cycle traffic data will also help Auckland Transport prioritise future funding through the Auckland Land Transport Programme¹.

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

Manual Cycle Monitoring

Historically, manual cycle monitoring had been carried out in four of the seven Auckland region Territorial Authorities (TAs). However, each monitor had been undertaken using a different methodology². This variability prevented the possibility of comparing the relative popularity of different sites across TA boundaries. In addition, each monitor programme took place at different times of the year, preventing comparability from location to location since factors such as weather, school/tertiary education holidays, seasonal variations and daylight savings each have an impact on the numbers of cyclists. Even within TAs, inconsistencies as to when counts took place from year to year prevented robust comparability over time.

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

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

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



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

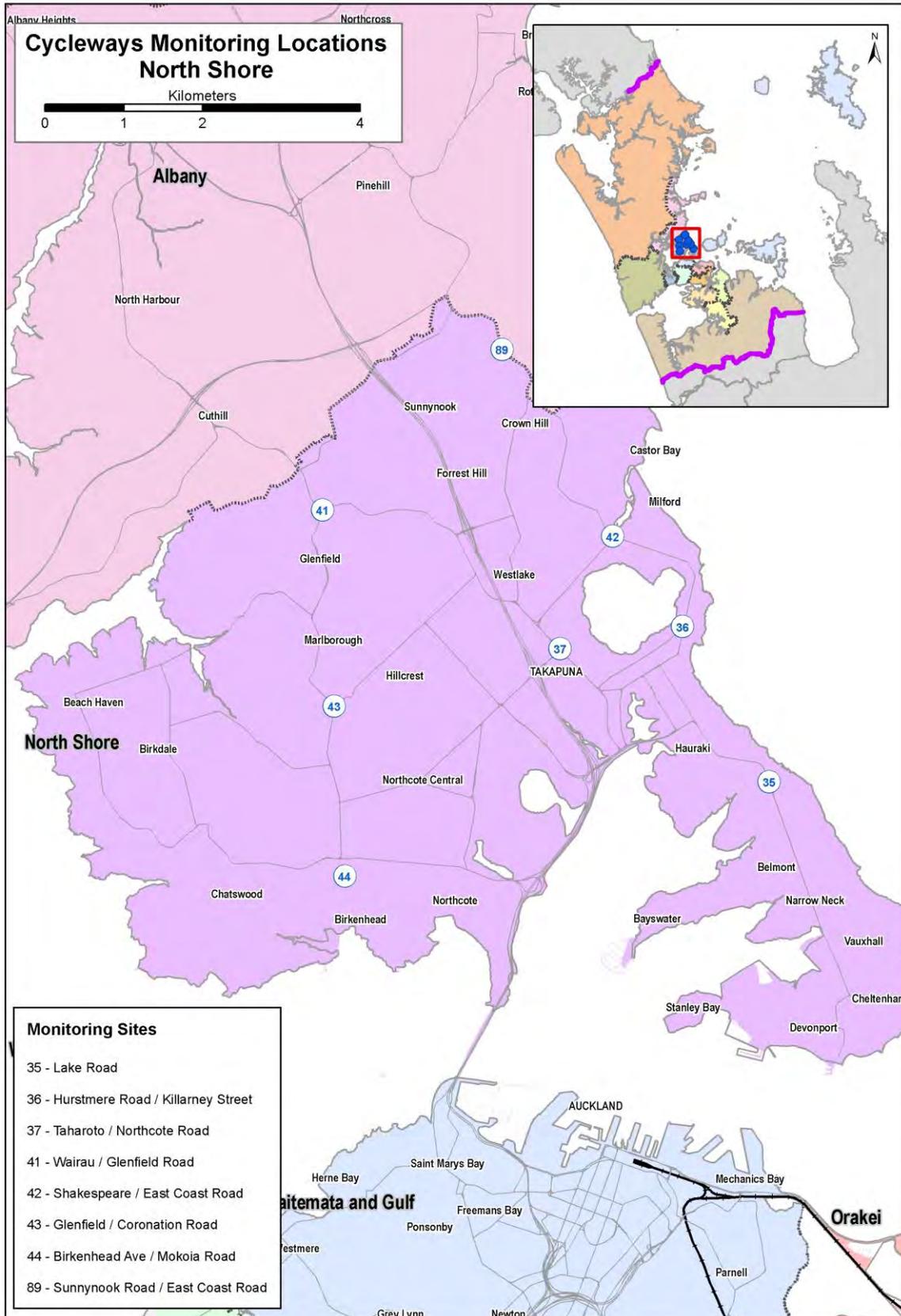
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and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

This report presents results from manual cycle counts conducted at 8 sites in the North Shore ward following a standardised methodology. Results are presented site-by-site, as well as being aggregated to a ward and region level. For sites also monitored in previous years, comparative results are provided.

Important Note: This report provides the results of manual cycle monitoring conducted at eight pre-determined sites in the North Shore 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 North Shore ward. Note that one site (Sunnynook/East Coast Road in Sunnynook – Site 89) lies on the border with the Albany ward. Consequently results for this site have been included in both ward reports.

Figure 1.1: 2014 Cycle Monitoring Locations in North Shore Ward





1.2 Methodology

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

Choice of Sites

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

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

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

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

Monitoring Times

Time Of Day

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

Day Of Week

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



Time Of Year

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

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

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

Counts were conducted on the following days:

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

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

Weather and Daylight Conditions

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



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

Tuesday 3rd March

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

Wednesday 4th March

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

Thursday 5th March

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

Conducting The Manual Counts

Scoping Visit

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

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

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

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



Briefing Session

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

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

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

Conducting The Manual Counts

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

During their shift the surveyor collected data on:

- The total number of cyclists⁴ passing through the intersection;
- The direction in which cyclists are travelling (using the numbers on the map provided);
- The time at which cyclists pass through the intersection (to the nearest minute);
- Whether cyclists are school children or adults (determined by whether they are wearing a school uniform or clearly of school age);
- Whether cyclists are wearing a helmet;
- Gender of the cyclist (*collected for the first time in 2011*); and
- Whether cyclists are riding on the road, footpath or designated off- road cycleway⁵.

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

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

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



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

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

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

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

Data Analysis

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

Annual Average Daily Traffic (AADT) Analysis

It is acknowledged that the number of cyclists using a site varies by time of day, day of the week and week of the year, and therefore it is not valid to simply multiply manual count data collected over a certain (relatively brief) period out to represent a full day, week or year. However, according to Land Transport New Zealand⁶, Annual Average Daily Traffic (AADT) analysis can be used to estimate the average annual daily flow of cyclists from manual and automated cycle counts conducted at one point in time. The procedure involves deriving scale factors, which account for the time of day, day of the week, and week of the year (which varies with school holidays and season) as well as weather conditions on the count day. These scale factors are then applied to the count data collected to give an AADT estimate.

Using the manual count figures for each site, it has been possible to provide the average annual daily traffic flow of cyclists (cycling AADT) estimate for each site. AADT scale factors (morning and afternoon) were provided by ViaStrada⁷.

⁶ <http://www.itsa.govt.nz/road-user-safety/walking-and-cycling/cycle-network/appendix2.html>

⁷ ViaStrada is a traffic engineering and transport planning consultancy based in Christchurch, New Zealand.



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

Note: ViaStrada acknowledge that, as cycling volumes fluctuate from day to day depending on the weather, this method should be used with caution. They note that ideally an estimate should be achieved based on the average of the results of several counts, rather than counts from a single day, as in this study⁸.

School Bike Shed Counts

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

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

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

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

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



Methodology

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

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

Reporting

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

Manual Counts - Site Level Reporting

The following results have been reported for each site:

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



- riding on the road/riding on the footpath/riding on an off-road path

Manual Counts - Aggregated Reporting

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

Bike Shed Counts

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

1.3 Summary of Results

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

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



1.4 Morning Peak

Environmental Conditions

- The North Shore sites experienced sunny weather throughout the morning monitoring period.
- There were no road works or accidents that may affect cycle counts.

Key Points

- A total of 840 cyclist movements were recorded across the eight sites in the morning peak period (between 6:30am and 9:00am) in 2015. This includes 12 per cent (n=100) observed cycling in groups, compared with 6 per cent (n=30) of group cycle movements last year.
- Over the last 12 months, the number of morning cycle movements observed has increased by 59 per cent.
- The average volume of morning cyclists across the eight sites monitored in the North Shore ward was 105 cycle movements, up from 66 last year.
- The busiest site in the morning peak was at Shakespeare Road/ East Coast Road (202 movements, up from 97 movements from 2014), whereas Birkenhead Avenue/Mokoia Road had the lowest level of morning cyclist traffic (9 cycle movements, unchanged from last year).
- Six out of the eight sites recorded an increase this year. The most notable increases were observed at:
 - Shakespeare Road/East Coast Road – up 108 per cent; and
 - Sunnynook Road/East Coast Road – up 96 per cent.
- The site which recorded a decrease this year was Glenfield Road/Coronation Road – down 7 per cent.



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

| Site No. | Locations | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 | Change 07-15 |
|-----------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|---------------------|
| 42 | Shakespeare Road/East Coast Road | 82 | 127 | 177 | 146 | 181 | 145 | 172 | 97 | 202 | 108% | 146% |
| 35 | Lake Road, by Takapuna Grammar | 127 | 200 | 166 | 186 | 220 | 175 | 159 | 126 | 172 | 37% | 35% |
| 36 | Hurstmere Road/Killarney Street | 76 | 134 | 186 | 180 | 191 | 154 | 176 | 97 | 155 | 60% | 104% |
| 37 | Taharoto Road/Northcote Road | 111 | 160 | 98 | 117 | 202 | 141 | 152 | 90 | 147 | 63% | 32% |
| 41 | Wairau Road/Glenfield Road | 34 | 39 | 42 | 38 | 41 | 36 | 32 | 37 | 41 | 11% | 21% |
| 43 | Glenfield Road/Coronation Road | 16 | 36 | 36 | 37 | 27 | 35 | 33 | 28 | 26 | -7% | 63% |
| 44 | Birkenhead Ave/Mokoia Road | 20 | 20 | 27 | 29 | 22 | 17 | 29 | 9 | 9 | 0% | -55% |
| | Average per site (7 sites since 2007) | 67 | 102 | 105 | 105 | 126 | 100 | 108 | 69 | 107 | 55% | 60% |
| | Total (7 sites since 2007) | 466 | 716 | 732 | 733 | 884 | 703 | 753 | 484 | 752 | 55% | 61% |
| 89 | Sunnynook Road/East Coast Road | - | - | - | - | 81 | 95 | 96 | 45 | 88 | 96% | - |
| | Average per site (8 sites since 2011) | - | - | - | - | 121 | 100 | 106 | 66 | 105 | 59% | - |
| | Total (8 sites since 2011) | - | - | - | - | 965 | 798 | 849 | 529 | 840 | 59% | - |



- Morning cyclist characteristics are shown in Table 1.2 below. Overall, 83 per cent of cyclists were adults, up from 76 per cent last year.
- Almost all North Shore ward morning cyclists were wearing a helmet (98 per cent, stable since 2008).
- The greatest share of morning cyclists in the North Shore ward were male (77 per cent).
- Approximately three in four cyclists were riding on the road (77 per cent, up slightly from 72 per cent last year). The share of cyclists travelling on the footpath decreased to 13 per cent. The remaining cyclists were riding on the off-road cycleway (10 per cent, up 8 percentage points compared to last year).

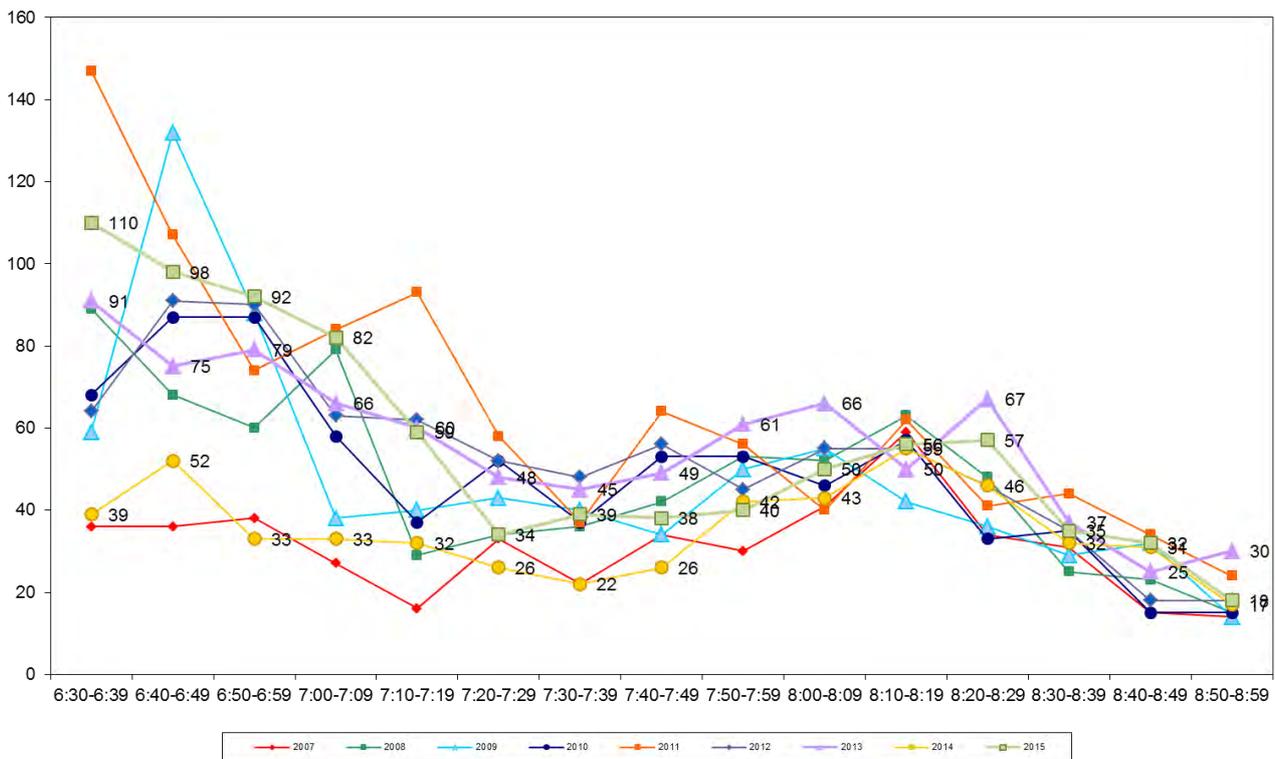
**Table 1.2: Summary of Morning Cyclist Characteristics
2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 73 | 79 | 85 | 83 | 85 | 83 | 82 | 76 | 83 | 7 |
| School child | 27 | 21 | 15 | 17 | 15 | 17 | 18 | 24 | 17 | -7 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 94 | 98 | 97 | 98 | 99 | 98 | 98 | 97 | 98 | 1 |
| No helmet | 6 | 2 | 3 | 2 | 1 | 2 | 2 | 3 | 2 | -1 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 65 | 78 | 81 | 80 | 77 | -3 |
| Female | - | - | - | - | 16 | 16 | 18 | 19 | 21 | 2 |
| Can't tell | - | - | - | - | 19 | 6 | 1 | 1 | 2 | 1 |
| Where Riding | | | | | | | | | | |
| Road | 71 | 80 | 81 | 81 | 80 | 79 | 74 | 72 | 77 | 5 |
| Footpath | 29 | 20 | 19 | 19 | 17 | 18 | 20 | 26 | 13 | -13 |
| Off-road cycleway | 0 | 0 | 0 | 0 | 3 | 3 | 6 | 2 | 10 | 8 |
| Base: | 466 | 716 | 732 | 733 | 965 | 798 | 849 | 529 | 840 | |



- Figure 1.2 illustrates the total number of cyclists in the morning peak by time of movement. Cycle volumes were a lot higher in the first half of the monitoring period, starting out with 110 cycle movements between 6:30am and 6:39am. Cycle volumes were most stable during the middle of the shift, then increased slightly up to 57 cycle movements between 8:20am and 8:29am. From there, cycle volumes declined at a steady rate for the remainder of the shift.

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





1.5 Evening Peak

Environmental Conditions

- The North Shore sites experienced sunny weather throughout the evening monitoring period.
- There were no road works or accidents that may affect cycle counts.

Key Points

- A total of 553 cyclist movements were recorded across the eight sites in the evening peak period (between 4:00pm and 7:00pm) in 2015, including eight per cent (n=42) observed cycling as groups. This compares with two per cent (n=12) last year.
- The number of cycle movements has increased slightly over the last 12 months, up from 512 in 2014 to 553 this year, an 8 per cent increase.
- The average volume of evening cyclists across the eight sites monitored in the North Shore ward was 69 cycle movements, up from 64 movements last year.
- Of the eight sites monitored in the North Shore ward, the sites which were the busiest in terms of the evening cycle activities were Taharoto Road/Northcote Road with 117 cycle movements (up from 80 movements last year) and Lake Road, by Takapuna Grammar with 101 cycle movements (up from 94 movements last year).
- The lowest level of evening cyclist traffic was at Glenfield Road/Coronation Street (21 movements, down from 30 movements last year).
- Five of the eight sites have recorded increases this year compared to 2014. The most notable increases were at:
 - Taharoto Road/Northcote Road – up 46 per cent; and
 - Sunnynook/East Coast Road – up 17 per cent.
- The site which recorded the most notable decrease was Glenfield Road/Coronation Road – down 30 per cent from last year.



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

| Site No. | Locations | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 | Change 07-15 |
|-----------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|---------------------|
| 37 | Taharoto Road/Northcote Road | 51 | 110 | 104 | 112 | 105 | 77 | 82 | 80 | 117 | 46% | 129% |
| 35 | Lake Road, by Takapuna Grammar | 65 | 97 | 129 | 141 | 96 | 146 | 107 | 94 | 101 | 7% | 55% |
| 42 | Shakespeare Road/East Coast Road | 55 | 123 | 133 | 159 | 105 | 93 | 94 | 97 | 99 | 2% | 80% |
| 36 | Hurstmere Road/Killarney Street | 45 | 118 | 132 | 122 | 113 | 108 | 95 | 95 | 87 | -8% | 93% |
| 41 | Wairau Road/Glenfield Road | 30 | 34 | 38 | 53 | 52 | 69 | 37 | 42 | 45 | 7% | 50% |
| 44 | Birkenhead Ave/Mokoia Road | 20 | 29 | 30 | 46 | 23 | 35 | 32 | 22 | 22 | 0% | 10% |
| 43 | Glenfield Road/Coronation Road | 12 | 39 | 42 | 56 | 25 | 38 | 25 | 30 | 21 | -30% | 75% |
| | Average per site (7 sites since 2007) | 40 | 79 | 87 | 98 | 74 | 81 | 67 | 66 | 70 | 6% | 75% |
| | Total (7 sites since 2007) | 278 | 550 | 608 | 689 | 519 | 566 | 472 | 460 | 492 | 7% | 77% |
| 89 | Sunnynook Road/East Coast Road | - | - | - | - | 93 | 60 | 53 | 52 | 61 | 17% | - |
| | Average per site (8 sites since 2011) | - | - | - | - | 77 | 78 | 66 | 64 | 69 | 8% | - |
| | Total (8 sites since 2011) | - | - | - | - | 612 | 626 | 525 | 512 | 553 | 8% | - |



- The majority of evening cyclists were adults (92 per cent, up from 85 per cent in 2014).
- Ninety-seven per cent of evening cyclists were wearing a helmet (up slightly from 93 per cent last year).
- The greatest share of evening cyclists were male (85 per cent, up from 78 per cent in 2014).
- Approximately three quarters of the cyclists were riding on the road in the evening (78 per cent, stable from 75 per cent in 2014). Sixteen per cent of cyclists were travelling on the footpath, with the remaining 6 per cent riding on the off-road cycleway.

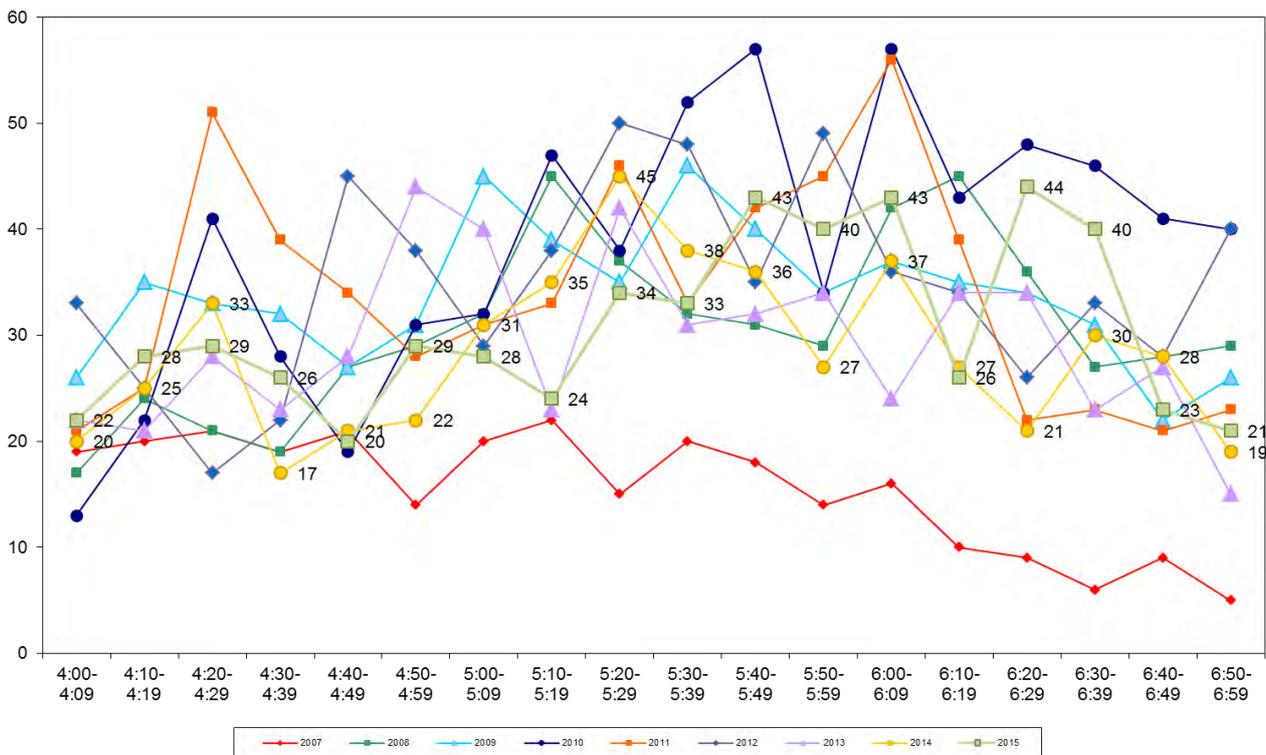
**Table 1.4: Summary of Evening Cyclist Characteristics
2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 90 | 85 | 87 | 82 | 85 | 91 | 90 | 85 | 92 | 7 |
| School child | 10 | 15 | 13 | 18 | 15 | 9 | 10 | 15 | 8 | -7 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 87 | 94 | 94 | 93 | 92 | 95 | 94 | 93 | 97 | 4 |
| No helmet | 13 | 6 | 6 | 7 | 8 | 5 | 6 | 7 | 3 | -4 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 85 | 81 | 85 | 78 | 85 | 7 |
| Female | - | - | - | - | 11 | 17 | 14 | 20 | 15 | -5 |
| Can't tell | - | - | - | - | 4 | 2 | 1 | 2 | 0 | -2 |
| Where Riding | | | | | | | | | | |
| Road | 81 | 77 | 78 | 72 | 76 | 82 | 77 | 75 | 78 | -3 |
| Footpath | 19 | 23 | 22 | 28 | 18 | 15 | 20 | 23 | 16 | -7 |
| Off-road cycleway | 0 | 0 | 0 | 0 | 6 | 3 | 3 | 2 | 6 | 4 |
| Base: | 278 | 550 | 608 | 689 | 612 | 626 | 525 | 512 | 553 | |



- The overall pattern of evening cyclist volumes by time of movement is illustrated in Figure 1.3. There was a clear curve evident at the start of the monitoring period (first 50 minutes). Evening cyclist volumes increased to several peaks, the first two between 5:40pm - 5:49pm and 6:00pm - 6:09pm (43 cycle movements) and the third between 6:20 - 6:29pm with 44 cycle movements recorded. From 6:29pm onwards cycle volumes declined.

