TEMPTING TEENAGERS TO CYCLE

“CYCLING IS FOR EVERYONE”
North Shore City Council Strategic Cycling Plan 2003

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NZ Science, Mathematics and Technology Teacher Fellowship 2006.

the ROYAL SOCIETY of NEW ZEALAND

NORTH SHORE CITY

ABOUT THE AUTHOR

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I would in particular like to thank the principals of the intermediates and the Heads of Mathematics at the secondary schools for supporting this survey and allowing their students to participate in the survey.

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Lastly I would like to acknowledge the continual belief, encouragement and constructive feedback from my wife Alison.

"Bicycles are almost as good as guitars for meeting girls"
Bob Weir, Grateful Dead

"Whoever invented the bicycle deserves the thanks of humanity"
Lord Charles Beresford

The bicycle is more than a sport and a means of transport,
it is a social benefit."
Pierre Giffard (Owner of Le Velo Newspaper,1889)

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2. SUMMARY

During 2006 a research programme was undertaken to identify barriers to teenagers cycling to and from school. In recent years there has been a trend in travel modes to school that has seen a substantial increase in the number of students been driven to high school and a decrease in the number choosing to cycle. This has resulted in serious congestion at school gates at the beginning and end of the school day. The long term environmental effect of an increase in vehicular traffic has been well documented and it is government policy to reduce the number of cars on our roads. In New Zealand, as in other developed countries, there has been concern expressed about the increase in obesity and diabetes amongst young people and their declining involvement in physical activity. Cycling is one activity, once very popular amongst teenagers, that is easily accessible and relatively inexpensive. The perspective of this research is to identify and analyse the issues and barriers that students face when they contemplate cycling to school. The outcome is to facilitate more informed decision making when designing programmes and promotions to tempt teenagers to cycle to school. Travel planners, engineers and agencies promoting active youth programmes will benefit from this research.

Increased cycling does incur cost. It requires additional facilities and services to make it safer but the long term gains benefit the individual and the community. Although it is now widely perceived that cycling is an unsafe activity, overseas research has shown that the risk of injury requiring hospital treatment as a result of cycling is around 0.005 per 100 hours; this compares with 0.19 for football (Australian Rules), 0.13 for squash and 0.06 for soccer. Research has also shown that as cycling participation increases the risk factor decreases. A doubling in cycle participation reduces the risk factor by a third. Experience in overseas countries also shows that as cycling becomes more common it becomes safer.

The purpose of this study was to collect the opinions of Year 8, 9 and 10 students related to cycling to school. This was achieved through an extensive online survey of a total of 19 intermediate and secondary schools in North Shore City. Students answered the online questionnaire that contained a variety of questions related to cycling to school, including bike ownership and use, modes of travel to school, safety issues, facility issues and peer issues. A total of 2355 students, approximately 28% of the target population in North Shore City, responded to the survey. The survey was carried out during class time under supervised conditions ensuring data reliability and a sample that was not self selected. Year 8 students

were surveyed to provide baseline data to compare with Year 9 and 10 students and to identify any attitudinal shift in future studies.

The key findings are:

- 75% of Year 8, 9 and 10 students on the North Shore own bikes
- 9% of Year 8 and 3% of Year 9 and 10 students regularly cycle to school
- Boys are seven times more likely to cycle to school than girls
- 33% of Year 8, 16% of Year 9 and 11% of Year 10 students would prefer to cycle to school
- 40% of students live between 1 and 3 kilometres from the school gate, a suitable distance for cycling to school
- Safe crossings, safe routes and the need for on road cycle lanes are cited as the most important barriers to cycling to school
- Secure, covered bike sheds would entice more students to cycle to school
- More than half of the students indicated that having friends to ride to school with was important
- More than 60% of those who regularly ride to school ride on the footpath
- Approximately a total of 2800 Year 8, 9 and 10 students in North Shore City do less than 3 hours of exercise per week

There are a group of students for who cycling is never an option as they live too far away from school and commuting by car or bus is the only option. The hilly terrain on the North Shore and adverse weather conditions were not highlighted as major barriers of cycling to school. Cycling skills training was very important for potential riders.

When a person contemplates a change in their mode of travel there are several stages involved. This research investigated the stages of travel behavioural change and attempts to identify the differing characteristics of students at each stage of the change cycle.

This survey shows that in total there are approximately 480 students at Year 8, 9 and 10 regularly cycling to school. It is estimated that there are another 570 who would seriously consider riding now if conditions were more favourable. As mentioned previously the doubling of cyclists would reduce the risk factor as drivers would be more aware of these vulnerable road users. Another 3200 (39% of all Year 8 to 10 students) could be tempted to ride in response to a comprehensive, creative promotional programme. The findings of this research

show that educational and promotional programmes must be designed to meet the specific needs of the various ages and groups identified in this investigation.

It is the responsibility of the government and local authorities to give this generation of teenagers every opportunity to enjoy the freedom and adventure of cycling to school. Many are aware of the impact of increasing carbon emissions on the environment and the health benefits of frequent exercise, however some may need persuading. Even though this study has highlighted the potential for more teenagers to ride to school, more funds will need to be invested to ensure that their journey to school is safe. This investment will have long term benefits as these young people would have a more positive perception of cycling and would encourage the next generation to do so.

2. INTRODUCTION

In New Zealand, as in many Western societies, the journey between home and school has become problematic, due to intensifying traffic and growing fears for children's safety. Accordingly, many parents now chauffeur their children to and from school. This situation has compounded congestion, prompting efforts to identify safe alternatives (Kearns, Collins and Neuwelt 2003).

A study comparing travel modes (Ministry of Transport NZ, 2006) showed that the number of primary/intermediate school-aged students (ages 5 to 12 years) being driven to school increased sharply from 31% of all journeys in 1989/90 to 52% in 2003-2006. The percentage of journeys by bicycle reduced from 12% to 6% over the same time. For secondary school students (ages 13 to 17 years) the number of journeys by car, either as a passenger or a driver, has doubled from 24% in 1989/90 to 48% of the total trips in 2003-2006. Cycling has decreased significantly over this time from 19% to 3% of all journeys in this time. Walking to school has not increased over this time, in fact the number of primary school students walking has decreased.

The successful "Walking School Bus" programme has seen an increase in the number of primary age children walking to school but despite high ownership of bicycles by preteens and teenagers, as shown above, cycling remains the most under utilised form of transport to and from school. Among preteens, cycling can be the most desired – but unfulfilled – mode of transport to school (Kearns, Collins and Neuwelt 2003). The question needs to be asked, "why is cycling not a more popular mode of transport to school for teenagers?" For the purpose of this research, preteens are defined as less than 13 years and teenagers as those who are 13 years to 17 years old inclusive. Most people who are likely to refer to themselves as cyclists are in the 6 to 17 year old category (Orsini, O'Brien, 2006).

Cycling to high school in the sixties was the preferred mode of transport and a regular form of exercise. The bike stands were full. Walking and cycling to school was seen as a form of physical activity that provided independence and adventure for children. Recently, with a decrease in these activities, concern has been expressed by health agencies worldwide about the prevalence of physical inactivity amongst children resulting in increasing obesity. A National Children Nutritional survey carried out in 2002 by the Ministry of Health in New Zealand found that 31% of children aged 5 to 14 years were either overweight or obese. The health and environmental benefits of regular cycling have been well documented.

Over the years as ownership of cars has increased, roads have become more congested and are perceived by students and their parents as too dangerous for cycling to school. This congestion is compounded with the increased number of car trips transporting children to school, especially at the start and end of the school day. The perplexing problem is that if the cycle numbers were to increase the risk factor of cycling would reduce, for example if cycling numbers doubled, the relative risk factor would reduce by 34% (Jacobsen 2003, Pucher, Buehler 2008)). The health benefits of regular cycling outweigh the potential loss of life in a road accident by a ratio of 20 to 1 (Hillman, 2000).

This study is focused on children aged 12, 13 and 14 year old and the issues related to their cycling. In New Zealand a driver's licence for a car can be obtained at the age of 15 years. Passing it is a priority for many teens even though some schools do not allow students at this age to drive to school. When teenagers approach this age, even though they are not legally allowed to drive, obtaining their drivers licence become their focus and cycling as a mode of transport to school fades into the background (Orsini, O'Brien, 2006). Even so there are a

proportion of students in this age group who could be tempted to cycle given favourable conditions.

The aim of sustainability in transportation is to instigate behavioural change and to maintain that shift. This project sets out to identify the factors that would encourage more secondary school students to choose cycling as their preferred mode of transportation to and from school. We have set out to identify the profile of a "contemplative" cyclist, to identify favourable promotions and programmes to entice regular cycling to schools.

2.1 Purpose

This project is the result of a N.Z. Science, Mathematics and Technology Teacher Fellowship granted to the author for the year 2006. The overall title for the fellowship programme was "On the Move: Maths and Statistics in Transportation." One of the programme's main objectives was "To research and report on the attitudes of students towards cycling and to provide recommendations on how to change those that are negative."

The purpose of this project is to develop an understanding of how teenagers perceive cycling including:

- The barriers to students cycling to school
- The health benefits of cycling
- The benefit for the environment of a sustainable transport mode
- The change in attitude to cycling in the transition from intermediate to secondary school
- Safety issues involved with cycling

2.2 Background

In February 2005 the Ministry of Transport released *Getting there –on foot, by cycle* a strategy to advance walking and cycling in New Zealand transport. This document states its vision is for New Zealand to be a country "where people from all sectors of the community walk and cycle for transport and enjoyment".

Cycling has also been given focus at regional level through the *Auckland Regional Cycling Strategy,* July 2002 and as part of the *Auckland Regional Land Transport Strategy*, November 2005.

The *North Shore Strategic Cycle Plan*, December 2003, is a comprehensive plan aimed at meeting the needs of cyclists on the North Shore. As well as addressing the council's obligation to provide a safe cycling environment for those already cycling, it also supports the council's policy to increase cycling as an alternative mode of sustainable transport.

Teenagers, as a specific target group, were acknowledged in the *North Shore City Strategic Cycling Plan (p36)* as a group with a low percentage cycling. Even though some research has been carried out in Christchurch on teenage attitudes to cycling and cycling habits this group still requires thorough investigation before any programme is put into practice.

The excellent *TravelWise to School* programme, a partnership between ARTA, NSCC and individual schools to develop School Travel plans has been implemented in many primary and some intermediate schools in North Shore City.

It is the aim of this survey to identify the barriers that face secondary students when choosing cycling to school as a mode of transportation. Year 8 students were included in the survey to provide “baseline” attitudes to cycling to school, hence attitudinal shifts can be identified when students move from intermediate school to secondary school.

2.3 Overall aim

Increase the number of teenagers cycling to school in the North Shore City.

2.4 Goals

1. Increase the number of students cycling to secondary school.
2. To improve the safety of students cycling to secondary school.
3. To raise awareness of cycling as a mode of sustainable transportation.
4. To promote cycling as a healthy activity.
5. To promote cycling as an environmentally beneficial activity.

2.5 Profile of North Shore City

North Shore City, New Zealand’s fourth largest city is located north of the Waitemata Harbour and Auckland City. Surrounded by the sea, the city has 140km of unbroken urban coastline. The city covers an area of 13 000 hectares and is known for its magnificent beaches, reserves and lifestyle. The population numbered approximately 220 300 residents as at June 30, 2007. The Local Territory Authority is the North Shore City Council with an annual budget in excess of $350 million and total assets in excess of $4 billion.

3. METHODOLOGY

3.1 Sample size and composition

3.1.1 Sample size

It was intended in this survey to select a representative sample of approximately 30% of the student population in Years 8, 9 and 10 at intermediate and secondary school in North Shore City. Pilot surveys indicated that the proportion of students who cycle in some schools was very small, hence as large a sample as practicable was sought so responses of those who do cycle to school were captured.

A total of 2355 responses were collected as a result of this survey which represents approximately 28% of the school population (8400) of these year levels.

The table below displays the sample size proportions for each year level.

Year	Sample Size	Population Size	Sample %
8	692	2730	26%
9	765	2730	28%
10	898	2940	31%
Total	**2355**	**8400**	**28%**

Table 1: Sample size

3.1.2 Sample composition

This sample represents the attitudes towards cycling to school and cycling in general of Year 8, 9 and 10 students attending intermediate and secondary schools in the North Shore City, Auckland, New Zealand. The sample is representative of students attending the state and integrated schools within North Shore City.

It was decided not to include private schools as travel surveys carried out by NSCC as part of their School Travel Plans indicated the majority of students attending these schools do not live within cycling distance of the school. Buses and private cars are the most common modes of transport to these schools.

In total 19 schools were included in the survey. The type of schools involved is shown in the table below:

School Type	School Authority	Years	Gender	Number of schools
Intermediate	State: not integrated	7 and 8	Co-Ed	8
Secondary*	State: not integrated	7 to 10	Co-Ed	1
Secondary	State: not integrated	9 to 13	Single sex-girls	1
Secondary	State: not integrated	9 to 13	Single sex-boys	1

Secondary	State: not integrated	9 to 13	Co-Ed	6
Secondary	State: integrated	7 to 13	Single sex-girls	1
Secondary	State: integrated	7 to 13	Single sex-boys	1
			Total	**19**

Table 2: School type

This school is a junior high school and has been open for two years. It only has Year 7 and 8 students at this stage. In 2007 the roll will include Year 9 students and Year 10 students in 2008.

3.1.3 School decile rating

The Ministry of Education uses a decile rating system for school funding purposes. Each decile contains approximately 10% of schools. Schools in decile one have the highest proportion of students from low socio-economic backgrounds. Schools in decile ten have the lowest proportions of these students.

3.2 School groupings and clusters

3.2.1 Grouping of schools

Schools groupings were established according to proximity, i.e. secondary schools were grouped with their contributing intermediate school(s). The reason for this was to identify common factors related to travel behaviour between schools within the group; this would enable travel planners to set in place behavioural change programmes relevant to the local school community.

The table below shows the school groupings established for this survey.

Grouping	School	Decile	Roll	Year levels
1A	Takapuna Grammar School	10	1395	9 to 13
1B	Belmont Intermediate	10	525	7 and 8
2A	Westlake Boys High School	10	2100	9 to 13
2B	Westlake Girls High School	10	2174	9 to 13
2C	Carmel College	10	994	7 to 13
2D	Rosmini College	10	950	7 to 13
2E	Takapuna Normal Intermediate	10	624	7,and 8
2F	Wairau Intermediate	8	409	7 and 8 composite
3A	Northcote College	9	1370	9 to 13
3B	Northcote Intermediate	7	226	7 and 8 composite
4A	Birkenhead College	6	986	9 to 13
4B	Birkdale Intermediate	6	574	7 and 8
4C	Glenfield College	8	1243	9 to 13
4D	Glenfield Intermediate	8	665	7 and 8

5A	Rangitoto College	10	3074	9 to 13
5B	Murrays Bay Intermediate	10	894	7 and 8
6A	Long Bay College	10	27	9 to 13
6B	Northcross Intermediate	10	1121	7 and 8
7	Albany Junior High School	10	547	7 to 10

Table 3: Schools surveyed

The location and make up of Group 2 is of particular interest. It is located in one of the busiest zones of North Shore where major arterial roads converge and is congested with a mix of commuters and students going to school. The secondary schools are all single sex schools with many of their students living in areas deemed as too far away to walk or ride a bike to school.

3.2.2 Selection of classes in schools

The number of classes invited to participate in the survey at each school was based on a predetermined sample size of approximately 30% of the school population at each of Year 8, 9 and 10. The classes that participated in the survey were randomly selected by the Principal in intermediate schools and by the Head of Mathematics in secondary schools. This method of using classes as a group resulted in cluster sampling.

3.3 Pilot surveys

Pilot surveys were carried at various stages of the survey development.

3.3.1 Written pilot questionnaire

Written pilot surveys were trialled at two local schools to assess composition, language difficulty and length of both questionnaires.

3.3.2 Online questionnaire

The same two schools used in the written pilot surveys trialled the online questionnaire to eliminate any “bugs”. Data collected from both of these pilot surveys was not used in the final analysis. The two schools participated in the final online survey.

3.4 Communication with schools

3.4.1 Initial contact

Initial contact was made to schools through a letter addressed to the Principal in the case of intermediate schools and to both the Principal and Head of Mathematics of secondary schools. A follow-up phone call was made to obtain the school’s commitment to participate in the survey and to make an appointment to visit the Principal to hand over the school information pack (see Appendix 5.3).

3.4.2 Communications with intermediate schools

At the meeting with the school Principal the 'school information pack' was provided. This pack contained the following:

- School Information' which included the following details – school code (Ministry of Education number), number of classes to be surveyed at Year 8, survey website address, window of time in which to do the survey
- 'Instructions for the online survey' for classroom teachers on how to manage the survey
- 'Cycling to School Project – Teacher Information Sheet' – this provided background details so the teacher could explain to their students the aim and reasons for the survey
- 'Distance to the school gate maps'- a set of GIS maps were provided so students could accurately answer the question "How far do you live from school?" (see Appendix 5.3)

3.4.3 Communications with secondary schools

A letter seeking the school's approval was sent to the Principal but contact was made with the Head of Mathematics to manage the survey. Mathematics is a core subject, at both Years 9 and 10 that all students take. Hence all students at these levels had an equal chance of being selected for the survey.

Head of Departments were provided with a school information pack as described in 3.4.2 with additional details of the required number of classes to be randomly selected at each of Years 9 and 10. (See Appendix 5.3)

3.5 Questionnaire design

There were four areas of interest in this survey

- Bike ownership, usage, transport modes to and from school
- Barriers to cycling to school
- Activity and facilities
- Cycling accident

Section 1 :

Questions: 1A to 1C, 2A to 2C, 3A to 3D.
Questions included - student details, details of bike ownership, bike usage, distance from home to school gate, modes of transport to and from school and preferred mode

A 'filter' question (3E) separated the students into those who didn't ride to school and those who did ride to school regularly.

Section 2 Students who don't regularly cycle to school

Questions: 4A to 4E, 5A to 5E, 6A and 6B.
Questions in this section are directed to the reasons that students do not cycle to school and in particular attempts to identify barriers to "contemplative cyclist" riding to school.

Question 4A asks respondents to complete the sentence, "I would cycle to school if ……". This question was intended to seek responses that may identify barriers and issues related to cycling to school. Questions 4B, 4C and 4D uses a 5 point Likert Scale for students to rate the importance of issues related to cycling to and from school.

Section 3 Students who cycle to school every week

Questions: 9A to9F.
In this section students are asked to identify issues important to them with regard to cycling to school. Questions also relate to the reasons they cycle to school. A question about where they ride is intended to provide evidence that riding on the footpath to school is a widespread practice.
Questions 7A, 7B and 7C use a 5 point Likert Scale for students to rate the importance of safety, facilities and other issues related to their cycling to school.

Section 4 Cycling accidents

Questions: 10A, 11A to 11D.
Questions in this section seek evidence related to cycling accidents amongst teenagers.

For full versions of the online and written questionnaires refer to Appendix 6.4

In preliminary reviews of the questionnaire it was suggested that questions related to parent/ guardian attitudes to their children cycling to school should be added. It was decided to limit such questions to simply whether permission to ride to school is an issue. The study *Balancing the needs of cyclists* (Walton, Dravitzki, Cleland, Thomas, Jackett, 2005) investigates parents' perception of cycling safety for high school children.

3.6 Online survey

3.6.1 Design

The layout of the online survey was designed by the Web Services Department of the North Shore City Council using "Usuite" software in conjunction with the author.

3.6.2 Management

The intermediate surveys and the secondary survey had slightly different web addresses and were accessible at different times of the year.

www.northshorecity..nz/TCC/ (Intermediate School Survey)
www.govt.nz/SSS/ (Secondary School Survey)

It was originally planned that each site would be live for three weeks but this time proved to be too short due to computer unavailability in some schools so the window was extended to five weeks. In fact two secondary schools did written surveys as they couldn't get their students into computer rooms in the 5 week period that the survey was live.

Access to the websites was tightly managed to avoid erroneous responses. This was achieved by each student needing a unique school code to access the questionnaire.

The school's Ministry of Education number was used for this purpose. The number was also useful for identifying which school the responses were from for analytical purposes. Even though the survey was anonymous it was possible to track responses to a certain extent. Each response was logged as follows:

- Log number
- Time of response
- Date of response
- School code

Some responses were found to be well outside school hours so these were removed from the final analysis during the data cleaning process.

3.6.3 Data collection

As the survey progressed, the data collected was stored on an Excel spreadsheet by the NSCC Web Services team. Each week an updated spreadsheet was provided to the author so that the participation of each school could be monitored. At the end of each survey a spreadsheet of all of the responses was provided for the final analysis.

4. RESULTS/FINDINGS

The aim of this survey was to identify barriers students at Year 9 and 10 at secondary schools have to cycling to school. As previously explained Year 8 students were surveyed to provide a "baseline" so that any attitudinal shift between intermediate and secondary school students towards cycling to school could be identified.

4.1 Distribution of responses

The table below gives the distribution of responses received at each year level.

Year 8 students are on average 12 years old. Year 9 students are approximately 13 years old and Year 10 students are approximately 14 years old.

Year	Male	Female	Number of students
8	367	325	692
9	377	388	765
10	454	444	898
Total	**1198**	**1157**	**2355**

Table 4: Distribution of responses (Gender and Year Level)

4.2 Confidence levels of results

Based on the sample sizes obtained in this survey the confidence intervals at the 95% level are generally $\pm 3.2\%$. In some instances, where the results are of particular importance, the confidence intervals of each result are provided.

4.3 Bike ownership and usage (Section 1)

***Note:** The questions in ITALLICS at the beginning of each sub section are those asked in the survey.*

4.3.1 Bike ownership

Do you own a bike?

