gravitas

Research Report Prepared for
Auckland Transport

May 2015

# 2015 Auckland Region Manual Cycle Monitor

## - Orakei Ward -

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

# TABLE OF CONTENTS

# 1. ORAKEI WARD SUMMARY OF RESULTS

## 1.1 Introduction

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

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

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

### *Manual Cycle Monitoring*

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

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

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

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

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

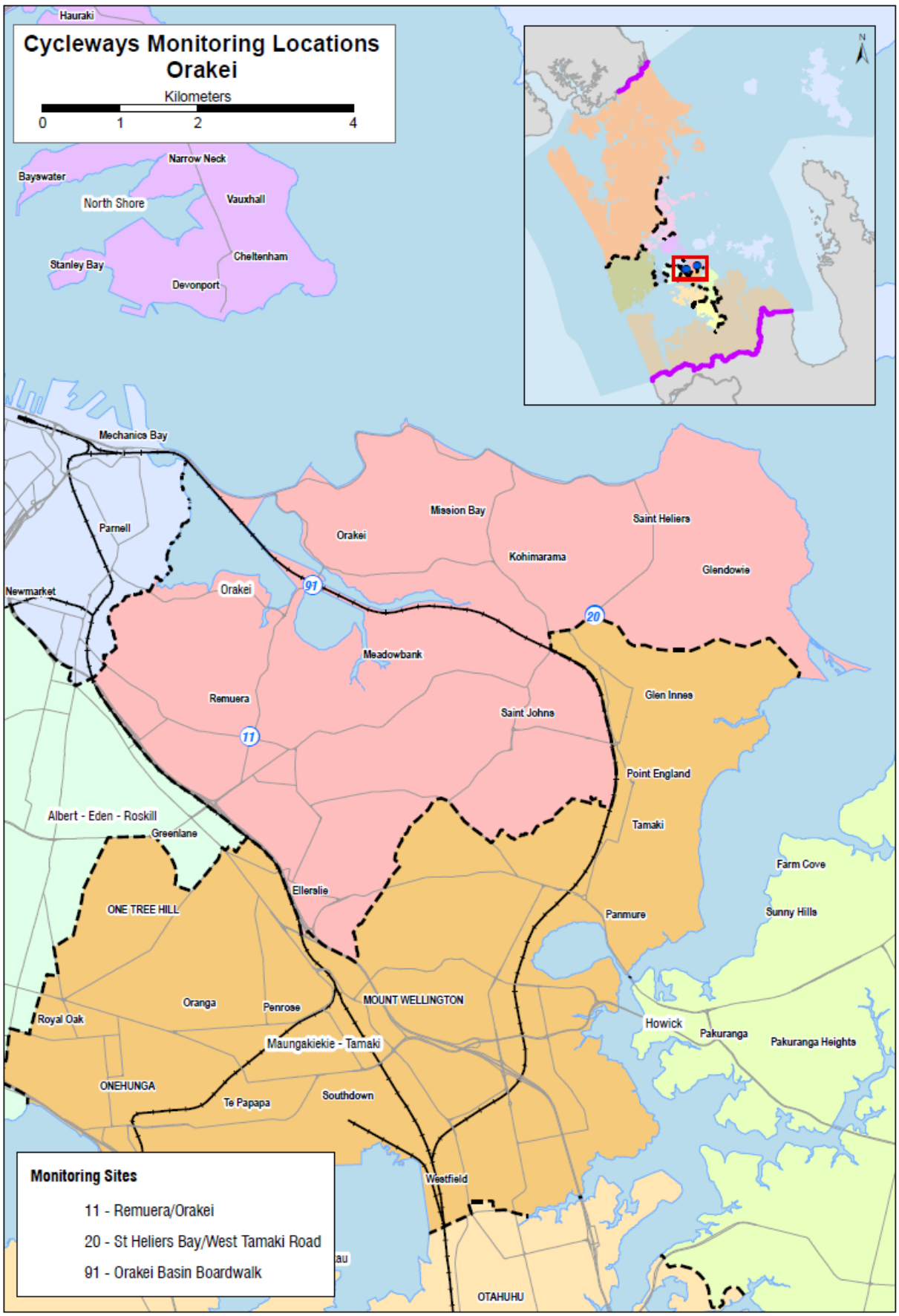
- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and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

This report presents results from manual cycle counts conducted at two sites in the Orakei 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 three pre-determined sites in the Orakei 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 Orakei ward. Note that one site (St Heliers Bay/West Tamaki Road in Glen Innes (Site 20)) lies on the border with the Maungakiekie-Tamaki ward and consequently has been included in both ward reports.

**Figure 1.1: 2015 Cycle Monitoring Locations in Orakei Ward**



## 1.2 Methodology

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

### *Choice of Sites*

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

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

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

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

### *Monitoring Times*

#### *Time Of Day*

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

#### *Day Of Week*

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

### *Time Of Year*

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

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

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

Counts were conducted on the following days:

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

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

### *Weather and Daylight Conditions*

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

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

**Tuesday 3rd March**

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

**Wednesday 4th March**

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

**Thursday 5th March**

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

## *Conducting The Manual Counts*

### *Scoping Visit*

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

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

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

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

### *Briefing Session*

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

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

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

### *Conducting The Manual Counts*

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

During their shift the surveyor collected data on:

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

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

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

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

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

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

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

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

### *Data Analysis*

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

### *Annual Average Daily Traffic (AADT) Analysis*

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

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

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

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

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

### *School Bike Shed Counts*

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

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

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

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

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

### *Methodology*

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

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

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

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

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

## ***Reporting***

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

### *Manual Counts - Site Level Reporting*

The following results have been reported for each site:

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

### *Manual Counts - Aggregated Reporting*

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

### *Bike Shed Counts*

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

## 1.3 Summary of Results

This summary contains the aggregated results of the three sites surveyed in the Orakei 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 Orakei 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 Four of this report.

Note: Surveying in the Orakei ward was undertaken on Tuesday 3rd of March, 2015. Sunrise was at 7:08am and sunset at 7:58pm. The highest temperature was 25 degrees Celsius.

## 1.4 Morning Peak Summary Results

### *Environmental Conditions*

- All sites monitored in the Orakei ward had fine but overcast weather in the morning.
- There were no road works or accidents that would have affected cycle movement counts.

### *Key Points*

- A total of 353 cyclist movements were recorded across the three sites in the morning peak period in 2015, down from 377 recorded last year.
- Site 91 Orakei Basin Boardwalk was surveyed for the third time this year. Cycle volumes at this site have been following an increasing trend, with a 19 per cent increase over the last 12 months.
- In contrast, cycle volumes at the two established sites, Remuera/Orakei Road intersection and St Heliers Bay/West Tamaki Road intersection, were found to have decreased this year (9 per cent and 8 per cent respectively).
- The busiest site in the morning continued to be Remuera/Orakei Road (180 cycle movements, down from 196 movements in 2014).
- Of the 353 movements recorded in the morning peak, 138 of them (39 per cent) were those riding as groups. This compares with 44 percent in 2014 and 51 per cent in 2013.

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Remuera/Orakei Road | 86 | 100 | 107 | 149 | 173 | 142 | 232 | 196 | **180** | **-9%** | **109%** |
| 20 | St Heliers Bay/ West Tamaki Road | 139 | 107 | 61 | 98 | 150 | 86 | 177 | 154 | **141** | **-8%** | **1%** |
| | **Average per site (2 sites since 2007)** | **113** | **104** | **84** | **124** | **162** | **114** | **205** | **175** | **161** | **-8%** | **42%** |
| | **Total (2 sites since 2007)** | **225** | **207** | **168** | **247** | **323** | **228** | **409** | **350** | **321** | **-8%** | **43%** |
| 91 | Orakei Basin Boardwalk | - | - | - | - | - | - | 14 | 27 | **32** | **19%** | - |
| | **Average per site (3 sites since 2013)** | - | - | - | - | - | - | **141** | **126** | **118** | **-6%** | - |
| | **Total (3 sites since 2013)** | - | - | - | - | - | - | **423** | **377** | **353** | **-6%** | - |

- Ninety-six per cent of cyclists that passed this site were adults, unchanged from last year.
- The majority of the morning cyclists were wearing a helmet (99 per cent, unchanged from last year).
- Four in five morning cyclists this year were male (81 per cent, stable from last year's result).
- The share of cyclists riding on the road has been following a stable but decreasing trend over the last four years of monitoring.