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





1.6 Aggregated Total

- A total of 1,393 cyclist movements were recorded across the eight sites in 2015. Ten per cent (n=142) of the total cycle movements were observed cycling as groups (compared with 4 per cent and n=42 in 2014).
- The total number of cycle movements has increased since last year – from 1,041 to 1,393 this year. This represents a 34 per cent increase over the last 12 months.
- The busiest site this year was at Shakespeare Road/East Coast Road, with a total of 301 movements recorded, while the Birkenhead Avenue/Mokoia Road intersection had the fewest cyclists (31 movements, unchanged from last year).
- Six out of the eight sites recorded an increase in cyclist volumes this year. The most notable increase were observed at:
 - Shakespeare Road/East Coast Road – up 55 per cent;
 - Taharoto Road/Northcote Road – up 55 per cent; and
 - Sunnynook Road/East Coast Road – up 54 per cent.
- The site which recorded a decrease over the past 12 months was Glenfield Road/Coronation Road – down 19 per cent.

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

| Site No. | Locations | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 | Change 07-15 |
|----------|--|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|
| 42 | Shakespeare Road/East Coast Road | 137 | 250 | 310 | 305 | 286 | 238 | 266 | 194 | 301 | 55% | 120% |
| 35 | Lake Road, by Takapuna Grammar | 192 | 297 | 295 | 327 | 316 | 321 | 266 | 220 | 273 | 24% | 42% |
| 37 | Taharoto Road/Northcote Road | 162 | 270 | 202 | 229 | 307 | 218 | 234 | 170 | 264 | 55% | 63% |
| 36 | Hurstmere Road/Killarney Street | 121 | 252 | 318 | 302 | 304 | 262 | 271 | 192 | 242 | 26% | 100% |
| 41 | Wairau Road/Glenfield Road | 64 | 73 | 80 | 91 | 93 | 105 | 69 | 79 | 86 | 9% | 34% |
| 43 | Glenfield Road/Coronation Road | 28 | 75 | 78 | 93 | 52 | 73 | 58 | 58 | 47 | -19% | 68% |
| 44 | Birkenhead Ave/Mokoia Road | 40 | 49 | 57 | 75 | 45 | 52 | 61 | 31 | 31 | 0% | -23% |
| | Average per site (7 sites since 2007) | 106 | 181 | 191 | 203 | 200 | 181 | 175 | 135 | 178 | 32% | 68% |
| | Total (7 sites since 2007) | 744 | 1266 | 1340 | 1422 | 1403 | 1269 | 1225 | 944 | 1244 | 32% | 67% |
| 89 | Sunnynook Road/East Coast Road | - | - | - | - | 174 | 155 | 149 | 97 | 149 | 54% | - |
| | Average per site (8 sites since 2011) | - | - | - | - | 197 | 178 | 172 | 130 | 174 | 34% | - |
| | Total (8 sites since 2011) | - | - | - | - | 1577 | 1424 | 1374 | 1041 | 1393 | 34% | - |



- Overall cyclist characteristics are illustrated in Table 1.6. In total, 86 per cent of cyclists were adults, down from 80 per cent in 2014.
- Almost all cyclists were wearing a helmet (98 per cent, stable from 95 per cent last year).
- The greatest share of North Shore cyclists were male (80 per cent).
- Three in four cyclists were riding on the road (77 per cent, up slightly from 73 per cent in 2014).

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

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 79 | 82 | 86 | 82 | 85 | 86 | 85 | 80 | 86 | 6 |
| School child | 21 | 18 | 14 | 18 | 15 | 14 | 15 | 20 | 14 | -6 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 91 | 97 | 96 | 96 | 96 | 97 | 96 | 95 | 98 | 3 |
| No helmet | 9 | 3 | 4 | 4 | 4 | 3 | 4 | 5 | 2 | -3 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 73 | 80 | 83 | 79 | 80 | 1 |
| Female | - | - | - | - | 14 | 16 | 16 | 20 | 18 | -2 |
| Can't tell | - | - | - | - | 13 | 4 | 1 | 1 | 2 | 1 |
| Where Riding | | | | | | | | | | |
| Road | 75 | 79 | 80 | 76 | 79 | 80 | 75 | 73 | 77 | 4 |
| Footpath | 25 | 21 | 20 | 24 | 17 | 17 | 20 | 25 | 14 | -11 |
| Off-road cycleway | 0 | 0 | 0 | 0 | 4 | 3 | 5 | 2 | 9 | 7 |
| Base: | 744 | 1266 | 1340 | 1422 | 1577 | 1424 | 1374 | 1041 | 1393 | |



1.7 Average Annual Daily Traffic (AADT) Estimate

AADT Estimate

- Table 1.7 provides the comparative AADT estimates for each site, based on the average of morning and evening peak AADT calculations.
- The highest AADT is at Shakespeare Road/East Coast Road (445 daily movements, up 58 per cent from last year) and the lowest is at Birkenhead Avenue/Mokoia Road (44 daily movements, unchanged from last year).
- All but one site recorded an increase in total AADT estimates this year compared with 2014. The most notable increases were at:
 - Shakespeare Road/East Coast Road - up 58 per cent
 - Taharoto Road/Northcote Road – up 56 per cent
 - Sunnynook Road/East Coast Road – up 56 per cent
- The site which observed a decrease in their AADT estimate was at Glenfield Road/Coronation Road – down 18 per cent.

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

| Site No. | Locations | 2007 ⁹ | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 | Change 07-15 |
|----------|----------------------------------|-------------------|------|------|------|------|------|------|------|------------|--------------|--------------|
| 42 | Shakespeare Road/East Coast Road | 314 | 364 | 454 | 442 | 422 | 350 | 393 | 282 | 445 | 58% | 42% |
| 35 | Lake Road, by Takapuna Grammar | 444 | 440 | 432 | 479 | 469 | 469 | 391 | 322 | 402 | 25% | -9% |
| 37 | Taharoto Road/Northcote Road | 375 | 396 | 293 | 333 | 454 | 322 | 346 | 248 | 386 | 56% | 3% |
| 36 | Hurstmere Road/Killarney Street | 279 | 368 | 466 | 443 | 448 | 384 | 400 | 279 | 357 | 28% | 28% |
| 89 | Sunnynook Road/East Coast Road | - | - | - | - | 252 | 228 | 211 | 140 | 219 | 56% | - |
| 41 | Wairau Road/Glenfield Road | 93 | 107 | 117 | 131 | 134 | 150 | 100 | 114 | 125 | 10% | 34% |
| 43 | Glenfield Road/Coronation Road | 64 | 109 | 113 | 134 | 76 | 106 | 85 | 84 | 69 | -18% | 8% |
| 44 | Birkenhead Ave/Mokoia Road | 58 | 71 | 83 | 108 | 65 | 74 | 88 | 44 | 44 | 0% | -24% |

⁹ As in 2008 and 2009, the AADT estimates for North Shore city this year are calculated under “dry” weather factor, whereas a “wet” factor was applied to AADT calculations in 2007.



1.8 North Shore Ferry Wharf Bike Count Summary

Key Points

- In the morning, eight cycles were observed at the Devonport Ferry Terminal at 6:10am and 51 were observed at 9:10am, suggesting 43 passengers cycled to the ferry (stable from last year). In the afternoon, 64 cycles were recorded at the Devonport Ferry Terminal at 3:30pm and 15 were observed at 7:10pm, suggesting that 49 ferry passengers cycled home after disembarking (stable from last year).
- This year, Auckland Transport undertook single counts of stationary cycles at various ferry terminals of the North Shore ward:
 - Bayswater – 14 cycles
 - Stanley Bay – 4 cycles
 - Birkenhead – 2 cycles
 - Beachhaven – 2 cycles
 - Northcote Point – 0 cycles

The counts indicate the approximate number of ferry passengers that cycle to the ferry terminals and park their bikes there.



1.9 School Bike Shed Count Summary

Cycle Counts

- Among the surveyed schools, of those eligible to cycle to school, on average, four per cent of students are cycling to their schools. This share is unchanged since 2011.
- Belmont Intermediate School reported the highest share of cyclists, 32 per cent of all eligible students currently cycling to school (unchanged from 2014).
- In total, n=362 students from the responding schools were reported to be cycling to school.
- At least one cycle was counted at each of the 10 responding schools in the North Shore ward.
- Of the 10 schools that participated in the count in both 2014 and 2015, two (20 per cent) reported an increase in the share of students cycling, the most notable increase being Takapuna Normal Intermediate School (23 per cent, up from 11 per cent in 2014).

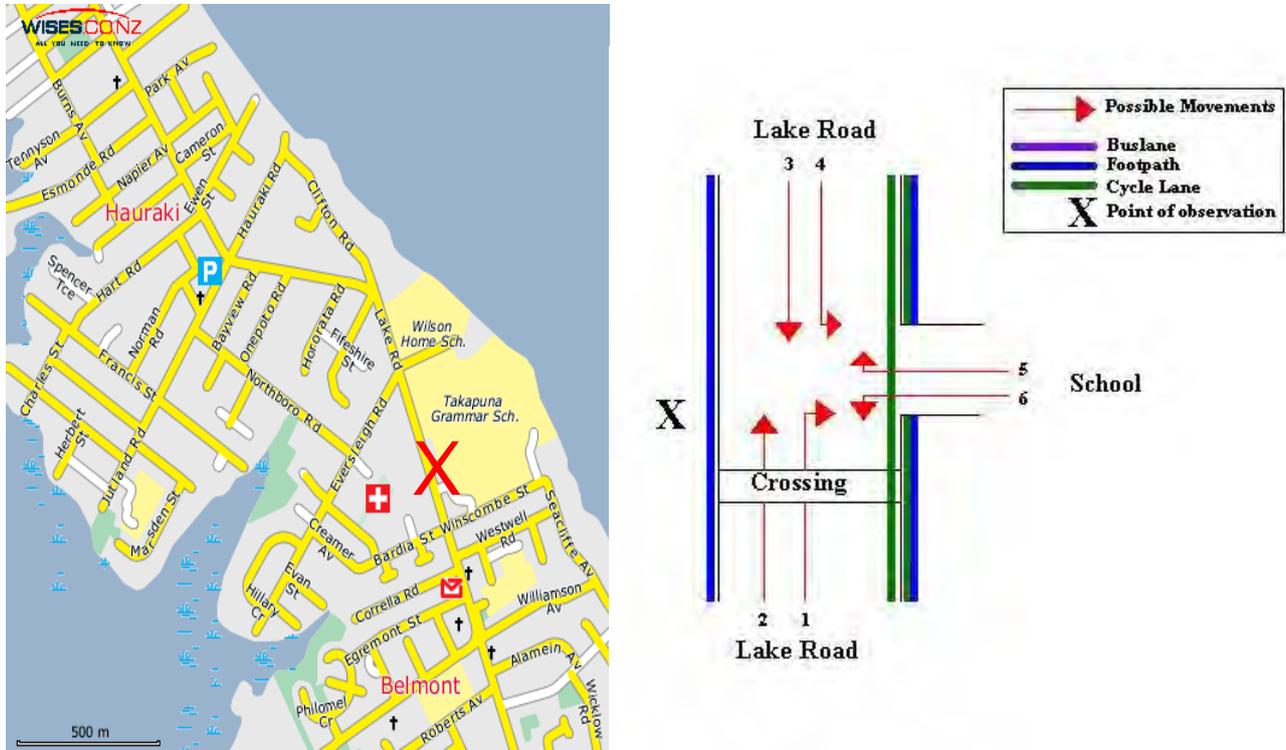
Scooter Counts

- Among the surveyed schools, of those eligible to scooter, on average, less than one per cent of students are scooting to their schools. This share is unchanged from 2014.
- Northcote Intermediate School reported the highest share of scooters, 3 per cent of all eligible students currently scooting to school (down from 6% in 2014).
- In total, n=21 students from the responding schools were reported to be scooting to school.
- Of the 8 schools that participated in the count in both 2014 and 2015, three (38 per cent) reported an increase in the share of students cycling.

2. LAKE ROAD, TAKAPUNA (SITE 35)

Figure 2.1 shows the possible cyclist movements at this site.

Figure 2.1: Cycle Movements: Lake Road



2.1 Site Summary

| | Raw Counts | | | AADT |
|-------------|--------------|--------------|------------|------------|
| | Morning Peak | Evening Peak | Total | Total |
| 2007 | 127 | 65 | 192 | 444 |
| 2008 | 200 | 97 | 297 | 440 |
| 2009 | 166 | 129 | 295 | 432 |
| 2010 | 186 | 141 | 327 | 479 |
| 2011 | 220 | 96 | 316 | 469 |
| 2012 | 175 | 146 | 321 | 469 |
| 2013 | 159 | 107 | 266 | 391 |
| 2014 | 126 | 94 | 220 | 322 |
| 2015 | 172 | 101 | 273 | 402 |



2.2 Morning Peak

Environmental Conditions

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

Key Points

- Morning cyclist movements have increased at the Lake Road site, from 126 movements last year to 172 movements this year.
- Key morning movements were straight along Lake Road in both directions (Movement 3 =115 movements; Movement 2 = 54 movements).
- Movement 3 saw the greatest change in cyclist movements over the last 12 months (up 42 movements).

**Table 2.1: Morning Cyclist Movements
Lake Road 2007 – 2015 (n)**

| Movement | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 1 | 0 | 3 | 1 | 2 | 0 | 0 | 1 | 0 | -1 |
| 2 | 40 | 68 | 50 | 51 | 89 | 51 | 50 | 45 | 54 | 9 |
| 3 | 85 | 132 | 110 | 131 | 122 | 121 | 105 | 73 | 115 | 42 |
| 4 | 1 | 0 | 3 | 3 | 6 | 3 | 4 | 5 | 3 | -2 |
| 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | -2 |
| Total | 127 | 200 | 166 | 186 | 220 | 175 | 159 | 126 | 172 | 46 |



- Over the morning peak in 2015, adults comprised the greatest share of cycle movements (80 per cent, up from 73 per cent in 2014).
- Almost all of the cyclists were wearing a helmet (99 per cent, stable since monitoring began).
- The majority of morning cyclists continued to be male (67 per cent, down from 79 per cent last year).
- Most cyclists were riding on the road (77 per cent, stable from 76 per cent last year).

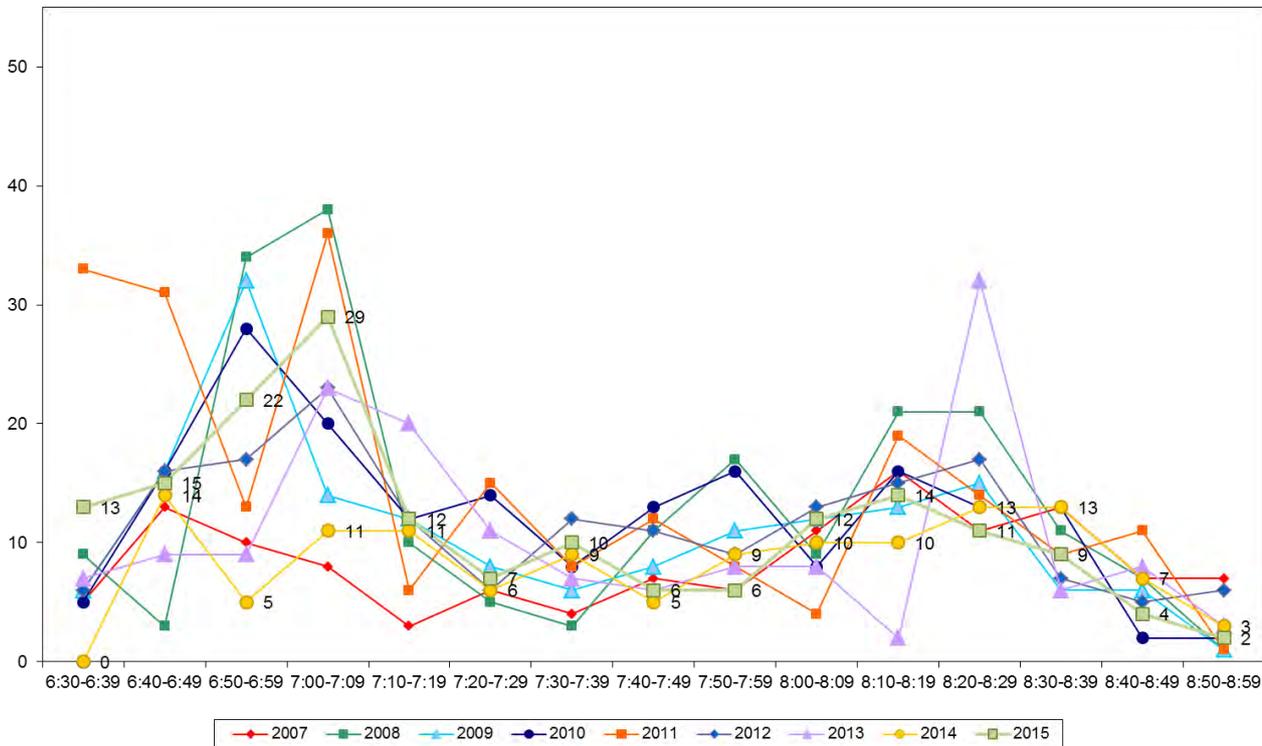
**Table 2.2: Morning Cyclist Characteristics
Lake Road 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 65 | 77 | 83 | 81 | 80 | 82 | 79 | 73 | 80 | 7 |
| School child | 36 | 23 | 17 | 19 | 20 | 18 | 21 | 27 | 20 | -7 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 98 | 98 | 98 | 97 | 98 | 98 | 98 | 97 | 99 | 2 |
| No helmet | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 1 | -2 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 58 | 84 | 78 | 79 | 67 | -12 |
| Female | - | - | - | - | 16 | 14 | 21 | 19 | 27 | 8 |
| Can't tell | - | - | - | - | 26 | 2 | 1 | 2 | 6 | 4 |
| Where Riding | | | | | | | | | | |
| Road | 77 | 78 | 77 | 84 | 83 | 82 | 65 | 76 | 77 | 1 |
| Footpath | 23 | 22 | 23 | 16 | 17 | 4 | 14 | 8 | 6 | -2 |
| Cycleway | - | - | - | - | - | 14 | 21 | 16 | 17 | 1 |
| Base: | 127 | 200 | 166 | 186 | 220 | 175 | 159 | 126 | 172 | |



- The volume of morning cycle movements varied throughout the monitoring period, with a peak evident between 7:00am and 7:09am (29 cycle movements). Volumes declined during the middle of the shift (between 7:10am and 8:09am). Following a smaller peak at 8:10am (14 cycle movements), cycle volumes declined through to the last time interval.

**Figure 2.2: Morning Peak Cyclist Frequency
Lake Road 2007 – 2015 (n)**



Note: In 2015, 22 per cent of the total cycle movements (n=37) in the morning peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- 3 cyclists at 6:48am
- 5 cyclists at 6:54am
- 4 cyclists at 7:01am
- 9 cyclists at 7:05am
- 3 cyclists at 7:13am
- 3 cyclists at 7:15am
- 3 cyclists at 7:29am
- 4 cyclists at 7:38am
- 3 cyclists at 8:17am.

This compares with three per cent of total cycle movements (n=4) in the morning peak in 2014 being identified as pelotons and 26 per cent (n=41) in 2013.



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

- In the last 12 months, the volume of evening cyclist movements has increased from 94 movements to 101 movements.
- Consistent with last year, the most common movements in the evening were straight along Lake Road in both directions (Movement 2 = 49 cyclists and Movement 3 = 48 cyclists).
- The most notable increase in evening cyclist volumes occurred at Movement 3 (up 11 movements).