Year level	Yes	Male	Female
8	80%	86%	73%
9	75%	79%	72%
10	69%	76%	62%

Table 5: Bike ownership

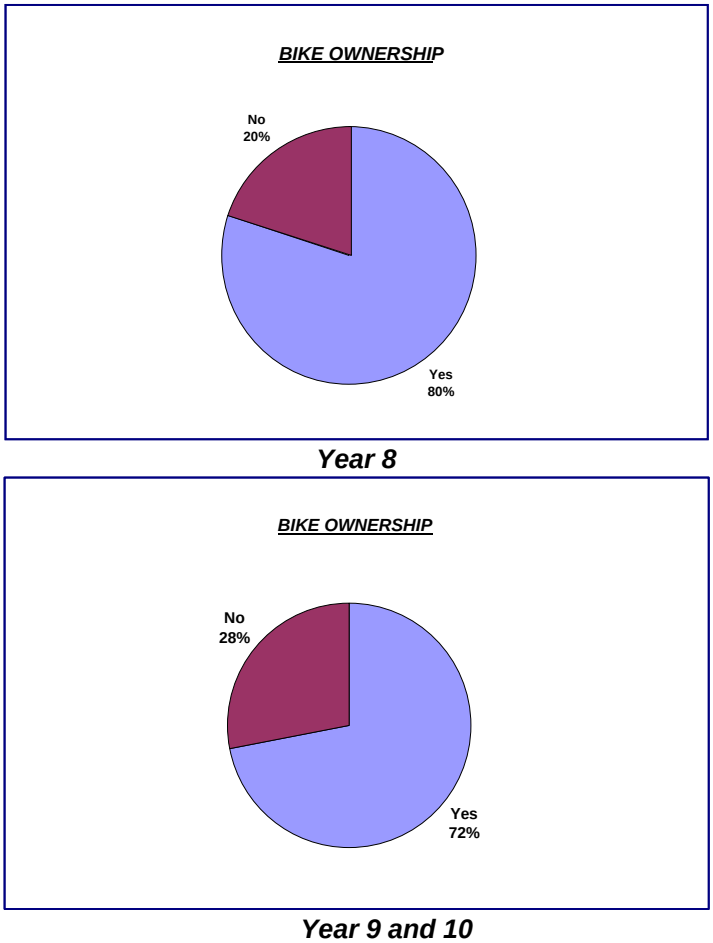

Figure 1: Bike ownership

Bike ownership is highest for Year 8 students with 80% owning a bike. The ownership rate drops as students get older, from 75% in Year 9 to 70% in Year 10. Males are more likely to own a bike.

4.3.2 Types of bikes owned

*If you answered **yes**, what type of bike(s) do you own?*

The distribution of the type of bike(s) owned was similar for Year 8, 9 and 10.

Students who indicated that they owned a bike were then asked what type of bike they owned. 5% of respondents indicated that they owned more than one bike. The most

common combination for multiple ownership was a road bike with a mountain bike. The most common type of bike owned, at all year levels, was the mountain bike at 53%. Road bikes were the next commonly owned bike at 23% with BMX bikes at 14%. The remaining 9% of bikes owned were in the "other" category.

Type of bike(s) owned	**Year 8**	**Year 9**	**Year 10**
Road	24%	23%	23%
Mountain	52%	54%	53%
BMX	14%	14%	15%
Other	10%	9%	9%
	100%	100%	100%

Table 6: Type of bikes owned

4.3.3 Amount of time bike used

On how many days in the last month have you ridden your bike(s), either to school or at any other time?

Year 8 students were more likely to have used their bike in the past month than Year 9 or 10 students. When the survey was carried out in July and August between 66.8% and 74.4% of students at Year 8 had used their bike at least once in June or July. As this was in the middle of winter it would be expected that this usage figure would be higher in summer. Between 51.3% to 56.9% of Year 9 and 10 students had not used their bike in the past month before the survey was conducted.

Bike used in last month	**Year 8**	**Year 9**	**Year 10**
None	29%	46%	46%
1 to 5 days	27%	26%	26%
6 to 10 days	14%	9%	11%
11 to 20 days	11%	8%	5%
More than 21 days	19%	11%	12%
	100%	100%	100%

Table 7: Number of days bike used

4.3.4 Bike usage

What have you used your bike for in the last month? You may select more than one.
This question asked those who had used their bike in the last month what it had been used for. Respondents were able to select more than one use. The most common use was riding around the neighbourhood. Approximately 20% of bike usage was for "Keeping fit"

Bike used for ……..	**Year 8**	**Year 9**	**Year 10**
Riding around neighbourhood	25%	29%	29%
Keeping fit	21%	21%	21%
Going to the shops	23%	18%	21%
Riding in parks	17%	30%	18%
Riding to school	10%	6%	8%
Racing	5%	5%	5%
	100%	100%	100%

Table 8: Bike usage

4.4 Transport Modes to and from school (Section 1)

4.4.1 Distance to school

How far do you live from school? Ask your teacher for the Distance to School Map if you are unsure.

Students had access to a GIS map of the school and its surrounding neighbourhood (see Appendix 5.3 for an example of the map provided). Students could locate their house and increasing concentric distance rings enabled them to read off the distance from where they lived to the school gate. It was considered that students living more than 3 km for their school were more likely to travel by car or bus even though there is evidence that some students do cycle more than this distance to school especially those living in the north of the city; 14 students indicated that they cycled more than 3km to school.

Between 35% and 40% of students live more than 3km for their school gate.

Distance to school	**Year 8**	**Year 9**	**Year 10**
Less than 500m	7% ± 2%	8% ± 2%	9% ± 2%
500m to 1km	13% ± 2%	14% ± 2%	12% ± 2%
1 to 2 km	21% ± 3%	25% ± 3%	21% ± 3%
2 to 3km	22% ± 3%	18% ± 2%	17% ± 2%
More than 3km	37% ± 3%	35% ± 3%	41% ± 3%
	100%	100%	100%
	N=692	***N=765***	***N=898***

Table 9: Distance from home to school gate

4.4.2 Modes of Transport to and from School

*How do you mainly travel **to school**?*

*How do you mainly travel **from school**?*

***If you could choose**, how would you most like to travel to and from school?*

To school:	**Year 8**	**Year 9**	**Year 10**
Walk	24% ± 3%	29% ± 3%	28% ± 2%
Car	45% ± 3%	35% ± 3%	37% ± 3%
Bike	9% ± 2%	4% ± 1%	4% ± 1%
Bus	21% ± 3%	31% ± 3%	30% ± 2%
Other	1%	1%	1%
	100%	100%	100%
From school:	**Year 8**	**Year 9**	**Year 10**
Walk	32% ± 3%	37% ± 3%	33% ± 3%
Car	23% ± 3%	16% ± 2%	19% ± 2%
Bike	9% ± 2%	4% ± 1%	4% ± 1%
Bus	34% ± 3%	41% ± 3%	43% ± 3%
Other	1%	2%	1%
	100%	100%	100%
Preferred mode:	**Year 8**	**Year 9**	**Year 10**

Walk	19% ± 2%	25% ± 3%	26% ± 2%
Car	29% ± 3%	38% ± 3%	44% ± 3%
Bike	33% ± 3%	16% ± 2%	11% ± 2%
Bus	12% ± 25	14% ± 2%	14% ± 2%
Other	7% ± 2%	7% ± 2%	5% ± 1%
	100%	100%	100%
	N=692	*N=765*	*N=898*

Table 10: Modes of transport to and from school

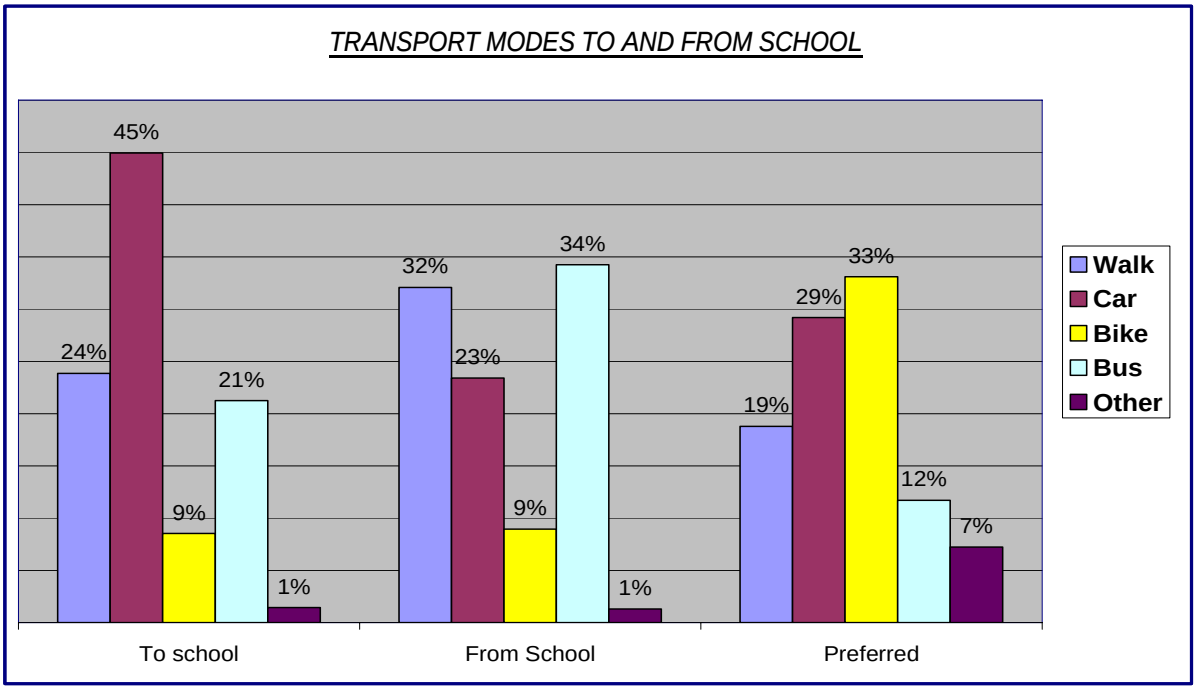

Figure 2: Modes of transport to and from school (Intermediate – Year 8)

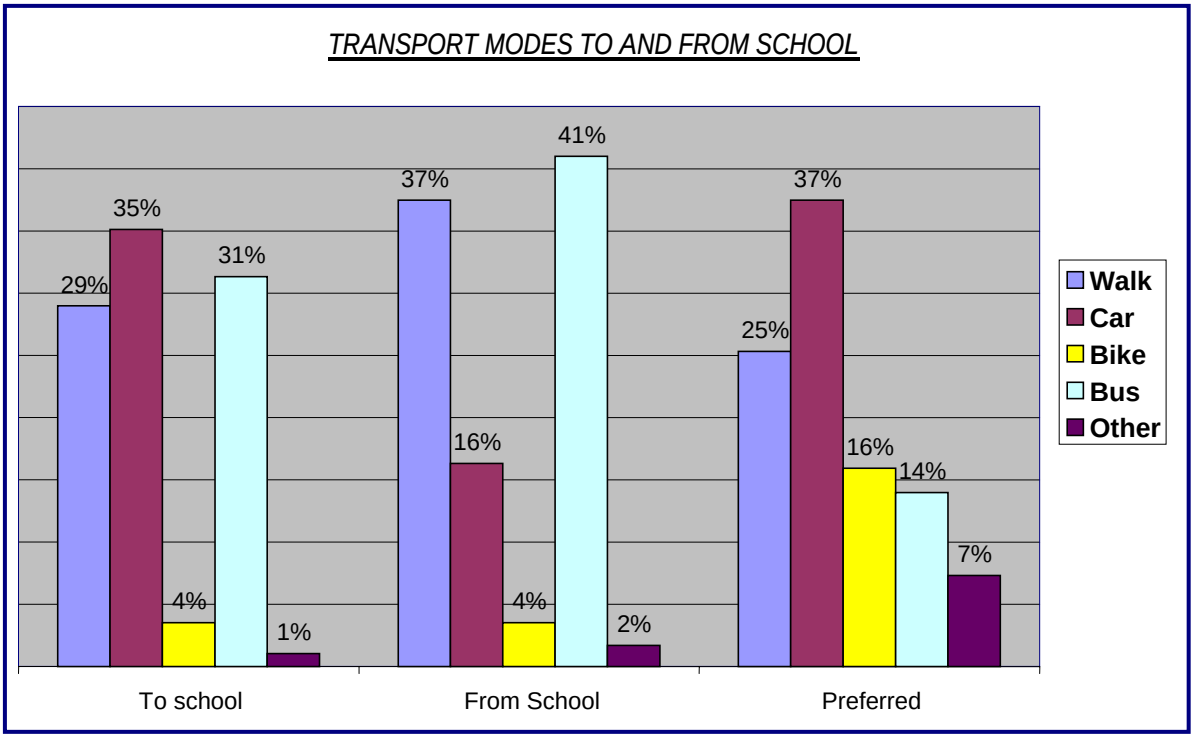

Figure 3: Modes of transport to and from school (Secondary – Year 9)

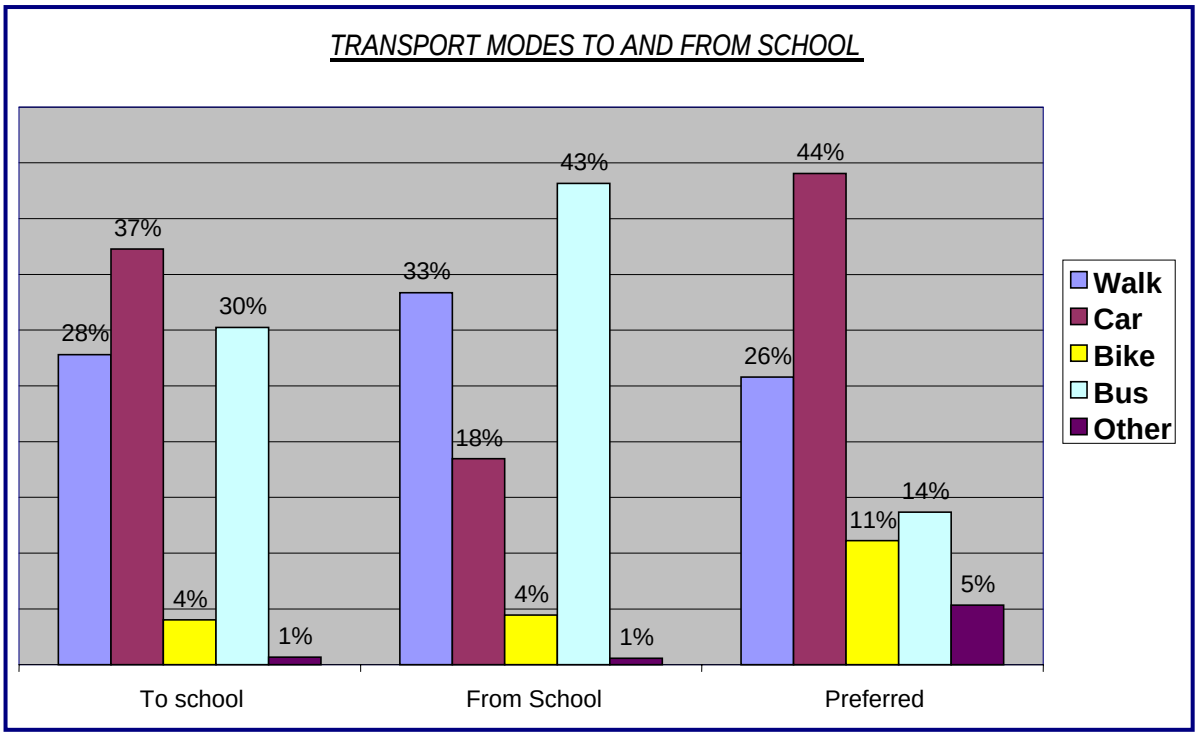

Figure 4: Modes of transport to and from school (Secondary – Year 10)

There are similarities between the modes of transport to and from school for all three year levels. In the morning the most common method of travelling to school is by car. In the afternoon there is an increase in walking by a similar percentage for all year levels. Travelling by bus is the most common method of getting home. This pattern of travel is similar to that found when Travel Surveys are carried out as part of School Travel Plans. There is approximately twice the number of cars in the vicinity of the school gate in the morning as there are in the afternoon.

Cycling is the least common mode of transport to and from school. Cycling to and from school is more than twice as common in Year 8 (9%) as it is in Year 9 and 10 (4% each).

Students were asked to choose their preferred mode of travel to and from school. The results show that there are many more students who would prefer to cycle than who do so presently.

Year	Cycle now	Prefer to cycle	Increase factor
8	9%	33%	3.6
9	4%	16%	4.0
10	4%	11%	2.8

4.4.3 Cycling to and from School

How often do you cycle to school?

This filter question directed respondents to either questions related to those who don't cycle regularly (*never/a few times a term*) or to those who are regular cyclists (*every week*).

How often do you cycle to school?	Year 8	Year 9	Year 10
Never	82%	92%	91%
A few times a term	10%	5%	5%
Every week	8%	3%	4%

Table 11: Cycling frequency to school

Almost 20% of Year 8 students cycle to school at sometime during the term compared with almost 10% at Year 9 and 10.

4.5 Issues related to students who do not cycle to school regularly (Section 2)

4.5.1 Barriers to cycling to school

I would cycle to school if …

This question required respondents to complete the sentence above. The objective of the question was to have students provide unsolicited barriers and reasons why they cannot or will not cycle to school.

There was no restriction on the number of barriers/reasons that a student could give. For the purpose of this survey all of the different type of barriers were recorded and listed.

The barriers were grouped into broad categories as shown below:

CATEGORY	REASONS
Locality/Terrain	lived too far away or too close to school, to hilly
Bike	had bike repaired, owned a bike, had a better bike
Social	parent's permission, friends to ride with, cycling was cool
Regulations	no helmet, do not want to ride in uniform/skirt
Physical activity	needed to lose weight, not overweight/unfit
Facilities	safe bike parking, lockers provided
Safety	had training, more confident, roads safer, more cycle lanes
Time management	woke up earlier, school started later
Negative to cycling	wanted to cycle, was paid, no other way to get to school

Category	Year 8	Year 9	Year 10
Locality/Terrain	33%	28%	29%
Bike	15%	13%	16%
Social	12%	12%	9%
Regulations	1%	6%	6%
Physical activity	1%	1%	1%
Facilities	2%	4%	3%
Safety	19%	16%	14%
Time management	4%	3%	3%
Negative to cycling	13%	17%	19%

Table 12: Reasons not cycling

Table 12 shows the distribution of reasons that students gave for not cycling to school.

The main issues and observations arising from this question are:

- The most common barrier given was the distance to school (30%) - although many students live beyond a reasonable cycling distance, there will be some who identified this barrier who live close enough to school who could be convinced that cycling is a suitable mode of transport
- 5.6% of year 8 students said that their parents will not let them cycle to school compared with 1.8% of Year 9
- Many children indicated that their bike was not suitable or needed repair – a visiting bike mechanic to schools could help overcome this barrier
- Having friends to ride with was important to all year levels
- Year 9 and 10 students are 3 times more likely to be concerned about their image cycling and they said that cycling is not cool
- Year 9 and 10 girls mentioned that cycling in a uniform/skirt is a barrier
- Safety issues, the second most common barrier, decreases as students get older

Questions in the following section invited respondents to rate the importance of a variety of issues related to safety, facilities and other factors that may arise when a student contemplates whether to cycle to school or not. As mentioned previously a 5 point Likert Scale is used with ratings from "*Really important"* through to "*Really unimportant".*

For analyses of these responses the top two boxes and the bottom two boxes of the scale will be combined. For example "*Really important"* and *"Important"* will be combined to give a single percentage. The neutral selection is *"Neither important nor unimportant".* The emphasis of this analysis is identifying the important issues.

4.5.2 Safety Issues

What is the importance of each of the following if you considered cycling to school?

