



greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao

School Travel Plan Programme: Regional Analysis Report 2006-2010



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Hummingbird #: 902595

ST/04/05/02

April 2011

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1. Introduction

The School Travel Plan (STP) Programme is a joint-partnership between schools, local councils and Greater Wellington that supports school communities in developing and implementing action plans that promote active, safe and sustainable travel to and from school. The programme has received funding from the New Zealand Transport Agency (NZTA) since 2006.

Data from the New Zealand Household Travel Survey (NZHTS) show that travel to school makes up around six percent of total travel in New Zealand, and that there has been a decrease in the proportion of pupils walking to school over the last decade, and a corresponding increase in the proportion travelling by car (Ministry of Transport, 2009). In particular, the proportion of primary/intermediate age children travelling to school by car increased from 31% to 56% between 1989/90 to 2004-2008. Given this, the aim of the STP programme for primary/intermediate age children is to reduce the proportion travelling to school by car, and increase the proportion using active modes or public transport.

This report presents information about the travel to school patterns of children, in the Wellington region, attending schools with travel plans. It looks at how children travel to school, how far children have to travel to school and perceptions of route safety. It should be noted that this information is not representative of the entire region, but as increasing numbers of schools become involved in travel planning the data collected through school travel plans will become a valuable source of travel to school information for the region.

This report also presents results for the regional level evaluation of the STP programme. It only looks at the change in travel to school behaviour for those schools in the region that have participated in both the baseline and evaluation data collection phases of the travel plan process.

2. Method

2.1 School Travel Plans

The School Travel Plan (STP) Programme is a joint-partnership between schools, local councils and Greater Wellington that supports school communities in developing and implementing action plans that promote active, safe and sustainable travel to and from school.

A School Travel Plan (STP) is a document, which outlines a series of actions that encourage and promote active, safe and sustainable travel to and from school. Every school's travel plan is unique. The plan should result in benefits for students, parents and the wider community. It will assist students and parents in identifying safe, healthy and sustainable transport travel practices and help to reduce the number of cars on the road at peak times. In addition it will contribute to the improvement of the environment around the school.

In the Wellington region approximately 79,000 children travel to school every morning (see Table 1), of these students around 63% are of primary and intermediate age. The national picture for school travel shows that around 56% of trips to school are by car (Ministry of Transport, 2009). If it is conservatively assumed that there are two primary/intermediate age students in every car, in 2009 there would be around 13,900 car trips to school for primary/intermediate age children every morning in the Wellington region.

Table 1. Number of students in the Wellington region by school year level, 2006-2010

Year level	Student numbers as at July				
	2006	2007	2008	2009	2010
Year 1 to Year 8 (primary/intermediate age)	50,461	49,919	49,915	49,918	49,682
Year 9 to year 15 (secondary age)	29,223	29,316	29,213	29,517	29,390
Total	79,684	79,235	79,128	79,435	79,072

The Wellington Region Land Transport Strategy 2010-2040 set the following target for the programme:

94, or 41%, of primary and secondary/intermediate schools and 26,761, or 34% of school children exposed to school travel plan activities by June 2013.

As of the end of December 2010, 42 Wellington region schools with a combined roll of 16,314 school children¹ have, or are developing STPs.^{2,3} Figure 1 and Figure 2 show how the programme is tracking towards its 2013 target of schools and students exposed to STPs respectively.

¹ Based on July 2010 roll counts from the Ministry of Education school roll returns.

² Two additional schools have signed up to the STP programme but not yet completed baseline surveys so are currently not included. If included, 36 schools with 12,948 students are currently enrolled in the programme.

³ For primary and intermediate schools only these figures become 32 schools with a combined roll of 9,771 children.

The number of schools enrolled in the STP programme is tracking just above target, whereas the number of students in the region exposed to STP activities is exceeding the target for the programme. To keep on target, growth in the number of schools participating in the STP programme will be required from 2011 to 2013.

Figure 1. The number of schools that have, or are developing travel plans, 2006-2010

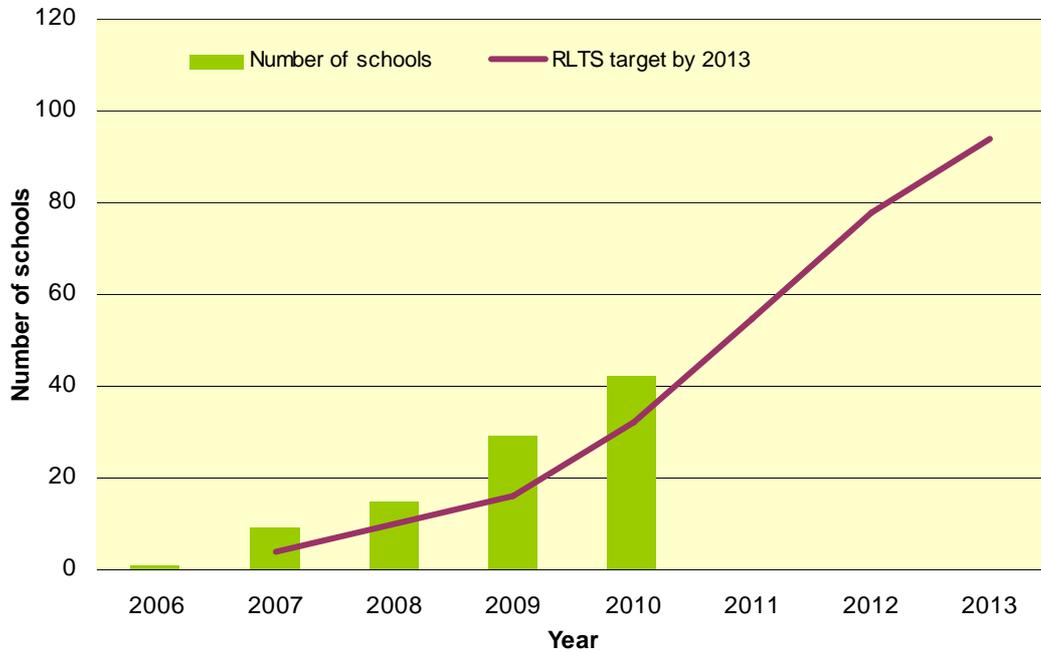
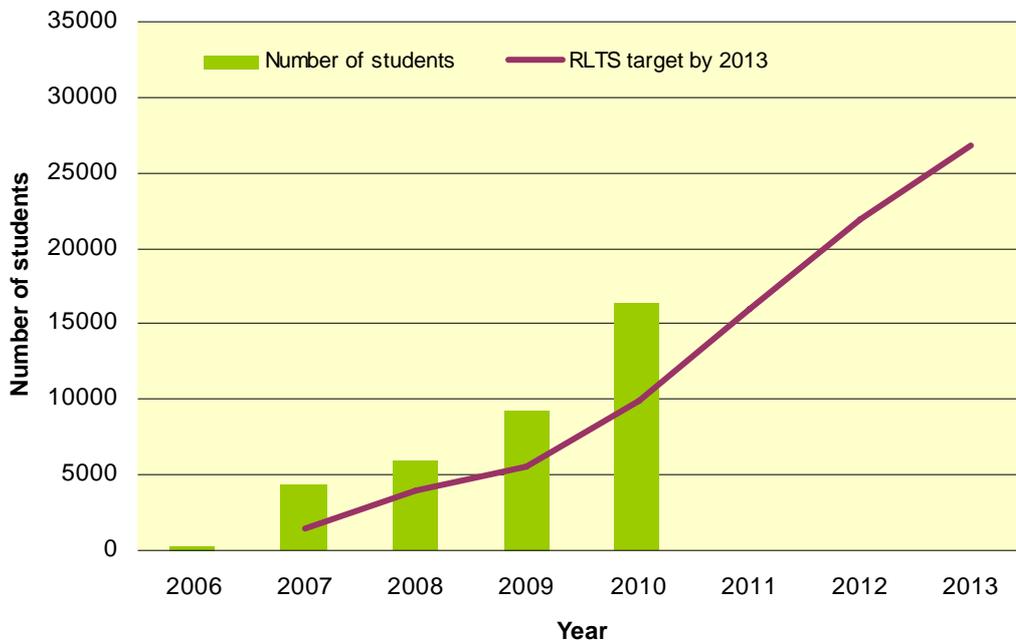