Table 2.3: Evening Cyclist Movements
Lake Road 2007 – 2015 (n)

| <i>Movement</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> | <i>2012</i> | <i>2013</i> | <i>2014</i> | <i>2015</i> | <i>Change 14-15</i> |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 2 | 27 | 38 | 64 | 92 | 54 | 83 | 62 | 47 | 49 | 2 |
| 3 | 34 | 56 | 53 | 44 | 32 | 57 | 37 | 37 | 48 | 11 |
| 4 | 1 | 3 | 2 | 3 | 3 | 1 | 3 | 3 | 0 | -3 |
| 5 | 2 | 0 | 5 | 1 | 4 | 4 | 3 | 7 | 4 | -3 |
| 6 | 1 | 0 | 3 | 1 | 3 | 0 | 2 | 0 | 0 | 0 |
| Total | 65 | 97 | 129 | 141 | 96 | 146 | 107 | 94 | 101 | 7 |



- The majority of cyclists using this site in the evening were adults (95 per cent, up from 79 per cent in 2014).
- Almost all cyclists were wearing a helmet (95 per cent, unchanged from last year).
- The majority of cyclists continued to be male (84 per cent, up slightly from 80 per cent in 2014).
- Approximately five in six cyclists (89 per cent) were riding on the road (up from 71 per cent last year).

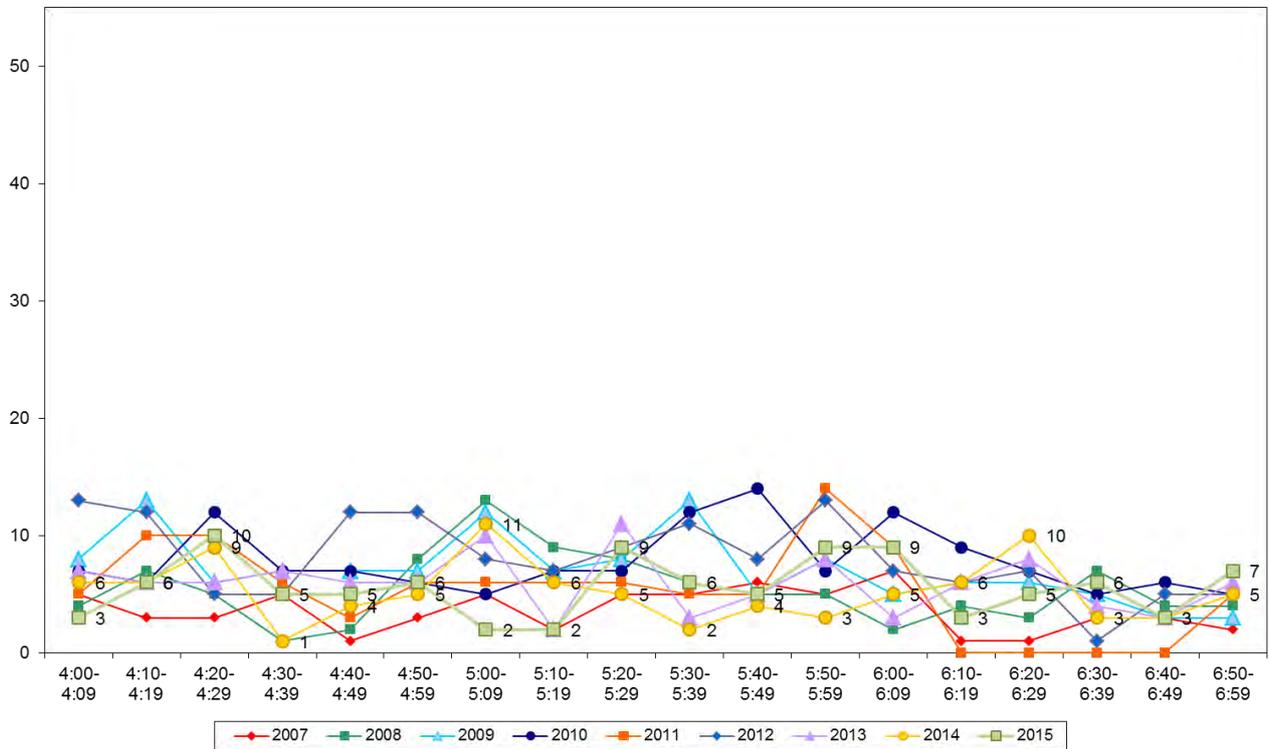
**Table 2.4: Evening Cyclist Characteristics
Lake Road 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|-----------|------------|------------|-----------|------------|------------|-----------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 97 | 85 | 85 | 85 | 82 | 97 | 83 | 79 | 95 | 16 |
| School child | 3 | 15 | 15 | 15 | 18 | 3 | 17 | 21 | 5 | -16 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 94 | 92 | 94 | 91 | 84 | 97 | 97 | 95 | 95 | 0 |
| No helmet | 6 | 8 | 6 | 9 | 16 | 3 | 3 | 4 | 5 | 1 |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | -1 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 90 | 84 | 82 | 80 | 84 | 4 |
| Female | - | - | - | - | 9 | 16 | 17 | 17 | 16 | -1 |
| Can't tell | - | - | - | - | 1 | 0 | 1 | 3 | 0 | -3 |
| Where Riding | | | | | | | | | | |
| Road | 95 | 76 | 74 | 76 | 71 | 87 | 80 | 71 | 89 | 18 |
| Footpath | 5 | 24 | 26 | 24 | 29 | 5 | 13 | 18 | 4 | -14 |
| Cycleway | - | - | - | - | - | 8 | 7 | 10 | 7 | -3 |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | -1 |
| Base: | 65 | 97 | 129 | 141 | 96 | 146 | 107 | 94 | 101 | |



- Cycle traffic volumes on Lake Road varied during the evening shift, fluctuating between two and nine cyclists each ten-minute interval with no noticeable peaks. This trend is consistent with last year's.

**Figure 2.3: Evening Peak Cyclist Frequency
Lake Road 2007 – 2015 (n)**

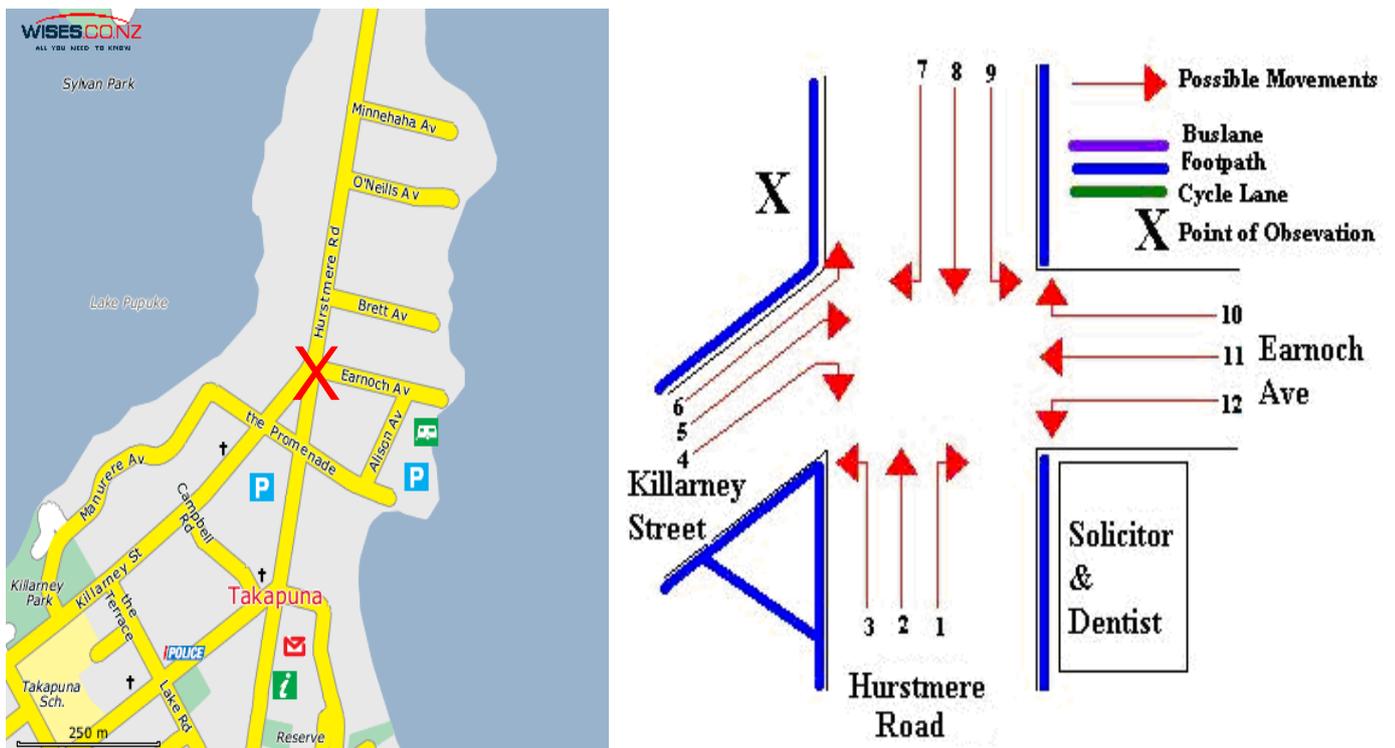


Note: No group cyclists or pelotons were observed riding past this site in 2015. This compares with 10 per cent of the total evening cycle movements (n=94) being identified as cycling in groups in 2014 and eight per cent in 2013.

3. HURSTMERE ROAD/KILLARNEY STREET, TAKAPUNA (SITE 36)

Figure 3.1 shows the possible cyclist movements at this intersection.

Figure 3.1: Cycle Movements: Hurstmere Road/Killarney Street



3.1 Site Summary

| | Raw Counts | | | AADT |
|-------------|--------------|--------------|------------|------------|
| | Morning Peak | Evening Peak | Total | Total |
| 2007 | 76 | 45 | 121 | 279 |
| 2008 | 134 | 118 | 252 | 368 |
| 2009 | 186 | 132 | 318 | 466 |
| 2010 | 180 | 122 | 302 | 443 |
| 2011 | 191 | 113 | 304 | 448 |
| 2012 | 154 | 108 | 262 | 384 |
| 2013 | 176 | 95 | 271 | 400 |
| 2014 | 97 | 95 | 192 | 279 |
| 2015 | 155 | 87 | 242 | 357 |



3.2 Morning Peak

Environmental Conditions

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

Key Points

- The volume of morning cyclist movements at the Hurstmere Road/Killarney Street intersection was up from 97 movements in 2014 to 155 movements in 2015.
- The key movements in the morning were straight along Hurstmere Road in both directions (Movement 8 = 70 movements and Movement 2 = 33 movements).
- The most notable increases were at Movement 6 – turning left onto Hurstmere Road, from Killarney Street (up 27 movements) and Movement 2 (up 12 movements).

Table 3.1: Morning Cyclist Movements
Hurstmere Road/Killarney Street 2007 – 2015 (n)

| Movement | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|--------------|-----------|------------|------------|------------|------------|------------|------------|-----------|------------|--------------|
| 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 15 | 43 | 44 | 33 | 43 | 37 | 23 | 21 | 33 | 12 |
| 3 | 0 | 1 | 1 | 5 | 1 | 1 | 0 | 0 | 0 | 0 |
| 4 | 0 | 3 | 0 | 1 | 0 | 2 | 2 | 1 | 5 | 4 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6 | 9 | 46 | 15 | 42 | 62 | 15 | 33 | 5 | 32 | 27 |
| 7 | 6 | 6 | 6 | 7 | 6 | 11 | 11 | 7 | 12 | 5 |
| 8 | 44 | 33 | 117 | 91 | 76 | 88 | 105 | 61 | 70 | 9 |
| 9 | 2 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 1 |
| 10 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | -1 |
| Total | 76 | 134 | 186 | 180 | 191 | 154 | 176 | 97 | 155 | 58 |



- Over the morning peak, most cyclists using this intersection were adults (92 per cent, stable from 89 per cent last year).
- Almost all cyclists were wearing a helmet (stable since 2008).
- Approximately four out of five cyclists were male (81 per cent, stable since 2011).
- Most cyclists were riding on the road (90 per cent, stable from 92 per cent last year).

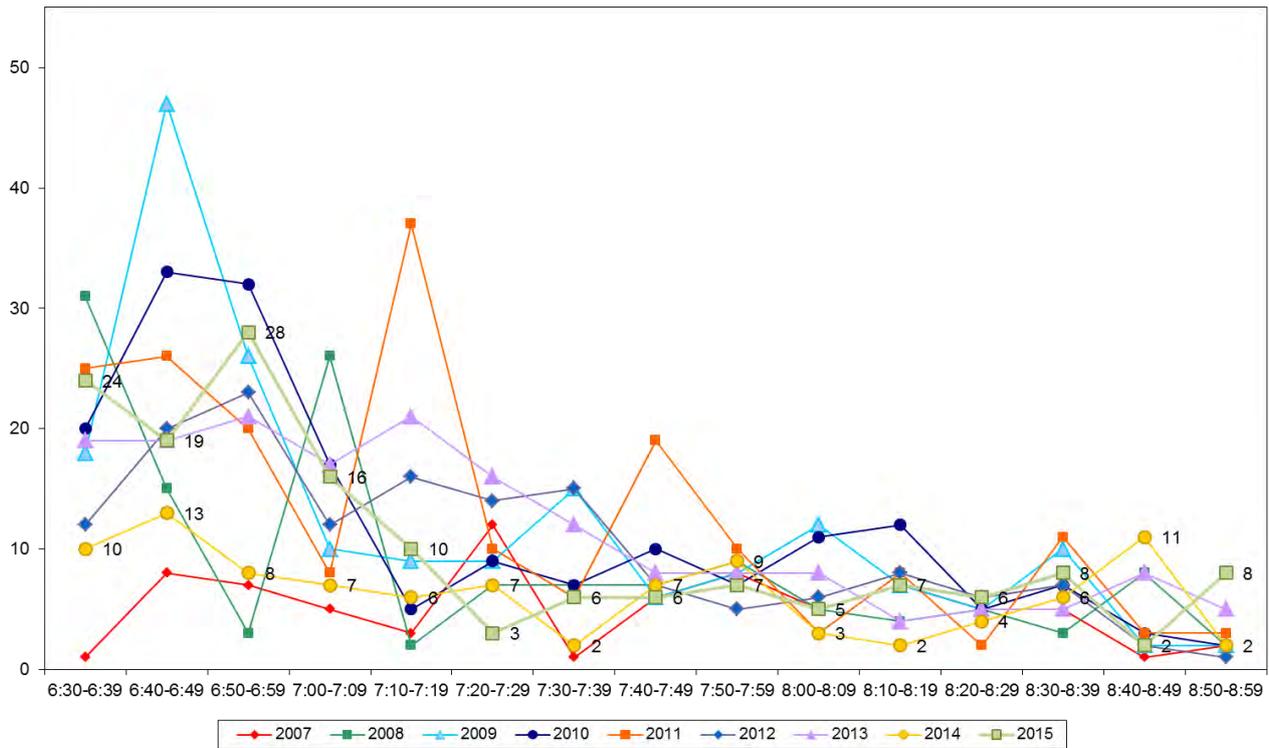
Table 3.2: Morning Cyclist Characteristics
Hurstmere Road/Killarney Street 2007 – 2015 (%)

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|------------|------------|------------|------------|------------|------------|-----------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 87 | 75 | 94 | 92 | 95 | 91 | 91 | 89 | 92 | 3 |
| School child | 13 | 25 | 6 | 8 | 5 | 9 | 9 | 11 | 8 | -3 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 93 | 99 | 98 | 99 | 100 | 100 | 99 | 100 | 99 | -1 |
| No helmet | 7 | 1 | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 1 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 80 | 88 | 82 | 80 | 81 | 1 |
| Female | - | - | - | - | 20 | 10 | 17 | 20 | 19 | -1 |
| Can't tell | - | - | - | - | 0 | 2 | 1 | 0 | 0 | 0 |
| Where Riding | | | | | | | | | | |
| Road | 83 | 93 | 90 | 90 | 94 | 90 | 93 | 92 | 90 | -2 |
| Footpath | 17 | 7 | 10 | 10 | 6 | 10 | 7 | 8 | 10 | 2 |
| Base: | 76 | 134 | 186 | 180 | 191 | 154 | 176 | 97 | 155 | |



- The volume of morning cycle movements was high near the start of the shift, before dropping and remaining low for the rest of the monitoring period. A peak occurred between 6:50 and 6:59am (28 cycle movements). Cycle volumes steadily declined for 40 minutes following this peak and then continued to fluctuate at a low volume (no higher than 8 cycle movements per time interval) for the rest of the shift. This pattern is similar to previous years.

**Figure 3.2: Morning Peak Cyclist Frequency
Hurstmere Road/Killarney Street 2007 – 2015 (n)**



Note: In 2015, 14 per cent of the total cycle movements (n=22) 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:

- 14 cyclists at 6:54am
- 4 cyclists at 7:04am
- 4 cyclists at 7:07am.

No pelotons were observed at this site in 2014. In 2013, peloton movements (n=47) comprised 27 per cent of the morning cycle movements at this site.



3.3 Evening Peak

Environmental Conditions

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

Key Points

- The volume of evening cyclist movements at the Hurstmere Road/Killarney Street intersection has decreased from 95 movements last year down to 87 movements this year.
- The key movements in the morning were turning left from Killarney Street onto Hurstmere Road heading north (Movement 6 = 35 movements) and straight along Hurstmere Road heading in either direction (Movement 2 = 31 movements and Movement 8 = 14 movements).
- The most notable increase occurred at Movement 6 (up 20 movements), while Movement 2 recorded the most notable decrease (down 22 movements).

**Table 3.3: Evening Cyclist Movements
Hurstmere Road/Killarney Street 2007 – 2015 (n)**

| <i>Movement</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> | <i>2012</i> | <i>2013</i> | <i>2014</i> | <i>2015</i> | <i>Change 14-15</i> |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 24 | 42 | 81 | 53 | 62 | 56 | 62 | 53 | 31 | -22 |
| 3 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | -1 |
| 4 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 1 | 1 |
| 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| 6 | 7 | 48 | 27 | 31 | 24 | 23 | 14 | 15 | 35 | 20 |
| 7 | 2 | 5 | 3 | 6 | 6 | 4 | 2 | 4 | 3 | -1 |
| 8 | 10 | 20 | 19 | 25 | 18 | 22 | 14 | 16 | 14 | -2 |
| 9 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 |
| 10 | 0 | 2 | 0 | 5 | 0 | 1 | 1 | 2 | 1 | -1 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | -1 |
| 12 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | -1 |
| Total | 45 | 118 | 132 | 122 | 113 | 108 | 95 | 95 | 87 | -8 |



- Over the evening peak, the greatest share of cyclists using the Hurstmere Road/Killarney Street intersection were adults (95 per cent, stable since 2013).
- Most cyclists (97 per cent) were wearing a helmet. This share has been stable since 2012.
- The majority of cyclist were male (82 per cent, up notably from 68 per cent in 2014).
- Approximately five in six cyclists were riding on the road (85 per cent, stable from 84 per cent last year).

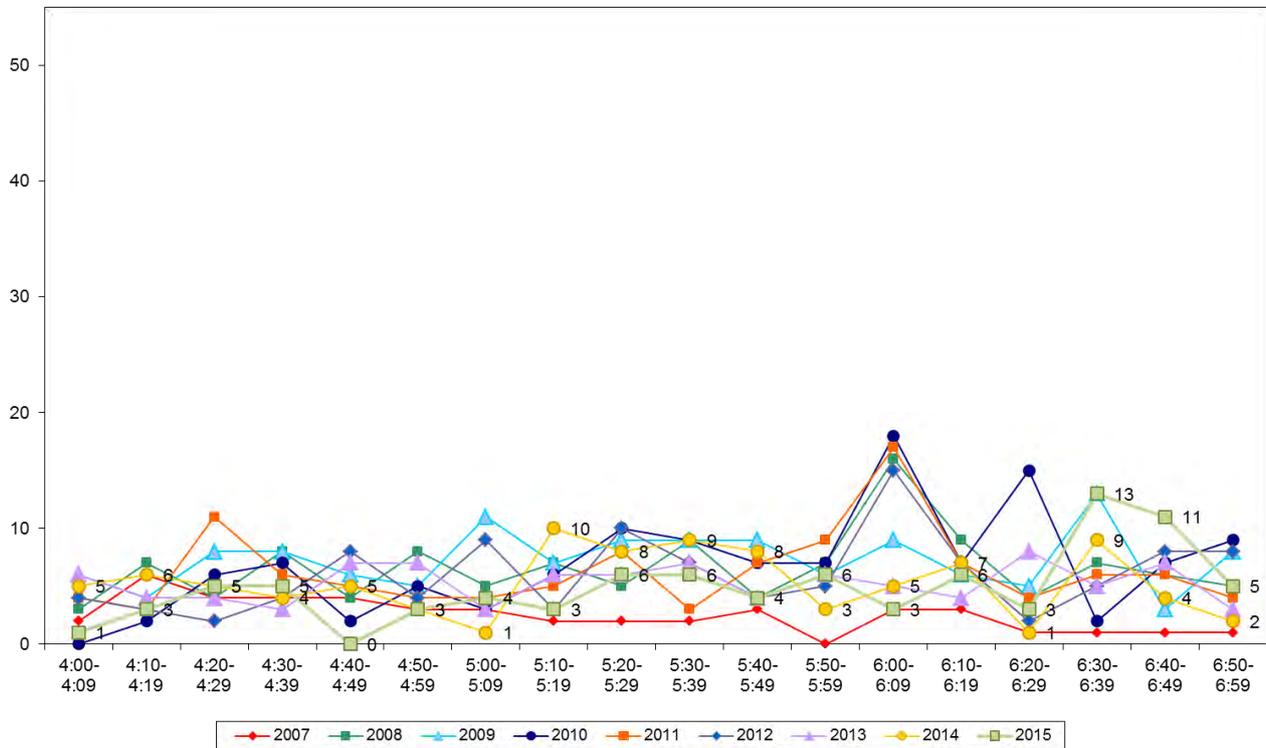
**Table 3.4: Evening Cyclist Characteristics
Hurstmere Road/Killarney Street 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|------------|------------|------------|------------|------------|-----------|-----------|-----------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 89 | 81 | 92 | 78 | 88 | 89 | 97 | 94 | 95 | 1 |
| School child | 11 | 19 | 8 | 22 | 12 | 11 | 3 | 5 | 5 | 0 |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | -1 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 89 | 92 | 96 | 93 | 93 | 95 | 96 | 96 | 97 | 1 |
| No helmet | 11 | 8 | 4 | 7 | 7 | 5 | 4 | 4 | 3 | -1 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 92 | 89 | 84 | 68 | 82 | 14 |
| Female | - | - | - | - | 8 | 11 | 15 | 31 | 18 | -13 |
| Can't tell | - | - | - | - | 0 | 0 | 1 | 1 | 0 | -1 |
| Where Riding | | | | | | | | | | |
| Road | 82 | 79 | 89 | 72 | 88 | 90 | 88 | 84 | 85 | 1 |
| Footpath | 18 | 21 | 11 | 28 | 12 | 10 | 12 | 16 | 15 | -1 |
| Base: | 45 | 118 | 132 | 122 | 113 | 108 | 95 | 95 | 87 | |



- This year, the volume of evening cyclist movements fluctuated, but stayed low throughout the evening monitoring period. One peak was observed between 6:30pm and 6:39pm (13 cycle movements).