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

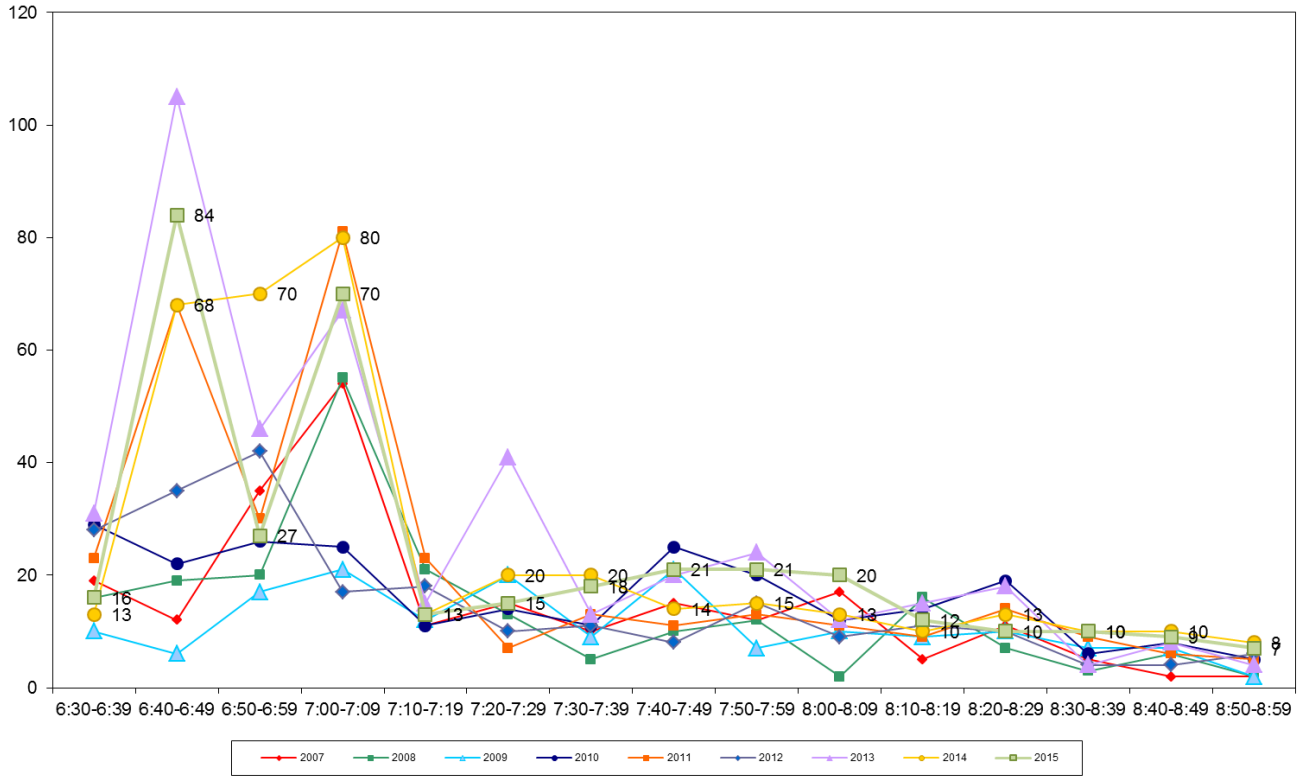
**2007 – 2015 (%)**

| | ***2007*** | ***2008*** | ***2009*** | ***2010*** | ***2011*** | ***2012*** | ***2013*** | ***2014*** | ***2015*** | **Change 14-15** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | | | | |
| Adult | 88 | 95 | 93 | 92 | 94 | 89 | 91 | 96 | **96** | **0** |
| School child | 12 | 5 | 7 | 8 | 6 | 11 | 9 | 4 | **4** | **0** |
| **Helmet Wearing** | | | | | | | | | | |
| Helmet on head | 99 | 98 | 98 | 98 | 99 | 100 | 92 | 99 | **99** | **0** |
| No helmet | 1 | 2 | 2 | 2 | 1 | 0 | 1 | 1 | **1** | **0** |
| Can't tell | - | - | - | - | - | - | 7 | 0 | **0** | **0** |
| **Gender** | | | | | | | | | | |
| Male | - | - | - | - | 70 | 79 | 81 | 80 | **81** | **1** |
| Female | - | - | - | - | 16 | 14 | 19 | 19 | **19** | **0** |
| Can't tell | - | - | - | - | 14 | 7 | 0 | 1 | **0** | **-1** |
| **Where Riding** | | | | | | | | | | |
| Road | 88 | 92 | 94 | 92 | 92 | 94 | 91 | 88 | **86** | **-2** |
| Footpath | 12 | 8 | 6 | 8 | 8 | 6 | 5 | 5 | **5** | **0** |
| Off-road cycleway | - | - | - | - | - | - | 3 | 7 | **9** | **2** |
| Unsure | - | - | - | - | - | - | 1 | 0 | **0** | **0** |
| ***Base:*** | ***225*** | ***207*** | ***168*** | ***247*** | ***323*** | ***228*** | ***423*** | ***377*** | ***353*** | |

- Figure 1.2 illustrates the total number of morning cyclists by time of movement at the three sites in the Orakei ward. The graph shows a sharp peak in cycle volumes between 6:40am and 6:49am with 84 movements, then a smaller peak of 70 movements 10 minutes later. Shortly after this peak, cyclist numbers decreased considerably and stayed low for the remainder of the morning shift. The pattern of cycle volumes was consistent with that observed in previous years.

**Figure 1.2: Total Cyclist Frequency – Morning Peak**

**2007 – 2015 (n)**



## 1.5 Evening Peak Summary Results

### *Environmental Conditions*

- All sites monitored in the Orakei ward had fine but overcast weather in the evening.
- At site 20 St Heliers Bay/West Tamaki Road, there was power line maintenance work on West Tamaki Road, about 50 metres away from this site.
- There were no other road works or accidents that would have affected cycle movement counts.

### *Key Points*

- This year the total number of evening cyclist movements in the Orakei ward was 216.
- Site 91 Orakei Basin Boardwalk was monitored for the third time this year. Similar to the trend observed in the morning shift, cycle volumes at this site has been following an increasing trend (32 per cent increase over the last 12 months).
- The two established sites, Remuera/Orakei Road intersection and St Heliers Bay/West Tamaki Road intersection, have also experienced increases in cycle traffic over the last 12 months (32 per cent and 15 per cent respectively).
- The busiest site in the evening continued to be Remuera/Orakei Road (108 cycle movements, up from 82 movements in 2014).
- There were no pelotons riding through these sites during the evening shift.

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Remuera/Orakei Road | 109 | 89 | 80 | 95 | 107 | 71 | 116 | 82 | **108** | **32%** | **-1%** |
| 20 | St Heliers Bay/ West Tamaki Road | 69 | 60 | 47 | 72 | 74 | 49 | 71 | 65 | **75** | **15%** | **9%** |
| | **Average per site (2 sites since 2007)** | **89** | **75** | **64** | **84** | **91** | **60** | **94** | **74** | **92** | **24%** | **3%** |
| | **Total (2 sites since 2007)** | **178** | **149** | **127** | **167** | **181** | **120** | **187** | **147** | **183** | **24%** | **3%** |
| 91 | Orakei Basin Boardwalk | - | - | - | - | - | - | 18 | 25 | **33** | **32%** | - |
| | **Average per site (3 sites since 2013)** | - | - | - | - | - | - | **68** | **57** | **72** | **26%** | - |
| | **Total (3 sites since 2013)** | - | - | - | - | - | - | **205** | **172** | **216** | **26%** | - |

- Eighty-nine per cent of evening cyclists this year were adults (unchanged since 2013).
- Most cyclists were wearing a helmet in the evening (92 per cent, down slightly from 96 per cent over the last three years).
- The majority of evening cyclists were male (76 per cent, stable from 79 per cent last year).
- The majority of evening cyclists were riding on the road (74 per cent, unchanged from the previous measure).

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

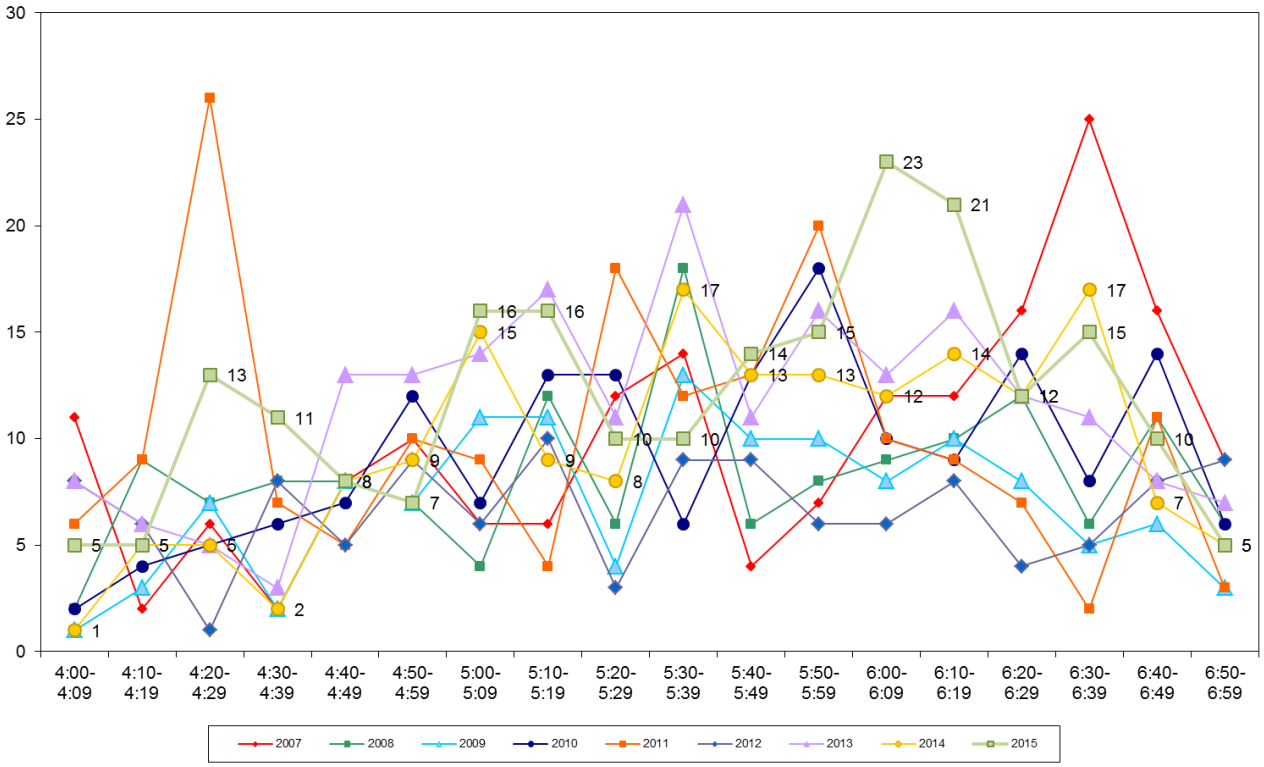
**2007 – 2015 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | | | | |
| Adult | 94 | 89 | 95 | 95 | 86 | 82 | 89 | 89 | **89** | **0** |
| School child | 6 | 11 | 5 | 5 | 14 | 18 | 11 | 10 | **10** | **0** |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** | **0** |
| **Helmet Wearing** | | | | | | | | | | |
| Helmet on head | 98 | 94 | 97 | 95 | 95 | 96 | 96 | 96 | **92** | **-4** |
| No helmet | 2 | 6 | 3 | 5 | 5 | 4 | 4 | 4 | **8** | **4** |
| **Gender** | | | | | | | | | | |
| Male | - | - | - | - | 83 | 80 | 84 | 79 | **76** | **-3** |
| Female | - | - | - | - | 10 | 19 | 16 | 20 | **24** | **4** |
| Can't tell | - | - | - | - | 7 | 1 | 0 | 1 | **0** | **-1** |
| **Where Riding** | | | | | | | | | | |
| Road | 90 | 88 | 89 | 91 | 86 | 85 | 81 | 74 | **74** | **0** |
| Footpath | 10 | 12 | 11 | 9 | 14 | 15 | 10 | 12 | **11** | **-1** |
| Off-road cycleway | - | - | - | - | - | - | 9 | 14 | **15** | **1** |
| ***Base:*** | ***178*** | ***149*** | ***127*** | ***167*** | ***181*** | ***120*** | ***205*** | ***172*** | ***216*** | |

- Figure 1.3 illustrates the total number of evening cyclists by time of movement at the three sites in the Orakei ward. As with previous years, cyclist volumes fluctuated throughout the evening monitoring period. However, there were three distinctive peaks with the third one being the biggest. The first peak occurred between 4:20pm and 4:29pm with 13 cycle movements. The second occurred between 5:00pm and 5:19pm with 16 counts in each 10-minute interval. The third peak was between 6:00pm and 6:09pm with 23 cycle movements recorded.