Figure 2. Number of students involved in or exposed to STP activities, 2006-2010



2.2 Data Collection Phases

Schools involved in the STP programme participate in data collection and monitoring phases. This involves using baseline surveys, conducted at each participating school, that gather information from students and parents around current school travel methods, barriers and issues. Once travel plan activities are implemented, students and parents at the school are re-surveyed typically a year on from implementation. Students participate in on-going surveys to track progress of their travel plan, refine its implementation and provide data on regional trends in travel behaviour (detailed below).

Data from parent surveys has been collated into one dataset. As there have been changes to the survey questions since the start of the STP programme, only the questions that have remained consistent, or can be meaningfully recoded are included in the dataset. There is another dataset for class survey data.

Parent Survey

The parent survey collects information from parents on how their children usually get to school, for up to four of their children, the reasons they drive their children to school if they do so, what types of initiatives might be implemented to encourage change, their perception of route safety, and what safety concerns they have about travel to school.

Class Survey

The class survey records how students travel to school over a one week period and the year level of the student. Home address information is also collected so routes taken from home to school can be mapped to calculate distance travelled, based on mode of travel.

2.3 Calculation of kilometres travelled (KT)

The home addresses supplied by survey respondents, and the school addresses are geocoded and used in a customised ArcGIS template to calculate KT values based on travel mode.

To calculate KT the main dataset needs to be broken down into smaller datasets for the individual schools, and then each school dataset is broken down further by usual travel to school mode.⁴ The template is then used to run each analysis which involves one school point shapefile and one home address shapefile by travel mode. The template calculates KT values based on the shortest route.⁵ Once KT values for all respondents with geocoded home address information had been processed these were exported into Excel and then joined to the main dataset using a statistical analysis software package (SPSS).

2.4 Regional travel behaviour-primary/intermediate

Data from both the baseline and evaluation surveys are used to look at the regional travel to school behaviour. Data is pooled together for the 2007-2010 period to provide a large enough sample for analysis. This year, data from two overlapping time periods

⁴ The usual modes used for KT calculations are: car (friends car, family car), active (walk, cycle, scoot and skate, walking school bus), PTbus (bus, school bus, private bus), and PTother (train, ferry and other).

⁵ Some criticise this as unacceptable and/or inaccurate because people often do not take the shortest or quickest route, however, recent analysis has shown that assuming direct routes is reasonably accurate (NZTA, 2009 in draft).

2006-2009 and 2007-2010 is available for comparison. However, in future years, as more information is collected, trends in regional travel to school will be examined by looking at data from the overlapping time periods.

Participating schools

The total number of primary/intermediate schools included in the parent and class datasets that provide a picture of regional travel over the 2006-2009 and 2007-2010 periods are shown in Table 2.⁶ Also shown is the number of parent and student survey responses received across participating schools.

Table 2. Number of schools, and parent and student responses used in the Wellington region travel to school behaviour analysis 2006-2009 and 2007-2010, and the STP programme evaluation

	Regional		STP evaluation	
	2006-2009	2007-2010	Baseline	Evaluation
Number of schools	27	39	13*	13*
Number of parent responses	3,301	5,092	1,051	989
Number of student responses	9,303	14,162	2,856	5,188

*Class survey data for the STP programme evaluation is based on responses from 12 schools, and does not include data from Maoribank School as they only participated in a parent evaluation survey not a class evaluation survey. Parent survey data for the STP programme evaluation is based on responses from 11 schools, and does not include data from Paraparamu Beach School or Kena Kena School as they only participated in a class evaluation survey not a parent evaluation survey.

Over the 2007-2010 period responses from 5,092 parents and 14,162 students, across 39 schools, are included in the regional travel behaviour analysis. Each TA has at least one school included in the 2007-2010 analysis, but some TAs are over-represented and some are under-represented compared to the regional picture. In particular, primary/intermediate schools in Wellington City (22% in dataset compared to 34% in region) and Porirua City (6% in dataset compared to 15% in region) are under-represented and Kapiti Coast District and Upper Hutt City schools are over-represented (22% and 14% in dataset compared to 8% for both TAs in the region). This over/under representation is due to the differing rates of participation of TAs and schools in the programme.

2.5 STP programme evaluation

Evaluating individual school travel plans is difficult due to the parent and student sample sizes involved. Whilst a number of individual schools have observed shifts in the mode of travel to school of their students it has not been possible to assess whether these are statistically significant changes or due to sampling error.

To overcome this issue and evaluate the STP programme, data from all schools in the region that have completed both their baseline and evaluation surveys have been pooled together. The results of baseline surveys for all schools in this pool are then compared to the results of the evaluation survey for all schools to provide a quantitative measure of the effects of the programme across the region, rather than for individual schools.

To date, 13 schools in the region have been in the programme long enough to have implemented travel plan activities and have conducted either parent/class or both baseline and evaluation surveys (see Table 2). From the 11 schools participating in parent baseline and evaluation surveys, 1,051 and 989 parent responses have been

⁶ The class evaluation survey responses from Titahi Bay School in 2008 have been omitted from the class analysis as the survey was conducted over a school event week.

received respectively. This gives a regional response rate of 33% and 31% for the parent baseline and evaluation surveys respectively.

Class survey data from 12 schools is used in the STP programme analysis. From these 12 schools, 2,856 and 5,188 student responses from baseline and evaluation surveys have been received respectively. This gives a regional student response rate of 69% and 84% for class baseline and evaluation surveys respectively.

2.6 Statistical Tests

In this report all the comparisons that have been made were tested for statistical significance at the 95 percent confidence level (alpha level set at 0.05). The alpha level refers to the probability that a difference exists when in actuality it does not.

The confidence interval for a proportion, π , is:

$$p \pm z\sigma_p$$

where p is the proportion in the sample, z depends on the level of confidence desired ($z = 1.96$ for 95% confidence), and σ_p , the standard error of a proportion, is equal to:

$$\sigma_p = \sqrt{\frac{\pi(1-\pi)}{N}}$$

where π is the proportion in the population and N is the sample size.