I could cycle through parks to school
I had road safety training
My bag was lighter making it safer to carry
I could ride on the footpath
There was a safer cycle route to school
There were safer places to cross the road
The traffic on the road was slower
There were cycle lanes on the way to school

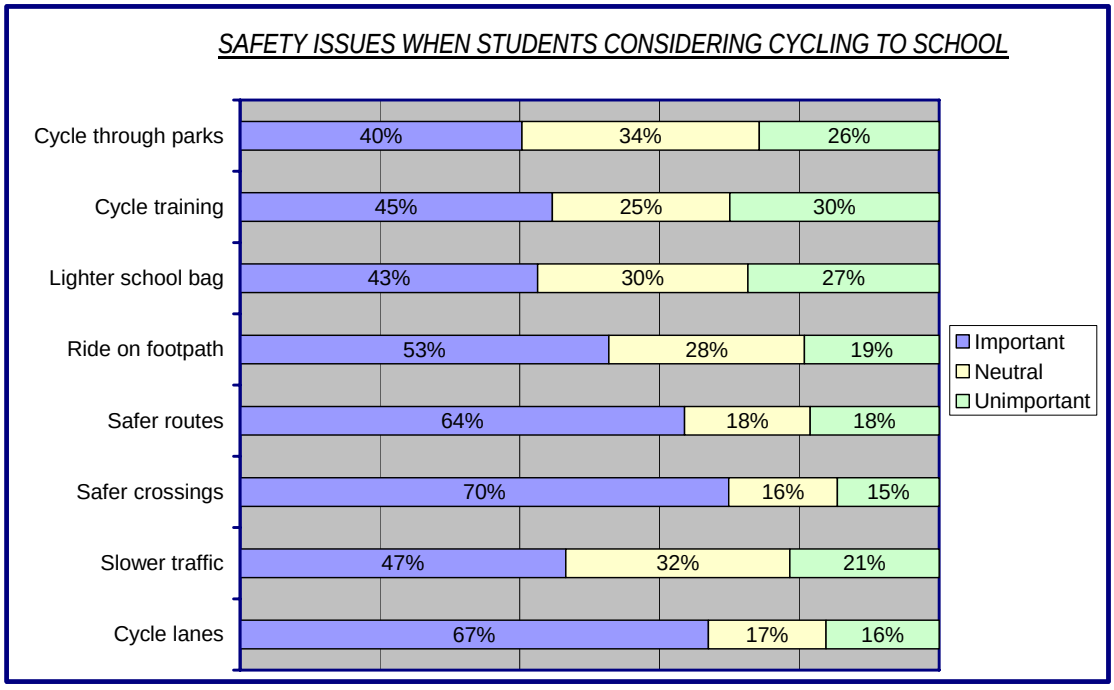

Figure 5: Safety issues Year 8 non-cyclists (Error ± 3%)

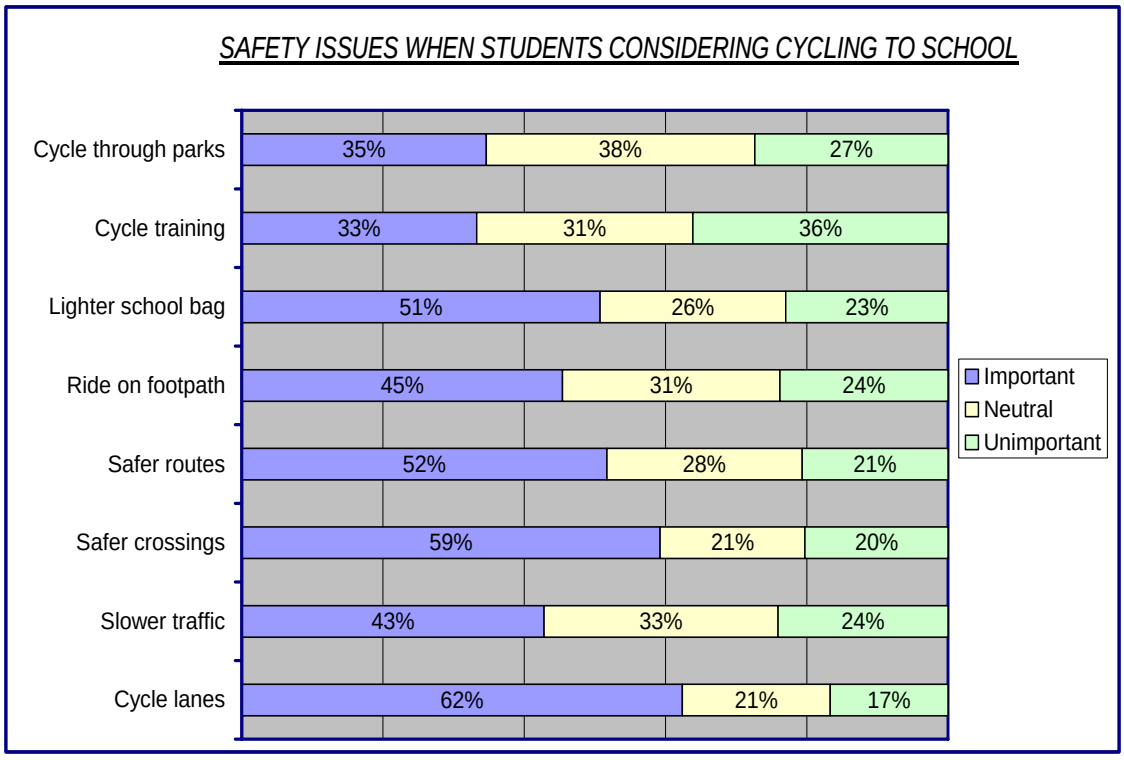

Figure 6: Safety issues for Year 9 non-cyclists (Error ± 3%)

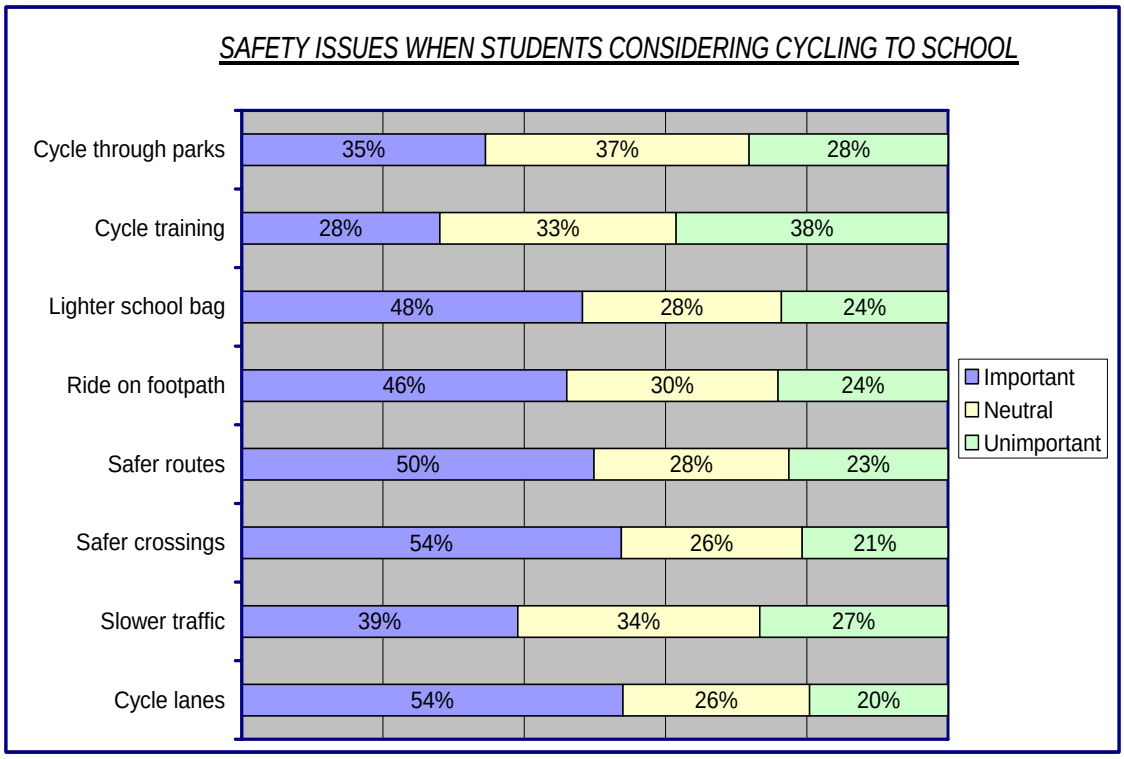

Figure 7: Safety issues for Year 10 non-cyclists (Error ± 3%)

The above charts indicate the importance of safety issues related to children's perception of the dangers of riding on the roads.

The most important issues for all three groups were:

Cycle lanes
Safer crossings
Safer routes to school

The least important issue was "cycle training" which had a significant reduction in importance for Year 8(45%) to Year 10 (28%). As cyclists become more experienced and confident in traffic the need for training reduces.

Riding on the footpath was perceived as important by approximately 50% of the students at each year level.

4.5.3 Facilities at School and Other Issues

What is the importance of each of the following if you considered cycling to school?

My parents would let me cycle
I had friends to cycle with
I lived closer to school
I owned a bike or a better bike
I had a cycle friendly uniform
I had a locker at school to store my things
There were showers at school
There were safer places to lock up my bike

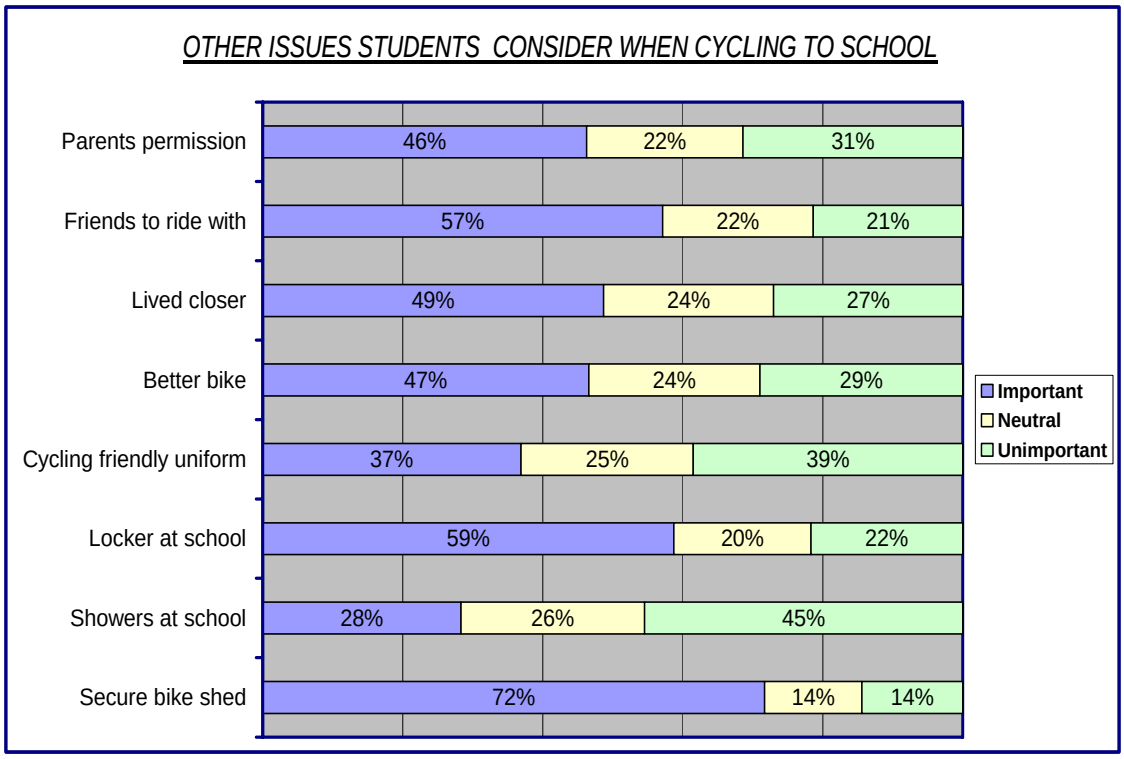

Figure 8: Other issues for Year 8 non-cyclists (Error ± 3%)

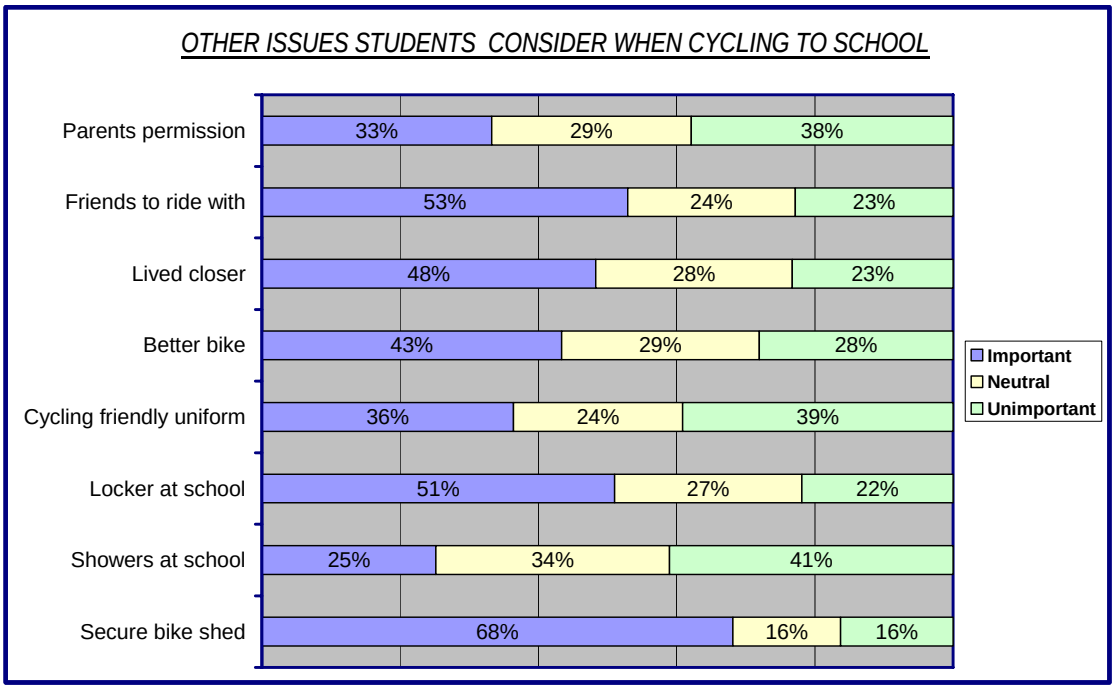

Figure 9: Other issues for Year 9 non-cyclists (Error ± 3%)

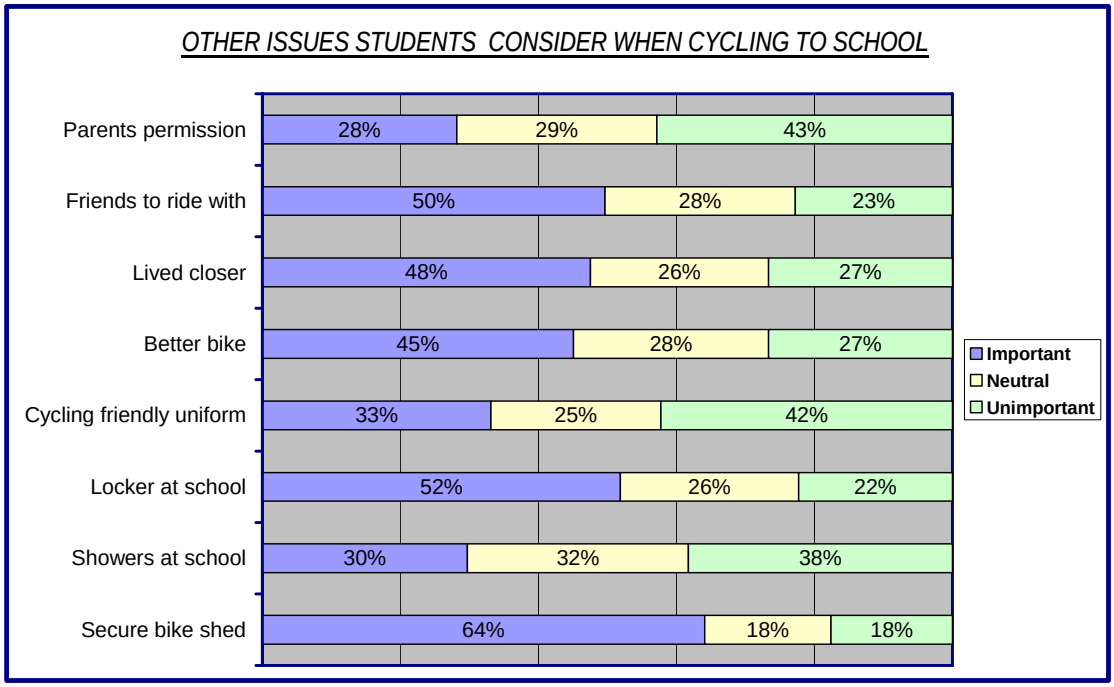

Figure 10: Other issues for Year 10 non-cyclists (Error ± 3%)

A secure place to leave a bike at school rated as the most important factor for students at all three levels. A locker at school in which to store school materials is important; this is related to the importance of having a lighter bag making it safer when riding a bike to school. Having friends to ride with is seen an important issue for students at all levels.

4.5.4 Consider cycling to School

Would you ever consider cycling to school?

	Year 8	***Year 9***	***Year 10***
Yes	66%	49%	45%
No	34%	51%	55%
	100%	100%	100%

Table 13: Would you consider cycling to school?

There is a trend shown in the table for students to be less interested in cycling to school as they get older. Even so there are large numbers of students who would consider cycling to school if conditions to do so were more favourable.

4.5.5 Peer Issues

If you were to cycle to school what do you think your friends would think about it?

What would your friends think?	**Year 8**	**Year 9**	**Year 10**
They would think it was cool	6%	3%	5%
They would think it was uncool	6%	17%	18%
They wouldn't care	71%	70%	70%
They may consider cycling to school themselves	17%	10%	7%
	100%	100%	100%

Table 14: What would your friends think?

The high percentage of students (70%) who responded that their friends wouldn't care if they cycled to school is encouraging considering that peer pressure is often seen as a determining factor that features strongly in teenagers' decision making. The results in Table 12 indicate that peer pressure is more evident at secondary school than at intermediate school as indicated by the percentage increase from 6% at Year 8 to 17% at Year 9 for the "uncool" factor.

The following table compares the "peer pressure" issue related to gender.

	Year 8		Year 9		Year 10	
	M	F	M	F	M	F
Cool	8%	4%	4%	2%	7%	4%
Uncool	4%	8% ± 2.8%	8%	25% ± 4.5%	10%	26% ± 3.8%
Wouldn't care	77%	65%	76%	65%	77%	64%
May cycle themselves	11%	22% ± 4.3%	12%	9% ± 2.7%	6%	7% ± 2.2%
	N=304	*N=314*	*N=346*	*N=385*	*N=412*	*N=440*

Table 15: By gender: What would your friends think?

At Year 8 the distributions for male and female responses are similar with the exception that girls believe that their actions of cycling to school may influence friends to do the same. There is a significant increase in the percentage of girls, from Year 8 (8%) to Year 9 (25%), who think that if they rode to school their friends would consider it to be uncool. This increase was not evident when comparing the distribution of the boys' responses at each level.

There is strong evidence that the difference in the "uncool" factor for Year 8 and Year 9 girls is statistically significant, as indicted by the highlighted figures. There is no evidence that the difference in the "uncool" factor for boys from Year 8 to Year 9 is statistically significant.

There is strong evidence that the difference in the "may cycle themselves" factor for Year 8 to Year 9 is statistically significant.

If you were to cycle to school what do you think other students would think about it?

What would other students think?	**Year 8**	**Year 9**	**Year 10**
They would think it was cool	7%	4%	6%
They would think it was uncool	5%	20%	22%
They wouldn't care	88%	76%	72%
	100%	100%	100%

Table 16: What would other students think?

The trend for what other students may think is similar to that of "friends" impressions with an increase in the percentage of those at Year 9 of who think that other students would consider cycling to school "uncool".

The following table compares males and females.

	Year 8		**Year 9**		**Year 10**	
	M	**F**	**M**	**F**	**M**	**F**
Cool	9%	7%	6%	2%	7%	4%
Uncool	3%	7% ± 2.7%	8%	30% ± 4.2%	10%	34% ± 4.1%
Wouldn't care	88%	86%	86%	68%	83%	62%
	N=304	*N=314*	*N=346*	*N=385*	*N=412*	*N=440*

Table 17: By gender: What would other students think?

There is strong evidence that the difference in the "uncool" factor for Year 8 and Year 9 girls is statistically significant as indicated by the highlight figures. There is no evidence that the difference in the "uncool" factor for boys from Year 8 to 9 and 10 is statistically significant.

4.5.6 Reasons for stopping cycling to school

If you have cycled to school, why have you stopped doing so now?

Why have you stopped cycling to school?	**Year 8**	**Year 9**	**Year 10**
I have never ridden to school	61%	63%	62%
It is too far to cycle to school now	18%	17%	16%
It isn't cool to cycle to school now	6%	6%	7%
I don't have a bike now	5%	6%	7%
The roads to school are unsafe now	10%	8%	8%
	100%	100%	100%

Table 18: Why have you stopped cycling to school?

There is no significant difference between the distributions of the proportions at each of the year levels. It is important to note that a large proportion have never ridden to school.

4.6 Issues related to students <u>who cycle to school regularly</u> (Section 2)

	Sample			**Population**		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
Year 8	51	8	**59**	14.0%	2.1%	**8.5%**
Year 9	23	3	**26**	6.1%	0.8%	**3.4%**
Year 10	33	4	**37**	7.3%	0.9%	**4.1%**
Totals	***N = 107***	***N = 15***	***N = 122***	***9.1%***	***1.3%***	***5.3%***

Table 19: Distribution of students who regularly cycle to school

Table 19 shows that there are 7 times more male students than female students cycling to school. This proportion is the same for all three year levels.

4.6.1 Safety Issues

What is the importance of each of the following with respect to you riding to school?

Road safety training
A lighter school bag making it safer to ride
A safer route through quiet streets and parks
Slower traffic on the road(s)
Riding on the footpath
Safer places to cross the road(s)
Cycle lanes on the road