Figure 3.3: Evening Peak Cyclist Frequency
Hurstmere Road/Killarney Street 2007 – 2015 (n)



Note: In 2015, 16 per cent of the total cycle movements (n=14) 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:

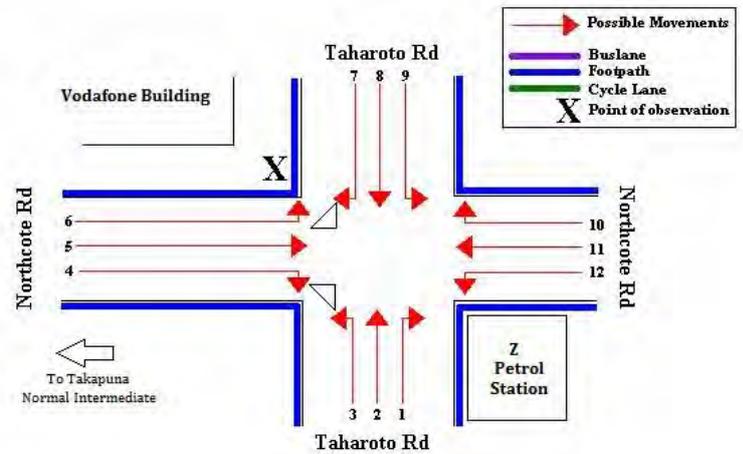
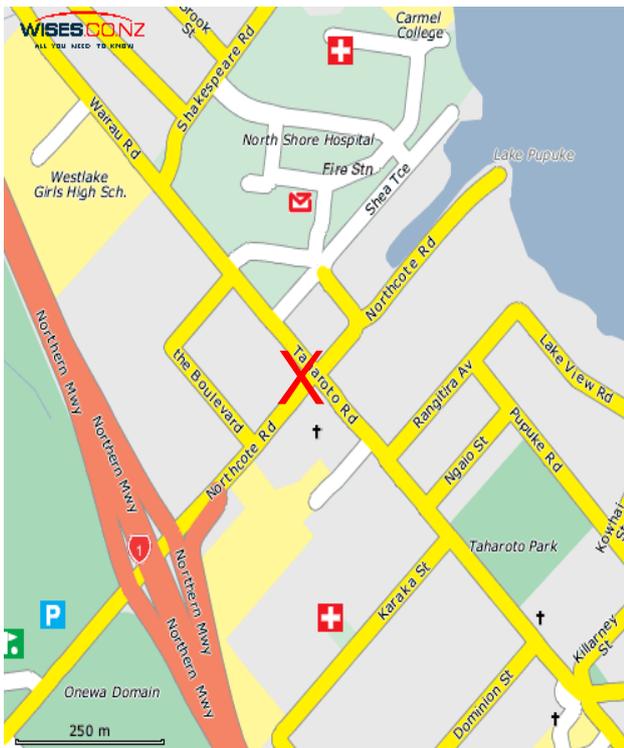
- 7 cyclists at 6:30pm
- 7 cyclists at 6:41pm.

No pelotons were observed at this site in the evening last year.

4. TAHAROTO ROAD/NORTHCOTE ROAD, TAKAPUNA (SITE 37)

Figure 4.1 shows the possible cyclist movements at this intersection.

Figure 4.1: Cycle Movements: Taharoto Road/Northcote Road



4.1 Site Summary

| | Raw Counts | | | AADT |
|-------------|--------------|--------------|------------|------------|
| | Morning Peak | Evening Peak | Total | Total |
| 2007 | 109 | 50 | 159 | 375 |
| 2008 | 160 | 110 | 270 | 396 |
| 2009 | 98 | 104 | 202 | 293 |
| 2010 | 117 | 112 | 229 | 333 |
| 2011 | 202 | 105 | 307 | 454 |
| 2012 | 141 | 77 | 218 | 322 |
| 2013 | 152 | 82 | 234 | 346 |
| 2014 | 90 | 80 | 170 | 248 |
| 2015 | 147 | 117 | 264 | 386 |



4.2 Morning Peak

Environmental Conditions

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

Key Points

- Cyclist volumes have increased this year, from 90 movements in 2014 to 147 this year.
- The key morning movement was straight along Taharoto Road heading southeast (Movement 8 = 91 movements).
- The most notable increase was also recorded at Movement 8, up 41 cyclists.

Table 4.1: Morning Cyclist Movements
Taharoto Road/Northcote Road 2007 – 2015 (n)

| Movement | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|--------------|------------|------------|-----------|------------|------------|------------|------------|-----------|------------|--------------|
| 1 | 1 | 4 | 4 | 4 | 5 | 3 | 6 | 4 | 7 | 3 |
| 2 | 9 | 21 | 21 | 17 | 28 | 31 | 26 | 14 | 22 | 8 |
| 3 | 12 | 3 | 2 | 1 | 5 | 5 | 5 | 1 | 2 | 1 |
| 4 | 19 | 14 | 14 | 12 | 8 | 4 | 14 | 2 | 6 | 4 |
| 5 | 3 | 2 | 2 | 5 | 1 | 3 | 4 | 2 | 4 | 2 |
| 6 | 3 | 7 | 2 | 0 | 6 | 2 | 3 | 1 | 3 | 2 |
| 7 | 1 | 3 | 4 | 2 | 5 | 3 | 7 | 4 | 1 | -3 |
| 8 | 42 | 78 | 44 | 69 | 122 | 85 | 84 | 50 | 91 | 41 |
| 9 | 0 | 0 | 1 | 0 | 7 | 0 | 1 | 3 | 1 | -2 |
| 10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 11 | 2 | 1 | 1 | 3 | 1 | 2 | 0 | 5 | 1 | -4 |
| 12 | 16 | 27 | 3 | 4 | 13 | 3 | 2 | 3 | 9 | 6 |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | -1 |
| Total | 109 | 160 | 98 | 117 | 202 | 141 | 152 | 90 | 147 | 57 |



- Four in five cyclists at this site were adults (up from 58 per cent last year).
- Helmet wearing continued to be widespread at this site in the morning (97 per cent, stable from 99 per cent last year).
- The majority of cyclists were identified as male (77 per cent, down from 84 per cent in 2014).
- Sixty-three per cent of cyclists were riding on the road (an increase of 13 percentage points from last year).

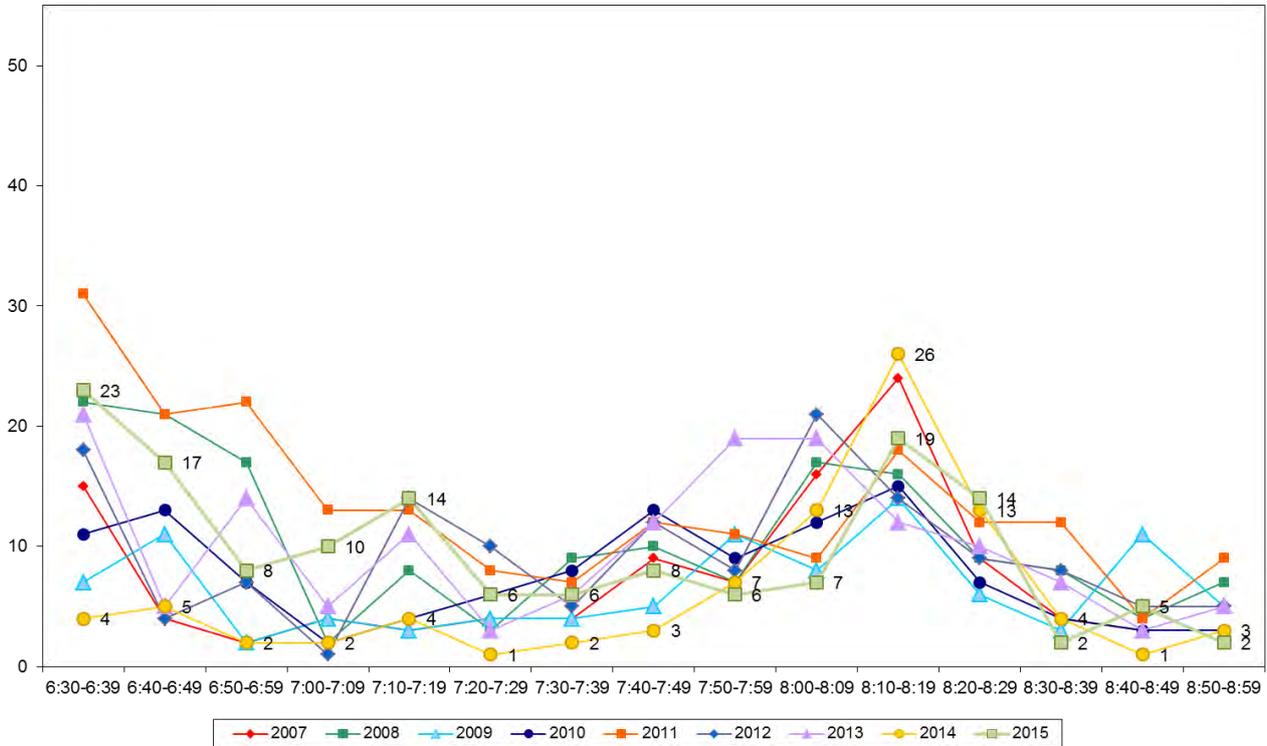
**Table 4.2: Morning Cyclist Characteristics
Taharoto Road/Northcote Road 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|------------|------------|-----------|------------|------------|------------|------------|-----------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 54 | 78 | 72 | 72 | 77 | 66 | 71 | 58 | 80 | 22 |
| School child | 46 | 22 | 28 | 28 | 23 | 34 | 29 | 42 | 20 | -22 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 94 | 99 | 93 | 98 | 98 | 95 | 96 | 99 | 97 | -2 |
| No helmet | 6 | 1 | 7 | 2 | 2 | 5 | 4 | 1 | 3 | 2 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 39 | 74 | 82 | 84 | 77 | -7 |
| Female | - | - | - | - | 7 | 24 | 18 | 16 | 22 | 6 |
| Can't tell | - | - | - | - | 54 | 2 | 0 | 0 | 1 | 1 |
| Where Riding | | | | | | | | | | |
| Road | 47 | 70 | 68 | 65 | 67 | 56 | 57 | 50 | 63 | 13 |
| Footpath | 53 | 30 | 32 | 35 | 33 | 44 | 43 | 50 | 37 | -13 |
| Base: | 109 | 160 | 98 | 117 | 202 | 140 | 152 | 90 | 147 | |



- Morning cyclist numbers varied throughout the monitoring period. A notable peak was evident at the start of the monitoring period between 6:30am and 6:39am (23 cycle movements), volumes then fluctuated and remained low. A second, small peak was observed during the second half of the shift, between 8:10am and 8:19am (19 cycle movements).

Figure 4.2: Morning Peak Cyclist Frequency
Taharoto Road/Northcote Road 2007 – 2015 (n)



Note: In 2015, six per cent of the total cycle movements (n=9) in the morning peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

- 3 cyclists at 6:39am
- 3 cyclists at 6:41am
- 3 cyclists at 7:14am.

This compares with nine per cent (n=8) last year.



4.3 Evening Peak

Environmental Conditions

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

Key Points

- The total number of cyclist movements observed at the Taharoto Road/Northcote Road intersection has increased from 80 movements last year to 117 movements this year.
- The key evening movements at this site were straight along Taharoto Road in a south-easterly direction (Movement 8 = 44 movements) and straight along Taharoto Road in a north-westerly direction (Movement 2 = 32 movements).
- The most notable increases were observed at Movement 2 (up 19 movements) and Movement 8 (up 11 movements).

**Table 4.3: Evening Cyclist Movements
Taharoto Road/Northcote Road 2007 – 2015 (n)**

| <i>Movement</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> | <i>2012</i> | <i>2013</i> | <i>2014</i> | <i>2015</i> | <i>Change 14-15</i> |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 1 | 4 | 2 | 1 | 1 | 0 | 2 | 6 | 7 | 1 |
| 2 | 8 | 23 | 20 | 28 | 21 | 20 | 21 | 13 | 32 | 19 |
| 3 | 12 | 13 | 11 | 7 | 11 | 4 | 11 | 6 | 4 | -2 |
| 4 | 10 | 3 | 6 | 8 | 7 | 2 | 6 | 6 | 8 | 2 |
| 5 | 0 | 2 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | -1 |
| 6 | 0 | 3 | 6 | 6 | 7 | 5 | 5 | 6 | 4 | -2 |
| 7 | 3 | 3 | 2 | 2 | 0 | 2 | 1 | 1 | 1 | 0 |
| 8 | 11 | 52 | 45 | 53 | 45 | 35 | 28 | 33 | 44 | 11 |
| 9 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 1 | 1 | 0 |
| 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 11 | 3 | 2 | 5 | 2 | 0 | 3 | 1 | 1 | 1 | 0 |
| 12 | 2 | 5 | 6 | 3 | 10 | 3 | 7 | 6 | 14 | 8 |
| Total | 50 | 110 | 104 | 112 | 105 | 77 | 82 | 80 | 117 | 37 |



- Over the evening peak, the greatest share of cyclists using this intersection were adults (97 per cent, up slightly from 93 per cent last year).
- Almost all cyclists at this site were wearing a helmet (98 per cent, stable from 96 per cent in 2014).
- The majority of cyclists continued to be male (86 per cent).
- Seventy-six per cent of the cyclists were riding on the road (down slightly from 79 per cent in 2014), while the remaining 24 per cent were riding on the footpath.

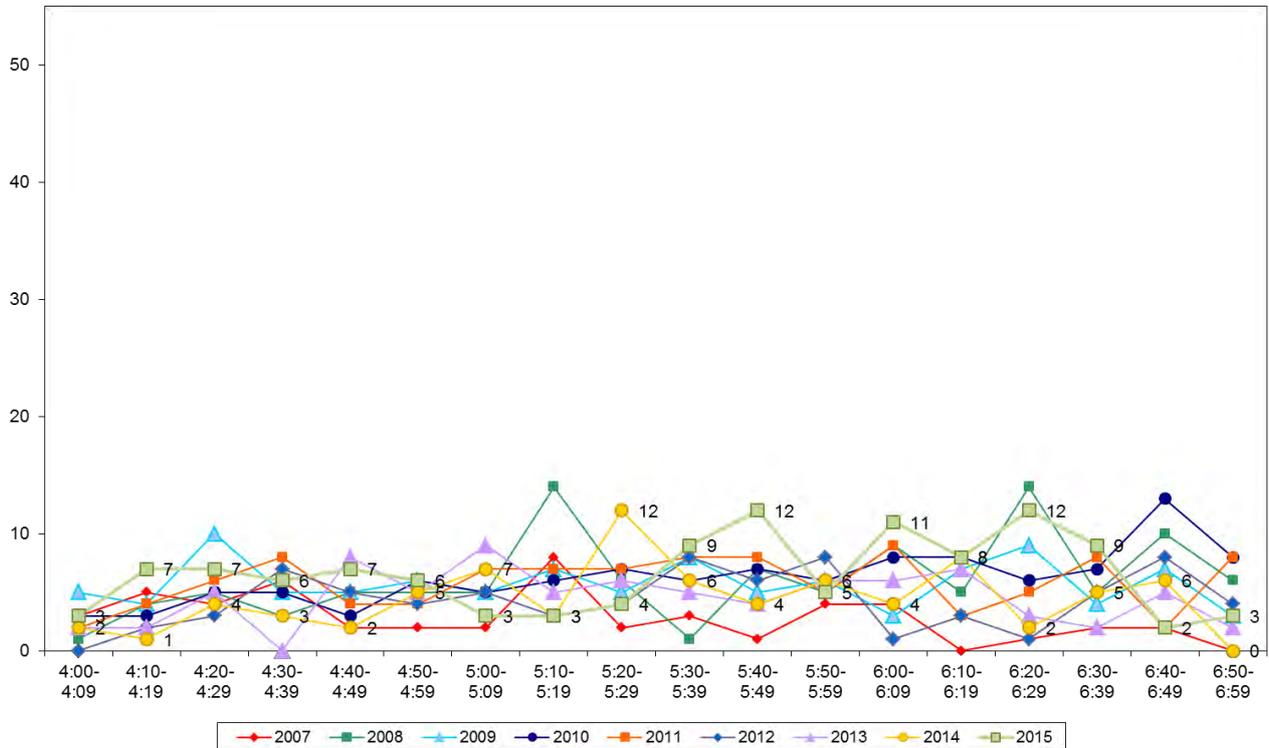
**Table 4.4: Evening Cyclist Characteristics
Taharoto Road/Northcote Road 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|------------|------------|------------|------------|-----------|-----------|-----------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 84 | 90 | 92 | 81 | 84 | 94 | 91 | 93 | 97 | 4 |
| School child | 16 | 10 | 8 | 19 | 16 | 6 | 9 | 7 | 3 | -4 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 82 | 97 | 94 | 96 | 92 | 95 | 91 | 96 | 98 | 2 |
| No helmet | 18 | 3 | 6 | 4 | 8 | 5 | 9 | 4 | 2 | -2 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 67 | 79 | 82 | 77 | 86 | 9 |
| Female | - | - | - | - | 10 | 21 | 18 | 19 | 14 | -5 |
| Can't tell | - | - | - | - | 23 | 0 | 0 | 4 | 0 | -4 |
| Where Riding | | | | | | | | | | |
| Road | 69 | 75 | 81 | 70 | 73 | 83 | 72 | 79 | 76 | -3 |
| Footpath | 31 | 25 | 19 | 30 | 27 | 17 | 28 | 21 | 24 | 3 |
| Base: | 50 | 110 | 104 | 112 | 105 | 77 | 82 | 80 | 117 | |



- Cyclist movement volumes during the evening remained relatively steady, with no clear peak observed. Volumes were higher throughout the second half of the monitoring period. The highest count of cyclists per ten-minute interval was twelve, which occurred between 5:40pm and 5:49pm and again between 6:20pm and 6:29pm. The overall pattern is consistent with previous years.

**Figure 4.3: Evening Peak Cyclist Frequency
Taharoto Road/Northcote Road 2007 – 2015 (n)**



Note: In 2015, 13 per cent of the total cycle movements (n=15) in the evening peak were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:

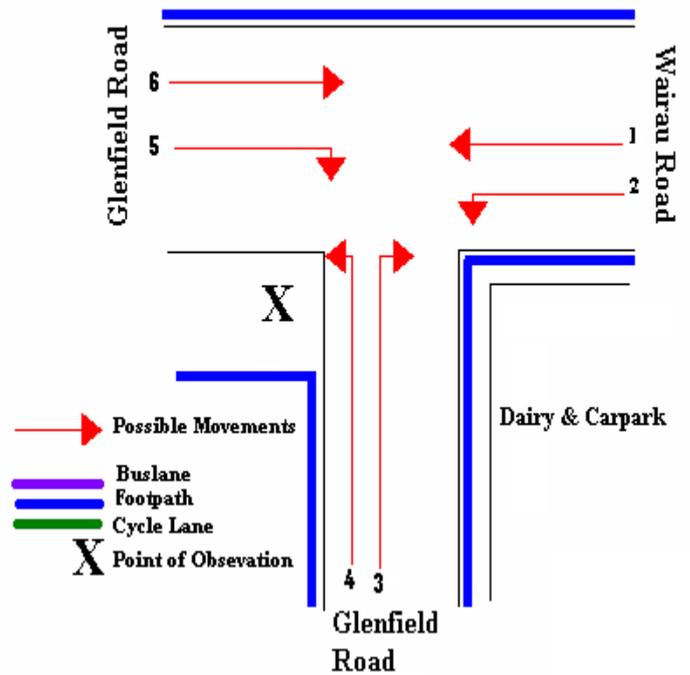
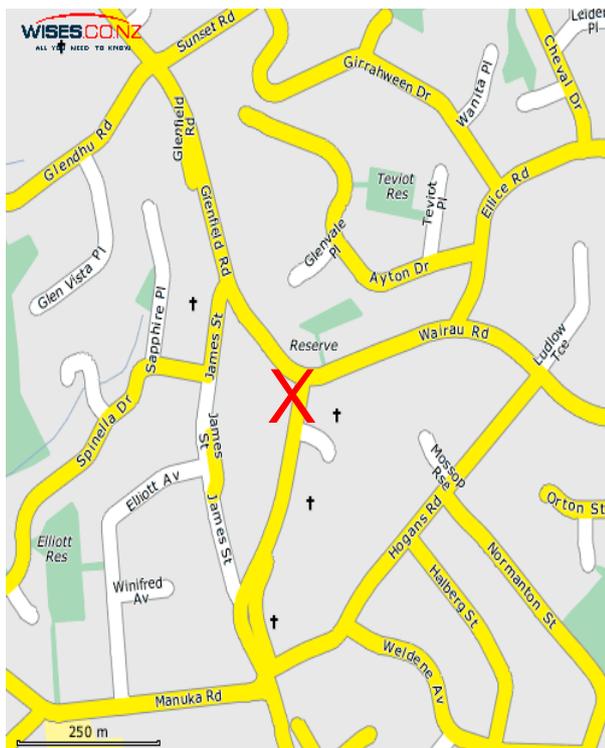
- 3 cyclists at 5:41pm
- 6 cyclists at 6:26pm
- 6 cyclists at 6:38pm.

No pelotons were observed at this site in the evening last year.

5. WAIRAU ROAD/GLENFIELD ROAD, GLENFIELD (SITE 41)

Figure 5.1 shows the possible cyclist movements at this intersection.