To see whether the results of two groups that have been sampled independently of each other (e.g., the mode choice in baseline and evaluation surveys) are statistically significant their confidence intervals are compared. If the confidence intervals overlap the results of the two groups are not statistically significant.

2.7 Important points to keep in mind when reading this report

Data collected through the STP programme around travel to school behaviour and issues currently only involves a relatively small sample of schools in the region, and schools involved are not representative of the distribution of schools across the region. However, there is an expectation that as more schools join the programme, this type of analysis will provide a rich source of information about the region's travel to school behaviour.

In addition, the evaluation of the STP programme is currently only based on a small number of schools. The number of schools will increase each year making changes in travel behaviour easier to measure and more complex analysis possible. As a travel plan is unique for each school it is not possible to relate travel plan activities to any resulting changes in travel to school behaviour.

The commentary in this report only includes findings/changes that are significant at the 95% confidence level. Whilst other trends may be apparent, these are not significant at this level with the current sample sizes in the datasets.

3. Regional Travel To School Behaviour

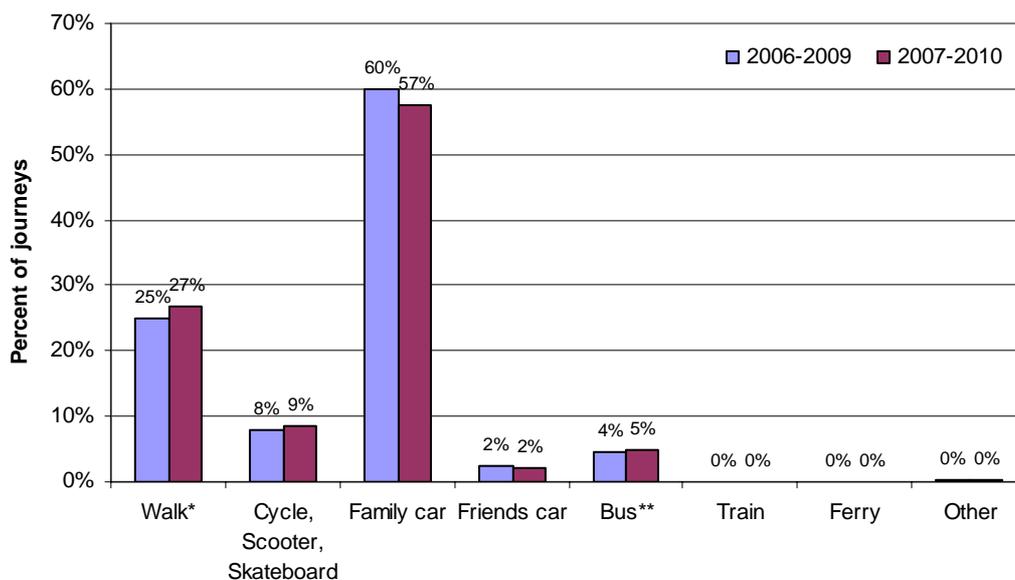
3.1 How the Regions Children Travel to School

The STP surveys collect information from parents and children about how they travel to school, including travel by vehicle, on foot, by bike and by public transport. Four years of STP data, from 2007-2010, on primary and intermediate age children has been pooled together to explore the school travel patterns in the Wellington region. Data for the 2006-2009 period is also shown for comparison. As more survey data is added we will be able to track changes over time in regional travel to school by mode and distance.

3.1.1 Travel Mode

Figure 3 shows the percentage of journeys (n = 65619) to school in the region by different modes over the 2007-2010 period.⁷ Data for the 2006-2009 period is also shown for comparison. Data collected over the 2007-2010 period shows that around 59% of trips to school were by car, 27% were on foot and nine percent by bike, scooter or skateboard.

Figure 3. Percent of journeys to school by mode, 2006-2009 and 2007-2010



*Walk includes walking school bus
**Bus includes public bus and school bus travel

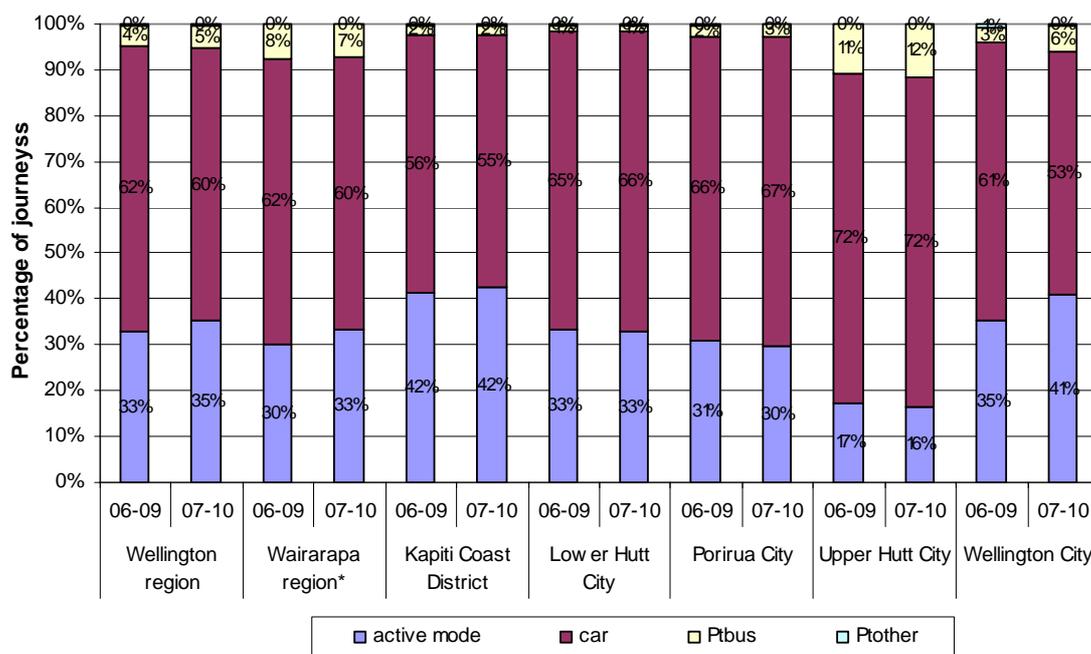
Comparing pooled data from 2006-2009 to the pooled data for 2007-2010, there has been a significant decrease in the percentage of trips to school across the region by car and a significant increase in the percentage of trips to school across the region by active modes. These figures are encouraging but currently not enough data is available to draw any definitive conclusions.

⁷ The information presented is that obtained through the class surveys at schools participating in travel planning. Mode share percentages from parent survey data (although not shown here) are very similar to those obtained through the class surveys.

There is no other regional data for comparison but modes of travel to school are similar to those observed nationally. The New Zealand Household Travel Survey (NZHTS) over the 2004-2008 period found that 56% of primary school children were driven to school, while 25% walked and four percent travelled by bike. The NZHTS results over the last decade show sharp declines in the proportion of children walking to school, and increases in those being driven.