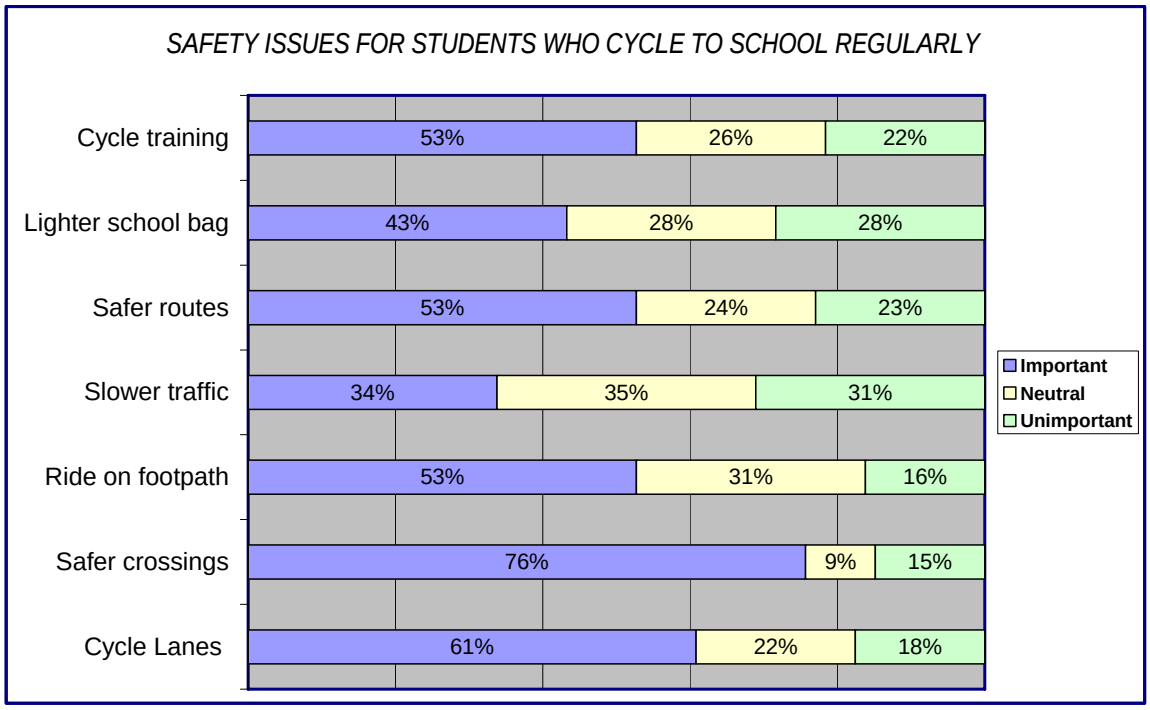

Figure 11: Safety issues for Year 8 regular cyclists

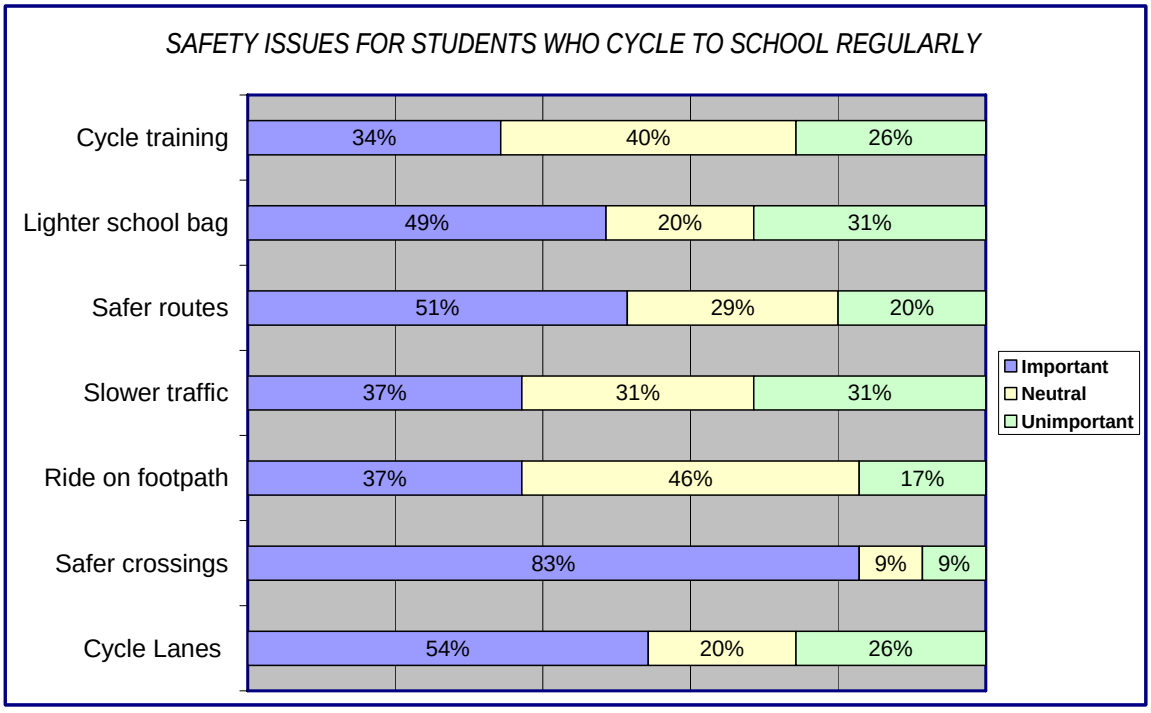

Figure 12: Safety issues for Year 9 regular cyclists

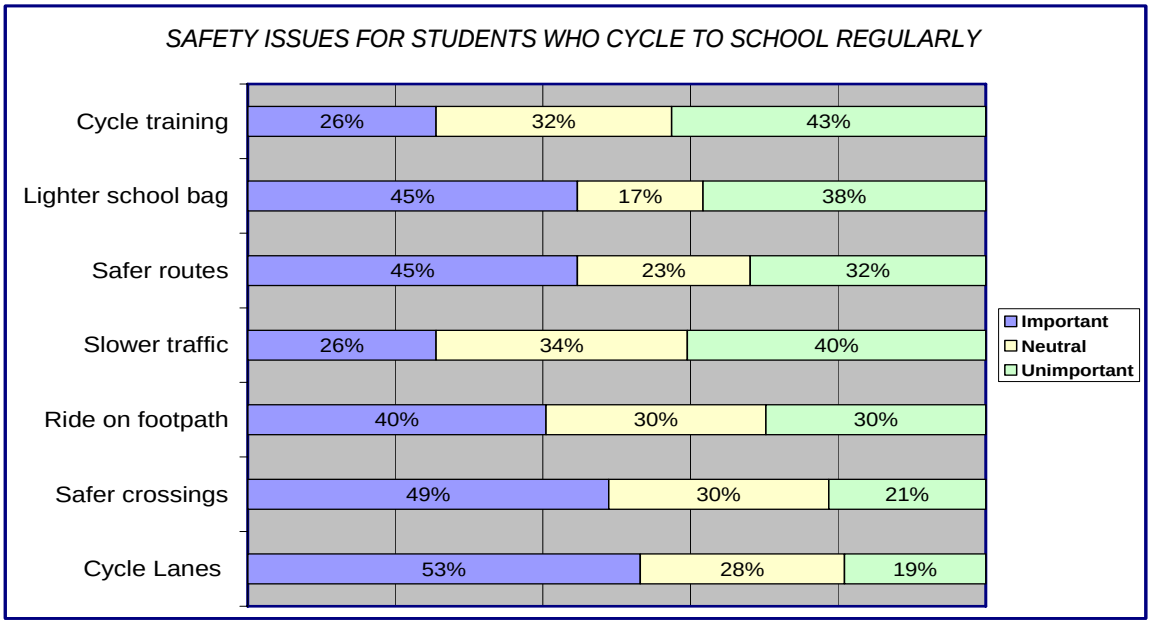

Figure 13: Safety issues for Year 10 regular cyclists

Comparisons between the three graphs, *Figures 11, 12 and 13*, shows that the importance of *cycle training* diminishes as students get older. This is expected as when students regularly cycle to school they will become more competent cyclists. The importance of having *safer crossings* and being able to legally *ride on the footpath* reduces although *safer crossings* are still an issue for Year 9 students.

4.6.2 Facilities at School and Other Issues

What is the importance of each of the following with respect to you riding to school?

Benefit to the environment
Cycling as a healthy activity
A cycle friendly uniform
A locker to store your books etc at school
Showers at school
A covered area to store your bike
A secure place to store your bike at school

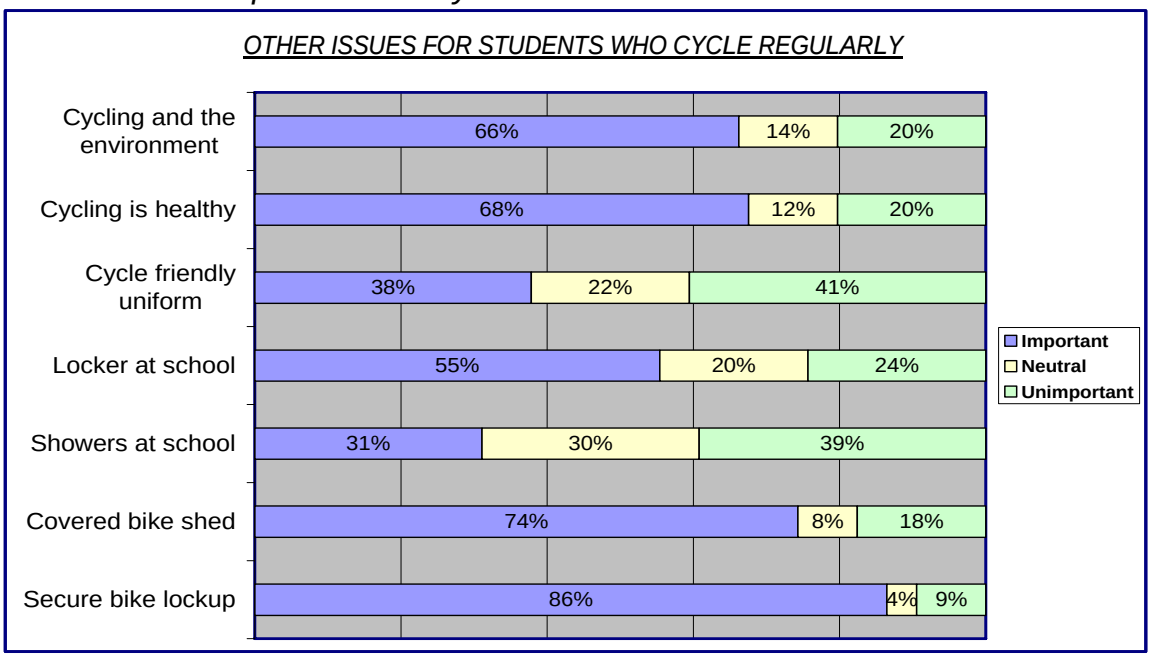

Figure 14: Other issues for Year 8 regular cyclists

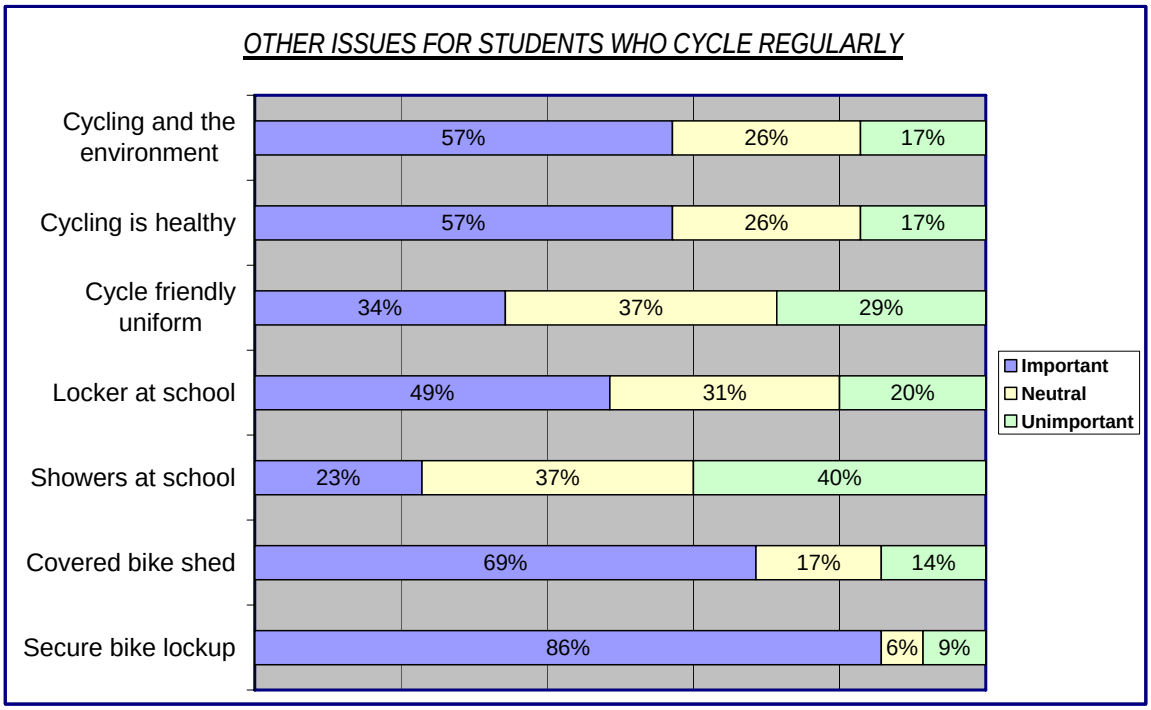

Figure 15: Other issues for Year 9 regular cyclists

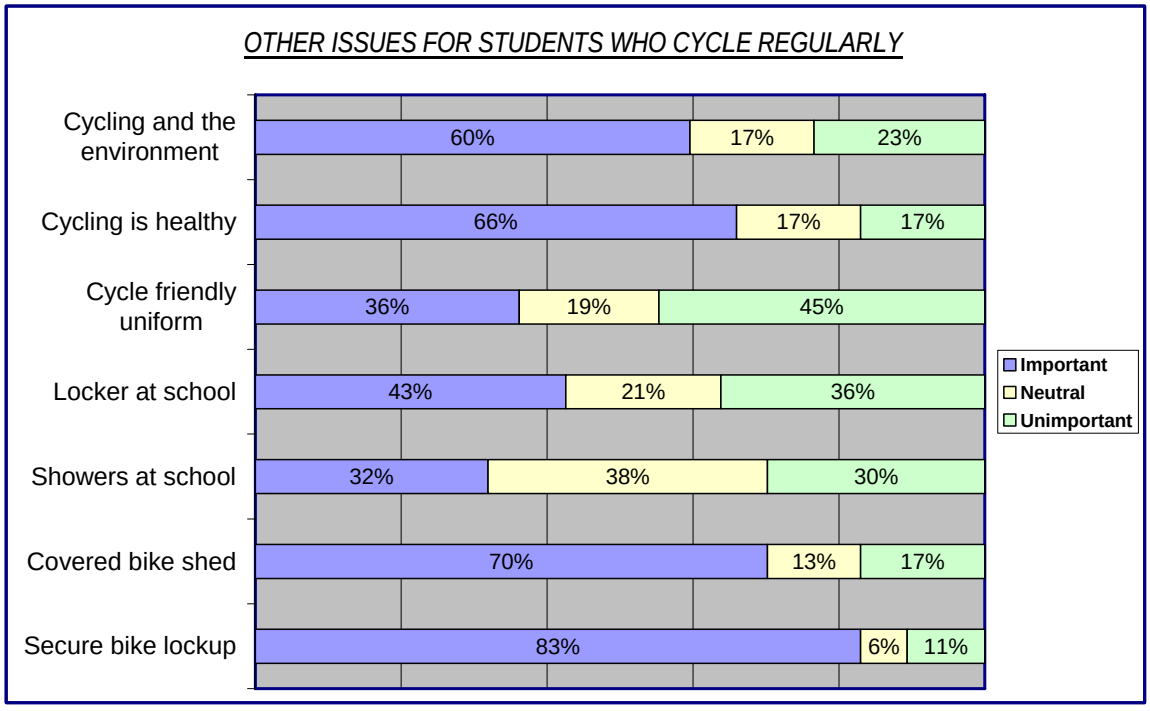

Figure 16: Other issues for Year 10 regular cyclists

Figures 14, 15 and 16 show that students who ride to school rate “the benefits of cycling to the environment” and that cycling is a “healthy activity” as important. They also consistently rate having a secure, covered area to store their bikes at school as very important. Comments from students who don’t cycle regularly to school also cited this as a reason why they do not ride. Schools often place bike racks in remote places where the bikes can be tampered with or damaged.

4.6.3 Reasons for Cycling to School

Why do you cycle to school? Select up to three answers.

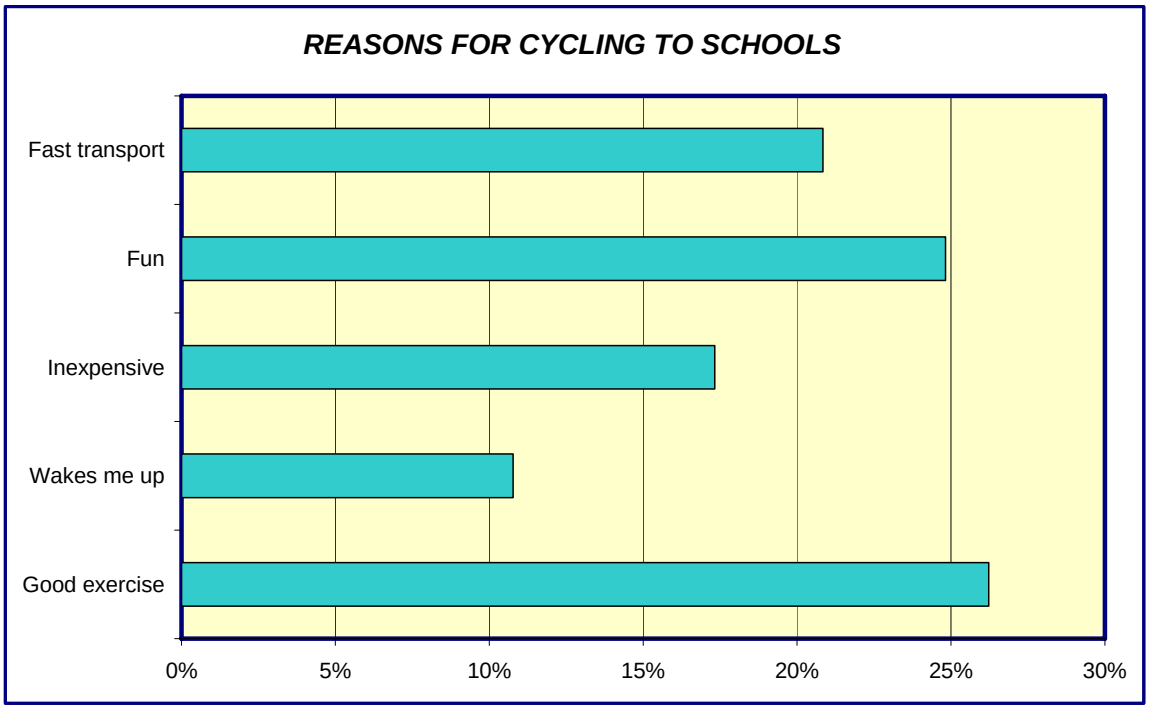

Figure 17: Reasons for Cycling to School (regular cyclists)

Figure 17 is a graph that combines the responses for all the year levels since the distribution for each was very similar. The popular reasons shown in the chart are consistent with surveys and research from around the world. *Independence* is often cited as the prime motivator for why many children enjoy cycling. It is of interest in this survey is that the most popular reason given was that cycling is "*good exercise".*

4.6.4 Where children ride when cycling to and from school

When you ride to and from school which applies to you?

I ride mostly on the road
I ride mostly on the footpath

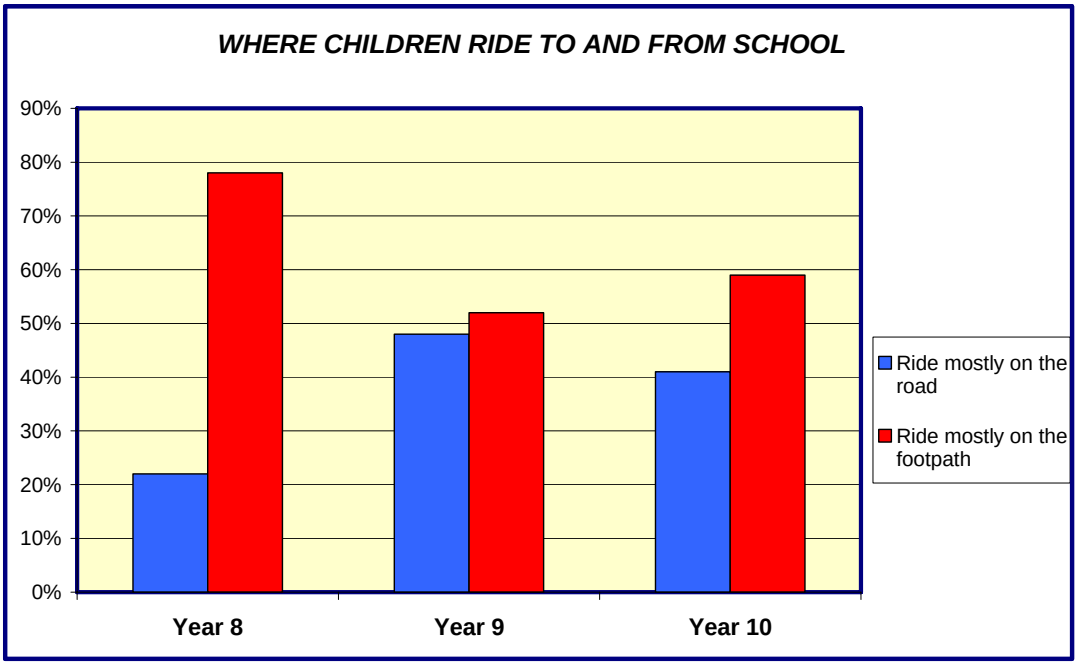

Figure 18: Where children ride (regular cyclists)

Almost 80% of Year 8 students ride to school on the footpath even though it is illegal to do so. In Years 9 and 10 the proportions of those who ride on the footpath are similar to the proportions of those who ride on the road. Many students commented that they were only permitted by parents to ride to school if they rode on the footpath.

4.6.5 Intention to continue cycling to school

Do you intend cycling to school next year?

	Year 8	Year 9	Year 10
Yes	85.1%	97.1%	93.5%
No	14.9%	2.9%	6.55
	100%	100%	100%

Table 20: Intention to ride to school next year

4.7 Exercise, Training, Facilities and Parents Cycling

4.7.1 Exercise

In a week (7 days), how much time do you usually spend on physical activity outside school hours? Physical activities include team sport, walking or cycling to and from school, dance classes, gym, swimming, karate, etc.