**Figure 1.3: Total Cyclist Frequency – Evening Peak**

**2007 – 2015 (n)**



## 1.6 Aggregated Total Summary Results

- Overall, the Orakei ward has experienced a small increase of three per cent in cycle volume over the last 12 months. A total of 569 cyclist movements were recorded across the three sites monitored, compared with 549 movements last year.
- Twenty-two per cent of these cyclists (n=126) were observed as cycling in groups. This compares with 30 per cent (n=166) in 2014.
- Remuera/Orakei Road and Orakei Basin Boardwalk experienced increases in cycle traffic this year (up 4 per cent and 25 per cent respectively).
- However, St Heliers Bay/West Tamaki Road had a one per cent decrease in cycle traffic this year.
- The average across all three sites this year was 190 cycle movements, a four per cent increase from last year.

**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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Remuera/Orakei Road | 195 | 189 | 187 | 244 | 280 | 213 | 348 | 278 | **288** | **4%** | **48%** |
| 20 | St Heliers Bay/ West Tamaki Road | 208 | 167 | 108 | 170 | 224 | 135 | 248 | 219 | **216** | **-1%** | **4%** |
| | **Average per site (2 sites since 2007)** | **202** | **178** | **148** | **207** | **252** | **174** | **298** | **249** | **252** | **1%** | **25%** |
| | **Total (2 sites since 2007)** | **403** | **356** | **295** | **414** | **504** | **348** | **596** | **497** | **504** | **1%** | **25%** |
| 91 | Orakei Basin Boardwalk | - | - | - | - | - | - | 32 | 52 | **65** | **25%** | - |
| | **Average per site (3 sites since 2013)** | - | - | - | - | - | - | **210** | **183** | **190** | **4%** | - |
| | **Total (3 sites since 2013)** | - | - | - | - | - | - | **628** | **549** | **569** | **4%** | - |

- The majority of cyclists continued to be adults (94 per cent, unchanged from last year).
- Almost all cyclists were wearing a helmet (97 per cent, stable from 98 per cent last year).
- Four in five of the total cyclist movements in Orakei ward were made by male cyclists, stable from last year.
- The majority of cyclists were riding on the road (81 per cent, stable from 83 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 | 91 | 92 | 94 | 93 | 91 | 86 | 91 | 94 | **94** | **0** |
| School child | 9 | 8 | 6 | 7 | 9 | 14 | 9 | 6 | **6** | **0** |
| **Helmet Wearing** | | | | | | | | | | |
| Helmet on head | 99 | 96 | 97 | 97 | 98 | 98 | 94 | 98 | **97** | **-1** |
| No helmet | 1 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | **3** | **1** |
| Can't tell | - | - | - | - | - | - | 4 | 0 | **0** | **0** |
| **Gender** | | | | | | | | | | |
| Male | - | - | - | - | 75 | 79 | 82 | 80 | **79** | **-1** |
| Female | - | - | - | - | 14 | 16 | 18 | 19 | **21** | **2** |
| Can't tell | - | - | - | - | 11 | 5 | 0 | 1 | **0** | **-1** |
| **Where Riding*** | | | | | | | | | | |
| Road | 89 | 90 | 92 | 92 | 90 | 91 | 87 | 83 | **81** | **-2** |
| Footpath | 11 | 10 | 8 | 8 | 10 | 9 | 7 | 7 | **7** | **0** |
| Off-road cycleway | - | - | - | - | - | - | 5 | 10 | **12** | **2** |
| Can't tell | - | - | - | - | - | - | 1 | 0 | **0** | **0** |
| ***Base:*** | ***403*** | ***356*** | ***295*** | ***414*** | ***504*** | ***348*** | ***628*** | ***549*** | ***569*** | |

## 1.7 Average Annual Daily Traffic (AADT) Estimate

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

- Table 1.7 provides the comparative AADT estimates for each site, based on the average of morning and evening peak AADT calculations.
- Consistent with previous data, the highest AADT is at Remuera/Orakei Road (424 daily movements, up slightly from 413 movements in 2014).
- Remuera/Orakei Road (Site 11) and Orakei Basin Boardwalk (Site 91) have both recorded increases in total ADDT estimates this year compared to last year.
- St Heliers Bay/West Tamaki Road (Site 20) has recorded a small decrease in total AADT estimate this year with a decrease of 2 per cent from 2014.

**Table 1.7: AADT Estimates Based on Morning and Evening Cyclist Movements**

**2007 – 2015 (n)**

| *Site No.* | *Locations* | *2007 AADT* | *2008 AADT* | *2009 AADT* | *2010 AADT* | *2011 AADT* | *2012 AADT* | *2013 AADT* | *2014 AADT* | *2015 AADT* | Change 14-15 | Change 07-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Remuera/Orakei Road | 282 | 276 | 274 | 359 | 412 | 315 | 515 | 413 | **424** | **3%** | **50%** |
| 20 | St Heliers Bay/West Tamaki Road | 308 | 246 | 158 | 249 | 331 | 199 | 369 | 325 | **319** | **-2%** | **4%** |
| 91 | Orakei Basin Boardwalk | - | - | - | - | - | - | 46 | 76 | **94** | **24%** | **-** |

## 1.8 School Bike Shed Count Summary

### *Cycle Counts*

- Of those eligible to cycle, on average three per cent of students are cycling to their schools (up slightly from 2 per cent in 2014).
- Across the 10 eligible schools that responded, n=117 students were reported cycling to school.
- Glendowie Primary School reported the highest share of cyclists 11 per cent of all eligible students currently cycling.
- Of the eight schools that participated in the survey in both 2014 and 2015, no schools have shown an increase in the share of students that cycle.
- Of the eight schools that participated in the count in both 2014 and 2015, two schools reported a decrease in the share of students cycling.

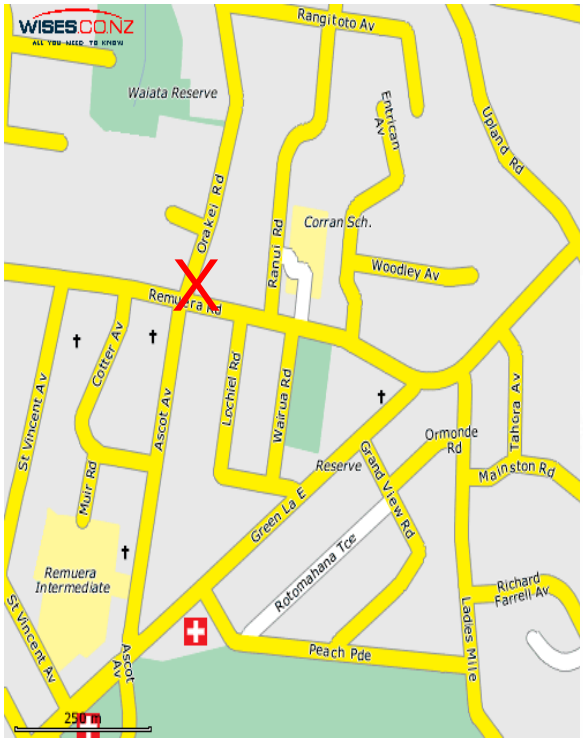
### *Scooter Counts*

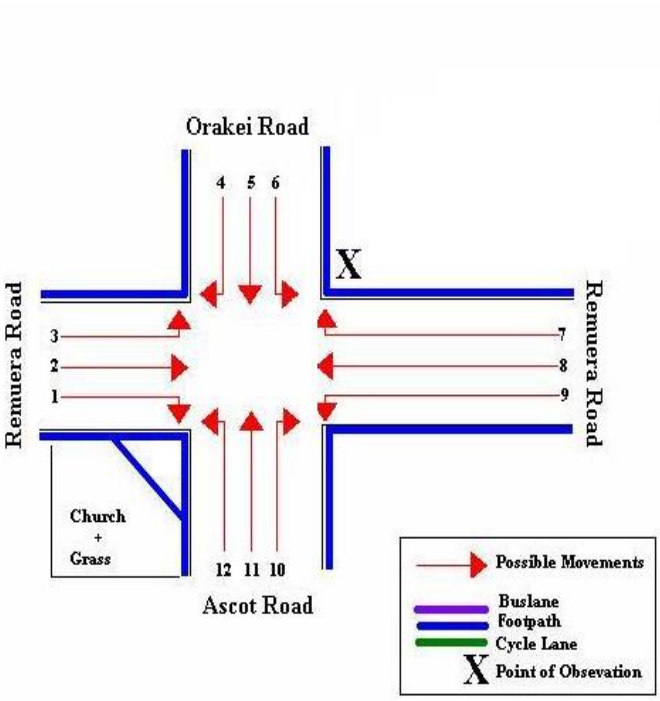
- Among the surveyed schools, of those eligible to scooter, on average, two per cent of students are scooting to their schools. This down from 4 per cent last year.
- Glendowie Primary School reported the highest share of scooters – 11 per cent of all eligible students currently scooting to school.
- In total, n=110 students from the responding schools were reported to be scooting to school.
- Of the nine schools that participated in the survey in both 2014 and 2015, three (33 per cent) reported an increase in the share of students scooting to school. In contrast, four (44 per cent) reported a decrease.

# 2. REMUERA/ORAKEI/ASCOT ROAD, REMUERA (SITE 11)

Figure 2.1 shows the possible cyclist movements at this intersection.

**Figure 2.1: Cycle Movements: Remuera/Orakei/Ascot**




## 2.1 Site Summary

| | Raw Counts | | | AADT |
|---|---|---|---|---|
| | *Morning Peak* | *Evening Peak* | *Total* | *Total* |
| 2007 | 86 | 109 | 195 | 282 |
| 2008 | 100 | 89 | 189 | 276 |
| 2009 | 107 | 80 | 187 | 274 |
| 2010 | 149 | 95 | 244 | 359 |
| 2011 | 173 | 107 | 280 | 412 |
| 2012 | 142 | 71 | 213 | 315 |
| 2013 | 232 | 116 | 348 | 515 |
| 2014 | 196 | 82 | 278 | 413 |
| **2015** | **180** | **108** | **288** | **424** |

## 2.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- Morning cyclist numbers recorded at the Remuera/Orakei/Ascot intersection have decreased over the past year, from 196 to 180 movements this year.
- The most common movement at this site was heading west on Remuera Road (Movement 8 = 68 cycle movements).
- The most notable changes in cyclist volumes from last year were at Movement 2 (down by 37 cycle movements), Movement 8 (up by 15 movements) and Movement 3 (up by 14 movements).