The mode share of travel to school for the individual Territorial Authorities (TAs) in the Wellington region is shown in Figure 4, using information from the class surveys. Data from 2007-2010 shows that responding children attending participating schools in Upper Hutt are less likely, than all other TAs and the Wellington region overall, to use active modes to travel to school, whereas children going to participating schools in Wellington City and the Kapiti Coast are most likely to use active modes to travel to school. Children attending schools in Upper Hutt are also more likely to travel to school by bus than any other TA or the Wellington region overall. Children attending schools in Upper Hutt are most likely to travel to school by car, followed by children attending schools in Porirua City and Lower Hutt City.

Figure 4. Percent of journeys to school by mode⁸ for the individual territorial authorities, 2006-2009 and 2007-2010



*Wairarapa region includes the Carterton District, Masterton District and South Wairarapa District.

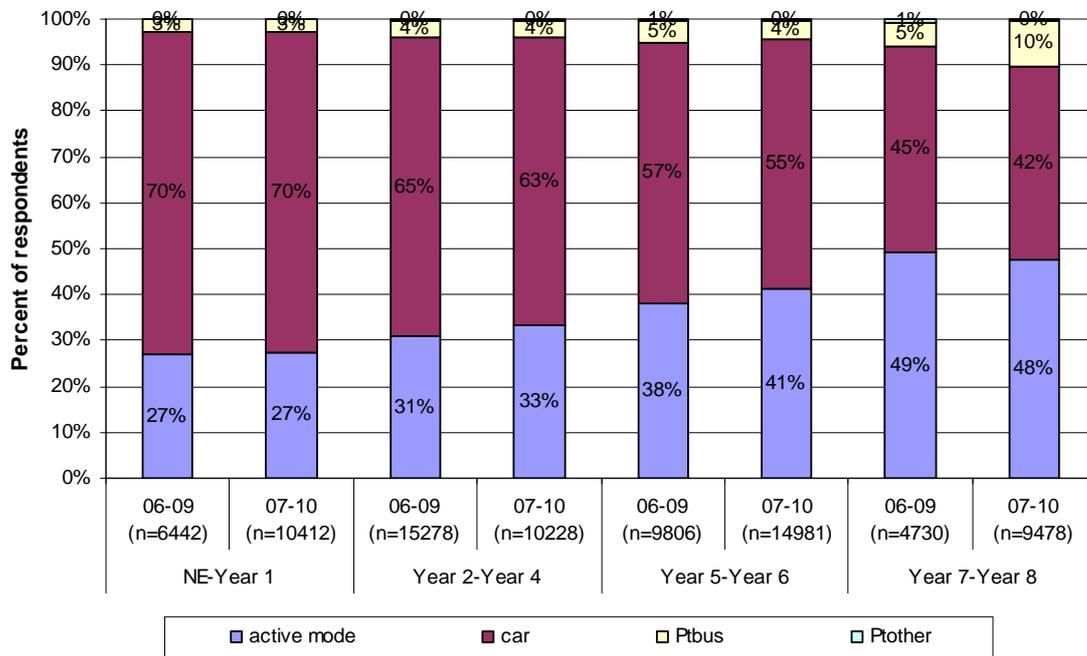
Further analysis of mode of travel to school by year level is shown in Figure 5.⁹ A strong predictor of travel to school mode choice is the age of the student. As primary and intermediate age children get older they becoming less reliant on being driven; with 70% of respondents being driven when they first start school, reducing to around 42% by the time they reach Year 7-Year 8. Correspondingly, students become increasingly more likely to use active modes (27% when they start school to 48% by Year 7-Year 8)

⁸ Active mode includes walk, cycle, scooter, skateboard and walking school bus; car includes family car and friend's car, Pbus includes school and public bus; Pother includes train, ferry and other modes.

⁹ The information presented is that obtained through the class surveys at schools participating in travel planning. Mode share percentages by age from parent survey data (although not shown here) are very similar to those obtained through the class surveys.

and public transport (3% when they start school to 10% by Year 7-Year 8) to get to school.

Figure 5. Mode¹⁰ of travel to school by year level of children, 2006-2009 and 2007-2010



Note: percentages not clearly visible are generally below 2%

Comparing pooled data from 2006-2009 to the pooled data from 2007-2010 there has been a significant increase in the percentage of respondents, in Year 2-Year 6 travelling to school by active mode. There has also been a significant decrease in the percentage of respondents, in Year 2-Year 8 travelling to school by car. No change in travel mode was observed for new entrant-Year 1 students. Once again, we note that currently not enough longitudinal data is available to draw any definitive conclusions.

3.1.2 Travel Distance

The typical distances (median, mean and 5% trimmed mean¹¹) children in the Wellington region travel to schools with STPs are shown in Table 3. The 5% trimmed mean distance to school, over the 2007-2010 period, for primary/intermediate age children was found to be 2.20km. Further analysis shows that the 5% trimmed mean distance to school by active modes is 1.05km, whereas by car it is 2.77km.

Short distances of less than 2km and less than 5km, from home to school, are of particular interest in school travel planning as these distances are often relatively easy to walk or cycle. Findings from the 2007-2010 class surveys show that 62% of children going to primary/intermediate schools with STPs in the region live within 2km of their school, and a further 27% live between 2km and 5km of their school.

¹⁰ Active mode includes walk, cycle, scooter, skateboard and walking school bus; car includes family car and friend's car, Ptbus includes school and public bus; Ptother includes train, ferry and other modes.

¹¹ 5% trimming removes the largest 5% of values, and the smallest 5% of values before the mean is calculated. This reduces the effect of outlier/extreme values.