Year 8

Amount of Activity	Male	Female	All Year 8
Less than 1 hour	11%	12%	12% ± 2%
Between 1 and 3 hours	19%	23%	21% ± 3%

Between 3 and 5 hours	22%	27%	25% ± 3%
More than 5 hours	48%	38%	42% ± 3%
	N=367	*N=325*	*N=692*

Table 21: weekly Physical Activity (Year 8)

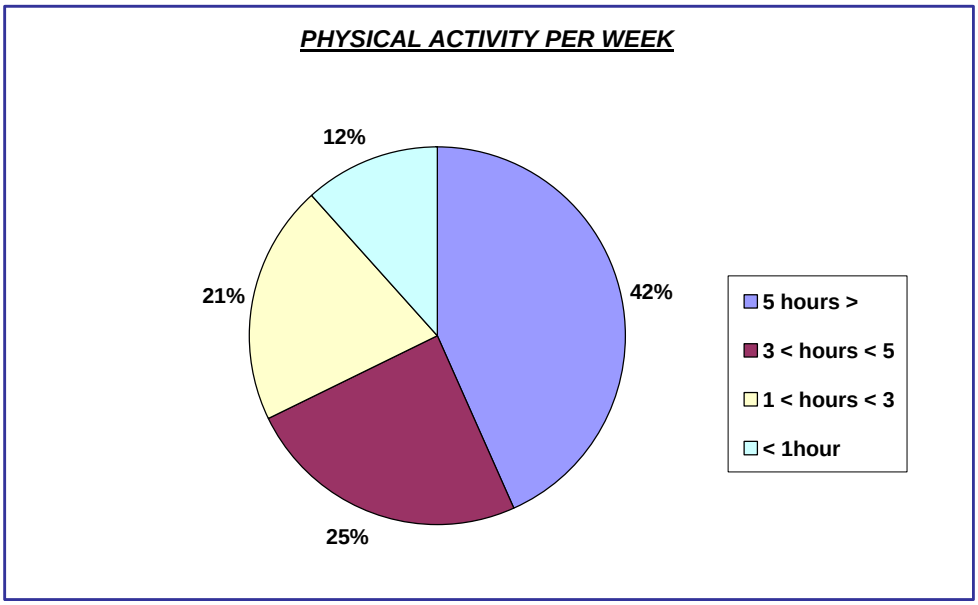

Figure 19: Physical Activity (Year 8)

Year 9

Amount of Activity	Male	Female	All Year 9
Less than 1 hour	7%	10%	8%
Between 1 and 3 hours	18%	26%	22%
Between 3 and 5 hours	23%	26%	25%
More than 5 hours	52%	38%	45%
	N=377	***N=388***	***N=765***

Table 22: Weekly Physical Activity (Year 9)

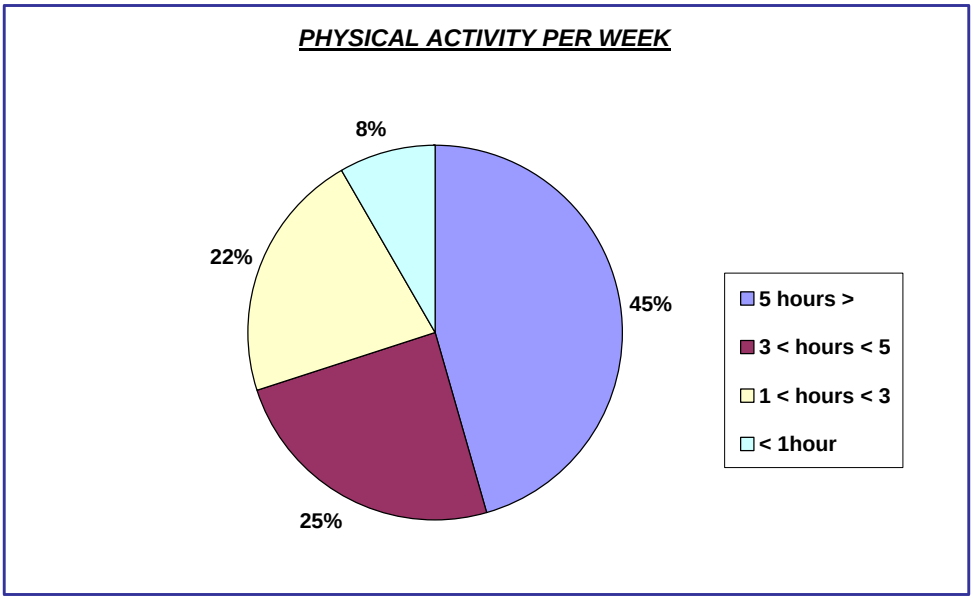

Figure 20: Physical Activity (Year 8)

Year 10

Amount of Activity	Male	Female	All Year 10
Less than 1 hour	11%	10%	11%
Between 1 and 3 hours	18%	25%	21%
Between 3 and 5 hours	22%	27%	24%
More than 5 hours	49%	38%	44%
	N=454	*N=444*	*N=898*

Table 23: Weekly Physical Activity (Year 10)

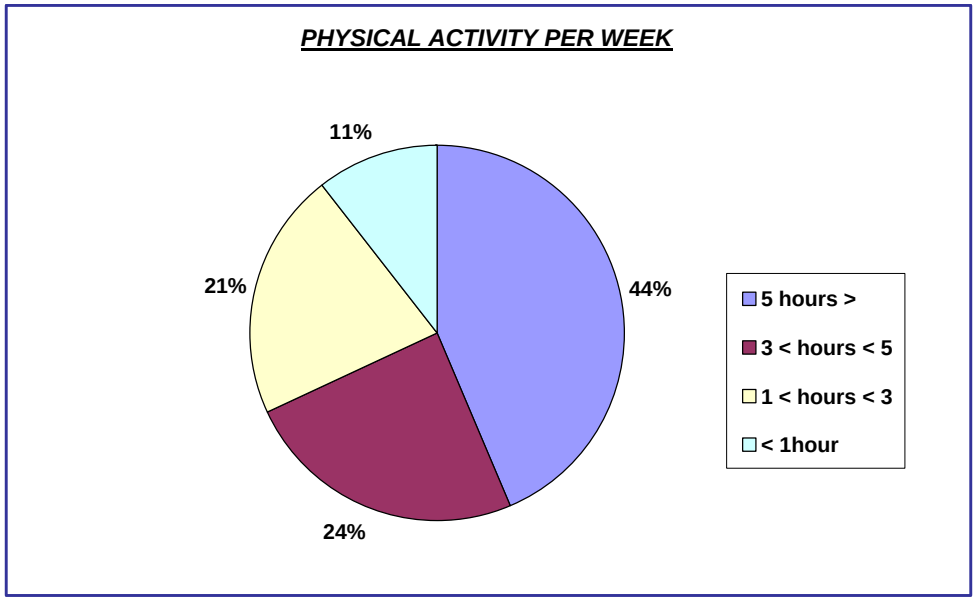

Figure 21: Physical Activity (Year 10)

The distributions of the amount of exercise done per week by students are similar for each of the year levels. Males are more likely to spend 5 or more hours per week exercising at all three levels. Approximately 30% of students at each of Year 8, 9 and 10 do less than 3 hours of exercise per week.

4.7.2 Cycling Facilities on the North Shore

Would you be interested in cycling more if there were better facilities for biking on the North shore?

Cycling Facilities	Yes	No	
Year 8	70%	30%	*N=692*
Year 9	56%	44%	*N=766*
Year 10	47%	53%	*N=898*

Table 24: Cycling facilities on North Shore

If you said "Yes", please indicate the facilities you would prefer.

Mountain Bike Park
BMX Track
\ *Green Routes (Riding paths through parks)*

Racing Track (Like in the Commonwealth Games)

Note: Students were allowed to select more than one facility.

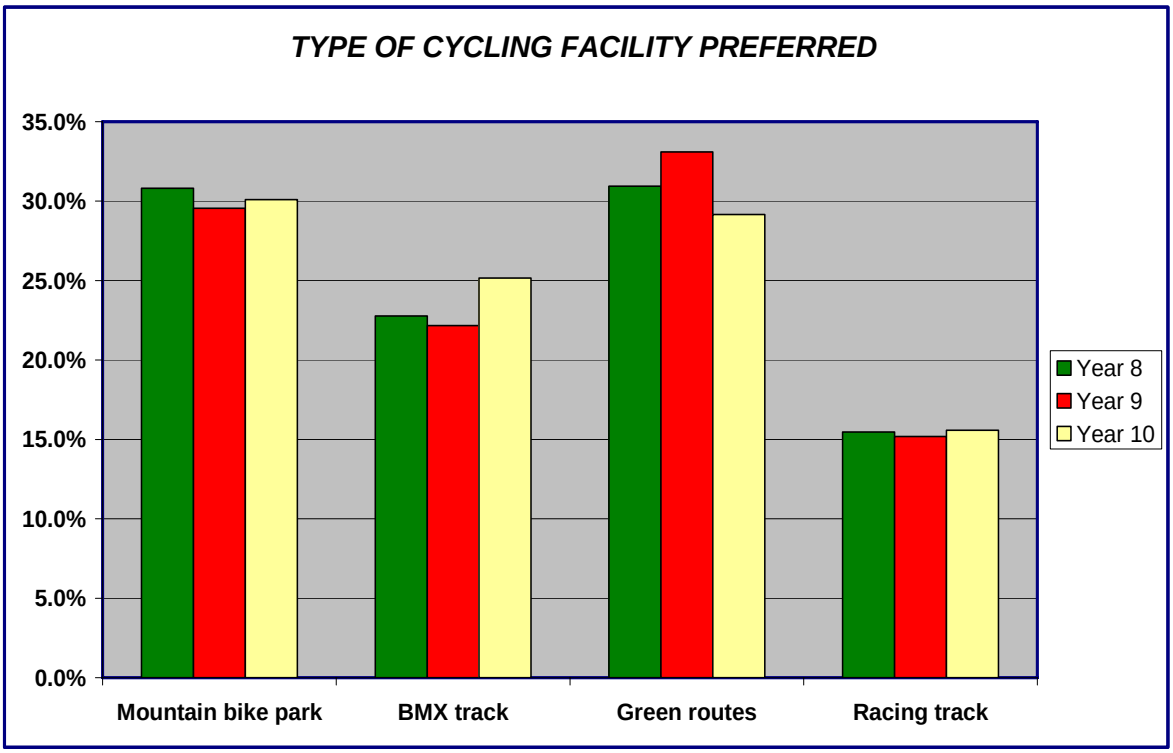

Figure 22: Type of cycling facility preferred

The distributions of the type of facility for students who would be interested in cycling facilities on the North Shore were similar for all year levels. Green Routes and a Mountain Bike Park were the most popular facilities.

4.7.3 Cycling Training

Have you had any cycling road safety training?

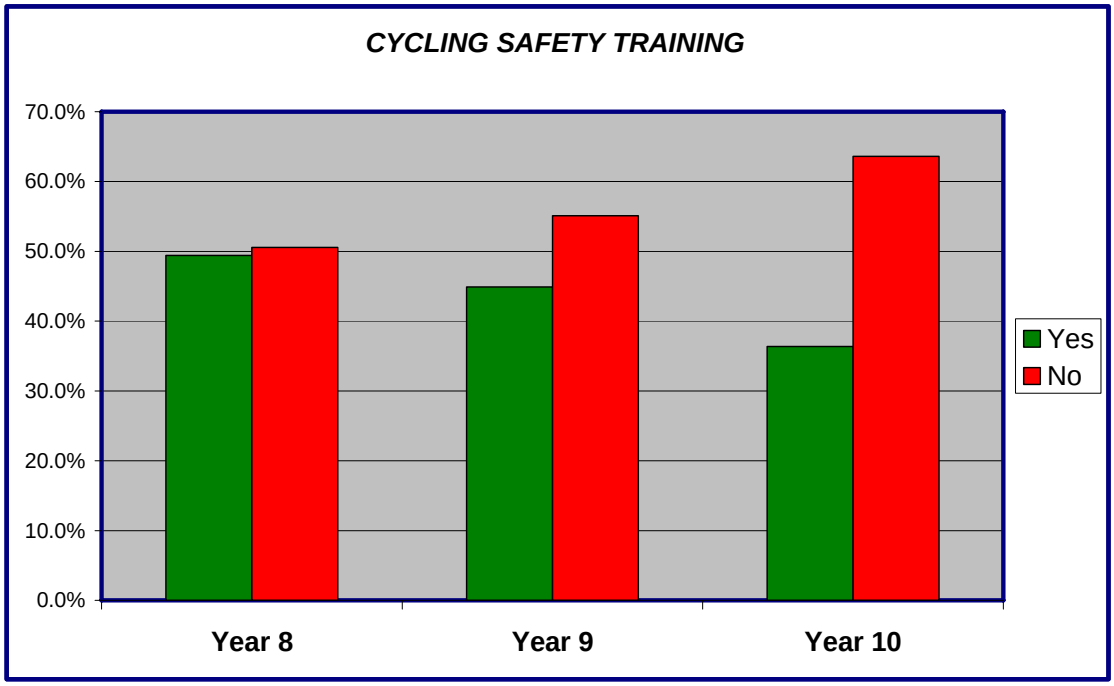

Figure 23: Students who have had cycling training

The percentage of students who have had cycling safety training Year 8 (46% to 53%) is significantly higher to the percentages that have had training in Year 10 (33% to 40%).

4.7.4 Parents/Guardians Cycling Habits

Do either (or both) of your parents/guardians cycle?

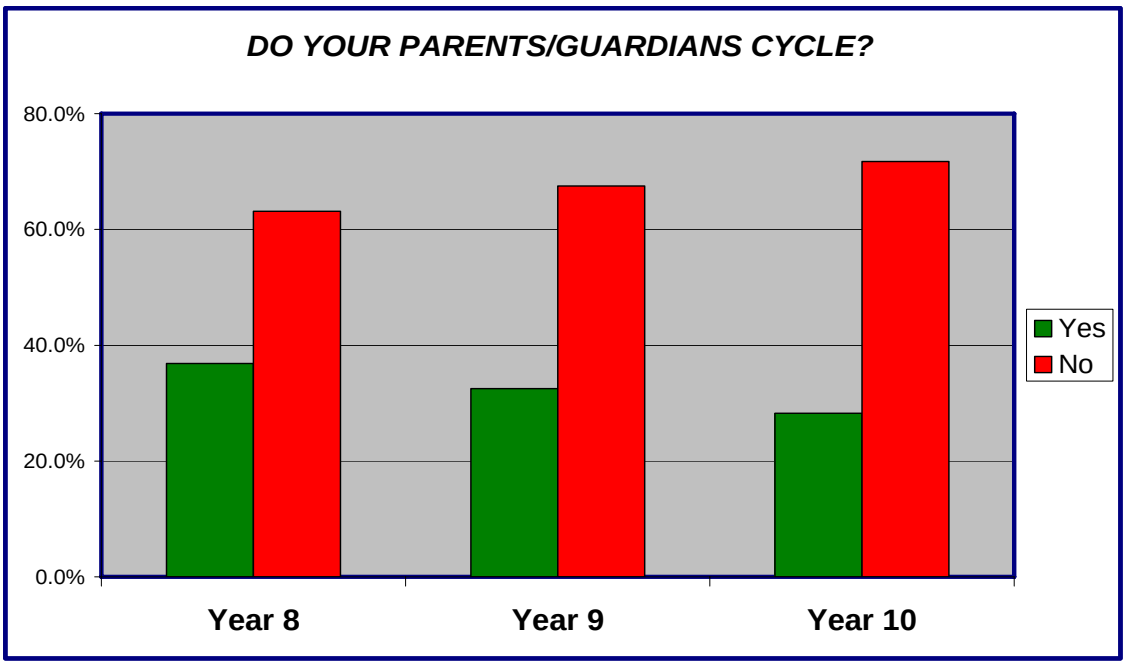

Figure 24: Parents/Guardians who cycle

Parents and guardians are the key element in the decision making process of whether their child cycles to and from school. It is often the parent's perception of the hazards of the road that is influential in the decision of which mode of transport is to be used. Studies have shown that parents who cycle themselves are more likely to have a positive attitude to cycling

(Walton, Dravitzki, Cleland, Thomas, Jackett, 2005). This survey shows that approximately 35% of the parents of this population cycle regularly.

Do Parents Cycle	**Yes**	**No**	
Year 8	37%	63%	*N=692*
Year 9	33%	67%	*N=766*
Year 10	28%	72%	*N=898*

Table 25: Parents who cycle

If you answered "Yes" do they cycle ……..

To work
For exercise
For leisure

Note: Students were able to select more than one activity.

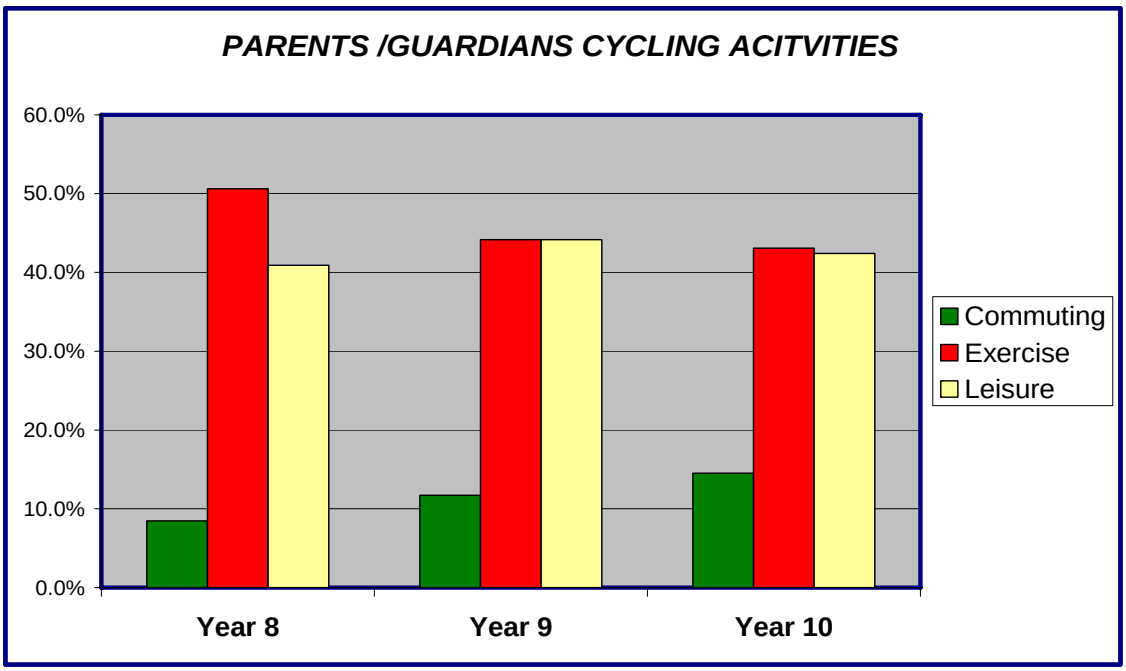

Figure 25: Parents/Guardians cycling activities

4.8 Accidents

Very little data is available on the frequency and nature of accidents involving cyclists. Under-reporting of accidents is a well known problem and statistics gathered are often anecdotal. This section of questions is designed to provide details about cycling accidents that members of this population have had. This information could be used by road safety coordinators and transport planners and engineers to direct future resources to make it safer for children to ride to school.

4.8.1 Number of Accidents

Have you ever had a cycling accident in which you got hurt?

Have you had an accident?	No	Yes
Year 8	51%	49%
Year 9	54%	46%
Year 10	52%	48%

Table 26: Cycling accidents

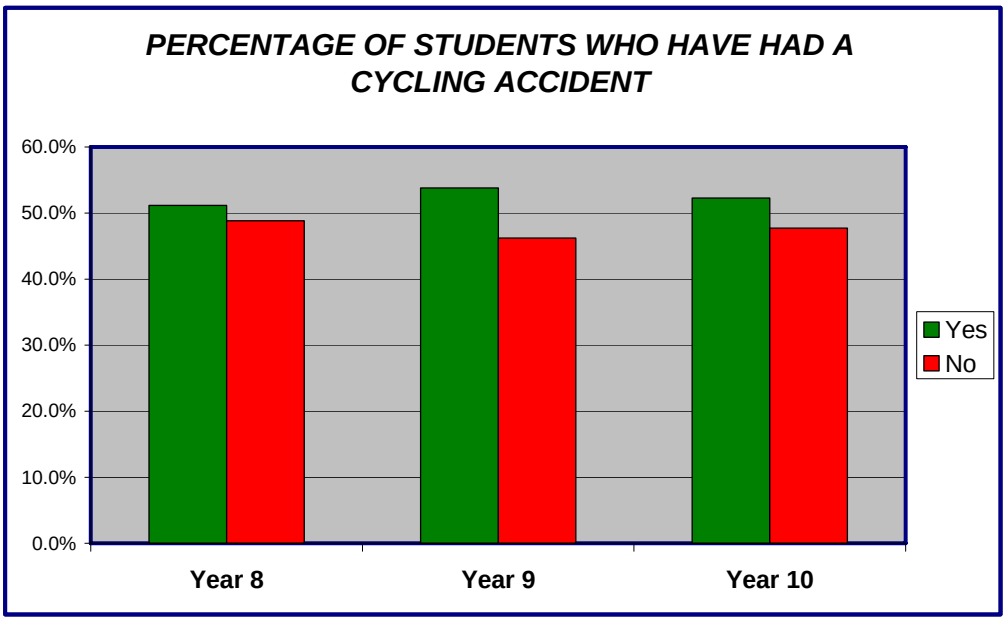

Figure 26: Cycling accidents

The proportion of students who have been involved in a cycling accident is consistently about 50% for all three groups.

4.8.2 Who was involved in the accident

If you answered "Yes" to the last question, please answer the following questions

Which of the following was involved in your accident?

Motor Vehicle
Pedestrian
No, just me
Other

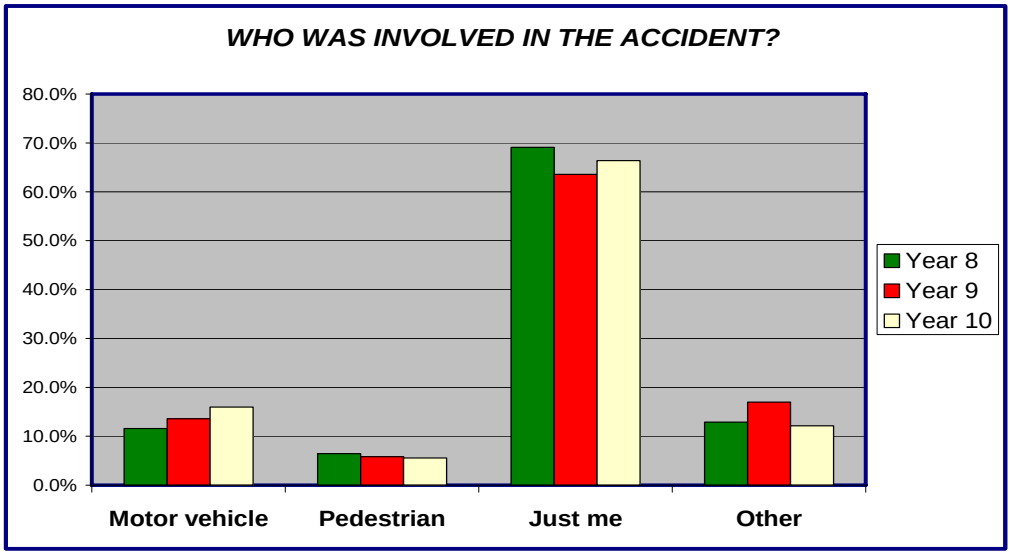

Figure 27: Who was involved in the accident

The distributions of who was involved in the accident(s) were similar for all three groups. Approximately 65% of all of the accidents involved just the child. Students were given the opportunity to give details of the accident i.e. location, time of day, what caused the accident etc. These responses are available for further analysis but are not provided in this report.

4.8.3 Accident Injuries

What were your injuries in the accident?