**Table 2.1: Morning Cyclist Movements**

**Remuera/Orakei/Ascot 2007 – 2015 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 2 | 1 | 19 | 2 | **1** | **-1** |
| 2 | 19 | 25 | 24 | 56 | 30 | 56 | 42 | 82 | **45** | **-37** |
| 3 | 4 | 1 | 3 | 5 | 3 | 4 | 72 | 40 | **54** | **14** |
| 4 | 3 | 9 | 12 | 10 | 70 | 14 | 9 | 9 | **5** | **-4** |
| 5 | 2 | 4 | 3 | 7 | 4 | 4 | 6 | 4 | **3** | **-1** |
| 6 | 3 | 9 | 1 | 4 | 5 | 1 | 0 | 2 | **1** | **-1** |
| 7 | 0 | 0 | 4 | 2 | 3 | 1 | 1 | 2 | **2** | **0** |
| 8 | 52 | 45 | 56 | 63 | 55 | 60 | 80 | 53 | **68** | **15** |
| 9 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | **0** | **0** |
| 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **0** | **0** |
| 11 | 1 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | **0** | **-2** |
| 12 | 2 | 4 | 3 | 0 | 0 | 1 | 2 | 0 | **1** | **1** |
| **Total** | **86** | **100** | **107** | **149** | **173** | **142** | **232** | **196** | **180** | **16** |

- Almost all cyclists in the morning at this site were adults (99 per cent, stable from 96 per cent last year).
- Helmet wearing continued to be widespread (99 per cent of the morning cyclists, stable from 100 per cent last year).
- Eighty-two per cent of the cyclists were male (stable from 81 per cent in 2014).
- The share of cyclists riding on the road has remained stable (96 per cent, compared with 93 per cent 12 months ago).

**Table 2.2: Morning Cyclist Characteristics**

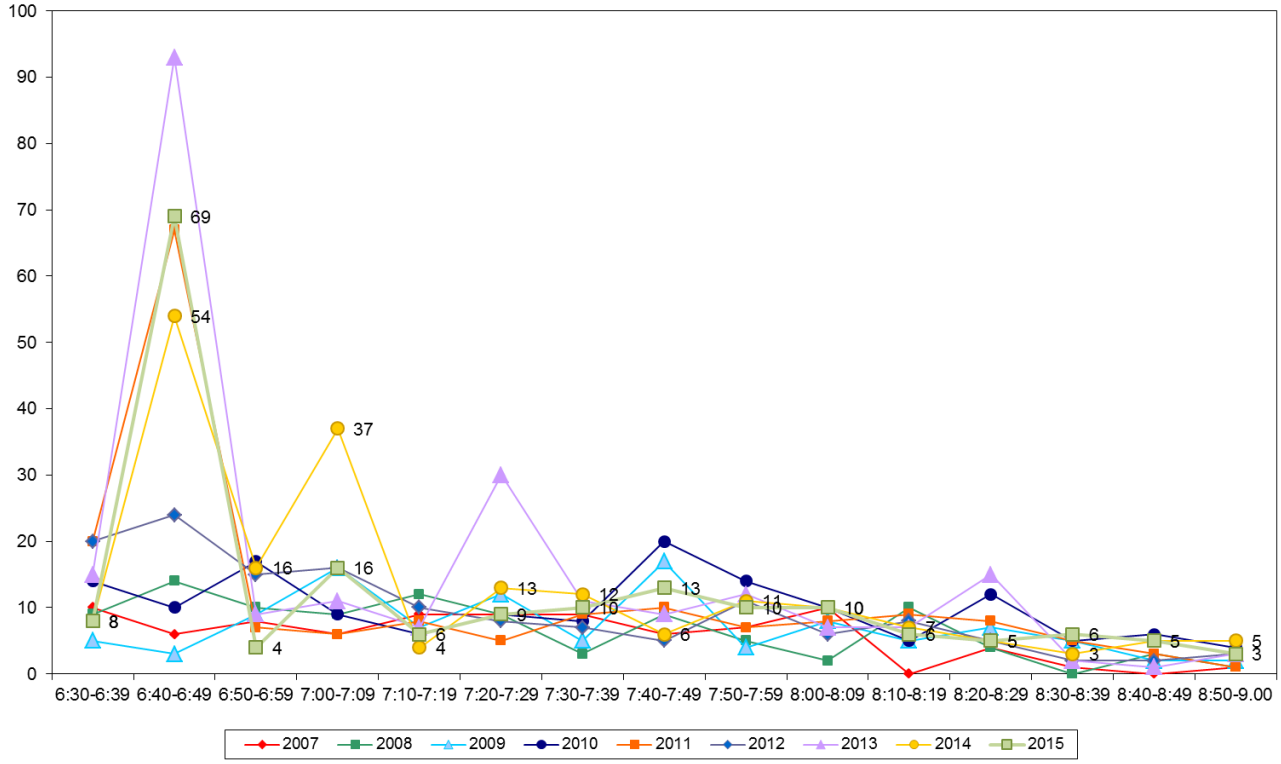
**Remuera/Orakei/Ascot 2007 – 2015 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | | | | |
| Adult | 91 | 97 | 94 | 91 | 94 | 89 | 90 | 96 | **99** | **3** |
| School child | 9 | 3 | 6 | 9 | 6 | 11 | 10 | 4 | **1** | **-3** |
| **Helmet Wearing** | | | | | | | | | | |
| Helmet on head | 98 | 98 | 98 | 97 | 99 | 100 | 92 | 100 | **99** | **-1** |
| No helmet | 2 | 2 | 2 | 3 | 1 | 0 | 1 | 0 | **1** | **1** |
| Can't tell | - | - | - | - | - | - | 7 | 0 | **0** | **0** |
| **Gender** | | | | | | | | | | |
| Male | - | - | - | - | 58 | 85 | 78 | 81 | **82** | **1** |
| Female | - | - | - | - | 16 | 14 | 22 | 19 | **17** | **-2** |
| Can't tell | - | - | - | - | 26 | 1 | 0 | 0 | **1** | **1** |
| **Where Riding** | | | | | | | | | | |
| Road | 90 | 92 | 94 | 90 | 92 | 95 | 96 | 93 | **96** | **3** |
| Footpath | 10 | 8 | 6 | 10 | 8 | 5 | 4 | 6 | **4** | **-2** |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **0** | **-1** |
| ***Base:*** | ***86*** | ***100*** | ***107*** | ***149*** | ***173*** | ***142*** | ***232*** | ***196*** | ***180*** | |

- Due to the presence of five pelotons this year, morning cyclist volume started with a particularly noticeable sharp peak of 69 cyclists between 6:40am and 6:49am. The volume then declined significantly to no more than 16 cycle movements per 10-minute interval for the remainder of the monitoring period. This pattern is generally consistent with previous years.

**Figure 2.2: Morning Peak Cyclist Frequency**

**Remuera/Orakei/Ascot 2007 – 2015 (n)**




*Note: In 2015, 40 per cent of the morning peak cycle movements (n=72) at this site were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:*

- *10 cyclists at 6:41am*
- *14 cyclists at 6:44am*
- *another group of 16 cyclists at 6:44am*
- *25 cyclists at 6:48pm*
- *7 cyclists at 7:00am.*

## 2.3 Evening Peak

### *Environmental Conditions*

- The weather was overcast in the beginning of the shift but the clouds cleared over the course of the shift.
- There were no road works or accidents that may affect cycle counts.

### *Key Points*

- The volume of cyclists recorded between 4:00pm and 7:00pm at this site in 2015 (108 movements) showed an increase from that recorded last year (82 movements).
- As with previous years' data, the key movement in the evening at this site was east along Remuera Road (Movement 2 = 76 cycle movements).
- The most noticeable change in cyclist volumes was at Movement 2 (up 19 cycle movements).

**Table 2.3: Evening Cyclist Movements**

**Remuera/Orakei/Ascot 2007 – 2015 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 2 | 0 | 1 | 2 | 4 | 2 | **1** | **-1** |
| 2 | 60 | 49 | 41 | 60 | 78 | 48 | 71 | 57 | **76** | **19** |
| 3 | 6 | 4 | 6 | 8 | 2 | 4 | 12 | 6 | **10** | **4** |
| 4 | 4 | 0 | 2 | 2 | 1 | 0 | 7 | 1 | **1** | **0** |
| 5 | 4 | 0 | 1 | 0 | 1 | 1 | 2 | 1 | **1** | **0** |
| 6 | 1 | 5 | 2 | 3 | 2 | 0 | 1 | 1 | **2** | **1** |
| 7 | 2 | 5 | 1 | 0 | 2 | 0 | 1 | 1 | **3** | **2** |
| 8 | 22 | 16 | 19 | 17 | 17 | 9 | 14 | 10 | **11** | **1** |
| 9 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | **1** | **1** |
| 10 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | **0** | **0** |
| 11 | 5 | 6 | 5 | 3 | 2 | 3 | 2 | 3 | **2** | **-1** |
| 12 | 1 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | **0** | **0** |
| **Total** | **109** | **89** | **80** | **95** | **107** | **71** | **116** | **82** | **108** | **26** |

- The majority of the evening cyclists were adults (96 per cent, stable from 95 per cent last year).
- Almost all cyclists were wearing a helmet (96 per cent, unchanged from 2014).
- Four in five cyclists were male (80 per cent, stable from 78 per cent last year).
- Compared with last year, the incidence of riding on the road has remained stable at 94 per cent (from 93 per cent last year). The remaining 6 per cent of cyclists were observed riding on the footpath.