Table 3. Kilometres travelled to school*, 2006-2009 and 2007-2010

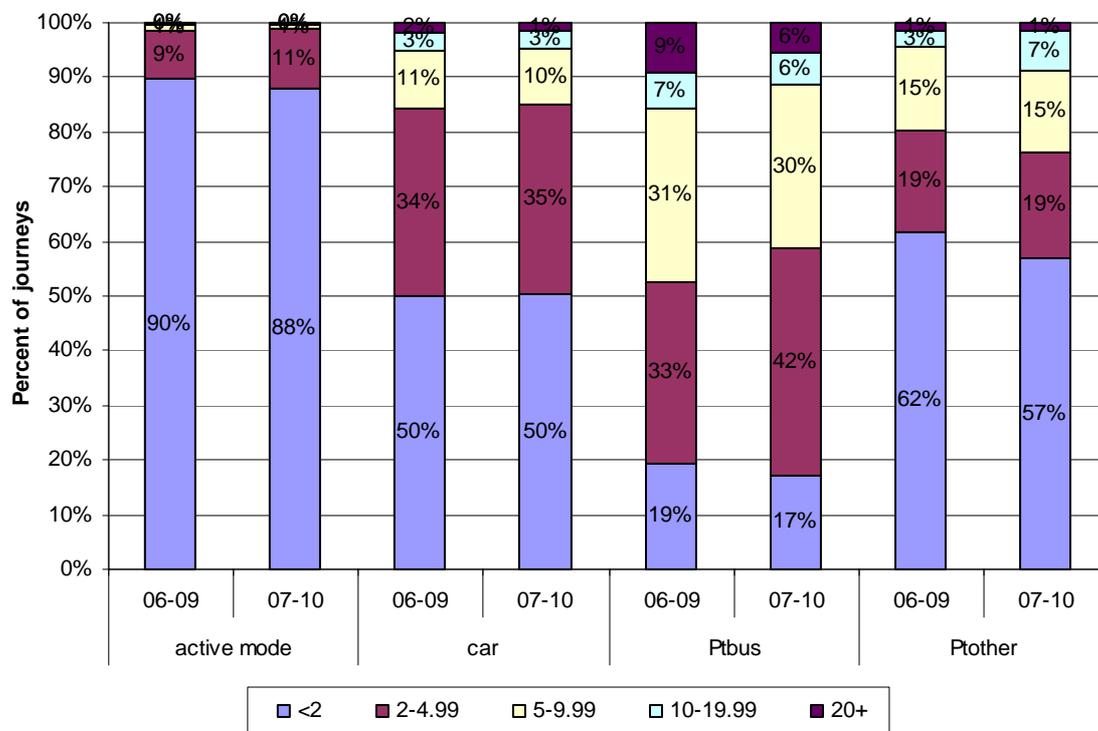
Mode of travel to school	# of trips		Median		Mean		5% trimmed mean	
	06-09	07-10	06-09	07-10	06-09	07-10	06-09	07-10
All modes	40926	62360	1.51	1.50	2.76	2.64	2.26	2.20
Car	25568	37282	1.99	1.99	3.34	3.25	2.81	2.77
Active	13480	22046	0.83	0.88	1.17	1.19	0.98	1.05

*Based on class survey data.

The distance travelled to school by mode of travel is shown in Figure 6, whereas the mode of travel to school by distance travelled is shown in Figure 7. From the pooled 2007-2010 data it is found that the vast majority of students (88%) using active modes to get to school live within 2km of their school, with a further 11% living between 2km and 5km. Students living further than this away from their school are very unlikely to use active modes for their journey to school. However, of interest for school travel planning is that half of trips (50%) where children are driven to school are less than 2km long, and 85% of trips are less than 5km long.

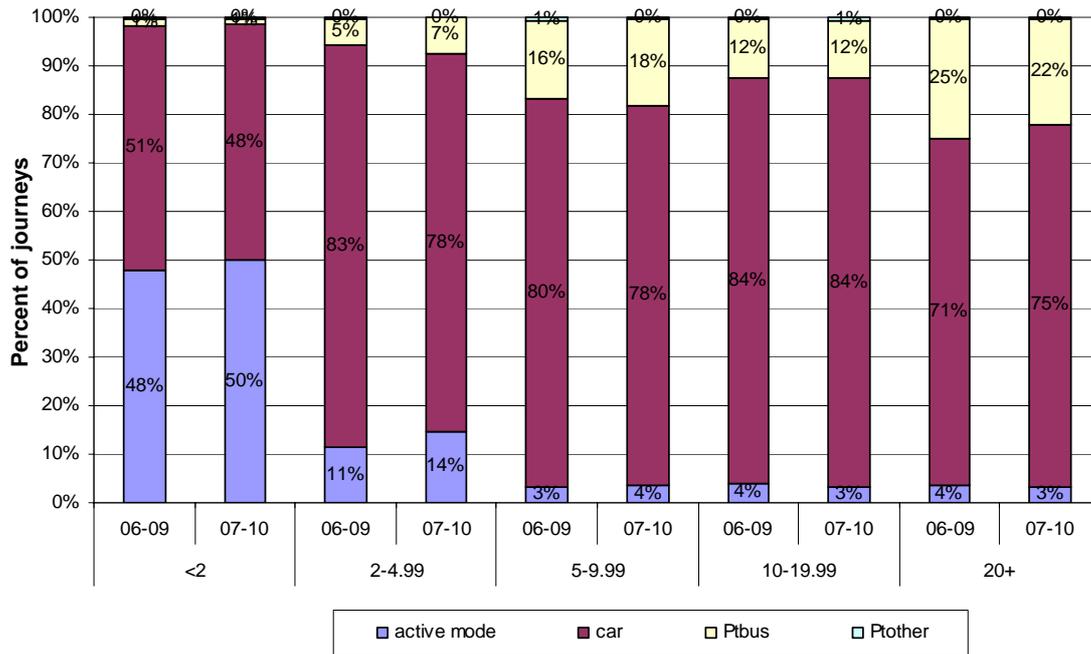
If this information is assumed to be representative of the entire Wellington region,¹² as a conservative estimate, there could be around 12,000 car journeys to primary/intermediate schools across the region, per day, that are less than 5km in length.

Figure 6. Distance travelled to school by mode of travel, 2006-2009 and 2007-2010



¹² Based on the number of primary/intermediate age children in 2010 (Table 1) and assuming (generously) that there are two children in every car journey to school.

Figure 7. Mode of travel to school by distance travelled, 2006-2009 and 2007-2010



3.2 School Route Safety

The STP surveys collect information from parents about how safe they think their child’s route to school is.¹³ STP data from parents of primary and intermediate age children has been pooled together to explore perceived route safety in the Wellington region for 2006-2009 and 2007-2010. As more information is collected, we will be able to track changes over time to perceived route safety to school.

Figure 8 shows the extent to which responding parents agree or disagree that their child’s route to school is safe, by mode of travel.¹⁴ Whilst around half of all responding parents in the region agree or strongly agree that their child’s route to school is safe, parents whose children travel to school by active modes or bus are more likely than parents who drive their child to school to think the route is safe.

As mode of travel to school was found to be related to the age (year level) of the child (see Figure 5), analysis of route safety by age of child was also carried out.¹⁵ Results are shown in Figure 9, where it can be seen that the differences by age are not as stark as those by mode of travel. However, we found that parents of children aged 9 to 12 are statistically more likely to agree that their child’s route to school is safe, and less likely to disagree or strongly disagree that their child’s route is safe, compared to parents of children aged 5 to 8.

There is little change in parent’s perception of route safety over the 2006-2009 and 2007-2010 periods. Further data is required to track changes in parents’ perception of route safety over time.

¹³ The question currently does not specify what route, i.e. walking route, cycling route, driving route etc.

¹⁴ Note that this analysis is based on the assumption that responding parent’s rate school route safety the same for all their children going that that school.

¹⁵ Note that this analysis is based on the assumption that responding parent’s rate school route safety the same for all their children going that that school.