Minor injuries (not needing a visit to the doctor and/or hospital)
Major injuries (needing a visit to the doctor and/or the hospital)

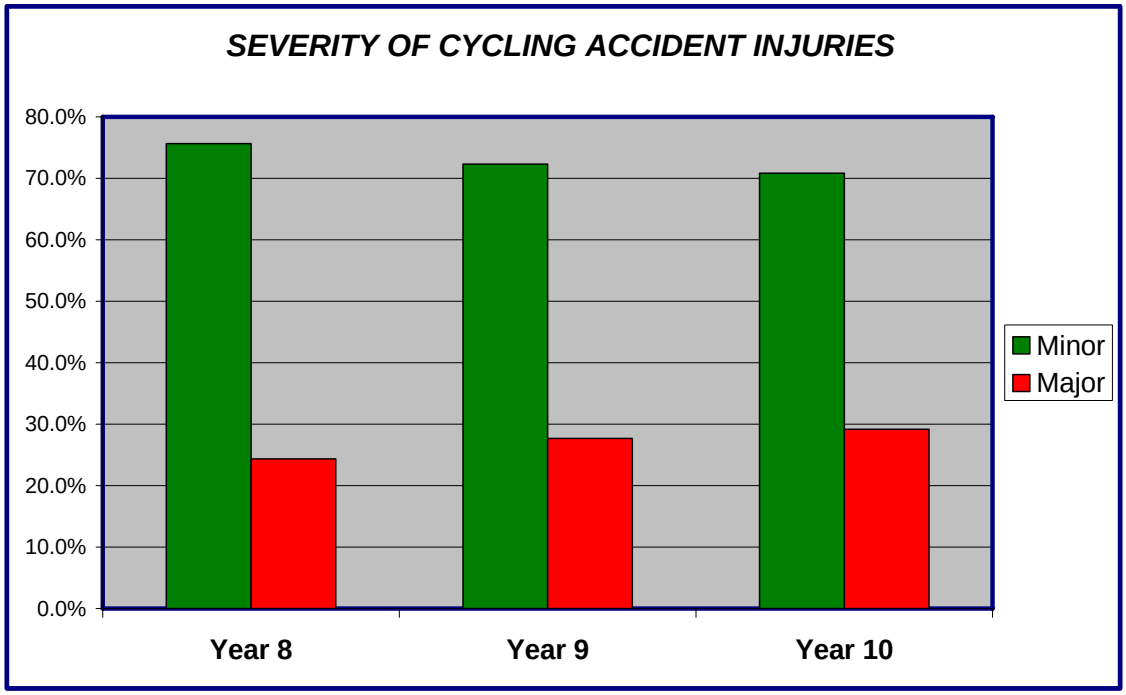

Figure 28: Severity of cycling accidents

The distributions of the severity of the accident(s) are similar for all three groups. Approximately 72% of the accidents were minor i.e. not requiring a visit to the doctor and/or to the hospital.

4.8.4 Discouraged from cycling because of accident

Did your accident put you off cycling?

	Yes	No	
Year 8	18%	82%	*N=369*
Year 9	20%	80%	*N=412*
Year10	16%	84%	*N=469*

Table 27: Discouraged from cycling

Note: *Students were asked to provide details of their accidents i.e. location, time of day, reason for accident. This information has not being analysed in this report.*

4.9 Summary of Key Findings

4.9.1 Bike ownership

- Three quarters (75%) of students in Year 8, 9 and 10 own a bike
- Bike ownership is highest in Year 8 (80%)
- 50% of the bikes owned are mountain bikes
- 40% of students had not used their bike in the last month
- Bike usage decreases when students start attending secondary school
- 8% use their bikes to ride to school
- 20% use their bike to keep fit

4.9.2 Travelling to and from school

- 38% of students live more than 3 kilometres from the school gate
- 40% live between 1 and 3 km from school – a suitable distance to cycle
- 9% of Year 8 students regularly bike to school as do 3% of Year 9 and 4% of Year 10 students
- 33% of Year 8, 16% of Year 9 and 11% of Year 10 students would prefer to cycle to school
- Boys are 7 times more likely to cycle to school than girls

4.9.3 Students <u>not regularly</u> cycling to school

<u>Safety issues:</u>

- Lack of cycle lanes, safer crossings and routes to school are the most important issues for all year levels
- The speed of the traffic is a concern for over 45% of the students
- Being able to ride on the footpath is important to 48% of the students

<u>Facilities and other issues:</u>

- 68% of respondents indicated that a secure bike shed was important to them
- A locker at school to store cycling gear was important for over 50%
- A third indicated that parent permission was seen a barrier
- 62% of students of this group have never ridden to school

<u>Peer Issues:</u>

- 53% indicated that having friends to ride to school with was important
- 70% of students think their friends “wouldn’t care” if they rode to school
- Girls are more likely to be concerned that their friends may consider them as “uncool” if they rode to school. This number increases significantly from 8% of Year 8 to 25% of Year 9 students.
- Girls are also more likely to consider that other students may think that cycling to school is “uncool” (7% in Year 8 to 30% in Year 9)

4.9.4 Students <u>who cycle</u> to school regularly

<u>Safety Issues</u>:

- Safer crossing are very important to Year 8 (76%) and Year 9 (83%) cyclists,
  They are important for 49% of Year 10 cyclists

- Cycle lanes and safer routes to school are perceived as important
- Cycle training is important for 53% of Year 8 cyclists but only important for only 34% of Year 9 cyclists
- The majority of those riding to school cycle on the footpath, i.e. 78% of Year 8's and 52% of Year 9's

Facilities and other issues:

- Having secure, covered bike sheds that are locked up during the day is very important for this group (85% indicated these facilities were important)
- Showers at school and a cycle friendly uniform were important to about a third of the cyclists
- 65% of the cyclists indicated that they considered riding to school a healthy activity that is beneficial to the environment
- Good exercise, fast transport and the fun aspect where given as important reasons for cycling to school
- 95% indicated that they intended to ride to school the following year

4.9.5 Exercise, cycling facilities and the cycling habits of parents/guardians (all students)

Exercise:

- One third of all students (approximately 2800 of this population)exercise for less than 3 hours per week
- 10% (850 of this population) exercise for less than 1 hour per week
- The distribution of the amount of exercise done by males and females is similar

Cycling facilities:

- 70% Year 8 students indicated that they would be keen to have better cycling facilities in the area
- "Green routes" and "mountain bike parks" were the preferred facilities

Cycling skills training

- 50% of the students surveyed had had cycle skills training

Parents/guardian cycling habits

- One third of the respondents parents/guardians cycled
- The most common activities were cycling for exercise and leisure

4.9.6 Cycling accidents

- 50% of students have had an accident whilst riding a bike
- 65% of the accidents involved no one else
- 10% of accidents involve a motor vehicle
- 25% of the accidents required a visit to the doctor and/or hospital
- 20% of the students who had an accident were discouraged from cycling

5 APPENDICES

5.1 Author's recommendations for further investigation

The health and environmental benefits of a modal shift to cycling to school are so overwhelming that it is recommended that:

1. The North Shore City Council liaise with the Ministry of Education to subsidise the construction of bike sheds at schools to provide secure, covered storage for student's bikes and riding gear.

2. The North Shore City Council advocate a change in the road user rule to legalise riding bicycles on footpaths to and from school for students aged 12 and younger.

3. Investigate including 'on road' cycling training be provided for students at Year 8 level with further advanced training provided at Year 9 as part of the school Health Curriculum.

4. An appropriate person is appointed on the North Shore to promote cycling and related cycling activities for young people. This person would also have an advocacy role and would represent the interests of students who walk and cycle to school.

5. Research be undertaken to develop programs to promote the benefits of cycling to school for students at the "contemplative" and "preparation" stages of the behavioural change model supported in this report.

6. Strategic education programmes be developed to further create a climate of safety for students who ride to school including identifying safe routes and crossings.

7. The North Shore City Council investigate leadership opportunities for young people to promote alternative forms of travelling to and from school that are healthy and beneficial for the environment, e.g. through the North Shore City Youth Council

8. Programmes specifically designed to encourage girls to ride to school be developed.

9. Sponsorship be sought from commercial interests to subsidise the purchase of bicycles for teenagers keen to cycle to school.

10. Information from this survey be used to further develop North Shore City cycling implementation strategies.

5.2 Author's discussions of findings

Note: The discussions in this section are the views of the author and not those of the North Shore City Council.

5.2.1 Introduction

The results from this survey indicate that there are many Year 8, 9 and 10 students who would cycle to school if conditions were more suitable. Some of the issues raised, such as the distance from the school gate, cannot be changed but there are some barriers that can be addressed by existing programs and agencies to encourage more cycling to school. Although there are some students who will never cycle to school there is a sizeable proportion who could be encouraged to do so given more favourable conditions.

Also in this section various issues that have been highlighted as a result of this survey will be discussed such as:

- Travel behavioural change
- School cycling profiles
- Active school profiles
- Other cycling profiles
- Cycling on the footpath
- Secure bike storage
- Parents perception of cycling

5.2.2 Travel behavioural change

To facilitate and promote behavioural changes in travel it is important to realise that there are multiple stages in the process. It is intended that the characteristics of the various sub groups in the change process related to cycling to school are identified. This will enable tailored programmes be developed to provide momentum for students to move through the various stages of change.

Stages of travel behavioural change

There has been considerable research related to models of individual behaviour change, but less has been given to models or theories that attempt to understand behaviour change in groups. Prochaska and DiClemente (1986) and their colleagues formally identified the dynamics and structure of behaviour change. Their model of change is based on 5 distinct stages through which people move in a cyclical or spiral pattern that has been identified along with parallel work of Rogers (1983) as an approach that sits well with any school based program that is focussed on travel behaviour change (TravelSMART: Theories and Models for Behavioural Change).

The 5 stages of behavioural change using Prochaska and DiClemente's model are:

***Stage 1*:**	**Precontemplation**	**"Never"**
***Stage 2*:**	**Contemplation**	**"Someday"**

***Stage 3*:**	**Preparation**	**"Soon"**
***Stage 4*:**	**Action**	**"Now"**
***Stage 5*:**	**Maintenance**	**"Forever"**

5 Stages of Behavioural Change (Prochaska and Diclemente's model)

Prochaska and DiClemente's Stages of Change Model

Stage of Change	Characteristics	Techniques
Pre-contemplation	Not currently considering change: "Ignorance is bliss"	Validate lack of readiness Clarify: decision is theirs Encourage re-evaluation of current behaviour Encourage self-exploration, not action Explain and personalize the risk
Contemplation	Ambivalent about change: "Sitting on the fence" Not considering change within the next month	Validate lack of readiness Clarify: decision is theirs Encourage evaluation of pros and cons of behaviour change Identify and promote new, positive outcome expectations
Preparation	Some experience with change and are trying to change: "Testing the waters" Planning to act within 1month	Identify and assist in problem solving re: obstacles Help patient identify social support Verify that patient has underlying skills for behaviour change Encourage small initial steps
Action	Practicing new behaviour for 3-6 months	Focus on restructuring cues and social support Bolster confidence for dealing with obstacles Combat feelings of loss and reiterate long-term benefits
Maintenance	Continued commitment to sustaining new behaviour Post-6 months to 5 years	Plan for follow-up support Reinforce internal rewards Discuss coping with relapse
Relapse	Resumption of old behaviours: "Fall from grace"	Evaluate trigger for relapse Reassess motivation and barriers Plan stronger coping strategies

Figure 29

Using the data collected from this survey it has been possible to identify the proportion of students at each stage. The stage that a student is at has been based on their response to a particular question:

Stage	Survey Question	Response
Precontemplation	*Would you ever consider cycling to school?*	"No"
Contemplation	*Would you ever consider cycling to school?*	"Yes"
Preparation	*How often do you ride to school?*	"A few times a term"
Action	*How often do you ride to school?*	"Every week"

Table 28: Survey questions to identify stages of change

Sub groups in the behavioural change model

The table below shows an estimate of the number of students attending the 19 schools surveyed at each stage of the Behavioural Change Model:

Stage		**Year 8**	**Year 9**	**Year 10**	**Total**
Precontemplation	*Never*	1080	1400	1630	**4110 (48%)**
Contemplation	*Someday*	1100	1080	1060	**3240 (39%)**
Preparation	*Soon*	300	140	130	**570 (7%)**
Action	*Now*	250	110	120	**480 (6%)**
		2730	**2730**	**2940**	**8400**
Chi-squared		*154.1*		*10.688*	
df		*3*		*3*	
p-value		*0*		*0.0135*	

Table 29: Number of students at each stage of behavioural change

There is a very high level of significance in the difference in the distributions of Year 8 and 9 students at each stage of the Behavioural Change Model (*p=0)*. There is a significant level of difference in the distributions of Year 9 and 10 students at each stage of the Behavioural Change Model (*p=0.0135).*

As students move from intermediate to secondary school there is an attitudinal shift towards cycling to school. The table above indicates that the percentage of students at the "Precontemplation" stage increase from Year 8 to 10.

i.e. ***Year 8: 40%*** ***Year 9: 51%*** ***Year 10: 56%***

The major proportion of this population (52%) sees cycling as a viable mode of transport to school given favourable conditions.

Profiles of the sub groups of travel behavioural change

For programs promoting cycling to be effective it is important to identify the "typical" characteristics of a student at the different stages of the behavioural change model. It is also important to be able to identify the issues and possible barriers that they dissuade them from cycling to school.

For the purpose of this report it has been decided to investigate the "typical" characteristics of Year 8, 9 and 10 students at the contemplative, preparation and action stages separately. The differences in the learning environments at intermediate schools and secondary schools would encourage different promotional programs. Also cycling to intermediate schools is presently more common hence they may require a different focus. For example the "Bike Buddy" program has a different focus at intermediate school level when compared with the approach used at secondary school.

Behavioural change stage profiles of Year 8 students

		Stage of Behavioural Change		
Characteristics/Issues		**Contemplation**	**Preparation**	**Action**
Gender	Male	52%	62%	86%
Type of bike	Mountain bike	55%	50%	57%
Time bike used for in last month	1 to 5 days More than 21 days	29% 16%	40% 17%	0% 62%
Distance from home to school gate	1 to 2 km More than 3km	19% 41%	29% 25%	24% 29%
Preferred mode of travel to school	Car Walk Bike	29% 15% 36%	21% 22% 47%	12% 3% 86%
Safety Issues	Cycle lanes Safe crossings Safe routes Ride on footpath Cycle training	74% 76% 72% 55% 49%	63% 58% 52% 37% 37%	54% 74% 47% 48% 48%
Other Issues	Secure bike sheds Locker at school Friends to ride with	79% 61% 59%	59% 54% 54%	86% 53%
Peer issues: friends	Cool Uncool	6% 7%	12% 9%	
Peer issues: others	Cool Uncool	9% 3%	9% 6%	
Reason for not cycling to school	Never ridden Roads are unsafe	58% 10%	46% 22%	
Why cycle?	Healthy activity Good for the environment			67% 68%
Physical activity (per week)	Less than 3 hours More than 5 hours	31% 45%	23% 57%	10% 56%
Would cycling facilities encourage you?	Yes	84%	81%	90%
Type of facility preferred	Mountain bike park Green routes	29% 37%	40% 28%	37% 12%
Have you had cycling training at school?	Yes	53%	59%	64%
Do your parents/guardian cycle?	Yes	53%	53%	47%
Parents/guardians cycle for…..	Exercise Commuting	49% 7%	49% 14%	55% 10%
Have you had a cycling accident?	Yes	53%	59%	66%
Who was involved?	Just me Motor vehicle	73% 10%	62% 19%	55% 13%
What were your injuries?	Minor Major	82% 18%	57% 43%	80% 20%
Did your accident discourage you for cycling?	Yes	15%	21%	8%

Table 30: Year 8 profiles at behavioural change stages

The percentages highlighted are significantly different to those at other stages in the behavioural change process.

Behavioural change stage profiles of Year 9 students

		Stage of Behavioural Change		
Characteristics/Issues		**Contemplation**	**Preparation**	**Action**
Gender	Male	59%	72%	88%
Type of bike	Mountain bike	56%	62%	40%
Time bike used for in last month	1 to 5 days More than 21 days	31% 10%	34% 18%	0% 71%
Distance from home to school gate	1 to 2 km More than 3km	24% 35%	28% 28%	38% 35%
Preferred mode of travel to school	Car Walk Bike	32% 24% 25%	31% 23% 31%	13% 0% 83%
Safety Issues	Cycle lanes Safe crossings Safe routes Ride on footpath Cycle training	66% 62% 58% 51% 32%	61% 58% 47% 37% 37%	46% 79% 50% 38% 29%
Other Issues	Secure bike sheds Locker at school Friends to ride with	75% 56% 57%	82% 61% 53%	92% 48%
Peer issues: friends	Cool Uncool	3% 11%	3% 5%	
Peer issues: others	Cool Uncool	5% 14%	11% 5%	
Reason for not cycling to school	Never ridden Roads are unsafe	56% 9%	16% 21%	
Why cycle?	Healthy Good for the environment			56% 58%
Physical activity (per week)	Less than 3 hours More than 5 hours	33% 48%	23% 57%	17% 62%
Would cycling facilities encourage you to ride?	Yes	75%	90%	92%
Type of facility preferred	Mountain bike park Green routes	30% 36%	32% 28%	39% 12%
Have you had cycling training at school?	Yes	52%	62%	57%
Do your parents/guardian cycle?	Yes	35%	54%	52%
Parents/guardians cycle for…..	Exercise Commuting	41% 10%	47% 10%	35% 22%
Have you had a cycling accident?	Yes	58%	69%	68%
Who was involved?	Just me Motor vehicle	67% 10%	33% 30%	45% 23%
What were your injuries?	Minor Major	74% 26%	59% 41%	63% 37%
Did your accident discourage you for cycling?	Yes	17%	22%	6%

Table 31: Year 9 profiles at behavioural change stages

The percentages highlighted are significantly different to those at other stages in the behavioural change process.

Behavioural change stage profiles of Year 10 students

Characteristics/Issues		Stage of Behavioural Change		
		Contemplation	Preparation	Action
Gender	Male	59%	87%	92%
Type of bike	Mountain bike	54%	61%	56%
Time bike used for in last month	1 to 5 days More than 21 days	31% 8%	35% 15%	0% 84%
Distance from home to school gate	1 to 2 km More than 3km	22% 46%	24% 29%	24% 29%
Preferred mode of travel to school	Car Walk Bike	39% 24% 14%	29% 18% 32%	18% 3% 79%
Safety Issues	Cycle lanes Safe crossings Safe routes Ride on footpath Cycle training	62% 56% 53% 55% 28%	49% 53% 47% 47% 31%	55% 47% 45% 37% 37%
Other Issues	Secure bike sheds Locker at school Friends to ride with	73% 56% 52%	67% 64% 51%	87% 42%
Peer issues: friends	Cool Uncool	6% 9%	3% 5%	
Peer issues: others	Cool Uncool	7% 15%	16% 13%	
Reason for not cycling to school	Never ridden Roads are unsafe	56% 9%	16% 21%	
Why cycle?	Healthy Good for the environment			71% 66%
Physical activity (per week)	Less than 3 hours More than 5 hours	26% 50%	23% 45%	18% 58%
Would cycling facilities encourage you to ride?	Yes	70%	80%	86%
Type of facility preferred	Mountain bike park Green routes	30% 31%	38% 20%	38% 21%
Have you had cycling training at school?	Yes	40%	42%	58%
Do your parents/guardian cycle?	Yes	33%	53%	47%
Parents/guardians cycle for…..	Exercise Commuting	44% 12%	47% 11%	42% 18%
Have you had a cycling accident?	Yes	59%	71%	79%
Who was involved?	Just me Motor vehicle	67% 10%	44% 22%	57% 33%
What were your injuries?	Minor Major	72% 28%	66% 34%	67% 33%
Did your accident discourage you from cycling?	Yes	12%	19%	18%

Table 32: Year 10 profiles at behavioural change stages

The percentages highlighted are significantly different to those at other stages in the behavioural change process.

Conclusions

Comparison Between Contemplative and Preparation Stages (Year 8 and 9)

Students at the preparation stage of change of cycling to school are more likely to:

- be boys
- use their bikes more frequently than those at the contemplative stage
- live less than 3 km from school
- be less concerned with safety issues such as cycle lanes, safer crossings and safer routes even though they are important to them
- have been involved in a cycling accident which required a visit to a doctor and/or hospital
- have had an accident that involved a motor vehicle

Contemplative stage: Comparison between Year 8 and 9

The profiles of Year 8 and 9 students in the Contemplative stage are similar with the following differences:

-more Year 9 students prefer to walk to school
-safety issues such as cycle lanes, safer crossings and safer routes are more important to Year 8 students
-cycling training is more important to Year 8 children
-the "uncool" factor is more an issue for Year 9 students which may be influenced by a larger proportion of girls in this stage of the behavioural change cycle
-it is more likely that the parents/guardians of Year 8 students cycle

5.2.3 Cycling profiles of schools

From the data collected it is possible to provide each school, who participated in the survey, with a profile of its cycling community. Cycling profiles could assist schools during the process of developing School Travel Plans that are coordinated by North Shore City Council and the Auckland Regional Transport Authority. Information provided by the School Cycling Profile could be used to supplement the extensive School Travel Survey that is an integral part of the school travel planning. Information about cycle routes, hazards, and safety issues gathered from individual student cyclists at the time of the Travel Plan Surveys using 'Real-life Maps' would provide invaluable information to planners, safety coordinators and engineers. This approach to planning has been used by travel planners at two intermediate schools on the North Shore.

5.2.4 Other cycling profiles

The data collected could be used to generate characteristics and/or information related to the cycling habits of students at Year 8, 9 and 10 based on a variety of criteria. Such profiles would highlight characteristics so that cycling promotional programs could be designed to meet the needs of the focus group.

Gender Profiles

One key result from this survey is that a student who regularly cycles to school is most likely to be a boy. The ratio of boys to girls cycling to school on the North Shore for these age groups is 7 to 1. Girls are more likely to ride to school in Year 8 than in year 9 or 10.

These findings are similar to research carried out overseas, for example in Australia; females share 21% of total bike trips, in the UK 29%. In the Netherlands 55% of all bike trips are by females (Pucher and Buehler, 2008). Even so girls are interested in cycling to school as they

constitute 48% of students identified as being at the "Contemplative" stage of travel behavioural change.

Further analysis of the data collected in this survey could provide details of barriers and issues specifically related to girls cycling to school. The findings could provide a framework for designing programmes designed to "tempt" girls to ride to school.

"Grouped" School Profiles

This survey provides information about "groups" of schools in the same vicinity. This data would be of particular interest to travel planners and engineers and could be used during the process of developing School Travel Plans or when upgrading nearby roading facilities.
Cycling profiles and safety issue related to that particular area could be highlighted using the data collected.

"Active Cycling Schools" profiles

At some schools on the North Shore cycling to school is very popular. Further analysis of these "active cycling schools" would be beneficial in identifying factors that encourage their students to cycle. For example, 30% of Year 8 students at Belmont Intermediate cycle to school whereas the average for all intermediates is 9%. Investigating how cycling is perceived and encouraged in these schools could assist with providing a model of good practices for promoting cycling within other schools.

In some clusters cycling is popular in one school but almost non-existent in nearby schools that share the same busy roads. For example cycling to school is common at Takapuna Normal Intermediate School but almost non-existent at nearby Westlake Girls High School and Carmel College. Further analysis could identify barriers and provide the key to encouraging cycling to all of the schools.