**Table 2.4: Evening Cyclist Characteristics**

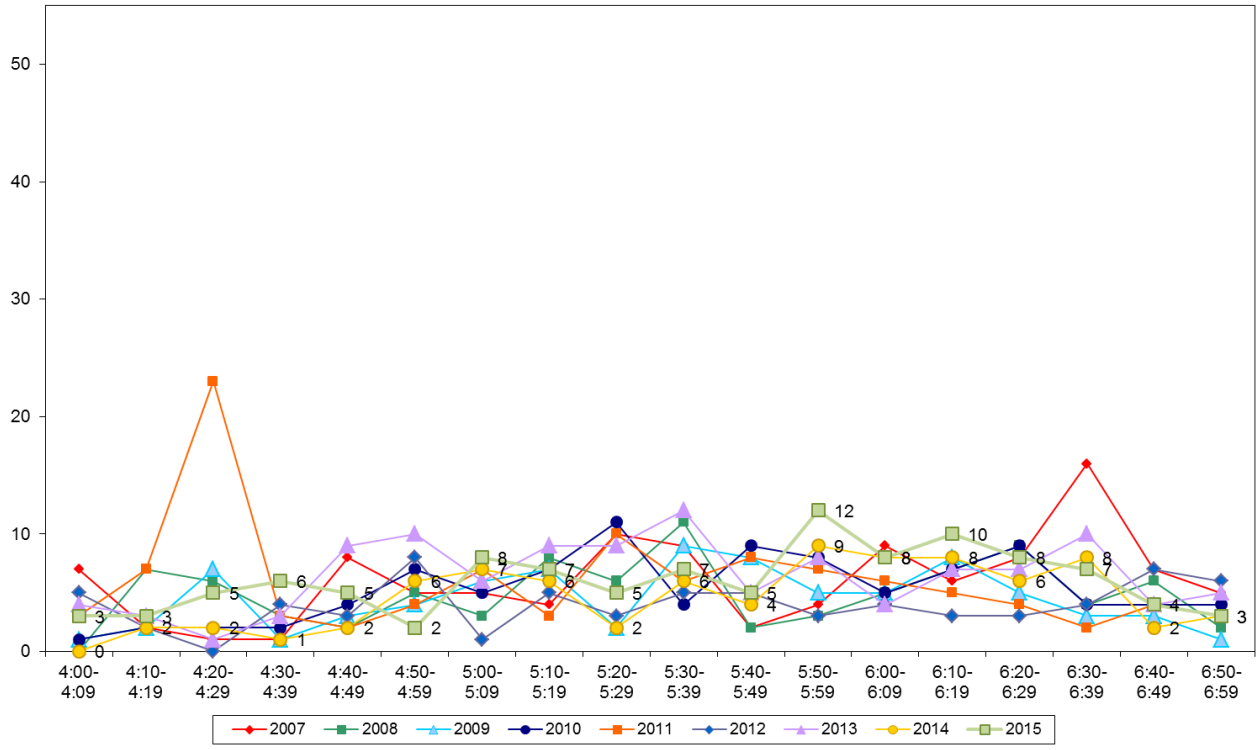
**Remuera/Orakei/Ascot 2007 – 2015 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | | | | |
| Adult | 94 | 89 | 98 | 94 | 84 | 87 | 90 | 95 | **96** | **1** |
| School child | 6 | 11 | 2 | 6 | 16 | 13 | 10 | 5 | **3** | **-2** |
| Blank/Don't know | - | - | - | - | - | - | - | - | **1** | **1** |
| **Helmet Wearing** | | | | | | | | | | |
| Helmet on head | 98 | 96 | 98 | 95 | 100 | 99 | 100 | 96 | **96** | **0** |
| No helmet | 2 | 4 | 2 | 5 | 0 | 1 | 0 | 4 | **4** | **0** |
| **Gender** | | | | | | | | | | |
| Male | - | - | - | - | 79 | 86 | 84 | 78 | **80** | **2** |
| Female | - | - | - | - | 10 | 14 | 16 | 22 | **19** | **-3** |
| Can't tell | - | - | - | - | 11 | 0 | 0 | 0 | **1** | **1** |
| **Where Riding** | | | | | | | | | | |
| Road | 92 | 89 | 90 | 87 | 93 | 87 | 92 | 93 | **94** | **1** |
| Footpath | 8 | 11 | 10 | 13 | 7 | 13 | 8 | 7 | **6** | **-1** |
| ***Base:*** | ***109*** | ***89*** | ***80*** | ***95*** | ***107*** | ***71*** | ***116*** | ***82*** | ***108*** | |

- Evening cycle volumes started off low, then slowly increased to a slight peak of 12 movements between 5:50pm to 5:59pm. Last year the maximum number of cyclists were also observed during this 10-minute interval. No pelotons were evident at this site in the evening.

**Figure 2.3: Evening Peak Cyclist Frequency**

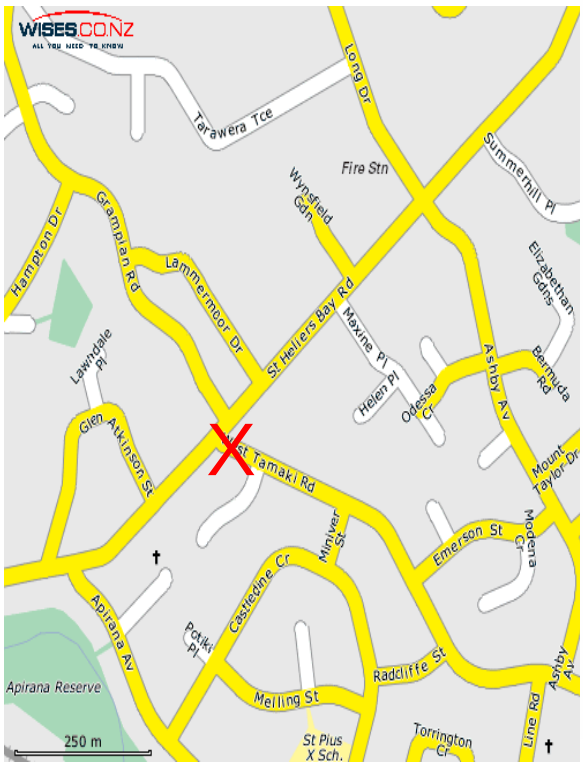
**Remuera/Orakei/Ascot 2007 – 2015 (n)**

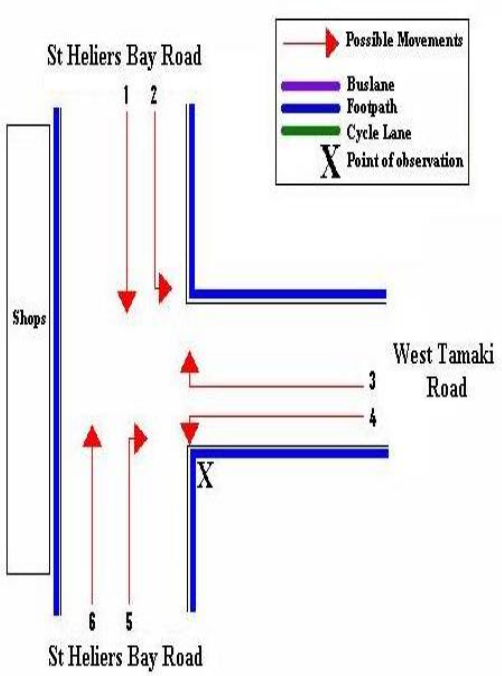


# 3. ST HELIERS BAY ROAD/WEST TAMAKI ROAD, GLEN INNES (SITE 20)

Figure 3.1 shows the possible cyclist movements at this intersection.

**Figure 3.1: Cycle Movements: St Heliers Bay/West Tamaki Road**




## 3.1 Site Summary

| | Raw Counts | | | AADT |
|---|---|---|---|---|
| | *Morning Peak* | *Evening Peak* | *Total* | *Total* |
| 2007 | 139 | 69 | 208 | 308 |
| 2008 | 107 | 60 | 167 | 246 |
| 2009 | 61 | 47 | 108 | 158 |
| 2010 | 98 | 72 | 170 | 249 |
| 2011 | 150 | 74 | 224 | 331 |
| 2012 | 86 | 49 | 135 | 199 |
| 2013 | 177 | 71 | 248 | 369 |
| 2014 | 154 | 65 | 219 | 325 |
| **2015** | **141** | **75** | **216** | **319** |

## 3.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- The volume of morning peak cyclists at the St Heliers Bay/West Tamaki Road intersection has continued to decrease – down from 154 last year to 141 movements this year.
- The key morning movement was turning right on to West Tamaki Road from St Heliers Bay Road (Movement 5 = 72 counts).
- The most noticeable changes in cycle volumes occurred at Movement 3 (turning right into St Heliers Bay Road from West Tamaki Road, down 17 cycle movements) and Movement 4 (turning left into St Heliers Bay Road from West Tamaki Road, up 12 movements).

**Table 3.1: Morning Cyclist Movements**

**St Heliers Bay/West Tamaki Road 2007 – 2015 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | 14 | 16 | 20 | 19 | 17 | 24 | 17 | **11** | **-6** |
| 2 | 4 | 4 | 1 | 5 | 4 | 3 | 3 | 10 | **13** | **3** |
| 3 | 21 | 7 | 5 | 7 | 6 | 3 | 28 | 23 | **6** | **-17** |
| 4 | 5 | 14 | 12 | 12 | 33 | 12 | 19 | 12 | **24** | **12** |
| 5 | 69 | 53 | 7 | 21 | 61 | 25 | 86 | 70 | **72** | **2** |
| 6 | 23 | 15 | 20 | 33 | 27 | 26 | 17 | 22 | **15** | **-7** |
| **Total** | **139** | **107** | **61** | **98** | **150** | **86** | **177** | **154** | **141** | **-18** |

- Over the morning peak, adults comprised the greatest share of cycle movements (91 per cent, stable from 94 per cent the previous year).
- Nearly all cyclists were wearing a helmet (99 per cent, same as last year).
- Eight-four per cent of cyclists were male (up 6 percentage points from 2014)
- Consistent with last year, the majority of cyclists are riding on the road (94 per cent, stable from the last measure).

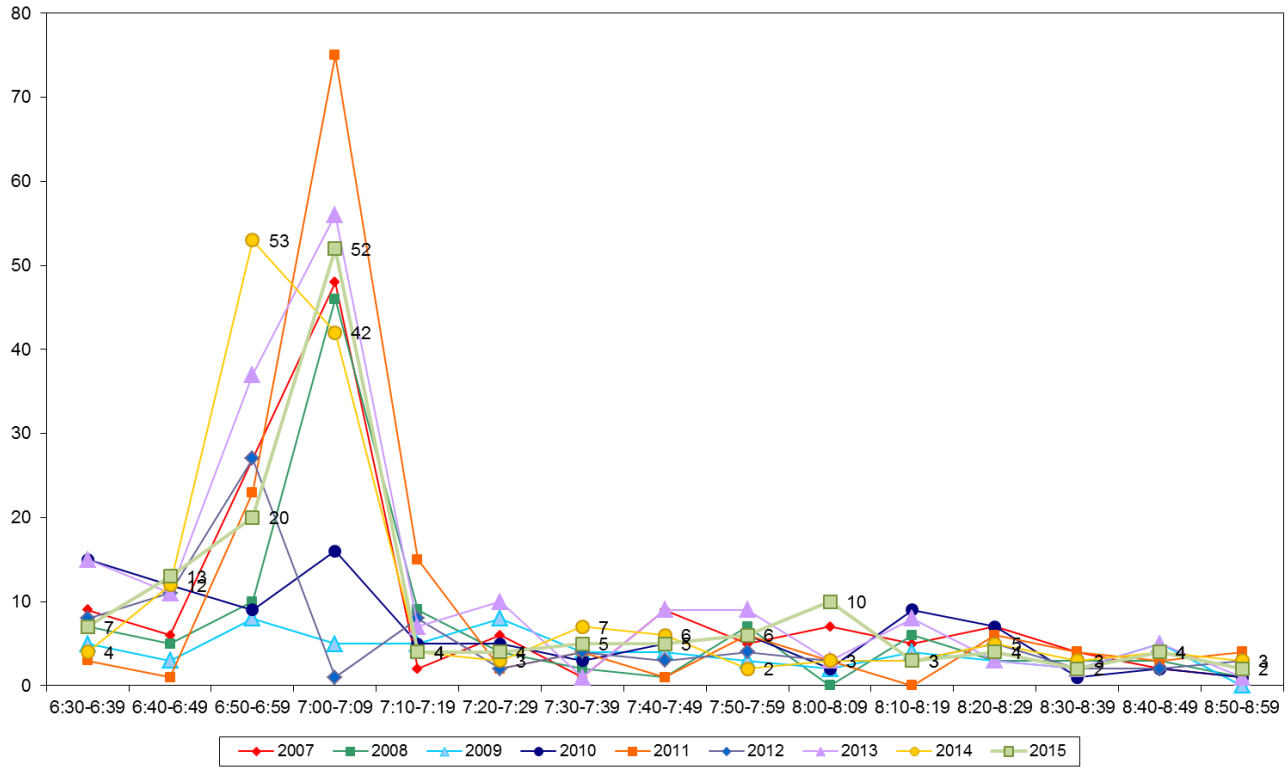
**Table 3.2: Morning Cyclist Characteristics**