Figure 5.1: Cycle Movements: Wairau Road/Glenfield Road



5.1 Site Summary

| | Raw Counts | | | AADT |
|-------------|--------------|--------------|-----------|------------|
| | Morning Peak | Evening Peak | Total | Total |
| 2007 | 34 | 30 | 64 | 93 |
| 2008 | 39 | 34 | 73 | 107 |
| 2009 | 42 | 38 | 80 | 117 |
| 2010 | 38 | 53 | 91 | 131 |
| 2011 | 41 | 52 | 93 | 134 |
| 2012 | 36 | 69 | 105 | 150 |
| 2013 | 32 | 37 | 69 | 100 |
| 2014 | 37 | 42 | 79 | 114 |
| 2015 | 41 | 45 | 86 | 125 |



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

- Morning cyclist movements increased slightly in 2015 (41 movements, compared to 37 movements in 2014).
- The most common movement in the morning was travelling northwest along Glenfield Road (Movement 4 = 18 movements).
- The most notable decrease was observed at Movement 5 – turning right from Glenfield Road and heading south (down six cyclists).

Table 5.1: Morning Cyclist Movements
Wairau Road/Glenfield Road 2007 – 2015 (n)

| Movement | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 2 | 6 | 8 | 9 | 6 | 11 | 3 | 4 | 5 | 1 |
| 2 | 2 | 4 | 1 | 1 | 0 | 1 | 2 | 3 | 4 | 1 |
| 3 | 4 | 2 | 3 | 1 | 6 | 4 | 2 | 1 | 1 | 0 |
| 4 | 11 | 11 | 17 | 17 | 13 | 7 | 14 | 15 | 18 | 3 |
| 5 | 9 | 8 | 4 | 4 | 8 | 2 | 6 | 10 | 4 | -6 |
| 6 | 6 | 8 | 9 | 6 | 8 | 11 | 5 | 4 | 9 | 5 |
| Total | 34 | 39 | 42 | 38 | 41 | 36 | 32 | 37 | 41 | 4 |



- Over the morning peak, adults comprised the greatest share of cycle movements (98 per cent).
- Almost all cyclists were wearing a helmet at this site (98 per cent, up slightly from 95 per cent in 2014).
- The majority of cyclists were male (85 per cent, up from 78 per cent last year).
- There has been an increase in the share of cyclists riding on the road (93 per cent, up from 81 per cent last year).

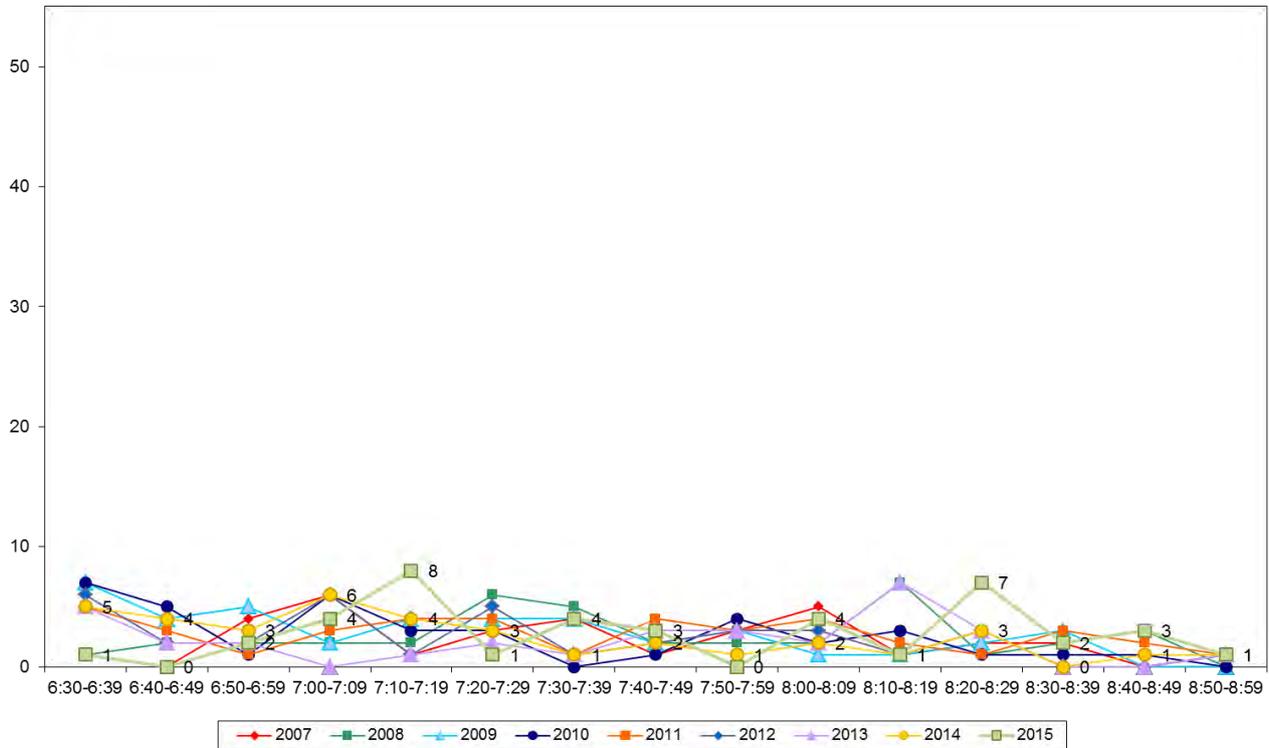
**Table 5.2: Morning Cyclist Characteristics
Wairau Road/Glenfield Road 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 91 | 87 | 93 | 97 | 98 | 97 | 88 | 95 | 98 | 3 |
| School child | 9 | 13 | 7 | 3 | 2 | 3 | 12 | 5 | 2 | -3 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 82 | 97 | 100 | 95 | 98 | 100 | 91 | 95 | 98 | 3 |
| No helmet | 18 | 3 | 0 | 5 | 2 | 0 | 9 | 5 | 0 | -5 |
| Blank/Don't know | - | - | - | - | - | - | - | - | 2 | 2 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 93 | 86 | 81 | 78 | 85 | 7 |
| Female | - | - | - | - | 7 | 14 | 0 | 22 | 15 | -7 |
| Can't tell | - | - | - | - | 0 | 0 | 19 | 0 | 0 | 0 |
| Where Riding | | | | | | | | | | |
| Road | 62 | 82 | 95 | 97 | 83 | 92 | 72 | 81 | 93 | 12 |
| Footpath | 38 | 18 | 5 | 3 | 17 | 8 | 28 | 19 | 7 | -12 |
| Base: | 34 | 39 | 42 | 38 | 41 | 36 | 32 | 37 | 41 | |



- The volume of morning cycle movements remained low throughout the shift, with the highest volumes of cyclists recorded between 7:10am and 7:19am (8 cycle movements) and between 8:20am and 8:29pm (7 cycle movements). Cyclist numbers have remained relatively stable over the past several years.

**Figure 5.2: Morning Peak Cyclist Frequency
Wairau Road/Glenfield Road 2007 – 2015 (n)**



Note: In 2015, no cycle movements at this site were made by group cyclists or pelotons. This compares with 5 cyclists (14 per cent of the morning cycle traffic at this site) last year.



5.3 Evening Peak

Environmental Conditions

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

Key Points

- This year, the total number of evening cyclist movements observed at the Wairau Road/Glenfield Road intersection has increased slightly (45 movements, up from 42 movements).
- The key movement in the evening was south along Glenfield Road (Movement 5 = 16 cyclists).
- The most notable change from last year was cyclists travelling west on Wairau Road, towards Glenfield Road (Movement 1 = up 5 movements).

Table 5.3: Evening Cyclist Movements
Wairau Road/Glenfield Road 2007 – 2015 (n)

| Movement | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 6 | 4 | 8 | 14 | 13 | 28 | 10 | 7 | 12 | 5 |
| 2 | 2 | 3 | 1 | 6 | 6 | 3 | 6 | 7 | 5 | -2 |
| 3 | 3 | 1 | 1 | 0 | 1 | 2 | 0 | 4 | 3 | -1 |
| 4 | 7 | 5 | 8 | 11 | 7 | 3 | 5 | 6 | 6 | 0 |
| 5 | 8 | 16 | 18 | 15 | 22 | 19 | 10 | 12 | 16 | 4 |
| 6 | 4 | 5 | 2 | 7 | 3 | 14 | 6 | 6 | 3 | -3 |
| Total | 30 | 34 | 38 | 53 | 52 | 69 | 37 | 42 | 45 | 3 |



- Almost all of the cyclists using this site were adults (98 per cent, up 17 percentage points from the previous year).
- All cyclists were wearing a helmet (up notably from 81 per cent in 2014)
- The majority of cyclists were male (96 per cent, up from 81 per cent in 2014).
- Ninety-one per cent of the cyclists were riding on the road, this share is up notably from 60 per cent last year.

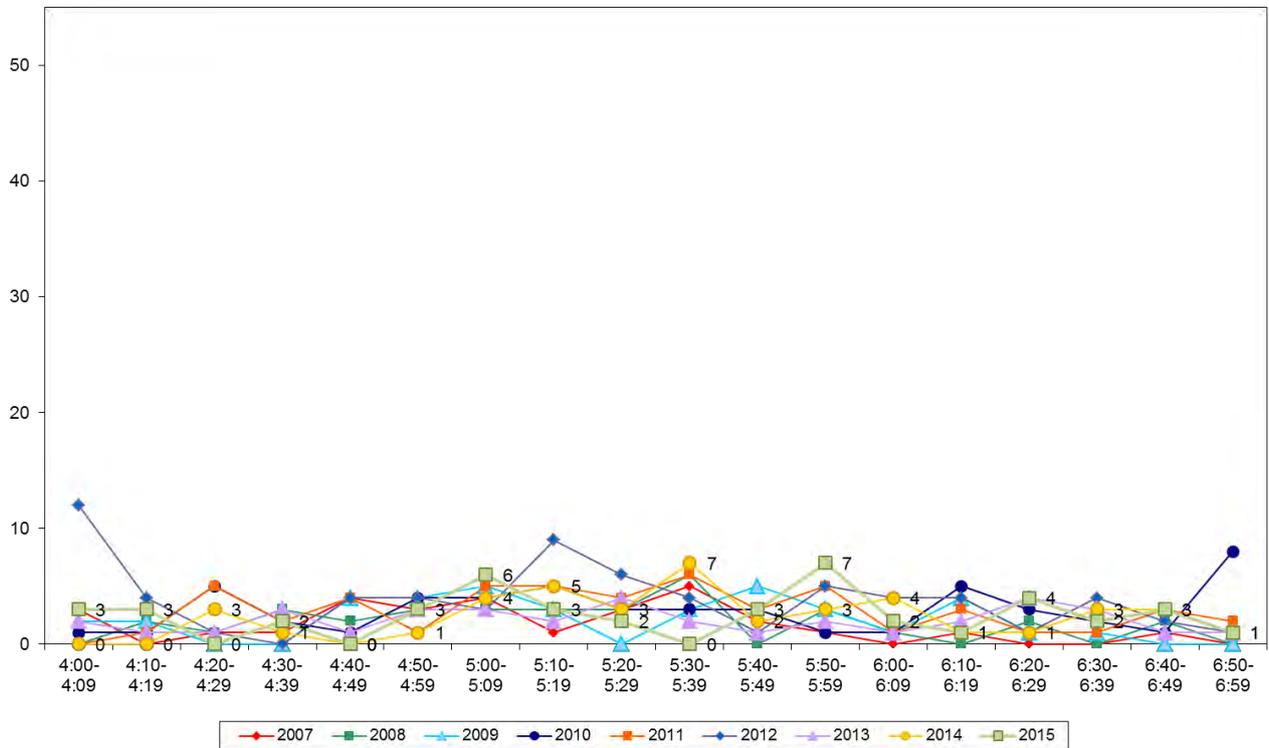
**Table 5.4: Evening Cyclist Characteristics
Wairau Road/Glenfield Road 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 100 | 91 | 95 | 91 | 92 | 99 | 100 | 81 | 98 | 17 |
| School child | 0 | 9 | 5 | 9 | 8 | 1 | 0 | 19 | 2 | -17 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 87 | 97 | 92 | 94 | 98 | 99 | 84 | 81 | 100 | 19 |
| No helmet | 13 | 3 | 8 | 6 | 2 | 1 | 16 | 19 | 0 | -19 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 94 | 74 | 95 | 83 | 96 | 13 |
| Female | - | - | - | - | 6 | 26 | 5 | 12 | 4 | -8 |
| Can't tell | - | - | - | - | 0 | 0 | 0 | 5 | 0 | -5 |
| Where Riding | | | | | | | | | | |
| Road | 73 | 85 | 95 | 89 | 83 | 94 | 73 | 60 | 91 | 31 |
| Footpath | 27 | 15 | 5 | 11 | 17 | 6 | 27 | 40 | 9 | -31 |
| Base: | 30 | 34 | 38 | 53 | 52 | 69 | 37 | 42 | 45 | |



- The number of evening cyclist movements remained low throughout the monitoring period, with no apparent peak observed. There were no more than seven cyclists passing by this site in any ten-minute interval. This trend is consistent with previous years.

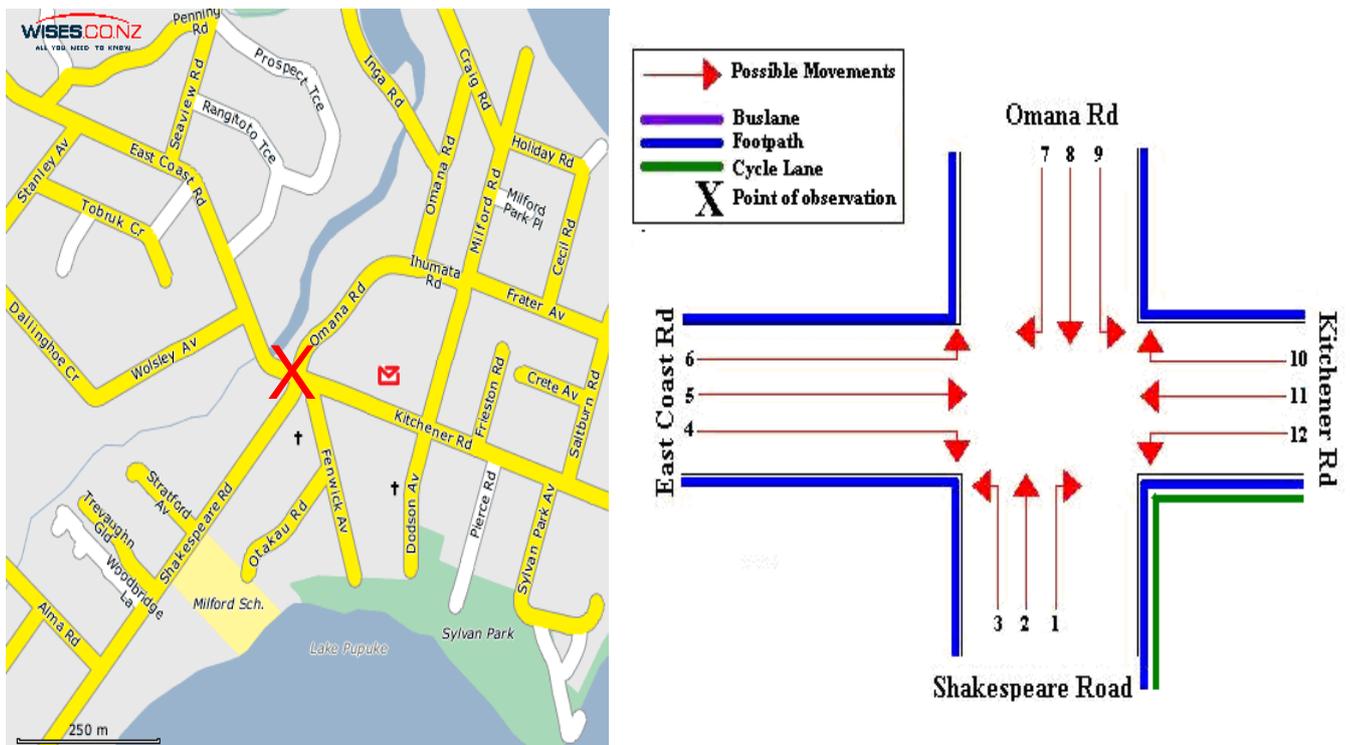
Figure 5.3: Evening Peak Cyclist Frequency
Wairau Road/Glenfield Road 2007 – 2015 (n)



6. SHAKESPEARE ROAD/EAST COAST ROAD, MILFORD (SITE 42)

Figure 6.1 shows the possible cyclist movements at this intersection.

Figure 6.1: Cycle Movements: Shakespeare Road/East Coast Road



6.1 Site Summary

| | Raw Counts | | | AADT |
|-------------|--------------|--------------|------------|------------|
| | Morning Peak | Evening Peak | Total | Total |
| 2007 | 82 | 55 | 137 | 314 |
| 2008 | 127 | 123 | 250 | 364 |
| 2009 | 177 | 133 | 310 | 454 |
| 2010 | 146 | 159 | 305 | 442 |
| 2011 | 181 | 105 | 286 | 422 |
| 2012 | 145 | 93 | 238 | 350 |
| 2013 | 172 | 94 | 266 | 393 |
| 2014 | 97 | 97 | 194 | 282 |
| 2015 | 202 | 99 | 301 | 445 |



6.2 Morning Peak

Environmental Conditions

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

Key Points

- The volume of cyclist movements recorded at the Shakespeare Road/East Coast Road intersection has increased notably since last year (202 movements, up from 97 movements in 2014).
- The most common movements were turning left from Kitchener Road onto Shakespeare Road heading south (Movement 12 = 65 movements) and travelling southeast from East Coast Road into Kitchener Road (Movement 5 = 43 movements).
- The most notable changes occurred at Movement 12 (up 36 movements) and Movement 4 (up 25 movements).

**Table 6.1: Morning Cyclist Movements
Shakespeare Road/East Coast Road 2007 – 2015 (n)**

| <i>Movement</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> | <i>2012</i> | <i>2013</i> | <i>2014</i> | <i>2015</i> | <i>Change 14-15</i> |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 13 | 7 | 9 | 6 | 26 | 5 | 11 | 4 | 5 | 1 |
| 2 | 3 | 0 | 3 | 1 | 5 | 2 | 2 | 1 | 3 | 2 |
| 3 | 1 | 1 | 0 | 4 | 4 | 0 | 2 | 3 | 1 | -2 |
| 4 | 5 | 8 | 9 | 16 | 24 | 13 | 23 | 14 | 39 | 25 |
| 5 | 28 | 26 | 96 | 46 | 22 | 67 | 51 | 26 | 43 | 17 |
| 6 | 1 | 0 | 2 | 1 | 1 | 0 | 2 | 2 | 5 | 3 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 1 | 2 | 1 |
| 8 | 3 | 6 | 15 | 9 | 6 | 15 | 18 | 9 | 20 | 11 |
| 9 | 2 | 0 | 0 | 2 | 0 | 1 | 4 | 0 | 3 | 3 |
| 10 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 5 | 13 | 16 | 26 | 23 | 12 | 13 | 8 | 16 | 8 |
| 12 | 21 | 66 | 27 | 30 | 70 | 30 | 42 | 29 | 65 | 36 |
| Total | 82 | 127 | 177 | 146 | 181 | 145 | 172 | 97 | 202 | 105 |



- Over the morning peak, adults comprised the greatest share of cycle movements (72 per cent, down from 67 per cent last year).
- Almost all cyclists were wearing a helmet (99 per cent, stable since 2007).
- The majority of cyclists continued to be male (76 per cent, stable from 78 per cent last year).
- Twenty-four per cent of the cyclists were riding on the off-road cycleway, up notably from 11 per cent last year. The share of cyclists travelling on the road has also increased (up 12 percentage points to 68 per cent).

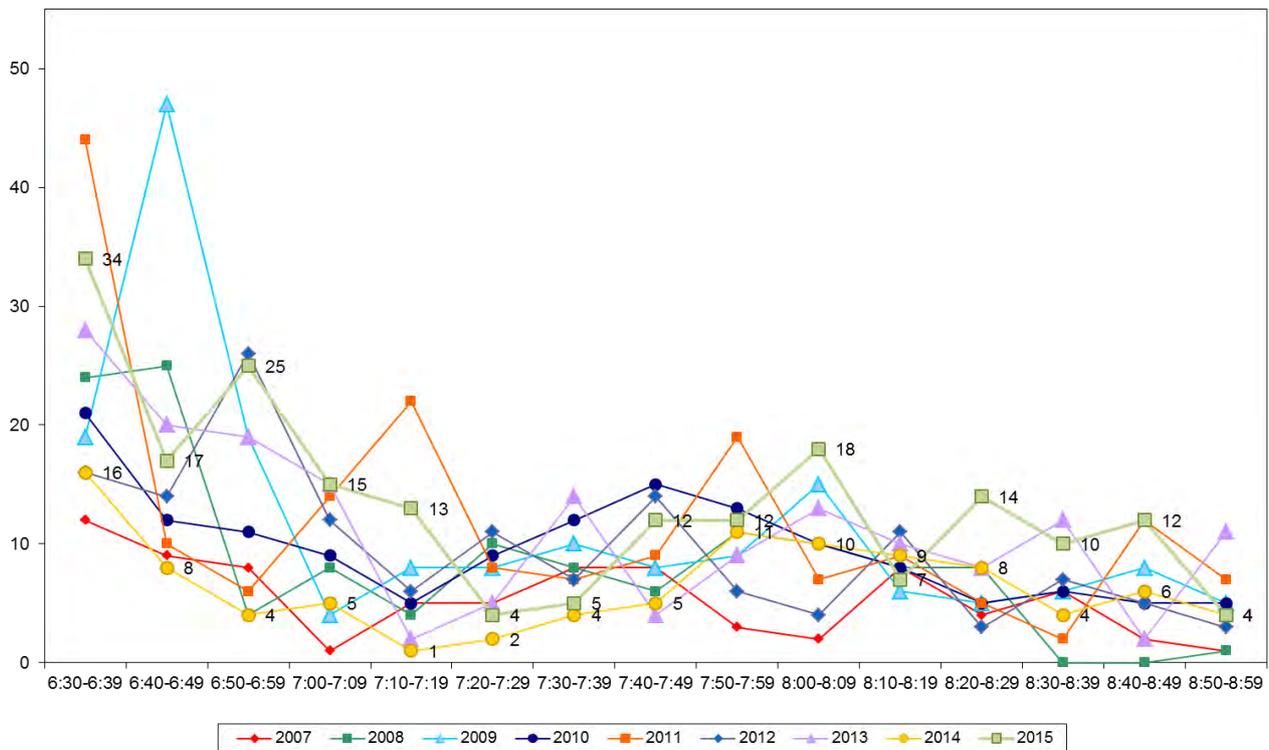
Table 6.2: Morning Cyclist Characteristics
Shakespeare Road/East Coast Road 2007 – 2015 (%)

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|------------|------------|------------|------------|------------|------------|-----------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 83 | 82 | 83 | 77 | 85 | 82 | 76 | 67 | 72 | 5 |
| School child | 17 | 18 | 17 | 23 | 15 | 18 | 24 | 33 | 28 | -5 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 96 | 98 | 98 | 100 | 98 | 99 | 98 | 96 | 99 | 3 |
| No helmet | 4 | 2 | 2 | 0 | 2 | 1 | 2 | 4 | 1 | -3 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 73 | 56 | 77 | 78 | 76 | -2 |
| Female | - | - | - | - | 23 | 19 | 23 | 22 | 24 | 2 |
| Can't tell | - | - | - | - | 4 | 25 | 0 | 0 | 0 | 0 |
| Where Riding | | | | | | | | | | |
| Road | 77 | 81 | 79 | 71 | 76 | 75 | 69 | 56 | 68 | 12 |
| Footpath | 23 | 19 | 21 | 29 | 18 | 25 | 20 | 32 | 8 | -24 |
| Off-road cycle way | - | - | - | - | 6 | 0 | 11 | 11 | 24 | 13 |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | -1 |
| Base: | 82 | 127 | 177 | 146 | 181 | 145 | 172 | 97 | 202 | |



- Consistent with last year, morning cycle volumes started off with a peak between 6:30am and 6:39am (34 movements). Volumes then decreased but at a fluctuating rate. Cycle volumes dropped to as low as four cycle movements (between 7:20am and 7:29am), before increasing to 18 cycle movements between 8:00am and 8:10am. This is a similar trend to what was evident the previous year.