Figure 8. Extent to which parents agree or disagree that their child's route to school is safe by mode¹⁶ of travel, 2006-2009 and 2007-2010

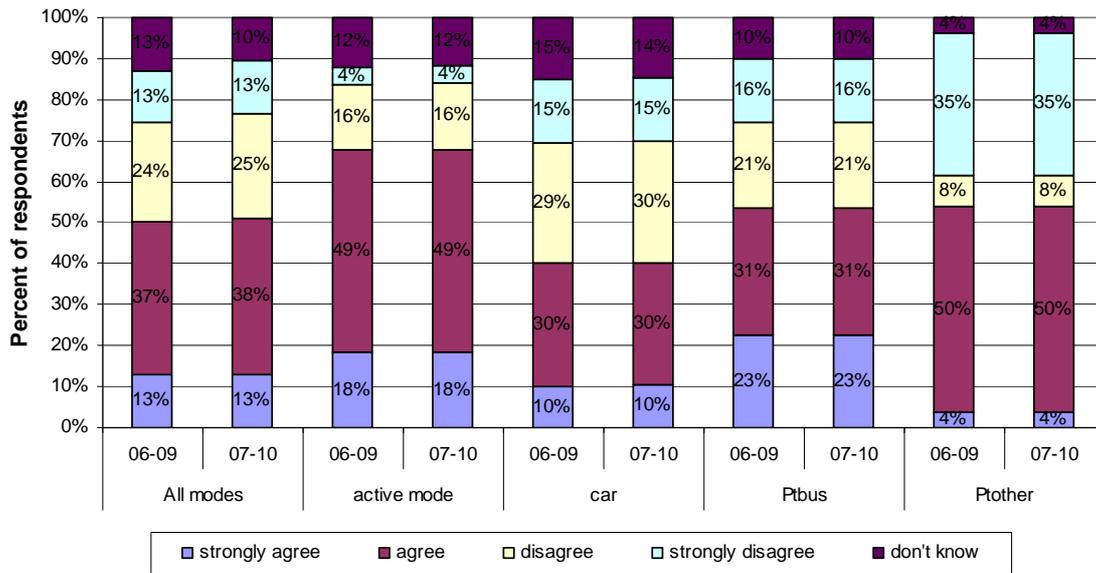
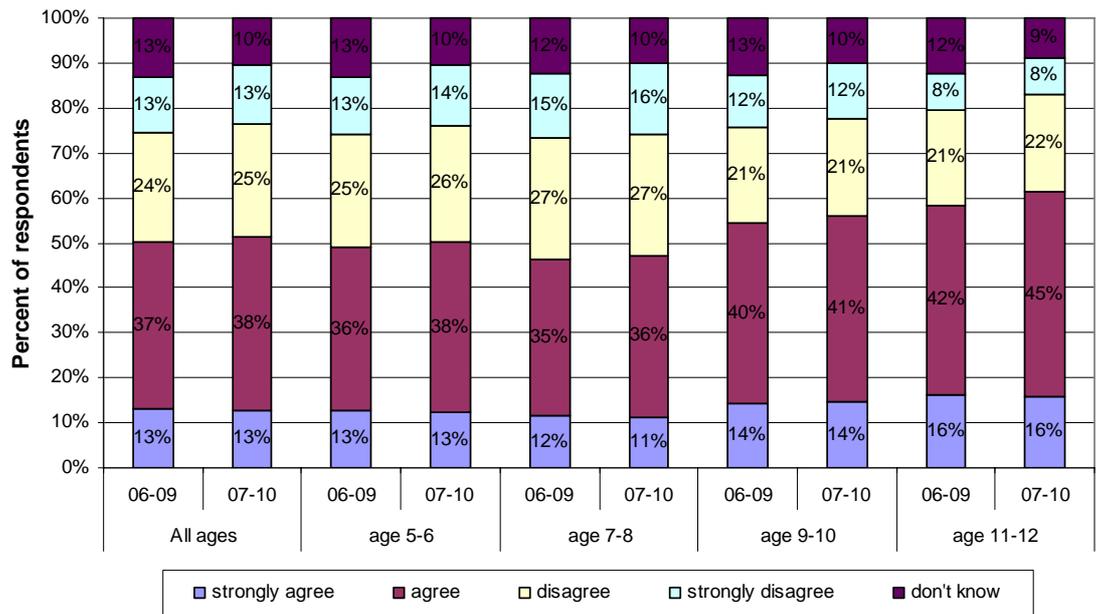


Figure 9. Extent to which parents agree or disagree that their child's route to school is safe by age of child, 2006-2009 and 2007-2010



3.3 Travel to School by Car

One of the aims of the STP programme is to reduce the proportion of schoolchildren in the region travelling to school by car. This section takes a closer look at information from the parent survey, which pertains to travel by car, including frequency of travel by car, reasons for travelling by car, who else is in the car, and the destination of the driver after the school drop-off. Once again, STP data from parents of primary and

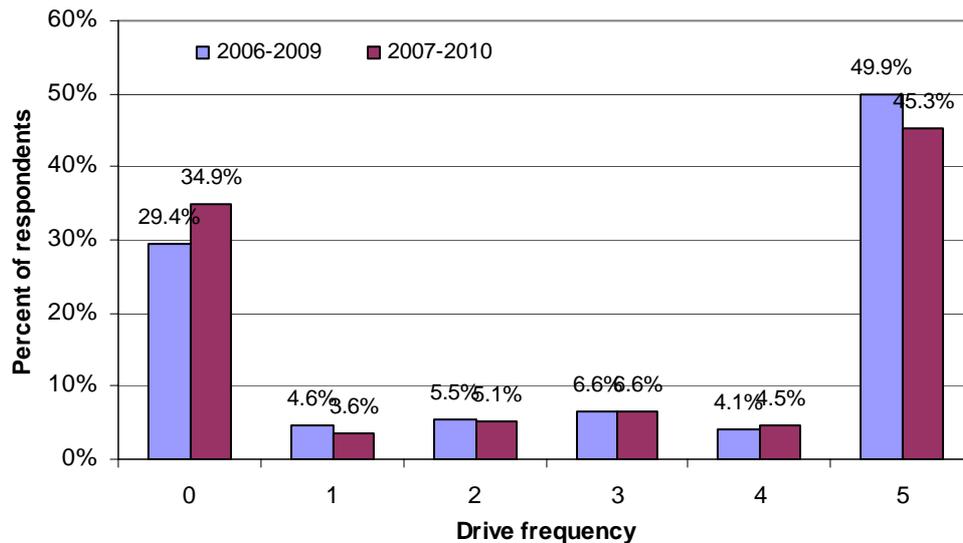
¹⁶ Active mode includes walk, cycle, scooter, skateboard and walking school bus; car includes family car and friends car, Ptbody includes school and public bus; Ptbody includes train, ferry and other modes.

intermediate age children has been pooled together over the 2006-2009 and 2007-2010 periods. As more information is added we will be able to track changes in travel to school by car over time.

3.3.1 Drive Frequency

Analysis of parent respondent information from 2007-2010 shows that around 45% of parents usually drive their children to school five times a week, with a further 20% usually driving between one and four times a week (see Figure 10).

Figure 10. Weekly drive frequency to school, 2006-2009 and 2007-2010



At a regional level, based on the observed drive frequencies in Figure 10 and generously assuming each parent drives two children to school, in 2010 there would have been around 69,100 car trips to primary/intermediate schools in the region per week (13,820 per weekday).¹⁷

3.3.2 To Where and with Whom?

Of those parents that drive their children to school information is collected in the parent survey about who else is in the car, and the destination of the driver after the school drop-off. Results show that of the responding parents that drive their children to school one or more times per week, 46% only have their children going to that school in the car. A further 10% have other people’s children going to that school in the car, and 29% also have their other children going to childcare, preschool, university, work or a different school. The remaining parents may have a spouse, colleague, other family member or friend in the car.