5.2.5 Riding bicycles on the footpath

Riding a bike on the footpath is currently illegal in New Zealand. Results from this survey showed that the footpath is seen as safer place by students to ride a bike to school. 78% of regular cyclists in Year 8 ride mostly on the footpath, the percentage decreases to approximately 55% of Year 9 and 10 riders. In recent surveys, as part of the TravelWise to School Programme at intermediate schools in North Shore City, regular cyclists were asked about the routes they took when riding to school. Most replied that they rode on the footpath as the roads were too dangerous to ride on. Many students said that their parents only gave them permission to ride to school on the condition that the child cycled on the footpath. Even cycle lanes on the road did not encourage these riders to leave the safety of the footpath. Students said that cycle lanes are usually on busy arterial roads and that they felt unsafe with the amount of traffic and the heavy vehicles passing nearby. A study has shown road cycling is much riskier than riding on the footpath by a factor of 2.6 (Drummond, Jee. 1988). This research also showed that it is 8 times more dangerous to ride a bicycle in an arterial environment (on the road or footpath) than a non-arterial environment. More than 50% of the schools in this survey are in arterial environments.

The conundrum that has developed is, since riding on the footpath is an illegal activity that is generally ignored by authorities; training cannot be given to school children on the hazards of riding on the footpath such as vehicles exiting and entering driveways, and the care required when transitioning at intersections. If young people are to be encouraged to cycle to school

and they deem the roads as unsafe consideration has to given to amending the road user rules to allow students travelling to school to ride on the footpaths.

In other countries it is legal for certain age groups to ride on the footpath. In Australia children aged 12 years and younger are permitted to do so (Australian Road Rules). In Queensland there is no age limit to riding a bike on the footpath (Queensland Government Cycling Road Rules); Western Australia is presently considering amending their laws as well. In the USA, 22 states allow young people to ride bikes on the sidewalks

Some progress has been made on the North Shore in providing cycling facilities on footpaths. For example, the NSCC has, in certain arterial environments, constructed wide footpaths that are designated to be shared by both pedestrians and cyclists. As arterial corridors are developed consideration has to be given by engineers in providing both cycle lanes and "share with care" paths to encourage students to cycle to school in a safe environment.

5.2.6 Providing secure bicycle sheds

Many schools have removed their bike stands as the number of students cycling to school decreased. In the past when cycling was more common covered bike sheds were the hub of activity before and after school. They were usually out of bounds areas during the day; hence cyclists could be assured that their bike would be secure from interference from other students as well as being protected from the elements. More recently bike sheds were replaced by bike stands and in many schools they were placed in areas that were accessible to all students in the school. At the author's school, students often complained that their bikes had been tampered with or damaged during the day. Occasionally, a bike would be stolen as the stands were in close proximity to the street.

This survey has shown that bike security is a major concern at both intermediate and secondary schools for both regular and potential cyclists. When respondents were asked to rate issues relating to facilities, 85% of regular cyclists and 68% of others rated this as an important issue. In schools where cycling is active, bike storage facilities are noticeably better, whereas in schools where there are few cyclists, bikes are secured in remote places around the school.

Overseas agencies responsible for promoting cycling have identified a lack of secure, sheltered places to park bikes at school as one of the biggest barriers to more students riding to school. Their experience has shown "that a bike shed can increase the number of students riding to school by 50% overnight" (Ride2school, Bike Victoria).

5.2.7 Programmes to promote cycling to school

Youth leadership

Programmes developed to promote cycling to teenagers need to abide by the six principals of youth development as specified in the *Youth Development Strategy Aotearoa*.

1. *Youth development is shaped by the "Big Picture"*
   Environmental and health benefits of cycling

2. *Youth development is about young people being connected*
   Cycling is a positive activity to do with friends

3. *Youth development is based on a consistent strength-based approach*
   Safety education that reduces "risk" but doesn't take away adventure

4. *Youth development happens through quality relationships*
   Those involved in promoting cycling must develop quality relationships

5. Youth development is triggered when young people fully participate
   Young people are the best promoters of cycling

6. Youth development needs good information
   Cycling promotion needs to be based on effective research and reliable information

The promotion of cycling and walking provides opportunities for leadership in schools and at a regional level through the North Shore City Youth Council. Cycling issues could be advocated through this forum.

Cycle Skills Training

The findings of this survey indicate that approximately 50% of Year 8 students and 55% of Year 9 students have had no formal road cycling safety training. Presently most bike training is provided by the Police Education Unit to Year 6 students. The training given is generally off- road in the school grounds and does not include practical experience of riding on the road or how to ride safely on the footpaths because of the illegality of the practice.

If cycling is to become more common, on-road training must be provided to give cyclists the skills and the confidence to ride on the road. If the practice of riding on the footpath is to continue, training needs to be given to ensure riders are aware of the dangers of cars exiting driveways, crossing intersections and how to safely share the path with pedestrians.

There has recently been research carried out in New Zealand on developing school-based cycle trains as a way of providing safe trips to and from school. Cycle trains have proven to be successful in other countries and are suitable for children aged 9, 10 and 11 years (O'Fallon 2007). Whilst providing valuable on-road experiences for this age group, on going road safety and cycling skills training still needs to be provided for 12, 13 and 14 year olds to ensure they can cope confidently with variable road conditions.

5.2.8 Parents' perception of the dangers of cycling to school

Parents and guardians are central to the decision of how their children travel to school. This survey has shown that there are a number of children who would like to cycle to school but are not permitted to by their parents and/or caregivers. The reason often given is that the roads are too dangerous and as a result the child is driven to school.

Research has shown parents perceive that cycling has become more dangerous in recent years, and that motorists do not cater adequately for cyclists and their needs (Walton,

Dravitzki, Cleland, Thomas, Jackett, 2005). Parents believe that there is a high level of danger when students cycle to school; they perceive that being driven is the safest mode of transport for their children. The study also showed that parents of cyclists have more confidence in their child's knowledge, experience and decision making ability to cycle safely than the parents on non-cyclists. Results from this survey indicate that the parents of regular cyclists are more likely to be involved cycling themselves than the parents of non-cyclists. Both the parents of cyclists and non-cyclists can play a critical part in the process of increasing the number of children cycling to school. They believe that greater promotion of cycling should occur within secondary schools in New Zealand, and that more money should be spent meeting cyclists needs. (Walton et al, 2005)

Education and programmes developed will need to *"address the heightened perception of the relative riskiness of cycling with information that targets parental concerns for safety in the road context, and balances these concerns with information concerning the benefits of cycling"* (Walton et al, 2005).

5.3 Survey information provided to schools

5.3.1 Letter to Intermediate Principals

CYCLING TO SCHOOL PROJECT

ONLINE SURVEY

SCHOOL INFORMATION

SCHOOL: **School Name*

SCHOOL CODE: **School code*

NUMBER OF CLASSES TO BE SURVEYED: ** Number Year 8 classes*

ONLINE SURVEY WEBSITE ADDRESS: www.northshorecity.govt.nz/TCC/

WHEN TO DO THE SURVEY: *Monday 24 July to Friday 11 August*

In this package please find the following:

1. Teacher instructions for managing the online survey.
2. Teacher information sheet backgrounding the project.
3. Copies of the "Distance to school" maps for students to answer a question in the survey about "How far do you live from the school?"
4. Copy of a permission form if needed – this form can be emailed so the school letterhead can be inserted.

Contact Details:

Brian Horspool
NSCC Transport Development
Ph. (09) 486 8600 Ext 8081
brian.horspool@northshorecity.govt.nz

Project sponsored by:

5.3.2 Instructions for school management of online survey

INSTRUCTIONS FOR ONLINE SCHOOL CYCLING SURVEY

School: *School name

Website address: www.northshorecity.govt.nz/TCC/

Your school code: *School code

Time to do survey: Approximately 15 minutes per student

The following instructions will assist you with managing the survey:

1. Briefly explain to your students that they are going to do a survey on cycling to school. Please **encourage all the students in your class** to do the survey **even if they don't own a bike or ride to school**. Students do not need to give their names and all details will be treated confidentially.
2. Please write the **website** and your **school code** on your board.
3. Please encourage your students to read the introductory page before they begin the survey.
4. A map showing the distances to the school gate is provided to assist students answering the question "How far do you live from school?
5. If a question is unanswered a prompt will appear requesting that the student answers the question.
6. When the student completes the survey they hit the **"Submit survey"** button.

All survey data gathered will be available for you to use with your class once the survey is completed later this term.

Thank you for your time and cooperation in managing this survey.

Brian Horspool

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5.3.3 Teacher information sheet

Cycling to School Project – Teacher Information Sheet

Background

I am a secondary school mathematics teacher who is on a NZ Science, Mathematics and Technology Teaching Fellowship for 2006. My host for the year is the Transport Division of the North Shore City Council whose vision includes developing a sustainable transportation system that will reduce traffic congestion at the school gates.

This project evolved from observing the dwindling number of children cycling to school, especially to secondary school.

Aim of the project:

The aim of the project is to research the attitudes of secondary school students to cycling to school. There appears to be a negative attitudinal shift of students towards cycling as children move from intermediate to secondary school. I hope to find out why this is so and what can be done to reverse this trend. My aim is to get more children on their bikes riding to school.

Method:

I intend surveying approximately 35% of Year 8 (Intermediate) and Year 9 and 10 (Secondary) students on the North Shore through an online questionnaire hosted at the North Shore City Council website.

The survey covers some of the following aspects:

- bike ownership and usage
- present and preferred travel modes to school
- barriers to cycling to school including: road safety aspects, bike facilities at school, peer pressure issues and parental opinions about their child riding to school.
- time spent on physical activity
- road safety training
- interest in membership of bike user group at school
- parents cycling participation
- cycling accident information

The survey results will form the basis for a report that will assist with designing a programme that can be used to promote cycling in secondary schools. The programme will be developed in conjunction with North City Council travel planners, Police Education Officers and other interest groups. It is envisaged that the programme will promote cycling to school as a healthy activity that is an environmentally beneficial. Safety will be a key element of any programme developed.

Finally, I would like to thank you for assisting with this survey. Without your support and cooperation the project would not be possible.

If you would like further information, either about this project or the teaching fellowship scheme my contact details are:

Brian Horspool
NSCC Transport Development
Ph. (09) 486 8600 Ext 8081
brian.horspool@northshorecity.govt.nz

This project is sponsored by:

5.3.4 Letter to parents

*School Letterhead

Dear Parent/Guardian

Teenage Cycle Survey

Our school has been asked to participate in a survey about children cycling to school.

The survey is part of research being carried out by the North Shore City Council Transport Development Division in partnership with the Royal Society of New Zealand. The aim of this project is to survey young people to gauge their attitudes to cycling and to identify barriers to cycling and walking to school.

You may be aware of the innovative "TravelWise to School" programme promoted in primary and intermediate schools by the North Shore City Council to reduce congestion at the school gate. A key aim of this programme is to encourage children to use healthy and environmentally beneficial ways of getting to and from school such as walking and cycling.

The project aims to provide travel planners with critical information about what facilities and safety training is required to encourage children to cycle to school. Even if your child does not cycle to school or own a bike their opinions would be appreciated.

The survey will be done in class and online through the North Shore City Council website. All information will be confidential with the students not having to provide their names.

Would you please complete the permission slip below and have your child return the reply slip to their class teacher as soon as possible.

Thank you for you cooperation.

Yours sincerely

*Principals name

Please cut off this permission slip and return it to your teacher as soon as possible.

TEENAGE CYCLE SURVEY

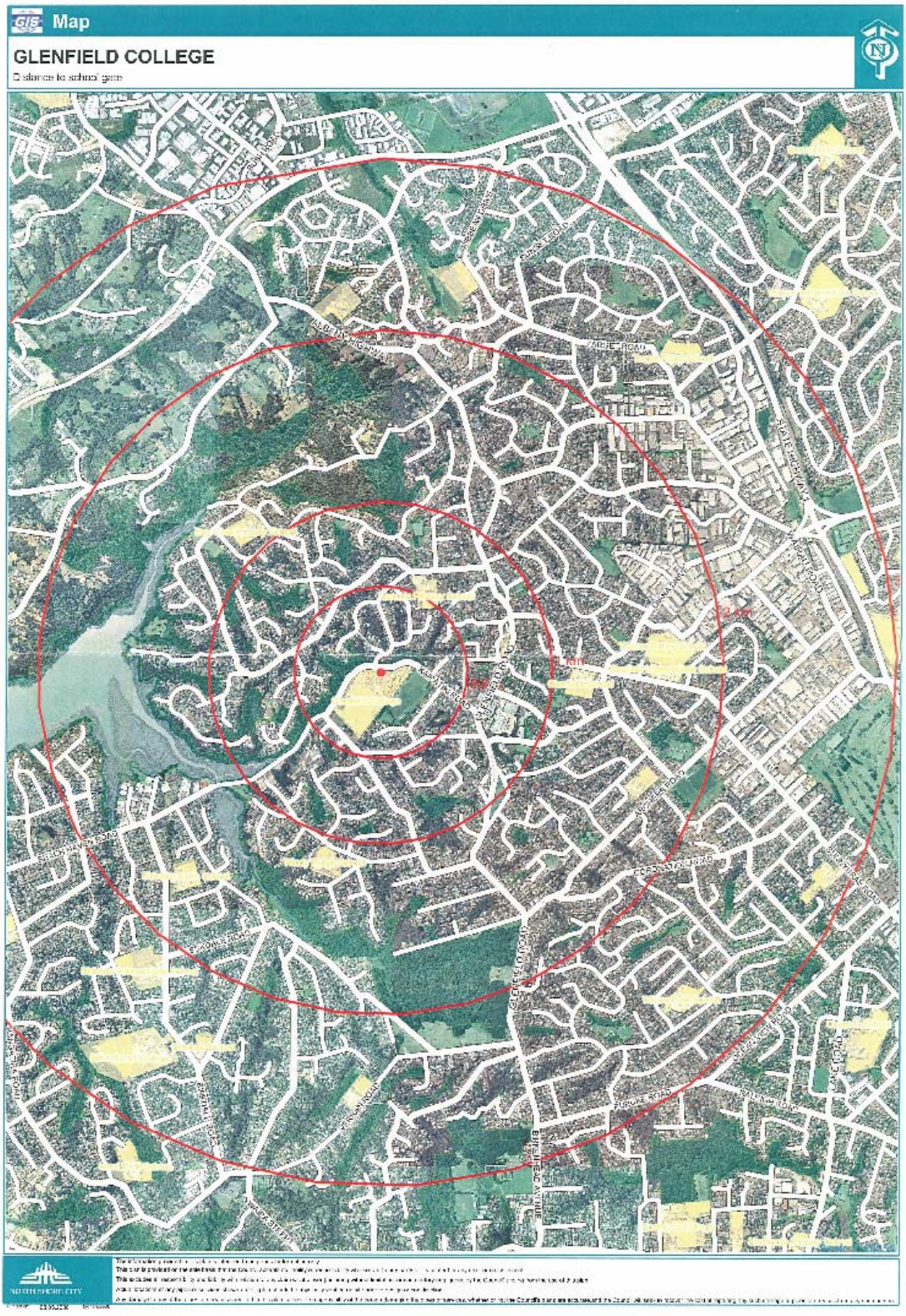
Student name:.....

Please tick ☐ *Has permission to do the survey.*

☐ *Does not have permission to do the survey.*

Signed: ..... Parent/Guardian

5.3.5 Distance to school gate map



5.4 Questionnaires – online and written

Online Survey

2006 School Cycle Survey Page 1 of 2

Dear student,

The purpose of this survey is to investigate ways of encouraging and promoting cycling to school. Some of you may already cycle to school so we are interested in how we can make your trip to school safer and what facilities you need. **Even if you don't cycle to school we would like to hear your opinions.**

Cycling is a healthy activity that can reduce congestion on our roads and it is also good for the environment.

To ensure that we understand what is important to you we would like you to complete this questionnaire.

All the information you provide will be treated in the **strictest confidence**. Please select the boxes that correspond to your answers or write in the spaces provided.

Start ▷

http://usuite.com/survey/fbae0930ed764b7aa55a329f53b5ee96.sur?data1=1225 08/11/2006

2006 School Cycle Survey Page 1 of 1

1A Are you male or female?

(•) Male
( ) Female

1B Do you own a bike?

( ) Yes ( ) No

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2A If you answered yes, what type of bike (s) do you own?

- ☐ Road
- ☐ Mountain Bike
- ☐ BMX
- ☐ Other

2B On how many days in the past month have you ridden your bike(s), either to school or at any other time.

- ○ None
- ○ 1 to 5 days
- ○ 6 to 10 days
- ○ 11 to 20 days
- ○ More than 21 days

2C What have you used for your bike for in the last month? You can select more than one.

- ☐ Riding to school
- ☐ Going to the shops
- ☐ neighbourhood
- ☐ Recreational riding in parks
- ☐ Keeping fit
- ☐ Racing

2006 School Cycle Survey Page 1 of 2

3A How far do you live from school? Ask your teacher for the Distance to School Map if you are unsure.

- ○ Less than 500m
- ○ More than 500m but less than 1 km
- ○ More than 1 km but less than 2 km
- ○ More than 2 km but less than 3 km
- ○ More than 3 km

3B How do you mainly travel to school?

- ○ Walking
- ○ Car
- ○ Bike
- ○ Bus
- ○ Other

3C How do you mainly travel from school?

- ○ Walking
- ○ Car
- ○ Bike
- ○ Bus
- ○ Other

http://usuite.com/survey/fbae0930ed764b7aa55a329f53b5ee96.sur?data1=1225 08/11/2006

3D If you could choose, how would you most like to travel to and from school?

- ○ Walking
- ○ Car
- ○ Bike
- ○ Bus
- ○ Other

3E How often do you cycle to school?

- ○ Every week
- ○ A few times a term
- ○ Never or almost never

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What is the importance of each of the following with respect to you riding to school?
1 = Really important
2 = Important
3 = Neither important or unimportant
4 = Unimportant
5 = Really unimportant

7A Safety

	1	2	3	4	5
Cycle lanes on the road	○	○	○	○	○
Safe places to cross the road(s)	○	○	○	○	○
Riding on the footpath	○	○	○	○	○
Slower traffic on the road(s)	○	○	○	○	○
A safe route through quiet streets and parks	○	○	○	○	○
A light school bag making it safe to ride with	○	○	○	○	○
Road safety training	○	○	○	○	○

7B Facilities

	1	2	3	4	5
A secure place to store your bike at school	○	○	○	○	○
A covered area to store your bike	○	○	○	○	○
Showers at school	○	○	○	○	○
A locker to store your books etc at school	○	○	○	○	○

7C Other

1 2 3 4 5

2006 School Cycle Survey

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A cycle friendly uniform	○	○	○	○	○
Cycling as a healthy activity	○	○	○	○	○
Benefit to the environment	○	○	○	○	○

7D Do you have any other comments?

7E Why do you cycle to school? Select up to three answers.

- ☐ It is good exercise
- ☐ It wakes me up
- ☐ It's inexpensive
- ☐ It's fun
- ☐ It's fast transport

7F Other (please explain)

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8A When you ride to and from school which applies to to you?

- ○ I ride mostly on the road
- ○ I ride mostly on the footpath

8B Do you intend cycling to secondary school next year?

○ Yes ○ No

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4A Please complete this: **"I would cycle to school if..."**

4B What is the importance of each of the following if you considered cycling to school?
1 = Really important
2 = Important
3 = Neither important or unimportant
4 = Unimportant
5 = Really unimportant

	1	2	3	4	5
There were cycle lanes on the way to school	○	○	○	○	○
The traffic on the road was slower	○	○	○	○	○
There were safer places to cross the road	○	○	○	○	○
There was a safer cycle route to school	○	○	○	○	○
I could ride on the footpath	○	○	○	○	○
My bag was lighter making it safer to carry	○	○	○	○	○
I had road safety training	○	○	○	○	○
I could cycle through parks to school	○	○	○	○	○

4C Facilities

	1	2	3	4	5
There were safer places to lock up my bike	○	○	○	○	○
There were showers at school	○	○	○	○	○
I had a locker at school to store my things	○	○	○	○	○
I had a cycling friendly uniform	○	○	○	○	○

4D Other

	1	2	3	4	5
I owned a bike or a better bike	○	○	○	○	○
I lived closer to school	○	○	○	○	○
I had friends to cycle with	○	○	○	○	○
If my parents would let me	○	○	○	○	○

4E Do you have any other comments?

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5A Would you ever consider cycling to school?

○ Yes ○ No

5B If you were to cycle to school what do you think your friends would think about it?

- ○ They would think it was cool
- ○ They would think it was uncool
- ○ They wouldn't care
- ○ They may consider cycling to school themselves

5C Do you have any other comments about what your friends would think?

5D If you were to cycle to school what do you think other students would think about it?

- ○ They would think it was cool
- ○ They would think it was uncool
- ○ They wouldn't care

5E Do you have any other comments about what other students would think?

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5A Would you ever consider cycling to school?

○ Yes ○ No

5B If you were to cycle to school what do you think your friends would think about it?

- ○ They would think it was cool
- ○ They would think it was uncool
- ○ They wouldn't care
- ○ They may consider cycling to school themselves

5C Do you have any other comments about what your friends would think?

5D If you were to cycle to school what do you think other students would think about it?

- ○ They would think it was cool
- ○ They would think it was uncool
- ○ They wouldn't care

5E Do you have any other comments about what other students would think?

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6A If you have cycled to school in the past (i.e. at primary school), why have you stopped doing so?

- ○ I never rode to my primary school
- ○ It is too far to cycle to school now
- ○ It isn't cool to cycle to school now
- ○ I don't have a bike now
- ○ The roads to school are unsafe now

6B Are there any other reasons?

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9A In a week (7 days), how much time do you usually spend on physical activity outside of school hours? Physical activities include team sport, walking or cycling to and from school, dance classes, gym, swimming, karate, etc.

- ○ Five hours or more
- ○ More than three hours but less than five hours
- ○ More than one hour but less than three hours
- ○ Less than one hour

9B Would you be interested in cycling more if there were better facilities for biking on the North Shore?

○ Yes ○ No

9C If you said 'Yes' , please tick the facility that you would prefer.

- ☐ Mountain Bike Park
- ☐ BMX track
- ☐ Green Routes (Riding paths through parks)
- ☐ Racing track (Like in the Commonwealth Games)

9D Have you had any cycling road safety training?

○ Yes ○ No

9E Do either (or both) of your parents/guardians cycle?