Figure 9.2: Morning Peak Cyclist Frequency
Shakespeare Road/East Coast Road 2007 – 2015 (n)



Note: In 2015, a peloton of 12 cyclists rode past the site at 6:51am, accounting for six per cent of this site’s total morning movements. This compares with 3 cyclists (3 per cent of all morning peak cycle movements at this site) being identified as movements made by pelotons/groups in 2014.



6.3 Evening Peak

Environmental Conditions

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

Key Points

- The volume of evening cyclist movements recorded at the Shakespeare Road/East Coast Road intersection in 2015 has remained stable since last year (99 movements, compared with 97 movements in 2014).
- The most common movements in the evening were turning left from Kitchener Road onto Shakespeare Road travelling south-west (Movement 12 = 32 movements) and travelling straight along Kitchener Road into East Coast Road travelling in a north-westerly direction (Movement 11 = 18 movements).
- The most notable increase since 2014 was recorded at Movement 8 (up 11 movements) and the most notable decrease was at Movement 11 (down 8 movements).

**Table 6.3: Evening Cyclist Movements
Shakespeare Road/East Coast Road 2007 – 2015 (n)**

| <i>Movement</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> | <i>2012</i> | <i>2013</i> | <i>2014</i> | <i>2015</i> | <i>Change 14-15</i> |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 5 | 15 | 5 | 28 | 11 | 8 | 6 | 12 | 9 | -3 |
| 2 | 3 | 2 | 8 | 11 | 6 | 6 | 3 | 5 | 5 | 0 |
| 3 | 6 | 1 | 5 | 5 | 7 | 9 | 7 | 5 | 9 | 4 |
| 4 | 2 | 4 | 6 | 3 | 1 | 3 | 6 | 5 | 6 | 1 |
| 5 | 6 | 11 | 12 | 21 | 7 | 7 | 12 | 10 | 5 | -5 |
| 6 | 4 | 3 | 3 | 2 | 6 | 0 | 3 | 5 | 2 | -3 |
| 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 1 | 3 | 2 | 8 | 10 | 4 | 1 | 2 | 13 | 11 |
| 9 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 11 | 13 | 27 | 47 | 40 | 27 | 27 | 31 | 26 | 18 | -8 |
| 12 | 15 | 57 | 42 | 38 | 29 | 29 | 25 | 27 | 32 | 5 |
| Total | 55 | 123 | 133 | 159 | 105 | 93 | 94 | 97 | 99 | 2 |



- Over the evening peak, the majority of cyclists using this intersection were adults (85 per cent, up from 77 per cent last year).
- Most cyclists were wearing a helmet (98 per cent, up from 93 per cent in 2014).
- Approximately four in five cyclists were male (83 per cent, up from 73 per cent from last year).
- Nearly two thirds of cyclists were riding on the road (64 per cent, stable since 2011). The remaining cyclists were riding on either the footpath (27 per cent) or on the off-road cycle way (9 per cent).

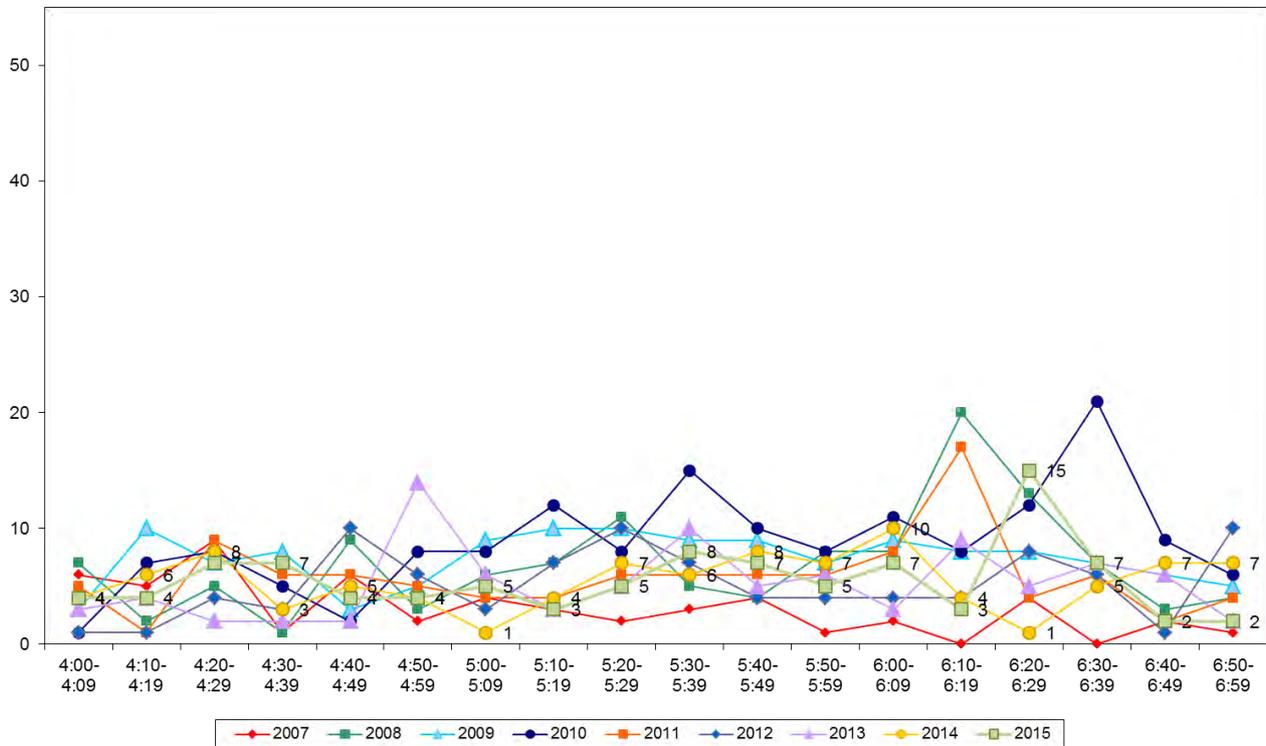
Table 6.4: Evening Cyclist Characteristics
Shakespeare Road/East Coast Road 2007 – 2015 (%)

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 82 | 76 | 81 | 74 | 80 | 88 | 87 | 77 | 85 | 8 |
| School child | 18 | 24 | 19 | 26 | 20 | 12 | 13 | 23 | 15 | -8 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 82 | 94 | 97 | 99 | 90 | 97 | 96 | 93 | 98 | 5 |
| No helmet | 18 | 6 | 3 | 1 | 10 | 3 | 4 | 7 | 2 | -5 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 81 | 79 | 81 | 73 | 83 | 10 |
| Female | - | - | - | - | 19 | 21 | 18 | 27 | 17 | -10 |
| Can't tell | - | - | - | - | 0 | 0 | 1 | 0 | 0 | 0 |
| Where Riding | | | | | | | | | | |
| Road | 73 | 72 | 69 | 60 | 64 | 65 | 65 | 63 | 64 | 1 |
| Footpath | 27 | 28 | 31 | 40 | 17 | 27 | 30 | 28 | 27 | -1 |
| Off-road cycle way | - | - | - | - | 19 | 8 | 5 | 8 | 9 | 1 |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | -1 |
| Base: | 55 | 123 | 133 | 159 | 105 | 93 | 94 | 97 | 99 | |



- Cycle volumes were low for the majority of the monitoring period. With the exception of a notable peak between 6:20pm and 6:29pm (15 cycle movements), cycle volumes remained below nine cycle movements per ten minute interval for the entire evening shift.

Figure 6.3: Evening Cyclist Frequency
Shakespeare Road/East Coast Road 2007 – 2015 (n)

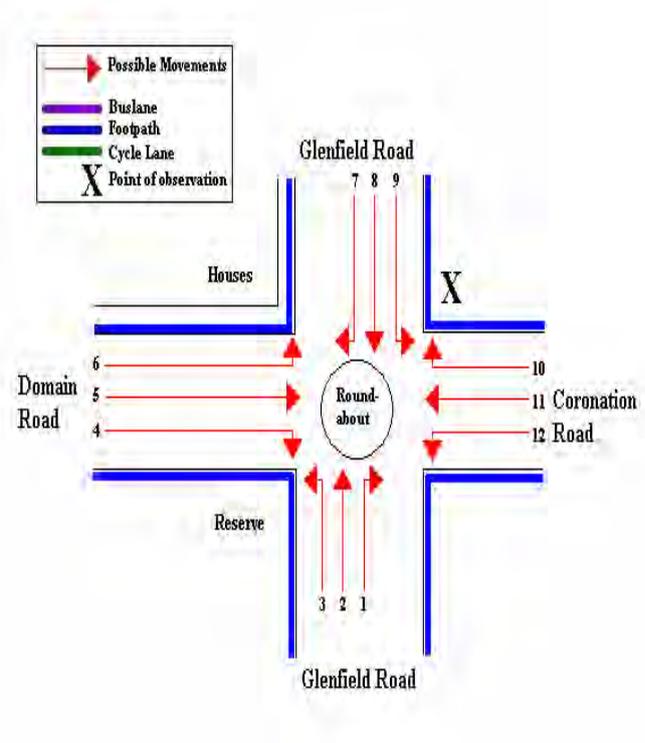
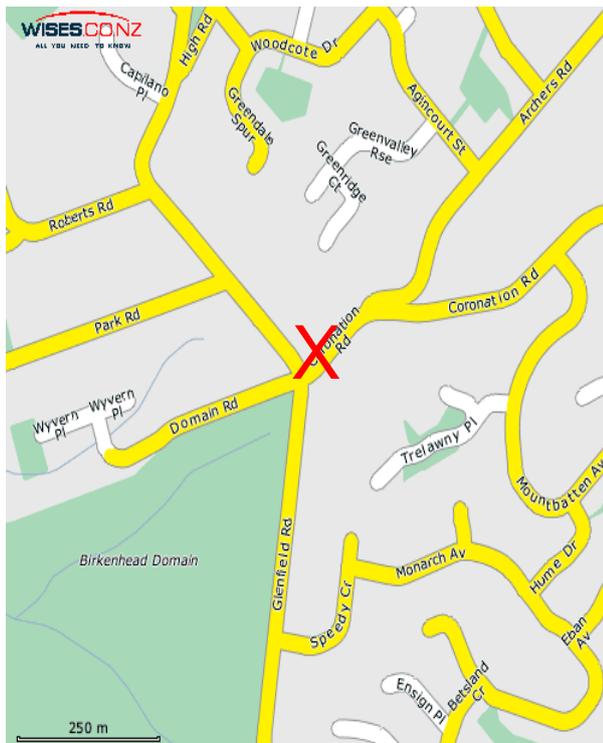


Note: In 2015, a peloton of seven cyclists rode past at 6:23pm, accounting for seven per cent of this site’s evening cycle traffic. This compares with three cyclists (three per cent) in 2014.

7. GLENFIELD ROAD/CORONATION ROAD, HILLCREST (SITE 43)

Figure 7.1 shows the possible cyclist movements at this intersection.

Figure 7.1: Cycle Movements: Glenfield Road/Coronation Road



7.1 Site Summary

| | Raw Counts | | | AADT |
|-------------|--------------|--------------|-----------|-----------|
| | Morning Peak | Evening Peak | Total | Total |
| 2007 | 16 | 12 | 28 | 64 |
| 2008 | 36 | 39 | 75 | 109 |
| 2009 | 36 | 42 | 78 | 113 |
| 2010 | 37 | 56 | 93 | 134 |
| 2011 | 27 | 25 | 52 | 76 |
| 2012 | 35 | 38 | 73 | 106 |
| 2013 | 33 | 25 | 58 | 85 |
| 2014 | 28 | 30 | 58 | 84 |
| 2015 | 26 | 21 | 47 | 69 |



7.2 Morning Peak

Environmental Conditions

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

Key Points

- The volume of morning cyclists at the Glenfield Road/Coronation Road intersection has remained stable since last year (26 movements, compared with 28 movements in 2014).
- The most common movement in the morning was heading north along Glenfield Road (Movement 2 = 9 cyclists).
- Turning left from Coronation Road onto Glenfield Road (Movement 12) was the only movement which recorded a notable change (down 5 movements).

**Table 7.1: Morning Cyclist Movements
Glenfield Road/Coronation Road 2007 – 2015 (n)**

| <i>Movement</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> | <i>2012</i> | <i>2013</i> | <i>2014</i> | <i>2015</i> | <i>Change 14-15</i> |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 2 | 7 | 13 | 6 | 4 | 3 | 10 | 5 | 5 | 0 |
| 2 | 1 | 5 | 5 | 7 | 10 | 17 | 6 | 9 | 9 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 8 | 7 | 9 | 6 | 11 | 4 | 3 | 5 | 2 | 5 | 3 |
| 9 | 6 | 8 | 9 | 9 | 2 | 3 | 5 | 4 | 5 | 1 |
| 10 | 0 | 5 | 3 | 2 | 2 | 4 | 4 | 3 | 1 | -2 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 2 | 0 | 2 | 4 | 1 | 3 | 5 | 0 | -5 |
| Total | 16 | 36 | 36 | 37 | 27 | 35 | 33 | 28 | 26 | -2 |



- Over the morning peak, adults comprised the greatest share of cycle movements (92 per cent, up from 79 per cent in 2014).
- Almost all of the cyclists were wearing a helmet (96 per cent, up from 86 per cent in 2014).
- The majority of cyclists were male (85 per cent, stable from 86 last year).
- Most cyclists were riding on the road (85 per cent, up from 75 per cent in 2014).

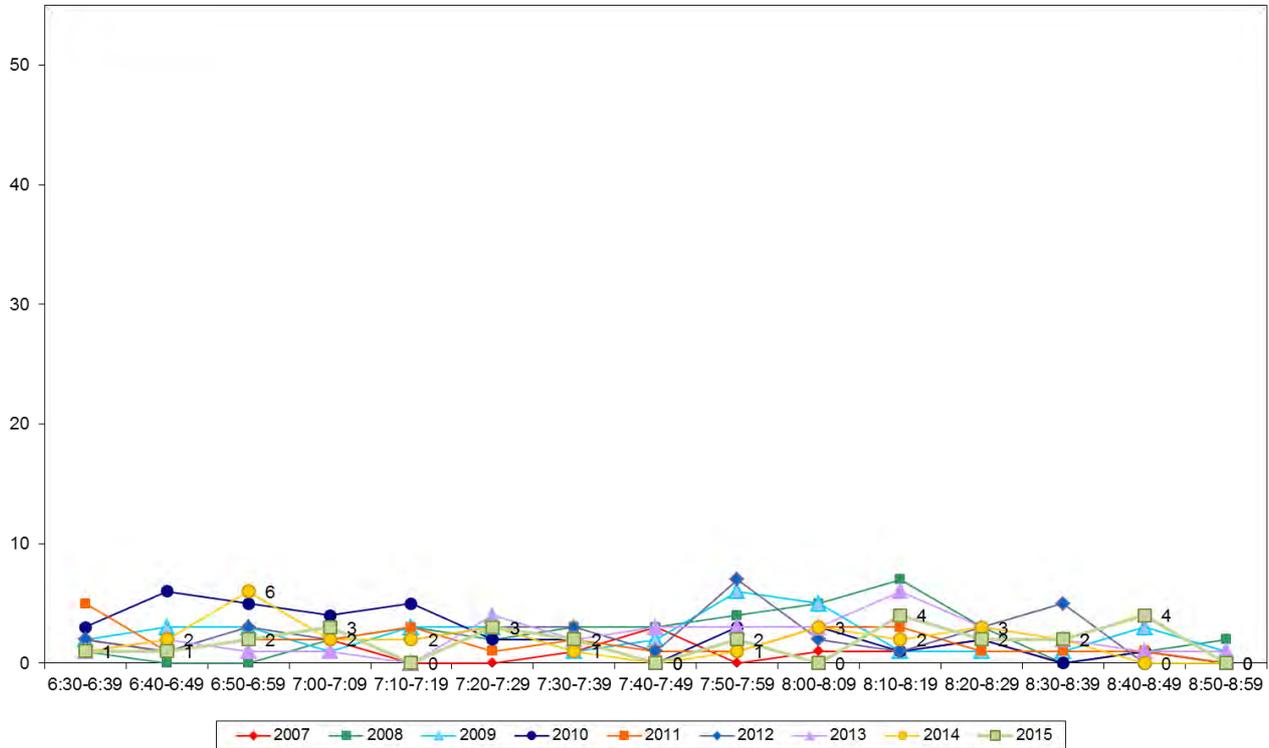
Table 7.2: Morning Cyclist Characteristics
Glenfield Road/Coronation Road 2007 – 2015 (%)

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 94 | 83 | 75 | 84 | 85 | 77 | 88 | 79 | 92 | 13 |
| School child | 6 | 17 | 25 | 16 | 15 | 23 | 12 | 21 | 8 | -13 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 87 | 100 | 97 | 95 | 100 | 91 | 97 | 86 | 96 | 10 |
| No helmet | 13 | 0 | 3 | 5 | 0 | 9 | 3 | 14 | 4 | -10 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 70 | 91 | 82 | 86 | 85 | -1 |
| Female | - | - | - | - | 30 | 9 | 15 | 7 | 15 | 8 |
| Can't tell | - | - | - | - | 0 | 0 | 3 | 7 | 0 | -7 |
| Where Riding | | | | | | | | | | |
| Road | 87 | 83 | 69 | 76 | 81 | 83 | 85 | 75 | 85 | 10 |
| Footpath | 13 | 17 | 31 | 24 | 19 | 17 | 15 | 25 | 15 | -10 |
| Base: | 16 | 36 | 36 | 37 | 27 | 35 | 33 | 28 | 26 | |



- Consistent with previous years, morning cyclist volumes were low over the entire monitoring period, with no evident peaks being observed. This year, no more than four cyclists were observed during each ten minute interval throughout the monitoring period.

**Figure 7.2: Morning Peak Cyclist Frequency
Glenfield Road/Coronation Road 2007 – 2015 (n)**



Note: No movements made by group cyclists or pelotons were observed in 2015. This compares with five cyclists (22 per cent of the morning cycle traffic at this site) in 2014.



7.3 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 cyclist movements recorded at the Glenfield Road/Coronation Road intersection in the evening has decreased from 2014 (21 movements, down from 30 movements last year).
- The key movements in the evening were travelling along Glenfield Road heading north (Movement 2 = 5 movements) and heading south on Glenfield Road (Movement 8 = 5 movements).
- Turning right onto Coronation Road from Glenfield Road (Movement 1) and turning left from Coronation Road to Glenfield Road (Movement 12) observed the greatest decrease (both down 4 movements).

**Table 7.3: Evening Cyclist Movements
Glenfield Road/Coronation Road 2007 – 2015 (n)**

| Movement | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 0 | 3 | 6 | 1 | 2 | 3 | 2 | 4 | 0 | -4 |
| 2 | 4 | 6 | 7 | 16 | 9 | 10 | 6 | 8 | 5 | -3 |
| 3 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | -1 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| 8 | 5 | 6 | 8 | 9 | 7 | 11 | 7 | 4 | 5 | 1 |
| 9 | 0 | 4 | 3 | 9 | 0 | 5 | 1 | 1 | 3 | 2 |
| 10 | 1 | 4 | 6 | 11 | 3 | 2 | 0 | 3 | 4 | 1 |
| 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | -1 |
| 12 | 2 | 13 | 12 | 10 | 4 | 6 | 8 | 7 | 3 | -4 |
| Total | 12 | 39 | 42 | 56 | 25 | 38 | 25 | 30 | 21 | -9 |



- Nearly all cyclists at this location were adults (86 per cent, up from 83 per cent in 2014).
- The majority of cyclists were wearing a helmet (90 per cent, up from 80 per cent from last year).
- Nineteen per cent of cyclists were female, the highest proportion of female cyclists observed at this site since 2011.
- Eighty-one per cent of cyclists were riding on the road (up from 67 per cent in 2014).