Of the car trips to school in the morning, once children are dropped off, the driver will then “do something else” 70% of the time and “drive straight home” 30% of the time.

There is little change in these findings between the 2006-2009 and 2007-2010 pooled data.

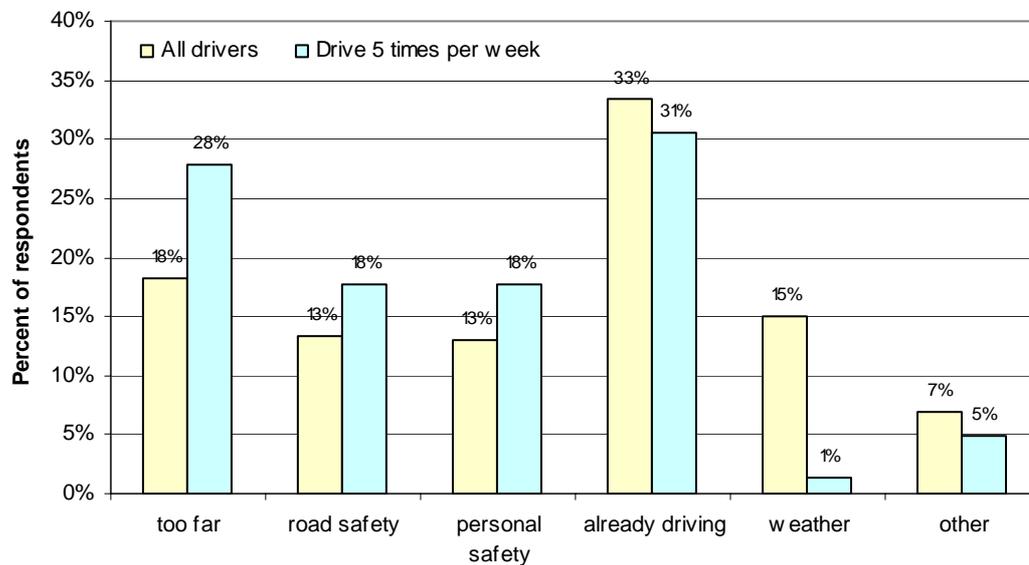
¹⁷ This is likely to be an underestimate as there are usually less than two children per car.

3.3.3 Reasons for Driving

Since the start of the STP programme changes have been made to the parent survey question around the reasons they drive their children to and from school. In the first few versions of the survey up to 11 reasons were available, but analysis showed that parents were most likely to select one of six reasons, which accounted for around 95% of responses. To reflect this finding, latter versions of the parent survey only gave the option of six reasons as the main reason for driving.

Figure 11 shows parents main reasons for driving their children to school (includes parents that drive once or more per week). For comparison, the main reason of those parents that drive five times a week is also shown.¹⁸ Already driving, followed by distance (too far) are the two main reasons parent respondents selected for driving their children to school. These were also the main reasons for parents who drove five times per week, but distance became a much more prominent reason.

Figure 11. Parents main reasons for driving, over the period 2007-2010



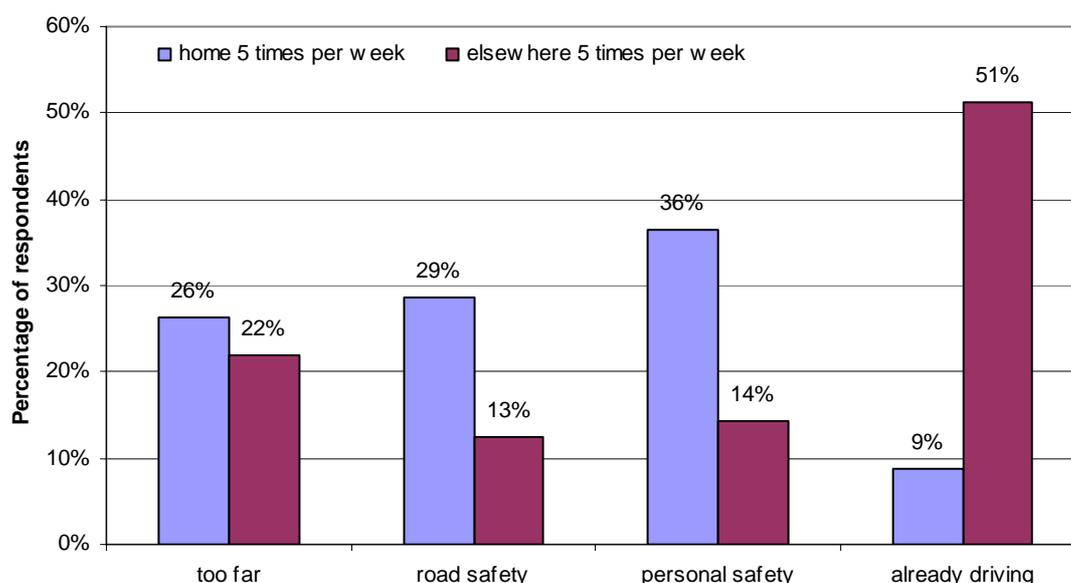
For parents that drive five time per week, the weather does not feature as a strong reason for driving, so the higher proportion of parent respondents amongst all drivers selecting weather as the main reason must mean that the weather is more important for those that drive fewer than five times per week.

It was also found that parents who drive their children to school and then drive straight home (five times per week) had different reasons for doing so (Figure 12) compared to those drivers who drove their children to school then drove elsewhere (five times per week). Parents who, after the school drop-off, drive elsewhere were most likely to select “already driving” as their main reason for driving their children to school, whereas parents who drive straight home after the drop-off are more likely to select safety related reasons.

There is little change in these findings between the 2006-2009 and 2007-2010 pooled data.

¹⁸ All differences shown in Figure 11 are significant

Figure 12. Parents main reasons for driving for those drivers that drive straight home or elsewhere after the school drop-off five times per week, over the period 2007-2010



3.4 Summary

This work continues to provide an annual picture of travel to school in the Wellington region, on a four-yearly moving average basis. To date analysis has looked at the overlapping time periods, 2006-2009 and 2007-2010, to provide a large enough sample size and a pool of schools that cover the entire Wellington region (all TAs). As data continues to be collected it will be possible to examine trends in the regions travel to school behaviour by looking at the overlapping time periods e.g. 2006-2009, 2007-2010, 2008-2011 etc.

Over the 2007-2010 period, around 60% of travel to school, for primary/intermediate age children in the region, was by car. There are some differences by TA with children in Wellington City and the Kapiti Coast District more likely than children in other TAs to use active modes to travel to school, whereas children in Upper Hutt, followed by Porirua City and Lower Hutt are more likely to travel by car.

Mode of travel to school in the region is also found to be highly dependent on the age of the child, with older children becoming less reliant on being driven and increasingly more likely to use active modes of travel to school.