**St Heliers Bay/West Tamaki Road 2007 – 2015 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | | | | |
| Adult | 87 | 93 | 92 | 93 | 95 | 88 | 92 | 94 | **91** | **-3** |
| School child | 13 | 7 | 8 | 7 | 5 | 12 | 8 | 5 | **9** | **4** |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **0** | **-1** |
| **Helmet Wearing** | | | | | | | | | | |
| Helmet on head | 100 | 97 | 98 | 100 | 99 | 99 | 92 | 99 | **99** | **0** |
| No helmet | 0 | 3 | 2 | 0 | 1 | 1 | 2 | 1 | **1** | **0** |
| Can't tell | - | - | - | - | - | - | 6 | 0 | **0** | **0** |
| **Gender** | | | | | | | | | | |
| Male | - | - | - | - | 84 | 69 | 85 | 78 | **84** | **6** |
| Female | - | - | - | - | 16 | 15 | 15 | 19 | **16** | **-3** |
| Can't tell | - | - | - | - | 0 | 16 | 0 | 3 | **0** | **-3** |
| **Where Riding** | | | | | | | | | | |
| Road | 87 | 92 | 93 | 95 | 93 | 93 | 93 | 96 | **94** | **-2** |
| Footpath | 13 | 8 | 7 | 5 | 7 | 7 | 7 | 4 | **6** | **2** |
| ***Base:*** | ***139*** | ***107*** | ***61*** | ***98*** | ***150*** | ***86*** | ***177*** | ***154*** | ***141*** | |

- Due to the presence of pelotons, there was a sharp peak in cycle movements between 7:00am and 7:09am (52 cycle counts). Cycle movements then declined sharply and stayed low for the remainder of the monitoring period. This trend is consistent with previous years.

**Figure 3.2: Morning Peak Cyclist Frequency**
**St Heliers Bay/West Tamaki Road 2007 – 2015 (n)**




*Note: In 2015, 47 per cent of the morning peak cycle movements (n=66) at this site were identified as cycling in groups. Three or more cyclists were observed travelling in groups at this site at the following times:*

- *10 cyclists at 6:47am*
- *11 cyclists at 6:57am*
- *18 cyclists at 7:01am*
- *27 cyclists at 7:07am.*

## 3.3 Evening Peak

### *Environmental Conditions*

- The weather was fine throughout the entire evening shift.
- There was power line maintenance work on West Tamaki Road, about 50 metres away from this site.
- There were no other road works or accidents that may affect cycle counts.

### *Key Points*

- In 2015, the number of evening cycle movements recorded at the St Heliers Bay/West Tamaki Road intersection has increased by 10, to a total of 75 movements.
- The key movement at this site in the evening was straight along St Heliers Bay Road heading north (Movement 6 = 21 cyclists).
- The most notable decrease was at Movement 1 (down 7 counts) while the most notable increase was at Movement 6 (up 7 cycle counts).

**Table 3.3: Evening Cyclist Movements**

**St Heliers Bay/West Tamaki Road 2007 – 2015 (n)**

| *Movement* | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 19 | 15 | 23 | 17 | 9 | 14 | 22 | **15** | **-7** |
| 2 | 6 | 6 | 7 | 6 | 6 | 5 | 4 | 5 | **9** | **4** |
| 3 | 4 | 8 | 6 | 2 | 4 | 1 | 1 | 5 | **3** | **-2** |
| 4 | 5 | 5 | 5 | 6 | 8 | 4 | 10 | 5 | **7** | **2** |
| 5 | 3 | 12 | 7 | 9 | 11 | 9 | 16 | 14 | **20** | **6** |
| 6 | 29 | 10 | 7 | 26 | 28 | 21 | 26 | 14 | **21** | **7** |
| **Total** | **69** | **60** | **47** | **72** | **74** | **49** | **71** | **65** | **75** | **10** |

- Consistent with the morning peak, the greatest share of cyclists using this intersection were adults (76 per cent, stable from 78 per cent in 2014).
- About four in five cyclists at this site were riding with helmets on (83 per cent, down 11 percentage points from last year).
- Seventy-three per cent of cyclists were male, down from 78 per cent last year.
- The majority of cyclists were riding on the road (76 per cent, stable from 78 per cent last year).

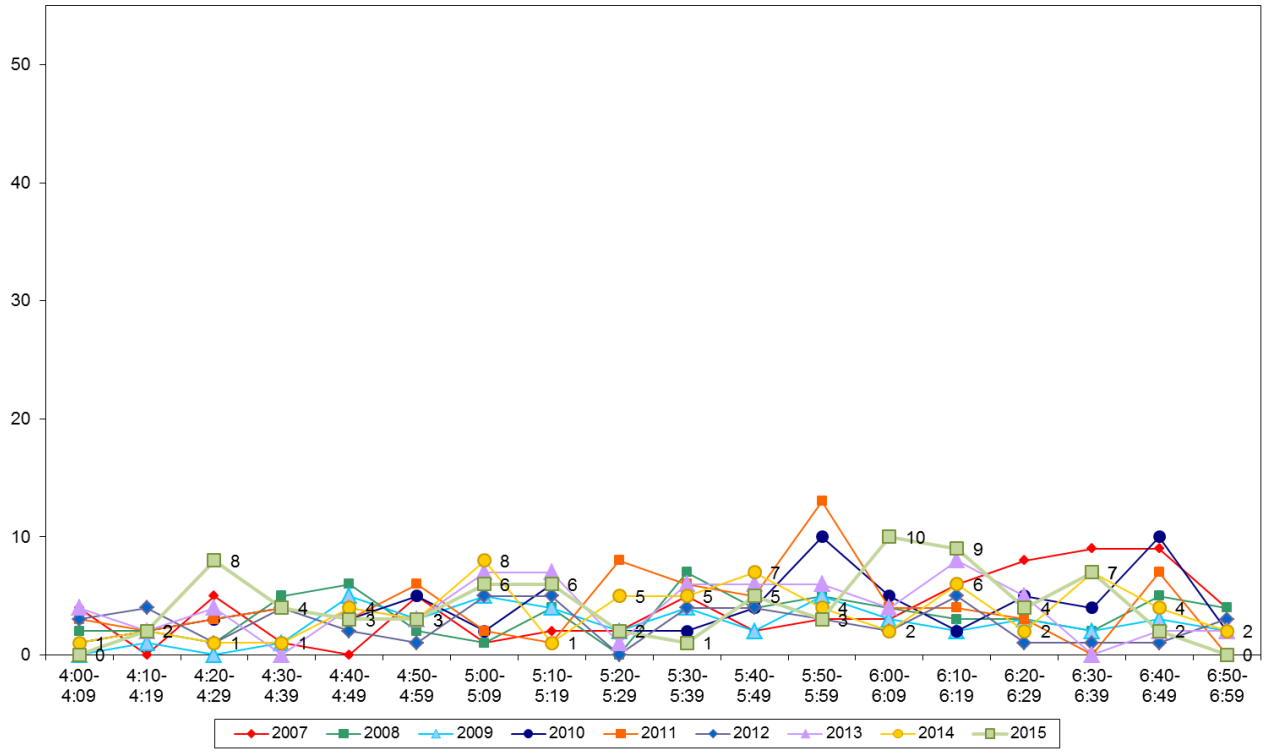
**Table 3.4: Evening Cyclist Characteristics**

**St Heliers Bay/West Tamaki Road 2007 – 2015 (%)**

| | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Cyclist Type** | | | | | | | | | | |
| Adult | 93 | 88 | 89 | 96 | 89 | 73 | 86 | 78 | **76** | **-2** |
| School child | 7 | 12 | 11 | 4 | 11 | 27 | 14 | 20 | **24** | **4** |
| Don't know | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | **0** | **-2** |
| **Helmet Wearing** | | | | | | | | | | |
| Helmet on head | 99 | 92 | 94 | 96 | 88 | 92 | 92 | 94 | **83** | **-11** |
| No helmet | 1 | 8 | 6 | 4 | 12 | 8 | 8 | 6 | **17** | **11** |
| **Gender** | | | | | | | | | | |
| Male | - | - | - | - | 91 | 71 | 83 | 78 | **73** | **-5** |
| Female | - | - | - | - | 9 | 27 | 17 | 20 | **27** | **5** |
| Can't tell | - | - | - | - | 0 | 2 | 0 | 2 | **0** | |
| **Where Riding** | | | | | | | | | | |
| Road | 88 | 87 | 87 | 96 | 76 | 82 | 83 | 78 | **76** | **-2** |
| Footpath | 12 | 13 | 13 | 4 | 24 | 18 | 17 | 22 | **24** | **2** |
| ***Base:*** | ***69*** | ***60*** | ***47*** | ***72*** | ***74*** | ***49*** | ***71*** | ***65*** | ***75*** | |

- The volume of evening cycle movements was low throughout the monitoring period. Two slight peaks were observed this year – one between 4:20pm and 4:29pm (8 cycle counts) and one between 6:00pm and 6:19pm (a total of 19 cycle movements).