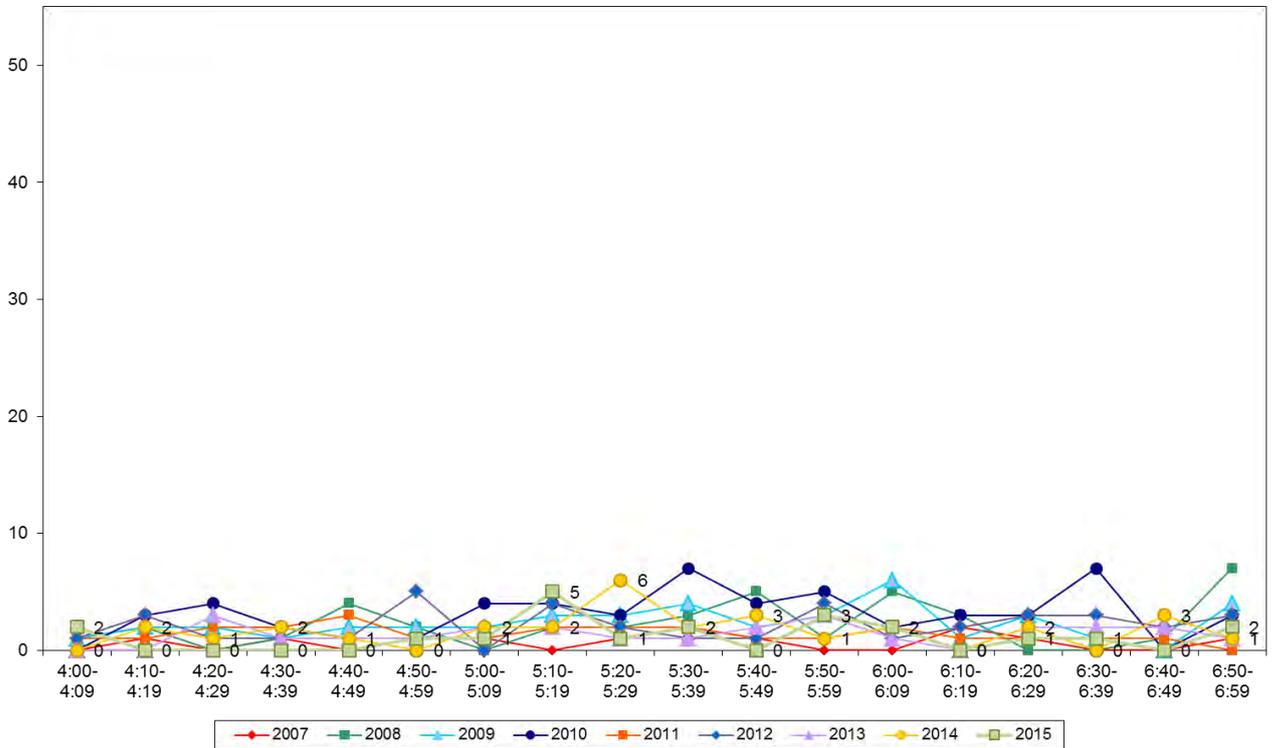
**Table 7.4: Evening Cyclist Characteristics
Glenfield Road/Coronation Road 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 83 | 95 | 76 | 89 | 100 | 79 | 92 | 83 | 86 | 3 |
| School child | 17 | 5 | 24 | 11 | 0 | 21 | 8 | 17 | 14 | -3 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 75 | 95 | 81 | 91 | 96 | 89 | 88 | 80 | 90 | 10 |
| No helmet | 25 | 5 | 19 | 9 | 4 | 11 | 12 | 20 | 10 | -10 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 96 | 89 | 100 | 93 | 76 | -17 |
| Female | - | - | - | - | 4 | 11 | 0 | 7 | 19 | 12 |
| Can't tell | - | - | - | - | 0 | 0 | 0 | 0 | 5 | 5 |
| Where Riding | | | | | | | | | | |
| Road | 83 | 77 | 69 | 77 | 100 | 76 | 80 | 67 | 81 | 14 |
| Footpath | 17 | 23 | 31 | 23 | 0 | 24 | 20 | 33 | 19 | -14 |
| Base: | 12 | 39 | 42 | 56 | 25 | 38 | 25 | 30 | 21 | |



- Evening cyclist movement volumes remained very low throughout the monitoring period, with no more than five cyclists riding past the site during any ten-minute interval.

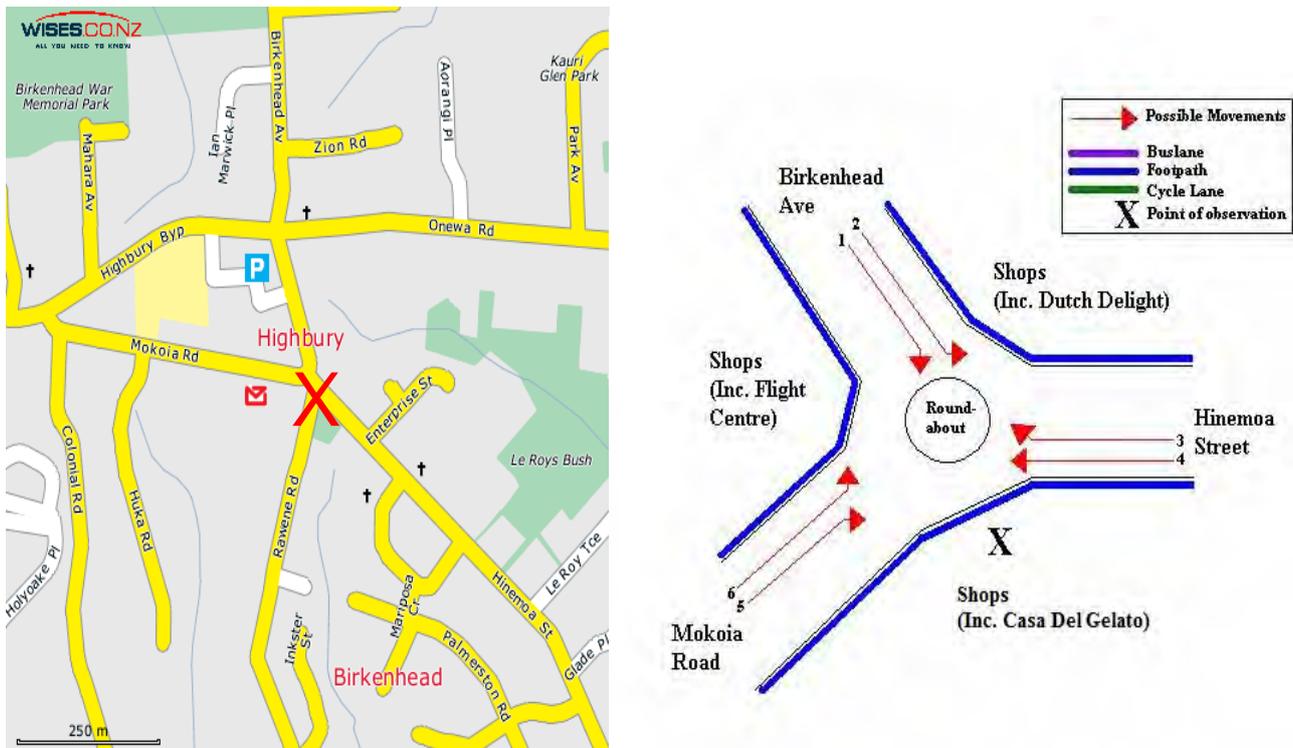
**Figure 7.3: Evening Peak Cyclist Frequency
Glenfield Road/Coronation Road 2007 – 2015 (n)**



8. BIRKENHEAD AVENUE/MOKOIA ROAD, BIRKENHEAD (SITE 44)

Figure 8.1 shows the possible cyclist movements at this intersection.

Figure 8.1: Cycle Movements: Birkenhead Avenue/Mokoia Road



8.1 Site Summary

| | Raw Counts | | | AADT |
|-------------|--------------|--------------|-----------|-----------|
| | Morning Peak | Evening Peak | Total | Total |
| 2007 | 20 | 20 | 40 | 58 |
| 2008 | 20 | 29 | 49 | 71 |
| 2009 | 27 | 30 | 57 | 83 |
| 2010 | 29 | 46 | 75 | 108 |
| 2011 | 22 | 23 | 45 | 65 |
| 2012 | 17 | 35 | 52 | 74 |
| 2013 | 29 | 32 | 61 | 88 |
| 2014 | 9 | 22 | 31 | 44 |
| 2015 | 9 | 22 | 31 | 44 |



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 total volume of morning cyclists at the Birkenhead Avenue/Mokoia Road intersection has not changed from 2014 (9 movements).
- The key movement in the morning was the right turn from Mokoia Road into Hinemoa Street travelling in a south-easterly direction (Movement 5 = 6 cyclists).

Table 8.1: Morning Cyclist Movements
Birkenhead Avenue/Mokoia Road 2007 – 2015 (n)

| <i>Movement</i> | <i>2007</i> | <i>2008</i> | <i>2009</i> | <i>2010</i> | <i>2011</i> | <i>2012</i> | <i>2013</i> | <i>2014</i> | <i>2015</i> | <i>Change 14-15</i> |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|
| 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 |
| 2 | 7 | 6 | 12 | 16 | 9 | 5 | 7 | 1 | 2 | 1 |
| 3 | 1 | 4 | 4 | 1 | 6 | 3 | 7 | 2 | 0 | -2 |
| 4 | 2 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| 5 | 8 | 7 | 9 | 9 | 5 | 7 | 12 | 4 | 6 | 2 |
| 6 | 1 | 2 | 2 | 0 | 1 | 1 | 2 | 1 | 0 | -1 |
| Total | 20 | 20 | 27 | 29 | 22 | 17 | 29 | 9 | 9 | 0 |



- Over the morning peak, all cyclists using the Birkenhead Avenue/Mokoia Road intersection were adults (unchanged since 2012).
- All cyclists wore a helmet (unchanged since 2011).
- A notable increase of male cyclists was evident this year (89 per cent, up from 67 per cent last year).
- Most cyclists were riding on the road (89 per cent, unchanged from last year).

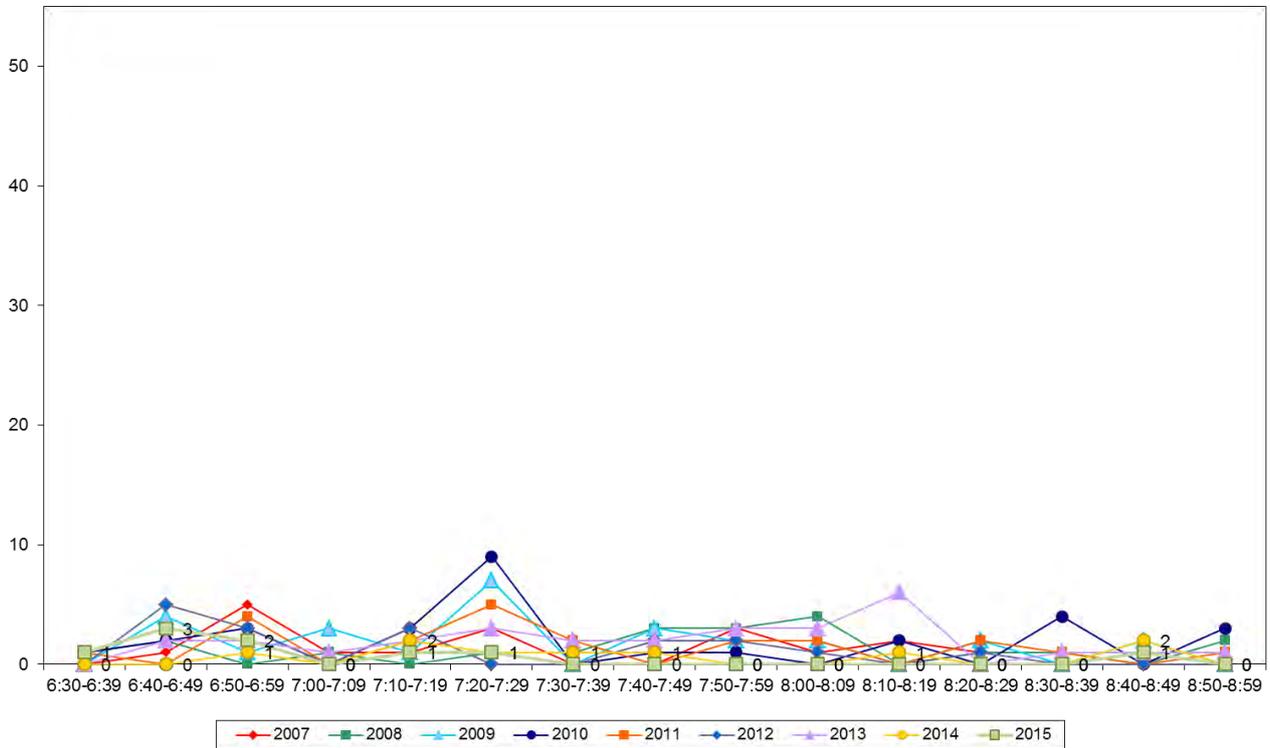
**Table 8.2: Morning Cyclist Characteristics
Birkenhead Avenue/Mokoia Road 2007 – 2015 (%)**

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|------------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 100 | 95 | 100 | 100 | 91 | 100 | 100 | 100 | 100 | 0 |
| School child | 0 | 5 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 80 | 100 | 96 | 90 | 100 | 100 | 100 | 100 | 100 | 0 |
| No helmet | 20 | 0 | 4 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 100 | 88 | 93 | 67 | 89 | 22 |
| Female | - | - | - | - | 0 | 12 | 7 | 33 | 11 | -22 |
| Can't tell | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 |
| Where Riding | | | | | | | | | | |
| Road | 90 | 90 | 96 | 97 | 86 | 94 | 100 | 89 | 89 | 0 |
| Footpath | 10 | 10 | 4 | 3 | 14 | 6 | 0 | 11 | 11 | 0 |
| Base: | 20 | 20 | 27 | 29 | 22 | 17 | 29 | 9 | 9 | |



- The volume of morning cycle movements was low over the entire monitoring period with no more than three movements recorded during any ten-minute interval.

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





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

- Consistent with the morning peak, the total volume of evening cyclists at the Birkenhead Avenue/Mokoia Road intersection has stayed the same as 2014 (22 movements).
- The most common movement in the evening was turning left from Hinemoa Street onto Mokoia Road (Movement 4 = 8 movements).
- Turning from Hinemoa Street onto Birkenhead Avenue Road recorded the greatest change at this site (Movement 3 = down 3 movements).
- Movement 6 (Mokoia Road to Birkenhead Avenue) continued the previous years' trend of no cyclists making this movement.

**Table 8.3: Evening Cyclist Movements
Birkenhead Avenue/Mokoia Road 2007 – 2015 (n)**

| Movement | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| 1 | 1 | 6 | 2 | 8 | 2 | 4 | 6 | 2 | 2 | 0 |
| 2 | 1 | 2 | 3 | 4 | 4 | 7 | 7 | 2 | 4 | 2 |
| 3 | 8 | 8 | 11 | 17 | 9 | 6 | 6 | 8 | 5 | -3 |
| 4 | 8 | 10 | 12 | 13 | 7 | 12 | 12 | 7 | 8 | 1 |
| 5 | 2 | 2 | 1 | 1 | 0 | 1 | 1 | 3 | 3 | 0 |
| 6 | 0 | 1 | 1 | 3 | 1 | 5 | 0 | 0 | 0 | 0 |
| Total | 20 | 29 | 30 | 46 | 23 | 35 | 32 | 22 | 22 | 0 |



- Over the evening peak, all cyclists using this intersection were adults (up from 91 per cent last year).
- All of the cyclists were wearing a helmet (up from 95 per cent in 2014).
- The greatest share of evening cyclists continued to be male (86 per cent, up from 82 per cent at the previous measure).
- The share of cyclists on the road increased from 82 per cent last year to 91 per cent in 2015.

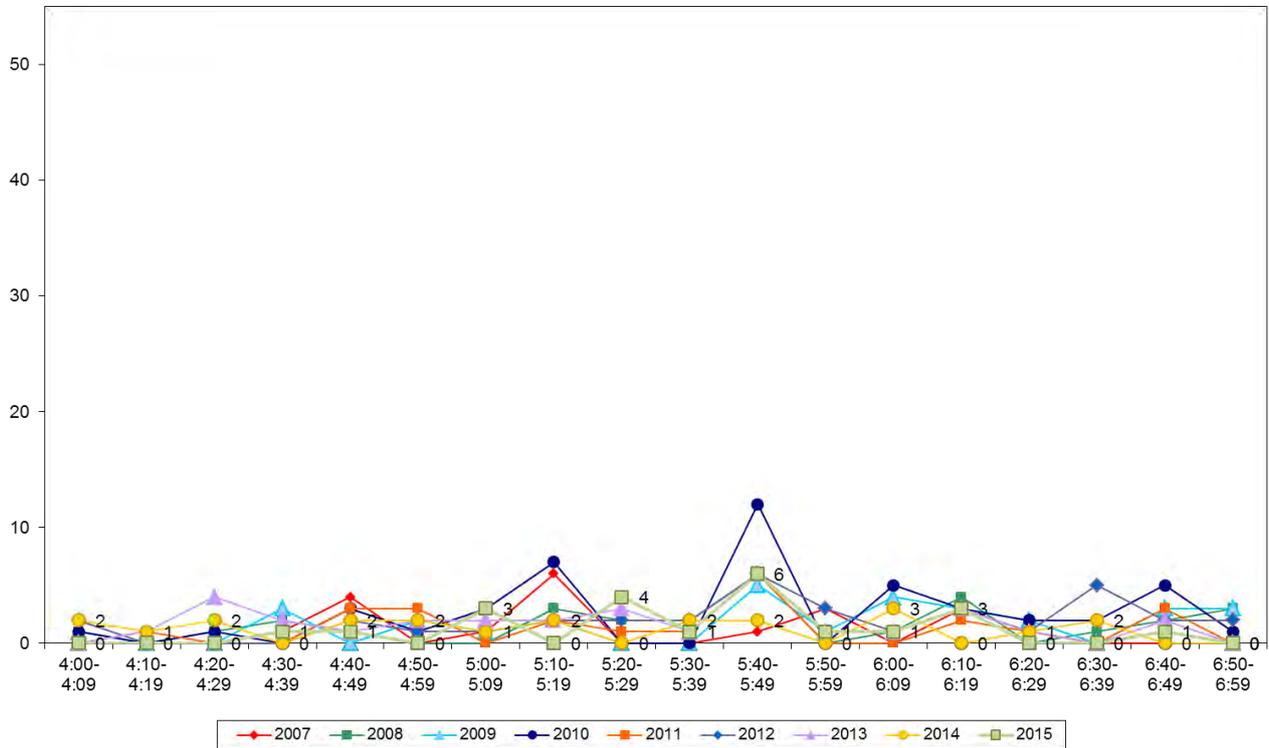
Table 8.4: Evening Cyclist Characteristics
Birkenhead Avenue/Mokoia Road 2007 – 2015 (%)

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|
| Cyclist Type | | | | | | | | | | |
| Adult | 95 | 93 | 93 | 87 | 91 | 91 | 88 | 91 | 100 | 9 |
| School child | 5 | 7 | 7 | 13 | 9 | 9 | 12 | 9 | 0 | -9 |
| Helmet Wearing | | | | | | | | | | |
| Helmet on head | 95 | 93 | 93 | 80 | 87 | 83 | 91 | 95 | 100 | 5 |
| No helmet | 5 | 7 | 7 | 20 | 13 | 17 | 9 | 5 | 0 | -5 |
| Gender | | | | | | | | | | |
| Male | - | - | - | - | 83 | 89 | 91 | 82 | 86 | 4 |
| Female | - | - | - | - | 17 | 11 | 6 | 18 | 14 | -4 |
| Can't tell | - | - | - | - | 0 | 0 | 3 | 0 | 0 | 0 |
| Where Riding | | | | | | | | | | |
| Road | 100 | 93 | 80 | 76 | 78 | 63 | 81 | 82 | 91 | 9 |
| Footpath | 0 | 7 | 20 | 24 | 22 | 37 | 19 | 18 | 9 | -9 |
| Base: | 20 | 29 | 30 | 46 | 23 | 35 | 32 | 22 | 22 | |



- In 2015, the cyclist movement volumes were low and reached no more than six movements per ten minute interval.

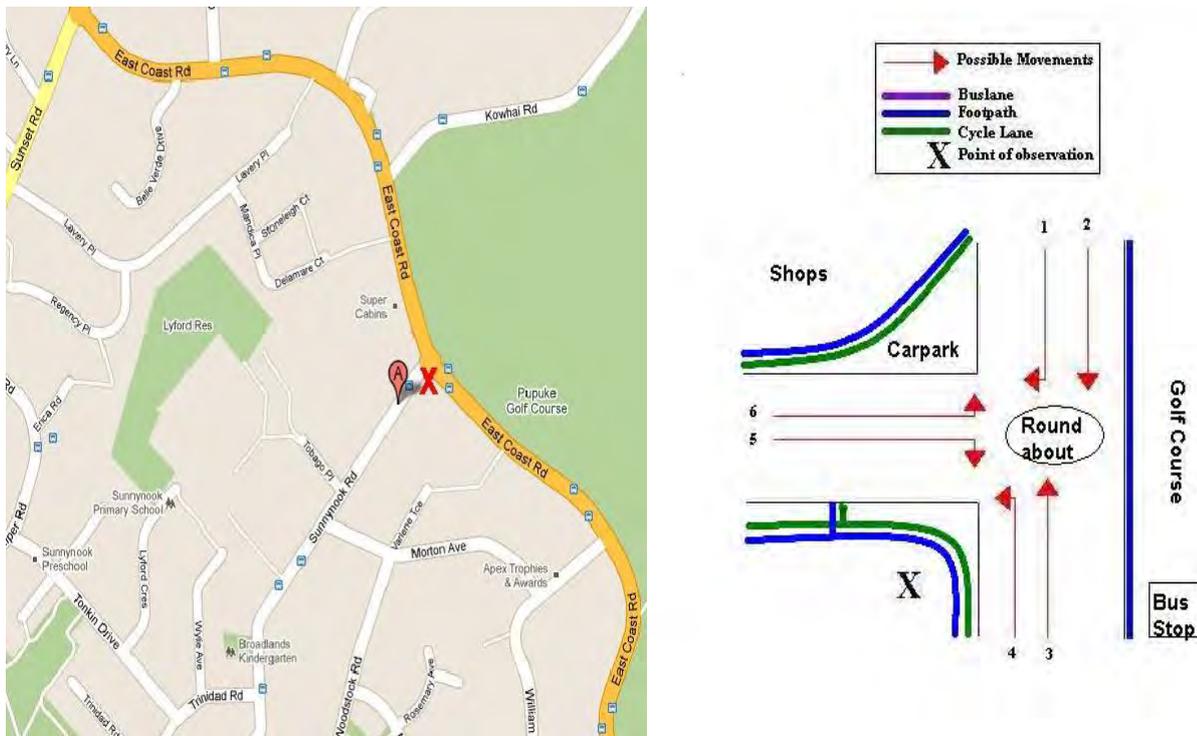
Figure 8.3: Evening Peak Cyclist Frequency
Birkenhead Avenue/Mokoia Road 2007 – 2015 (n)



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

Figure 9.1 shows the possible cyclist movements at this intersection.