○ Yes ○ No

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9F If you answered 'Yes' do they cycle... (you may choose more than one)

- ☐ To work
- ☐ For exercise
- ☐ For leisure

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10A Have you ever had a cycling accident in which you got injured?

○ Yes ○ No

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If you answered 'Yes' to the last question, please answer the following questions

11A Which of the following was involved in your accident?

- ○ Motor vehicle
- ○ Pedestrian
- ○ None, just me
- ○ Other

11B What were your injuries in the accident?

- ○ Minor injuries (not needing a visit to the doctor and/or hospital)
- ○ Major injuries (needing a visit to the doctor and/or hospital)

11C Did your accident put you off cycling?

○ Yes ○ No

11D Would you please explain in the box below what happened in your accident, including the location of your accident. This will be useful in helping us to identify danger spots for cyclists. For example, "I was riding along East Coast Road and a car pulled out of a drive and knocked me off my bike".

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http://usuite.com/survey/fbae0930ed764b7aa55a329f53b5ee96.sur?data1=1225 08/11/2006

2006 School Cycle Survey Page 1 of 2

Thank you for taking this survey

If you have any queries, please contact Brian Horspool on 486 8600.

http://usuite.com/survey/Thankyou.aspx?data1=1225&uqid=fbae0930ed764b7aa55a329f53b5ee96 08/11/2006

The survey is submitted automatically when you click the button below

Please click here to complete this survey

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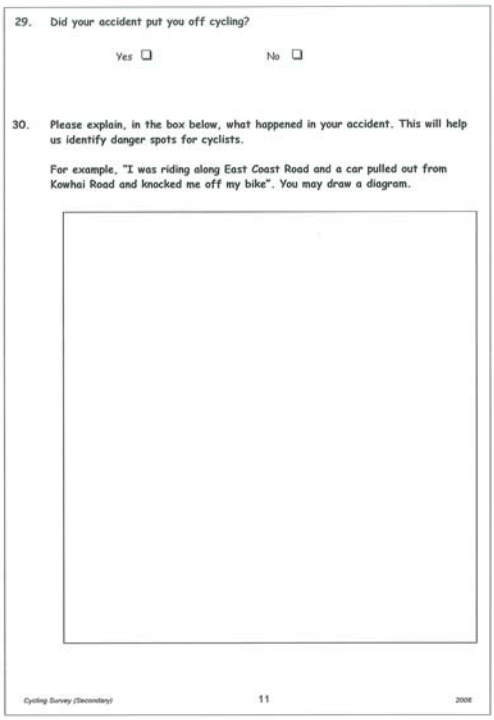
Written Survey



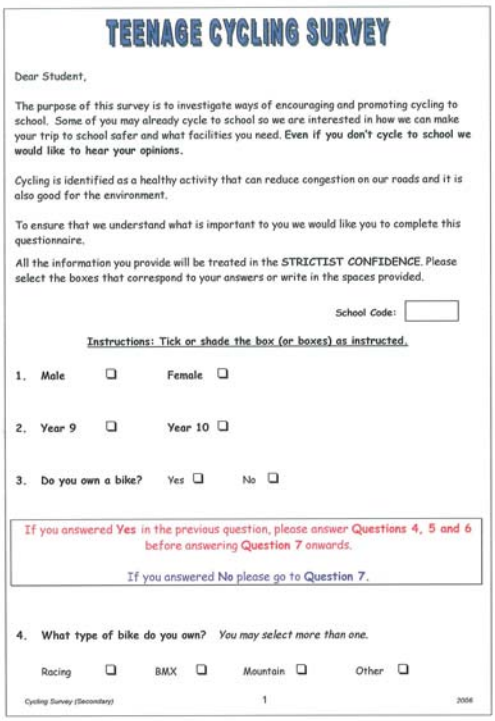
29. Did your accident put you off cycling?

Yes ❑ No ❑

30. Please explain, in the box below, what happened in your accident. This will help us identify danger spots for cyclists.

For example, "I was riding along East Coast Road and a car pulled out from Kowhai Road and knocked me off my bike". You may draw a diagram.

Thank you for doing this survey.



TEENAGE CYCLING SURVEY

Dear Student,

The purpose of this survey is to investigate ways of encouraging and promoting cycling to school. Some of you may already cycle to school so we are interested in how we can make your trip to school safer and what facilities you need. **Even if you don't cycle to school we would like to hear your opinions.**

Cycling is identified as a healthy activity that can reduce congestion on our roads and it is also good for the environment.

To ensure that we understand what is important to you we would like you to complete this questionnaire.

All the information you provide will be treated in the **STRICTIST CONFIDENCE**. Please select the boxes that correspond to your answers or write in the spaces provided.

School Code: ☐

Instructions: Tick or shade the box (or boxes) as instructed.

1. **Male** ❑ **Female** ❑

2. **Year 9** ❑ **Year 10** ❑

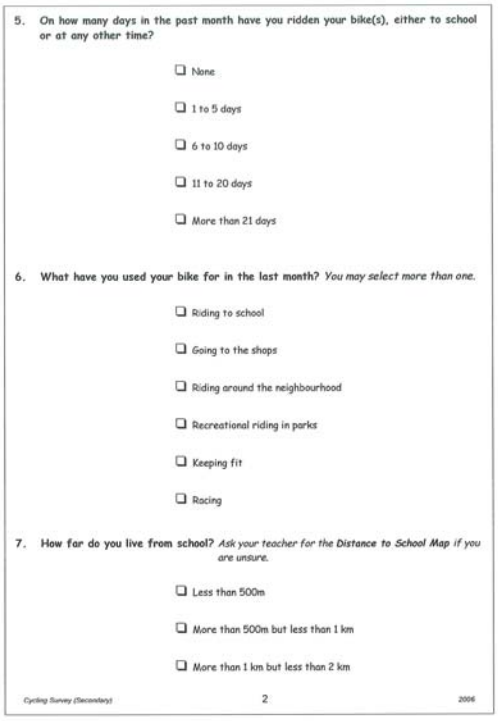
3. **Do you own a bike?** Yes ❑ No ❑

If you answered **Yes** in the previous question, please answer **Questions 4, 5 and 6** before answering **Question 7** onwards.

If you answered **No** please go to **Question 7.**

4. **What type of bike do you own?** *You may select more than one.*

Racing ❑ BMX ❑ Mountain ❑ Other ❑



5. **On how many days in the past month have you ridden your bike(s), either to school or at any other time?**

❑ None

❑ 1 to 5 days

❑ 6 to 10 days

❑ 11 to 20 days

❑ More than 21 days

6. **What have you used your bike for in the last month?** *You may select more than one.*

❑ Riding to school

❑ Going to the shops

❑ Riding around the neighbourhood

❑ Recreational riding in parks

❑ Keeping fit

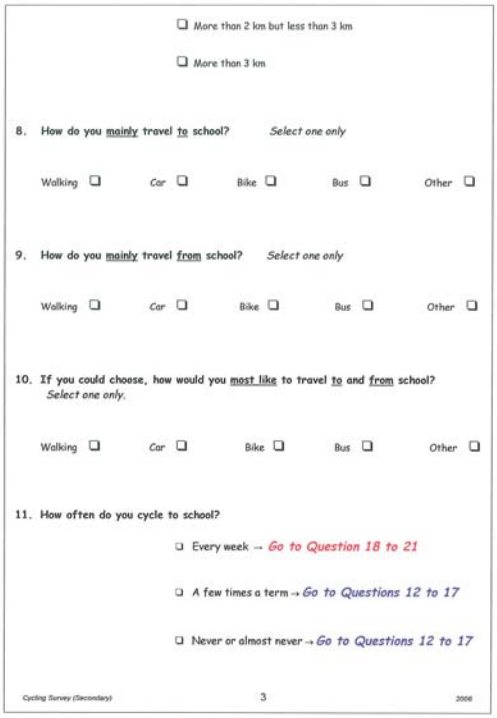
❑ Racing

7. **How far do you live from school?** *Ask your teacher for the Distance to School Map if you are unsure.*

❑ Less than 500m

❑ More than 500m but less than 1 km

❑ More than 1 km but less than 2 km



❑ More than 2 km but less than 3 km

❑ More than 3 km

8. **How do you mainly travel to school?** *Select one only*

Walking ❑ Car ❑ Bike ❑ Bus ❑ Other ❑

9. **How do you mainly travel from school?** *Select one only*

Walking ❑ Car ❑ Bike ❑ Bus ❑ Other ❑

10. **If you could choose, how would you most like to travel to and from school?** *Select one only.*

Walking ❑ Car ❑ Bike ❑ Bus ❑ Other ❑

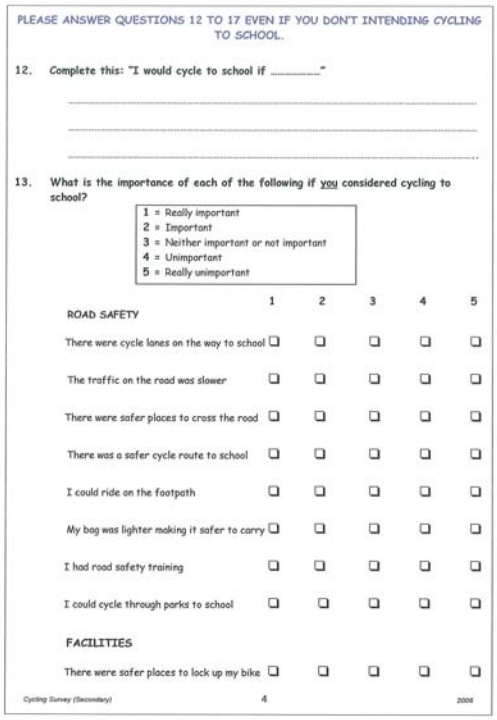
11. **How often do you cycle to school?**

❑ Every week → *Go to Question 18 to 21*

❑ A few times a term → *Go to Questions 12 to 17*

❑ Never or almost never → *Go to Questions 12 to 17*

Cycling Survey (Secondary) 3 2006



PLEASE ANSWER QUESTIONS 12 TO 17 EVEN IF YOU DON'T INTENDING CYCLING TO SCHOOL.

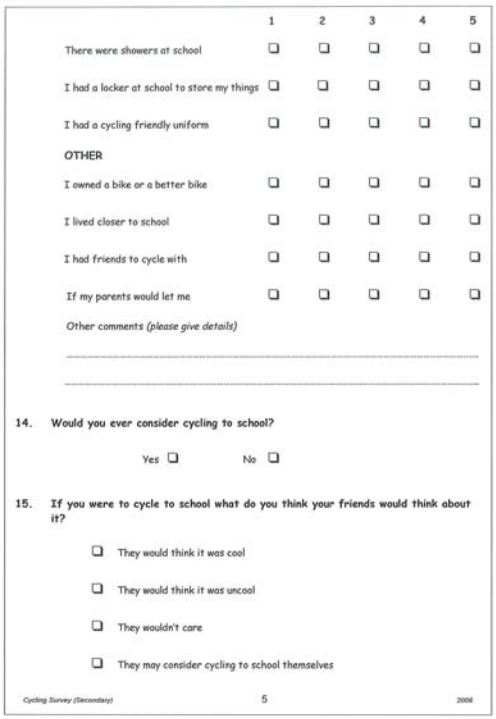
12. **Complete this: "I would cycle to school if ....."**

13. **What is the importance of each of the following if you considered cycling to school?**

1 = Really important
2 = Important
3 = Neither important or not important
4 = Unimportant
5 = Really unimportant

	1	2	3	4	5
ROAD SAFETY					
There were cycle lanes on the way to school	❑	❑	❑	❑	❑
The traffic on the road was slower	❑	❑	❑	❑	❑
There were safer places to cross the road	❑	❑	❑	❑	❑
There was a safer cycle route to school	❑	❑	❑	❑	❑
I could ride on the footpath	❑	❑	❑	❑	❑
My bag was lighter making it safer to carry	❑	❑	❑	❑	❑
I had road safety training	❑	❑	❑	❑	❑
I could cycle through parks to school	❑	❑	❑	❑	❑
FACILITIES					
There were safer places to lock up my bike	❑	❑	❑	❑	❑

Cycling Survey (Secondary) 4 2006



	1	2	3	4	5
There were showers at school	❑	❑	❑	❑	❑
I had a locker at school to store my things	❑	❑	❑	❑	❑
I had a cycling friendly uniform	❑	❑	❑	❑	❑
OTHER					
I owned a bike or a better bike	❑	❑	❑	❑	❑
I lived closer to school	❑	❑	❑	❑	❑
I had friends to cycle with	❑	❑	❑	❑	❑
If my parents would let me	❑	❑	❑	❑	❑

Other comments (please give details)

14. **Would you ever consider cycling to school?**

Yes ❑ No ❑

15. **If you were to cycle to school what do you think your friends would think about it?**

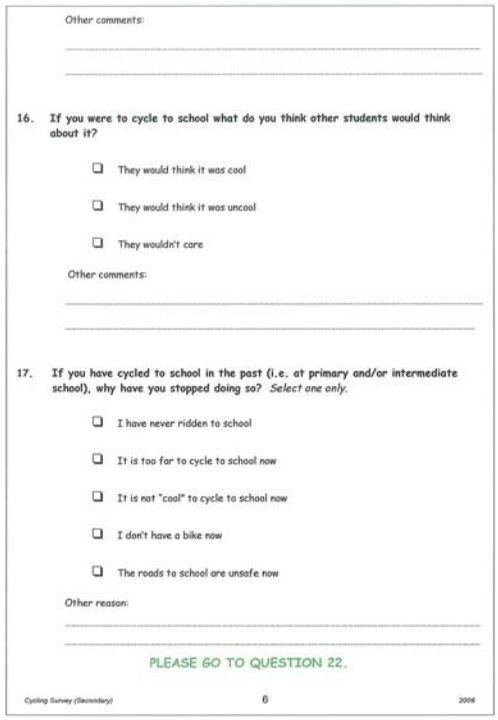
❑ They would think it was cool

❑ They would think it was uncool

❑ They wouldn't care

❑ They may consider cycling to school themselves

Cycling Survey (Secondary) 5 2006



Other comments:

16. **If you were to cycle to school what do you think other students would think about it?**

❑ They would think it was cool

❑ They would think it was uncool

❑ They wouldn't care

Other comments:

17. **If you have cycled to school in the past (i.e. at primary and/or intermediate school), why have you stopped doing so?** *Select one only.*

❑ I have never ridden to school

❑ It is too far to cycle to school now

❑ It is not "cool" to cycle to school now

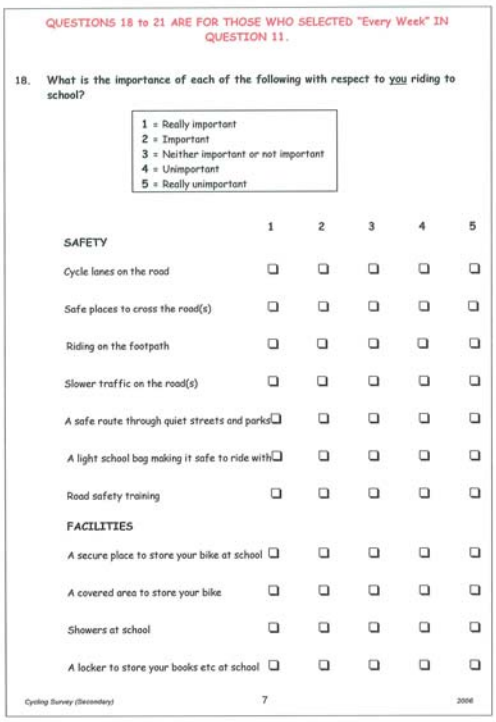
❑ I don't have a bike now

❑ The roads to school are unsafe now

Other reason:

PLEASE GO TO QUESTION 22.

Cycling Survey (Secondary) 6 2006



QUESTIONS 18 to 21 ARE FOR THOSE WHO SELECTED "Every Week" IN QUESTION 11.

18. What is the importance of each of the following with respect to you riding to school?

1 = Really important
2 = Important
3 = Neither important or not important
4 = Unimportant
5 = Really unimportant

	1	2	3	4	5
SAFETY					
Cycle lanes on the road	❑	❑	❑	❑	❑
Safe places to cross the road(s)	❑	❑	❑	❑	❑
Riding on the footpath	❑	❑	❑	❑	❑
Slower traffic on the road(s)	❑	❑	❑	❑	❑
A safe route through quiet streets and parks	❑	❑	❑	❑	❑
A light school bag making it safe to ride with	❑	❑	❑	❑	❑
Road safety training	❑	❑	❑	❑	❑
FACILITIES					
A secure place to store your bike at school	❑	❑	❑	❑	❑
A covered area to store your bike	❑	❑	❑	❑	❑
Showers at school	❑	❑	❑	❑	❑
A locker to store your books etc at school	❑	❑	❑	❑	❑

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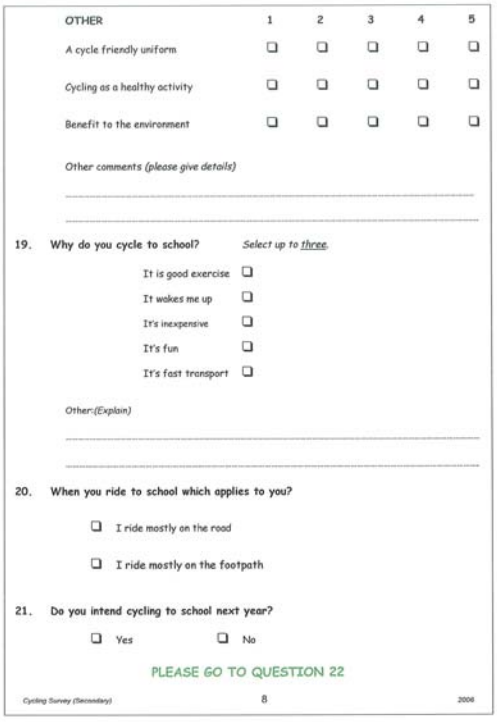

OTHER	1	2	3	4	5
A cycle friendly uniform	❑	❑	❑	❑	❑
Cycling as a healthy activity	❑	❑	❑	❑	❑
Benefit to the environment	❑	❑	❑	❑	❑

Other comments (please give details)

19. Why do you cycle to school? *Select up to three.*

- ❑ It is good exercise
- ❑ It wakes me up
- ❑ It's inexpensive
- ❑ It's fun
- ❑ It's fast transport

Other:(Explain)

20. When you ride to school which applies to you?

- ❑ I ride mostly on the road
- ❑ I ride mostly on the footpath

21. Do you intend cycling to school next year?

❑ Yes ❑ No

PLEASE GO TO QUESTION 22

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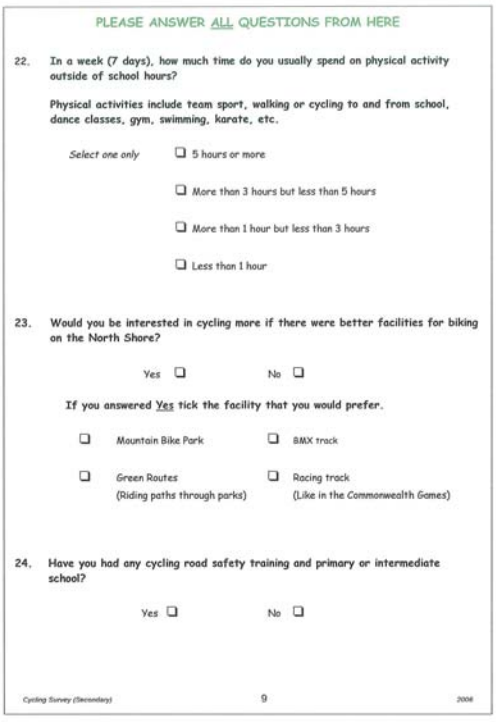

PLEASE ANSWER ALL QUESTIONS FROM HERE

22. In a week (7 days), how much time do you usually spend on physical activity outside of school hours?

Physical activities include team sport, walking or cycling to and from school, dance classes, gym, swimming, karate, etc.

Select one only

- ❑ 5 hours or more
- ❑ More than 3 hours but less than 5 hours
- ❑ More than 1 hour but less than 3 hours
- ❑ Less than 1 hour

23. Would you be interested in cycling more if there were better facilities for biking on the North Shore?

Yes ❑ No ❑

If you answered Yes tick the facility that you would prefer.

- ❑ Mountain Bike Park
- ❑ BMX track
- ❑ Green Routes (Riding paths through parks)
- ❑ Racing track (Like in the Commonwealth Games)

24. Have you had any cycling road safety training and primary or intermediate school?

Yes ❑ No ❑

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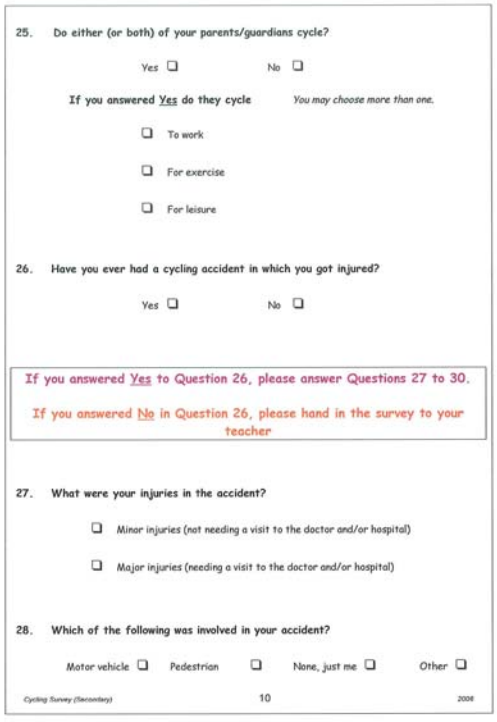

25. Do either (or both) of your parents/guardians cycle?

Yes ❑ No ❑

If you answered Yes do they cycle *You may choose more than one.*

- ❑ To work
- ❑ For exercise
- ❑ For leisure

26. Have you ever had a cycling accident in which you got injured?

Yes ❑ No ❑

If you answered Yes to Question 26, please answer Questions 27 to 30.

If you answered No in Question 26, please hand in the survey to your teacher

27. What were your injuries in the accident?

- ❑ Minor injuries (not needing a visit to the doctor and/or hospital)
- ❑ Major injuries (needing a visit to the doctor and/or hospital)

28. Which of the following was involved in your accident?

Motor vehicle ❑ Pedestrian ❑ None, just me ❑ Other ❑

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