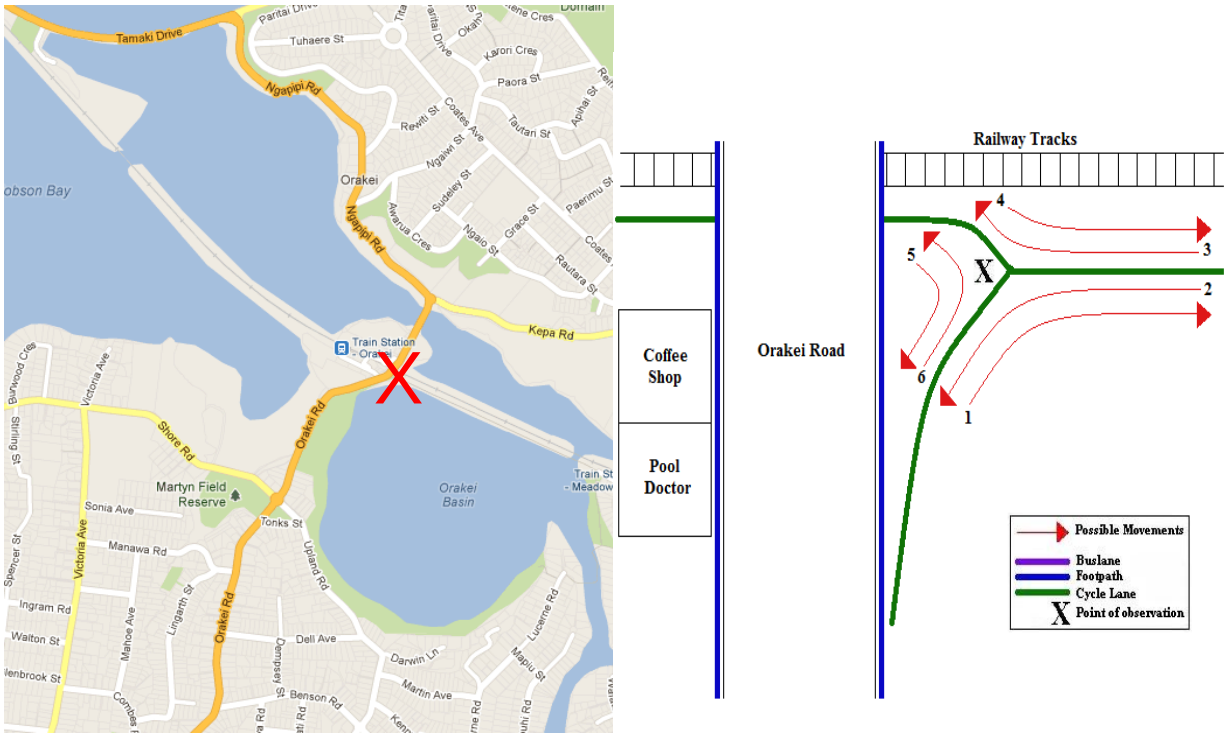
**Figure 3.3: Evening Peak Cyclist Frequency**
**St Heliers Bay/West Tamaki Road 2007 – 2015 (n)**



# 4. ORAKEI BASIN BOARDWALK, ORAKEI (SITE 91)

Figure 4.1 shows the possible cyclist movements at this site.

**Figure 4.1: Cycle Movements: Orakei Basin Boardwalk**




## 4.1 Site Summary

| | Raw Counts | | | AADT |
|---|---|---|---|---|
| | *Morning Peak* | *Evening Peak* | *Total* | *Total* |
| 2013 | 14 | 18 | 32 | 46 |
| 2014 | 27 | 25 | 52 | 76 |
| **2015** | **32** | **33** | **65** | **94** |

## 4.2 Morning Peak

### *Environmental Conditions*

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

### *Key Points*

- Thirty-two movements were recording during the morning shift, an increase from 27 movements last year.
- Consistent with previous results, the key morning movement was riding from Orakei Basin towards Ngapipi Road (Movement 3 = 28 counts, twice of the volume recorded at this site last year).
- For the first time since monitoring at this site began there were movements observed at Movement 4 (heading east alongside the railway tracks, 3 cycle movements).

**Table 4.1: Morning Cyclist Movements**

**Orakei Basin Boardwalk 2013 – 2015 (n)**

| *Movement* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|
| 1 | 3 | 5 | **1** | **-4** |
| 2 | 2 | 6 | **0** | **-6** |
| 3 | 9 | 14 | **28** | **14** |
| 4 | 0 | 0 | **3** | **3** |
| 5 | 0 | 0 | **0** | **0** |
| 6 | 0 | 2 | **0** | **-2** |
| **Total** | **14** | **27** | **32** | **5** |

- All cyclists at this site were adults, the same result as last year.
- All cyclists were wearing a helmet (100 per cent, up 4 percentage points from last year).
- A third of cyclists were female, an increase of 23 percentage points over the last 12 months.

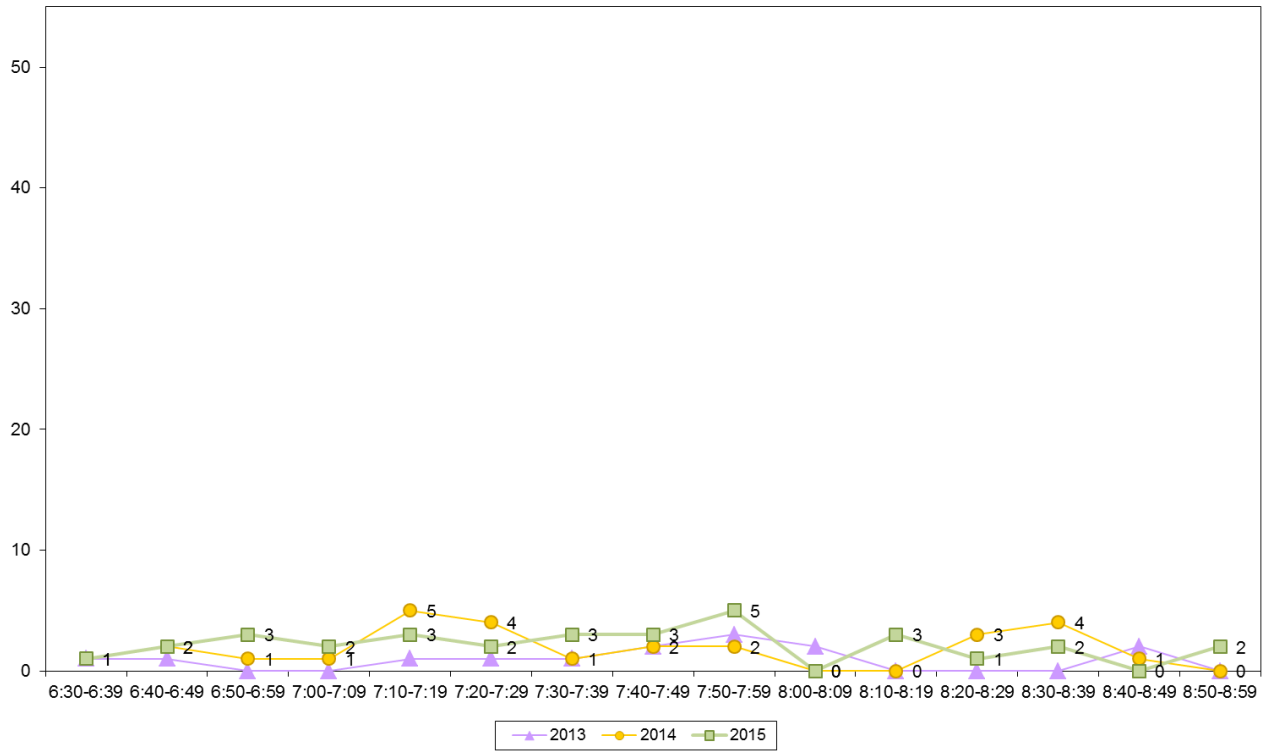
**Table 4.2: Morning Cyclist Characteristics**

**Orakei Basin Boardwalk 2013 – 2015 (%)**

| | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|
| **Cyclist Type** | | | | |
| Adult | 100 | 100 | **100** | **0** |
| School child | 0 | 0 | **0** | **0** |
| **Helmet Wearing** | | | | |
| Helmet on head | 100 | 96 | **100** | **4** |
| No helmet | 0 | 4 | **0** | **-4** |
| **Gender** | | | | |
| Male | 86 | 89 | **66** | **-23** |
| Female | 14 | 11 | **34** | **23** |
| Can't tell | 0 | 0 | **0** | |
| **Where Riding** | | | | |
| Road | 0 | 0 | **0** | **0** |
| Footpath | 0 | 0 | **0** | **0** |
| Off-road cycleway | 100 | 100 | **100** | **0** |
| ***Base:*** | ***14*** | ***27*** | ***32*** | |

- Morning cycle volumes were very low at this site, with no more than five cycle movements during any ten minute interval. A slight peak in cycle activity was recorded between 7:50am and 7:59am (5 movements).

**Figure 4.2: Morning Peak Cyclist Frequency**
**Orakei Basin Boardwalk 2013 – 2015 (n)**



## 4.3 Evening Peak

### *Environmental Conditions*

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

### *Key Points*

- Thirty-three cycle movements were recorded in the evening shift, an increase from the 25 movements recorded last year.
- The key evening movements observed were heading towards Orakei Basin from both directions of Orakei Road (from the north end; Movement 4 = 22 cyclists and from the south end; Movement 1 = 6 cyclists).
- The most noticeable change in cycle volumes was at Movement 4 (up 13 movements from last year).

**Table 4.3: Evening Cyclist Movements**

**Orakei Basin Boardwalk 2013 – 2015 (n)**

| *Movement* | *2013* | *2014* | *2015* | Change 14-15 |
|---|---|---|---|---|
| 1 | 7 | 11 | **6** | **-5** |
| 2 | 0 | 1 | **3** | **2** |
| 3 | 2 | 2 | **2** | **0** |
| 4 | 9 | 9 | **22** | **13** |
| 5 | 0 | 2 | **0** | **-2** |
| 6 | 0 | 0 | **0** | **0** |
| **Total** | **18** | **25** | **33** | **8** |

- Almost all cyclists at this site in the evening were adults (97 per cent, compared with 100 per cent last year).
- As with previous measure, all cyclists at this site were wearing a helmet.
- There has been an 18 percentage point increase in the share of female cyclists (12 per cent last year up to 30 per cent this year). A similar trend was observed in the morning peak.

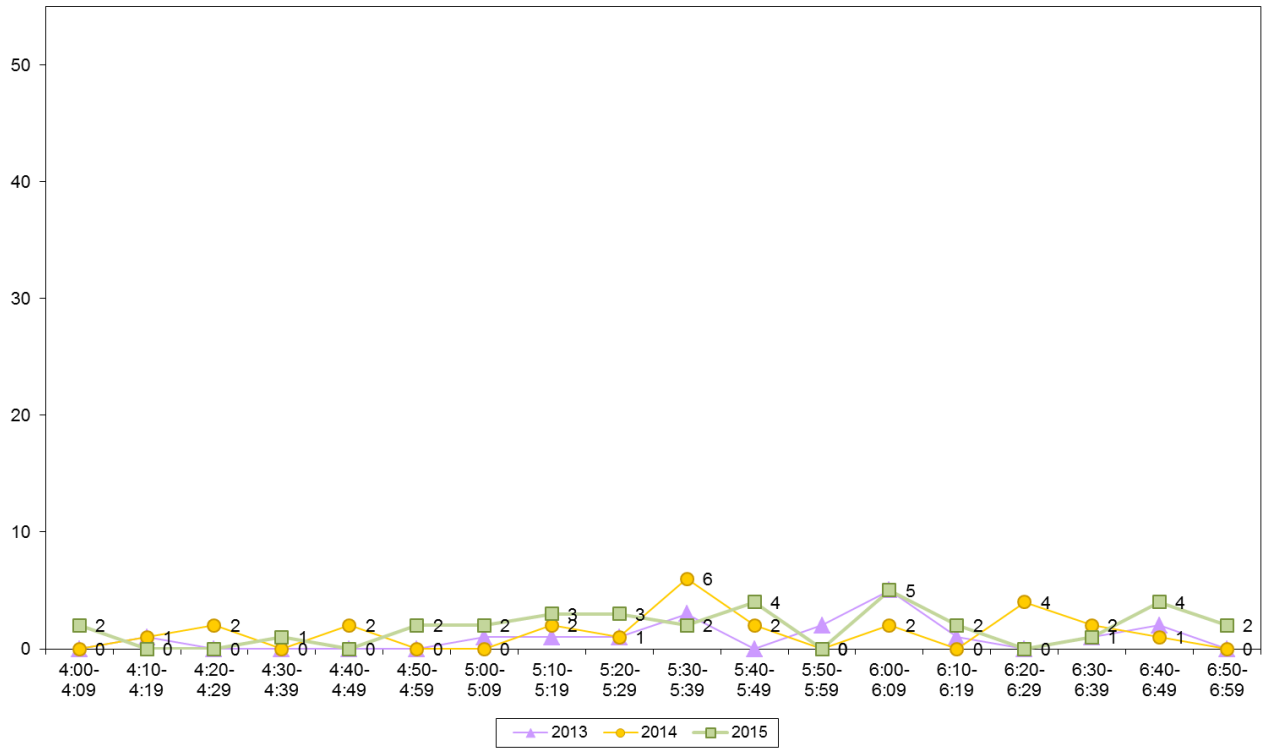
**Table 4.4: Evening Cyclist Characteristics**