Figure 9.1: Sunnynook Road/East Coast Road, Sunnynook



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

9.1 Site Summary

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



9.2 Morning Peak

Environmental Conditions

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

Key Points

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

Table 16.1: Morning Cyclist Movements
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (n)

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



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

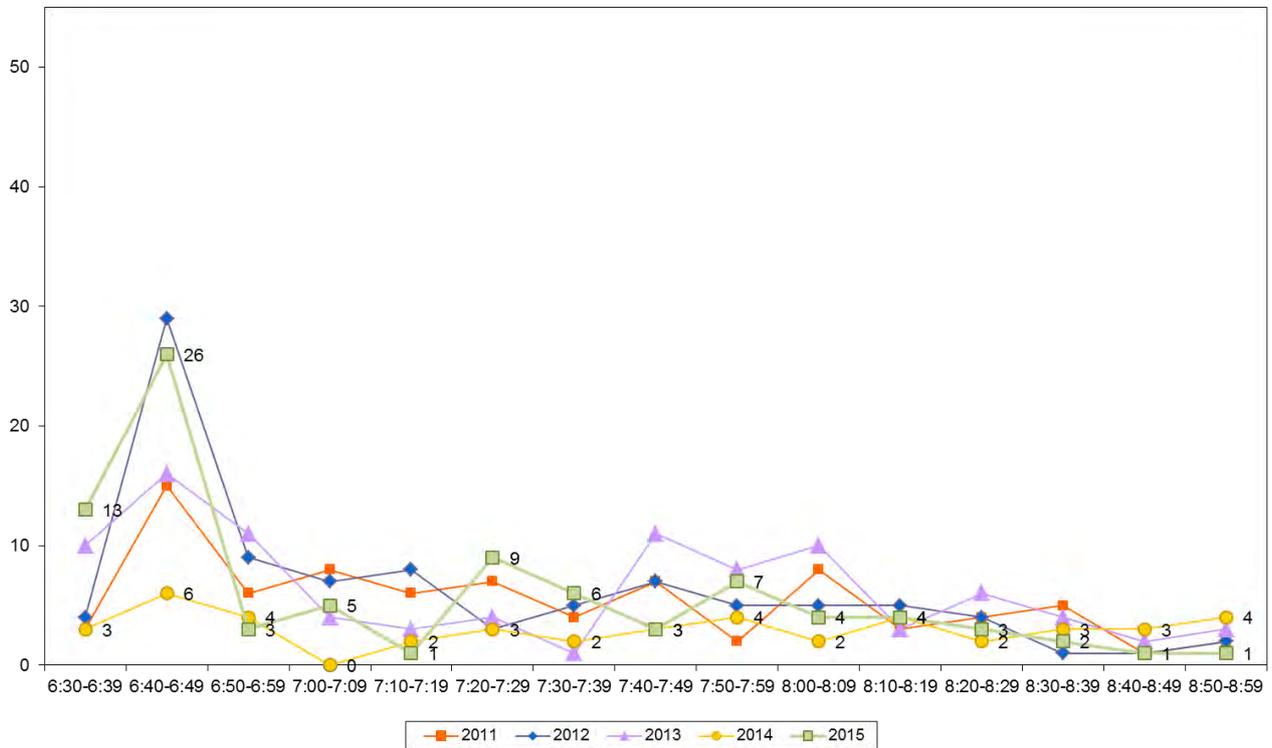
Table 16.2: Morning Cyclist Characteristics
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (%)

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



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

Figure 16.2: Morning Peak Cyclist Frequency
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (n)



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

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

The surveyor also noted that there was a peloton of over 20 cyclists riding past just before the morning cycle monitor (6:30am to 9:00am) commenced.

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



9.3 Evening Peak

Environmental Conditions

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

Key Points

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

Table 16.3: Evening Cyclist Movements
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (n)

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



- Three-quarters of cyclists at this site were adults (down 13 percentage points compared to the previous measure).
- Almost all cyclists were wearing a helmet (98 per cent, stable since 2011).
- The majority of cyclists continued to be male (90 per cent, stable since 2011).
- For the first time since 2012, there were cyclists observed on the off-road cycleway (31 per cent).

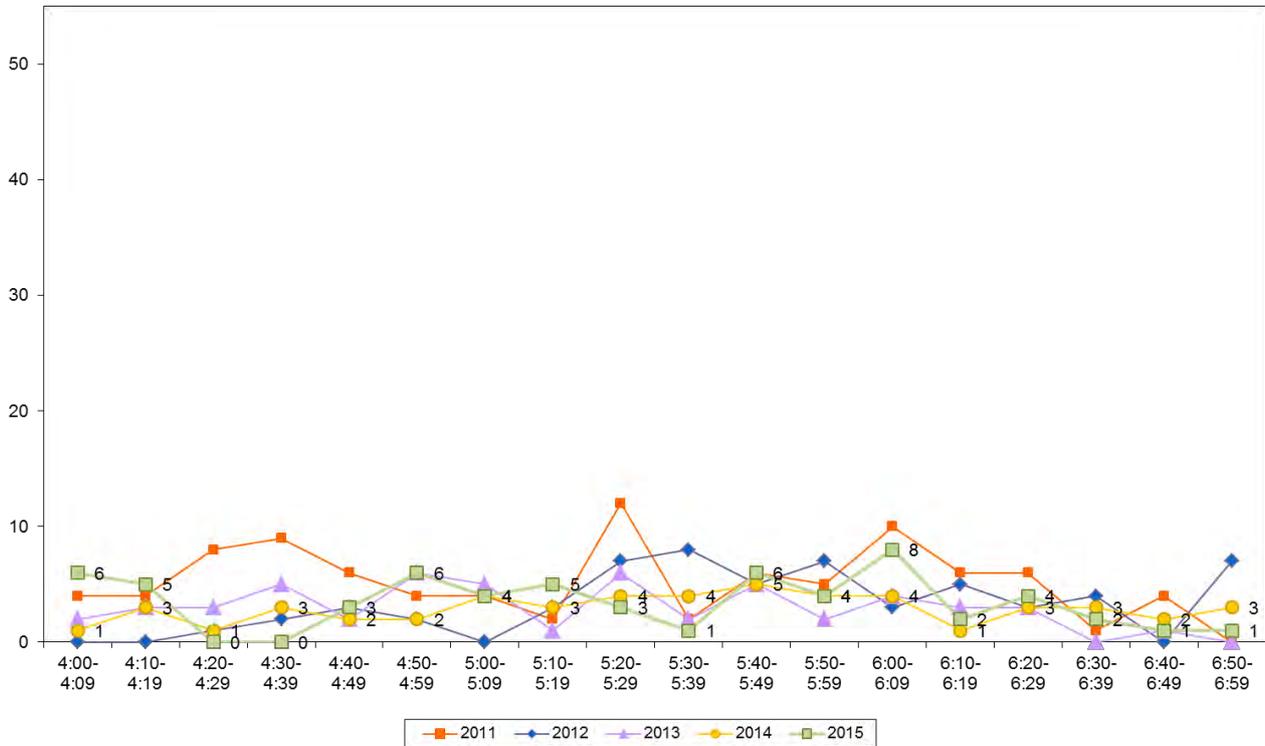
Table 16.4: Evening Cyclist Characteristics
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (%)

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



- Cyclist movement volumes in the evening were low and fluctuated throughout the shift. There was a small peak observed between 6:00pm and 6:10pm with eight cyclists. This is consistent with previous years which have also recorded continuous low numbers throughout the evening monitoring period.

Figure 16.3: Evening Peak Cyclist Frequency
Sunnynook Road/East Coast Road, Sunnynook 2011 – 2015 (n)



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

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

10. NORTH SHORE FERRY WHARVES

Environmental Conditions

- Stationary cycle counts at various ferry wharves were conducted on Thursday 5th March 2015 (the same day as the cycle counts in the North Shore ward).
- At the Devonport Ferry Wharf, upgrade work for the Marine Square was in progress, which reduced the number of cycle racks available by the front entrance.
- There were no other road works or incidents that may affect cycle counts.

Devonport Ferry Terminal - Key Points

- In the morning, eight cycles were observed at the Devonport Ferry Terminal at 6:10am and 51 were observed at 9:10am. This suggests around 43 passengers rode to the ferry and parked their cycles in the morning peak. This figure is stable from last year's result.
- In the afternoon, 64 cycles were recorded at the Devonport Ferry Terminal at 3:30pm and 15 were observed at 7:10pm. This suggests 49 ferry passengers collected their bikes after disembarking and cycled home in the evening peak. This figure is stable from last year's result.

Table 10.1: Devonport Ferry Terminal Cycle Counts (n)

| | 2011 | 2012* | 2013 | 2014 | 2015 | Change 14-15 |
|---------------------|------|-------|------|------|------|--------------|
| Morning Peak | | | | | | |
| 6:10am | 5 | 3 | 4 | 7 | 8 | 1 |
| 9:10am | 47 | 43 | 61 | 50 | 51 | 1 |
| Evening Peak | | | | | | |
| 3:30pm | 79 | 26 | 57 | 62 | 64 | 2 |
| 7:10pm | 11 | 4 | 12 | 13 | 15 | 2 |

* Counts conducted in early June 2012



Bayswater Ferry Terminal - Key Points

- In 2015, 14 bicycles were observed at the Bayswater Ferry Terminal at 9:10am. This suggests around 14 passengers cycled to the ferry terminal and parked their cycles there. This compares with 20 bicycles last year.

Note: Prior to 2014, a single count was undertaken at Bayswater Ferry Terminal (this count conducted at the end of the morning peak, around 9.10am). In 2014, four counts were conducted - just prior to, and immediately after, both the morning and afternoon peaks. In 2015, a single count was undertaken by Auckland Transport some time during the morning peak (6:30am – 9:00am).

Table 10.2: Bayswater Ferry Terminal Cycle Counts (n)

| | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
|---------------------|------|------|------|------|-----------|--------------|
| Morning Peak | | | | | | |
| 6:10am | - | - | - | 1 | - | - |
| 9:10am | 5 | 11 | 22 | 20 | 14 | -6 |
| Evening Peak | | | | | | |
| 3:30pm | - | - | - | 22 | - | - |
| 7:10pm | - | - | - | 15 | - | - |

Stanley Bay Ferry Terminal - Key Points

- In 2015, four bicycles recorded in the morning at the Stanley Bay Ferry Wharf. This suggests around four passengers cycled to the ferry terminal and parked their cycles there. No cycles were observed at this wharf last year.

Note: Observation of stationary cycles was conducted for the first time in 2014. In 2015, a single count was undertaken by Auckland Transport some time during the morning peak (6:30am – 9:00am).

Table 10.3: Stanley Bay Ferry Wharf Cycle Counts (n)

| | 2014 | 2015 | Change 14-15 |
|---------------------|------|----------|--------------|
| Morning Peak | | | |
| 6:10am | 0 | 0 | 0 |
| 9:10am | 0 | 4 | 4 |
| Evening Peak | | | |
| 3:30pm | 0 | 0 | 0 |
| 7:10pm | 0 | 0 | 0 |



Northcote Point Ferry Terminal - Key Points

- In 2015, no cycles were observed at the Northcote Point Ferry Wharf.

Note: Observation of stationary cycles was conducted for the first time in 2014. In 2015, a single count was undertaken by Auckland Transport some time during the morning peak (6:30am – 9:00am).

Table 10.4: Northcote Point Ferry Wharf Cycle Counts (n)

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

Birkenhead Ferry Terminal - Key Points

- In 2015, two bicycles recorded in the morning at the Birkenhead Ferry Terminal. This suggests around two passengers cycled to the ferry terminal and parked their cycles there. No cycles were observed at this wharf last year.

Note: Observation of stationary cycles was conducted for the first time in 2014. In 2015, a single count was undertaken by Auckland Transport some time during the morning peak (6:30am – 9:00am).

Table 10.5: Birkenhead Ferry Wharf Cycle Counts (n)

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



Beachhaven Ferry Terminal - Key Points

- In 2015, two bicycles recorded in the morning at the Beachhaven Ferry Terminal. This suggests around two passengers cycled to the ferry terminal and parked their cycles there. No cycles were observed at this wharf in previous years.

Note: In 2015, a single count was undertaken by Auckland Transport some time during the morning peak (6:30am – 9:00am).

Table 10.5: Beachhaven Ferry Wharf Cycle Counts (n)

| | 2015 |
|---------------------|----------|
| Morning Peak | |
| 6:10am | - |
| 9:10am | 2 |
| Evening Peak | |
| 3:30pm | - |
| 7:10pm | - |



11. SCHOOL BIKE SHED COUNT

11.1 Cycle Count Background Information

- A total of 10 schools in the North Shore ward participated in the school bike shed count. One school that responded to the survey stated that they had a policy that restricted students cycling to school¹⁰.
- Two schools reported an event or issue that may affect cycle counts¹¹.
- Although the designated count day was Tuesday 3rd of March 2015, four schools in the North Shore ward completed their count on an alternative day¹².

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

11.2 Cycle Count Key Points

- Among the surveyed schools, of those eligible to cycle to school, on average, four per cent of students are cycling to their schools. This share is unchanged since 2011.
- Belmont Intermediate School reported the highest share of cyclists, 32 per cent of all eligible students currently cycling to school (unchanged from 2014).
- In total, n=362 students from the responding schools were reported to be cycling to school.
- At least one cycle was counted at each of the 10 responding schools in the North Shore ward.
- Of the 10 schools that participated in the count in both 2014 and 2015, two (20 per cent) reported an increase in the share of students cycling, the most notable increase being Takapuna Normal Intermediate School (23 per cent, up from 11 per cent in 2014).
- Of the 10 schools that participated in the count in both 2014 and 2015, four (40 per cent) reported a decrease in the share of students cycling, the most notable decrease being Wairau Intermediate School (2 per cent, down from 4 per cent in 2014).

¹⁰ The following school had policies surrounding the riding of bicycles to school:

- Belmont Intermediate School *"High-vis vests are now mandatory"*

¹¹ The following school reported events or issues that may affect cycle counts:

- Belmont Intermediate School *"High-vis vest policy was introduced this week, so numbers have dropped. I expect that they will increase again over the coming weeks"*
- Takapuna Normal Intermediate *"Cycle safe day today – so extra bikes"*

¹² The following schools undertook counts on alternative days:

- Belmont Intermediate School – 6th March 2015
- Birkenhead College – 2nd March 2015
- Takapuna Normal Intermediate School – 9th March 2015
- Wairau Intermediate School – 5th March 2015



Table 11.1 shows the results of the 10 schools surveyed in the North Shore ward.

**Table 11.1: Summary Table of School Bike Count
2007 – 2015 (n)**

| School Name | School Type | School Roll Eligible To Cycle | No. of Cycles Counted | Cyclists as share of those eligible ¹³ | | | | | | | | |
|-------------------------------------|------------------------|-------------------------------|-----------------------|---|-----------|-----------|-----------|-----------|------|------|------|------|
| | | | | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 |
| Belmont Intermediate School | Intermediate | 560 | 178 | 32% | 32% | 25% | 31% | 30% | 33% | 22% | 26% | 3% |
| Takapuna Normal Intermediate School | Intermediate | 601 | 138 | 23% | 11% | 17% | 8% | - | - | - | - | - |
| Northcote Intermediate School | Intermediate | 273 | 7 | 3% | 4% | <1% | 2% | 3% | 5% | 2% | 3% | 2% |
| Wairau Intermediate School | Intermediate | 297 | 7 | 2% | 4% | 4% | 3% | 4% | 6% | 5% | 7% | 4% |
| Rosmini College | Intermediate/Secondary | 1058 | 15 | 1% | 2% | 3% | 3% | 5% | 3% | 3% | 4% | 3% |
| Glenfield College | Secondary | 1131 | 6 | 1% | <1% | 1% | - | - | 1% | 1% | - | - |
| Birkenhead College | Secondary | 710 | 1 | <1% | <1% | <1% | <1% | <1% | 1% | - | - | - |
| Carmel College | Intermediate/Secondary | 1030 | 2 | <1% | <1% | <1% | <1% | <1% | 0% | 0% | <1% | 0% |
| Northcote College | Secondary | 1102 | 2 | <1% | 1% | 1% | 1% | <1% | <1% | 0% | - | - |
| Westlake Girls' High School | Secondary | 2120 | 6 | <1% | <1% | <1% | <1% | <1% | <1% | 0% | <1% | <1% |
| Total | | 8882 | 362 | 4% | 4% | 4% | 4% | 4% | - | - | - | - |

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 11.2 illustrates the rates of cycling to school at different school levels. Rates of cycling to school are highest among intermediate schools (19 per cent, up from 12 per cent in 2014).

**Table 11.2: Summary Table of School Bike Count by School Type
2007 – 2015 (%)**

| Year Levels | Number of Schools Responded in 2015 | Cyclists as share of those eligible | | | | | | | | | |
|------------------------|-------------------------------------|-------------------------------------|------|------|------|------|------|------|------|------|--------------|
| | | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | Change 14-15 |
| Intermediate | 4 | 11% | 8% | 7% | 9% | 10% | 10% | 11% | 12% | 19% | 7% |
| Intermediate/Secondary | 2 | 2% | 2% | 2% | 2% | 2% | 1% | 2% | 1% | 1% | 0% |
| Secondary | 4 | 4% | 2% | 3% | 3% | 3% | 2% | 3% | 3% | <1% | -3% |
| Full Primary | - | - | - | - | - | 0% | 0% | 0% | 0% | - | - |
| Composite | - | - | - | - | - | 0% | 0% | - | - | - | - |



11.3 Scooter Count Background Information

- A total of 9 schools in the North Shore ward participated in the school bike shed scooter count. One school that responded to the survey stated that they had a policy that restricts students cycling to school¹⁴.
- One school reported an event or issue that may affect scooter counts¹⁵.
- Although the designated count day was Tuesday 3rd of March 2015, four of the schools in the North Shore ward completed their count on an alternative day¹⁶.

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

11.4 Scooter Count Key Points

- Among the surveyed schools, of those eligible to scooter, on average, less than one per cent of students are scooting to their schools. This share is unchanged from 2014.
- Northcote Intermediate School reported the highest share of scooters, 3 per cent of all eligible students currently scooting to school (down from 6% in 2014).
- In total, n=21 students from the responding schools were reported to be scooting to school.
- Of the 9 schools that responded, 4 (44 per cent) had no students scooting to school.
- Of the 8 schools that participated in the count in both 2014 and 2015, three (38 per cent) reported an increase in the share of students cycling, the most notable increase being Wairau Intermediate School (1 per cent, up from 0 per cent in 2014).
- Of the 8 schools that participated in the count in both 2014 and 2015, three (38 per cent) reported a decrease in the share of students cycling, the most notable decreases being Northcote Intermediate School (3 per cent, down from 6 per cent in 2014) and Takapuna Normal Intermediate (no scooters, down from 3 per cent in 2014).

¹⁴ The following school reported events or issues that may affect cycle counts:

- Belmont Intermediate School “*High-vis vests are now mandatory*”

¹⁵ The following school reported events or issues that may affect cycle counts:

- Belmont Intermediate School “*High-vis vest policy was introduced this week*”

¹⁶ The following schools undertook counts on alternative days:

- Belmont Intermediate School – 6th March 2015
- Birkenhead College – 2nd March 2015
- Takapuna Normal Intermediate School – 9th March 2015
- Wairau Intermediate School – 5th March 2015



Table 11.3 shows the results of the 9 schools surveyed in the North Shore ward.

**Table 11.3: Summary Table of School Scooter Count
2007 – 2015 (n)**

| School Name | School Type | School Roll Eligible To Scooter | No. of Scooters Counted | Scooters as share of those eligible ¹⁷ | |
|-------------------------------------|------------------------|---------------------------------|-------------------------|---|---------------|
| | | | | 2015 | 2014 |
| Northcote Intermediate School | Intermediate | 273 | 8 | 3% | 6% |
| Belmont Intermediate School | Intermediate | 560 | 8 | 1% | 1% |
| Wairau Intermediate School | Intermediate | 297 | 3 | 1% | 0% |
| Birkenhead College | Secondary | 710 | 1 | <1% | 0% |
| Rosmini College | Intermediate/Secondary | 1058 | 1 | <1% | 0% |
| Carmel College | Intermediate/Secondary | 1030 | 0 | 0% | 0% |
| Glendowie College | Secondary | 1131 | 0 | 0% | - |
| Northcote College | Secondary | 1102 | 0 | 0% | <1% |
| Takapuna Normal Intermediate School | Intermediate | 601 | 0 | 0% | 3% |
| Total | | 6762 | 21 | <1% | <1% |

¹⁷ This share is calculated by averaging the number of scooters counted over the total number of students eligible to scooter. The figure obtained is rounded to zero decimal places.



Table 11.4 illustrates the rates of scooting to school at different school levels. Rates of scooting to school are highest for the intermediate schools (1 per cent, down from 2 per cent in 2014).

**Table 11.4: Summary Table of School Scooter Count by School Type
2007 – 2015 (%)**

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



gravitas

APPENDICES

Appendix One: Annual Average Daily Traffic (AADT) Calculation



APPENDIX ONE: ANNUAL AVERAGE DAILY TRAFFIC (AADT) CALCULATION

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

Purpose

The purpose of this appendix is to document the recommended procedure for estimating a cycling AADT¹⁸ 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)¹⁹, 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.

¹⁸ Annual average daily traffic

¹⁹ LTSA, 2004



For the Gravitas counts, the following factors apply:

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

$$D = 14$$

$$W = 0.9$$

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

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

| | Morning | Afternoon |
|-------------|---------|-----------|
| Dry weather | 3.06 | 2.78 |
| Wet weather | 4.78 | 4.35 |

Worked Example

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

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



Appendix Figure 1: Scale Factors for Auckland Region

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

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

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

| Weather | R |
|---------|------|
| Fine | 100% |
| Rain | 64% |