**Orakei Basin Boardwalk 2013 – 2015 (%)**

| | *2013* | *2014* | *2015* | *Change 14-15* |
|---|---|---|---|---|
| **Cyclist Type** | | | | |
| Adult | 100 | 100 | **97** | **-3** |
| School child | 0 | 0 | **3** | **3** |
| **Helmet Wearing** | | | | |
| Helmet on head | 83 | 100 | **100** | **0** |
| No helmet | 17 | 0 | **0** | **0** |
| **Gender** | | | | |
| Male | 83 | 88 | **70** | **-18** |
| Female | 17 | 12 | **30** | **18** |
| Can't tell | 0 | 0 | **0** | **0** |
| **Where Riding** | | | | |
| Road | 0 | 0 | **0** | **0** |
| Footpath | 0 | 0 | **0** | **0** |
| Off-road cycleway | 100 | 100 | **100** | **0** |
| ***Base:*** | ***18*** | ***25*** | ***33*** | |

- Figure 4.3 illustrates the total number of cyclists by time of movement in the evening shift. Evening cycle traffic remained very low. A slight peak was observed between 6:00pm and 6:09pm (5 cycle movements).

**Figure 4.3: Evening Peak Cyclist Frequency**
**Orakei Basin Boardwalk 2013 – 2015 (n)**



# 5. SCHOOL BIKE SHED COUNT

## 5.1 Cycle Count Background Information

- A total of 10 schools in the Orakei ward participated in the school bike shed count.
- Of the schools that responded to the survey, most did not have policies that restrict students cycling to school[9].
- One school reported an event or issue that may affect cycle counts[10].
- Six schools in the Orakei ward completed the count on the designated count day (Tuesday 3rd of March 2015). Three schools completed the count on an alternative day[11].

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

## 5.2 Cycle Count Key Points

- Of those eligible to cycle, on average three per cent of students are cycling to their schools (up slightly from 2 per cent in 2014).
- Across the 10 eligible schools that responded, n=117 students were reported cycling to school.
- Glendowie Primary School reported the highest share of cyclists - 11 per cent of all eligible students currently cycling.
- Of the eight schools that participated in the survey in both 2014 and 2015, no schools have shown an increase in the share of students that cycle.
- Of the eight schools that participated in the count in both 2014 and 2015, two schools reported a decrease in the share of students cycling.
- Of the 10 eligible schools that responded, two (20 per cent) had no students cycling to school.

[9] The following schools had polices surrounding riding bicycles to school:
- Churchill Park School *"Students must be aged 10 years or older (Years 6,7,8)"*
- Glen Taylor School *"Only Year 4 to 8 may cycle to school and must be wearing appropriate safety gear"*
- Glendowie Primary School *"Wearing a helmet is compulsory, bikes must be roadworthy, pupils from the age of ten or years 6 - 8 may ride to school (Year 5s with special permission from the principal)."*

[10] The following schools reported events or issues that may affect cycle counts:
- St Thomas's School *"20 students away at interschool sports"*

[11] The following schools undertook counts on alternative days:
- Churchill Park School – 17th March 2015
- Remuera Intermediate School – 4th March 2015
- Saint Heliers School – 5th March 2015

Table 5.1 shows the results of the 10 schools surveyed in the Orakei ward.

**Table 5.1: Summary Table of School Bike Count**

**2007 – 2015 (n)**

| *School Name* | *School Type* | *School Roll Eligible To Cycle* | *No. of Cycles* | *Cyclists as share of those eligible*[12] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | *2015* | *2014* | *2013* | *2012* | *2011* | *2010* | *2009* | *2008* | *2007* |
| Glendowie Primary School | Full Primary | 205 | 23 | **11%** | - | 2% | 2% | 4% | - | - | - | - |
| Remuera Intermediate | Intermediate | 942 | 52 | **6%** | 6% | 6% | 6% | 6% | 5% | 7% | 5% | 9% |
| Selwyn College | Secondary | 1030 | 21 | **2%** | 2% | 3% | 2% | 2% | 2% | 2% | 1% | - |
| St Heliers School | Full Primary | 732 | 14 | **2%** | 2% | 1% | 2% | - | - | - | - | - |
| Mt Hobson Middle School | Intermediate/Secondary | 41 | 1 | **2%** | 4% | 7% | 6% | - | - | - | - | - |
| Michael Park School | Composite | 384 | 4 | **1%** | 1% | - | - | - | - | - | - | - |
| Churchill Park School | Full Primary | 130 | 1 | **1%** | 2% | 10% | 6% | 2% | - | - | - | - |
| St Thomas's School | Full Primary | 751 | 1 | **<1%** | - | <1% | - | <1% | - | - | - | - |
| Glen Taylor School | Full Primary | 151 | 0 | **0%** | 0% | 1% | 0% | - | - | - | - | - |
| Saint Kentigern Girls' School | Full Primary | 203 | 0 | **0%** | 0% | 0% | 0% | 0% | 0% | - | - | - |
| **Total** | | **4569** | **117** | **3%** | **2%** | **2%** | **2%** | **2%** | **-** | **-** | **-** | **-** |

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

Table 5.2 illustrates the rates of cycling to school at different school levels. Rates of cycling to school are highest among intermediate schools (6 per cent, unchanged since 2011).

**Table 5.2: Summary Table of School Bike Count by School Type**

**2007 – 2015 (%)**

| *School Type* | *Number of Schools Responded in 2015* | *Cyclists as share of those eligible* | | | | | | | | | Change 14-15 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *2007* | *2008* | *2009* | *2010* | *2011* | *2012* | *2013* | *2014* | *2015* | |
| Intermediate | 1 | 9% | 5% | 7% | 5% | 6% | 6% | 6% | 6% | **6%** | **0%** |
| Full Primary | 6 | - | - | - | - | 2% | 2% | 2% | 1% | **2%** | **1%** |
| Intermediate/Secondary | 1 | 0% | <1% | <1% | 0% | 1% | <1% | 1% | 1% | **2%** | **1%** |
| Composite | 1 | - | - | - | 0% | 0% | 100% | 0% | 1% | **1%** | **0%** |
| Secondary | 1 | - | 1% | 1% | 1% | 2% | 2% | 2% | 1% | **<1%** | **<1%** |

## 5.3 Scooter Count Background Information

- A total of nine schools in the Orakei ward participated in the school bike shed scooter count. Of the schools that responded to the survey, most had no policies that restrict students scooting to school[13].
- One school reported an event or issue that may affect cycle counts[14].
- The designated count day was Tuesday 3rd of March 2015[15].

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

## 5.4 Scooter Count Key Points

- Among the surveyed schools, of those eligible to scooter, on average, two per cent of students are scooting to their schools. This compares with 4 per cent last year.
- Glendowie Primary School reported the highest share of scooters – 11 per cent of all eligible students currently scooting to school.
- In total, n=110 students from the responding schools were reported to be scooting to school.
- Of the nine schools that participated in the survey in both 2014 and 2015, three (33 per cent) reported an increase in the share of students scooting. Four (44 per cent) reported a decrease.
- Of the nine schools that responded, two (22 per cent) had no students scooting to school.

[13] The following school has policies surrounding scooting to school:
- Glen Taylor School *"Only Year 4 to 8 may scoot to school and must be wearing appropriate safety gear"*

[14] The following school reported an event or issue that may affect scooter counts:
- St Thomas's School *"20 students away at interschool sports"*

[15] The following schools undertook counts on alternative days:
- Churchill Park School – 17th March 2015
- Remuera Intermediate School – 4th March 2015
- Saint Heliers School – 5th March 2015

Table 5.3 shows the results of the 9 schools surveyed in the Orakei ward.

**Table 5.3: Summary Table of School Scooter Count**

**2014 – 2015 (n)**

| *School Name* | *School Type* | *School Roll Eligible To Scooter* | *No. of Scooters Counted* | *Scooters as share of those eligible*[16] | |
|---|---|---|---|---|---|
| | | | | *2015* | *2014* |
| Glendowie Primary School | Full Primary | 581 | 63 | **11%** | 0% |
| Mt Hobson Middle School | Intermediate/Secondary | 41 | 2 | **5%** | 10% |
| Glen Taylor School | Full Primary | 151 | 4 | **3%** | 0% |
| Remuera Intermediate School | Intermediate | 942 | 18 | **2%** | 2% |
| St Thomas's School | Full Primary | 751 | 14 | **2%** | 0% |
| Churchill Park School | Full Primary | 130 | 2 | **2%** | 3% |
| Saint Heliers School | Full Primary | 732 | 7 | **1%** | 4% |
| Michael Park School | Composite | 384 | 0 | **0%** | 1% |
| Selwyn College | Secondary | 1030 | 0 | **0%** | 0% |
| **Total** | | **4742** | **110** | **2%** | **4%** |

[16] 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 5.4 illustrates the rates of scooting to school at different school levels. Rates of scooting to school are highest for intermediate/secondary schools (5 per cent, up from less than one per cent in 2014).

**Table 5.4: Summary Table of School Scooter Count by School Type**

**2014 – 2015 (%)**

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

# APPENDICES

Appendix One:  Annual Average Daily Traffic (AADT) Calculation

# APPENDIX ONE: ANNUAL AVERAGE DAILY TRAFFIC (AADT) CALCULATION

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

## Purpose

The purpose of this appendix is to document the recommended procedure for estimating a cycling AADT[17] 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)[18], 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.

[17] Annual average daily traffic

[18] LTSA, 2004

For the Gravitas counts, the following factors apply:

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

D = 14%

W = 0.9

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

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

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

## Worked Example

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

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

**Figure 1: Scale Factors for Auckland Region**

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

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

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

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