Short distances of less than 2km and less than 5km, from home to school, are of particular interest in school travel planning as these distances are often relatively easy to walk or cycle. Data from STPs over the 2007-2010 period shows that around 89% of children live within 5km of their school. Even though the vast majority of children live within 5km of their school, around 57% of these short trips to school are currently by car with only 39% using active modes. This illustrates that there is plenty of scope across the region for shifting children's mode of travel to school.

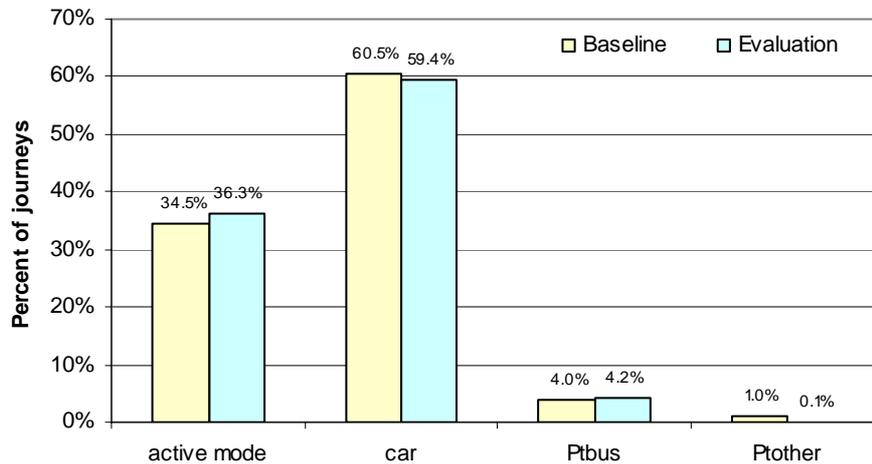
4. Evaluation of School Travel Plans

Up to the end of the 2010 school year, there were 11 schools involved in the STP programme that had completed parent baseline and evaluation travel surveys, and 12 schools that had completed class baseline and evaluation travel surveys. The data from these schools is presented in this chapter to look at the travel to school changes for those schools that have implemented STP activities.

4.1 Modal shift in schools with travel plans

From the class travel survey data, the regions schools with travel plans have achieved a statistically significant increase (1.8 percentage points) in the percent of journeys to school by active modes (see Figure 15). A corresponding decline in car use is also observed but this is only significant at the 90% confidence level. Similar observations are observed from the parent survey data, but due to the smaller sample sizes, none of the observed changes are significant.

Figure 15. Change in mode of travel to school between class baseline and evaluation surveys

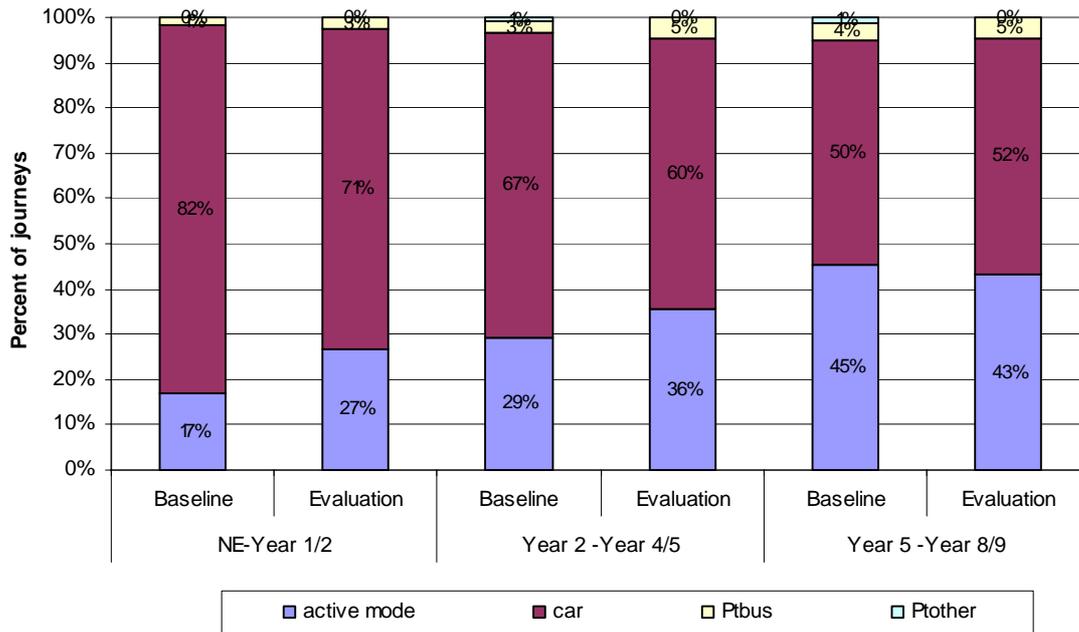


4.2 Mode shift by year level

The age of the student has been found to be a strong predictor of mode of travel to school in the Wellington region (see section 3.1.1 in this report), and for other regions (ARTA, 2008) and New Zealand nationally (Ministry of Transport, 2009). Figure 16 shows the change in mode of travel to school between class baseline and evaluation survey data by student year level.

At the schools who have implemented STP activities, there has been a statistically significant increase in journeys to school by active modes and a corresponding significant decrease in journeys by car for new entrant (NE) students-Year 1/2 students and Year 2-Year 4/5 students. For the older primary/intermediate age students (Year 6-Year 8/9), the reverse has been observed with a slight decrease in journeys to school by active modes and an increase in journeys by car.

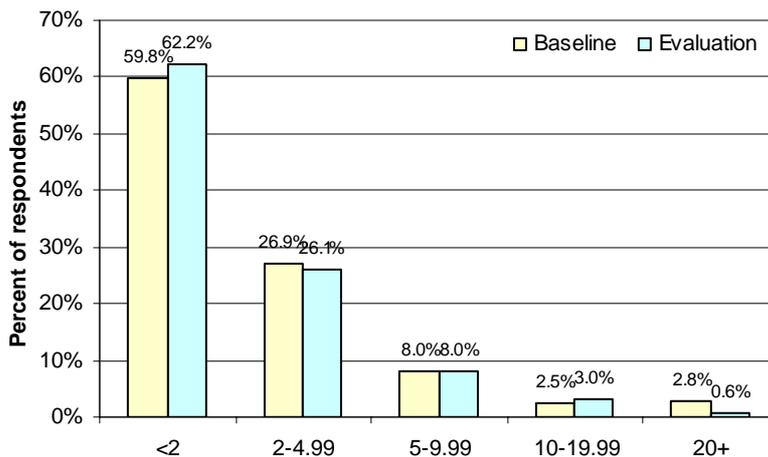
Figure 16. Change in mode of travel to school between class baseline and evaluation surveys, by student year level



4.3 Modal shift by distance travelled to school

Short distances of less than 2km and less than 5km, from home to school, are of particular interest in school travel planning as these distances are often relatively easy to walk or cycle. Therefore, mode of travel to school is also influenced by the distance between a child’s home and their school, with active modes of transport not feasible for longer journeys to school. Figure 17 shows the distances children travel to their school from the baseline and evaluation surveys.

Figure 17. Change in distance travelled to school between class baseline and evaluation surveys

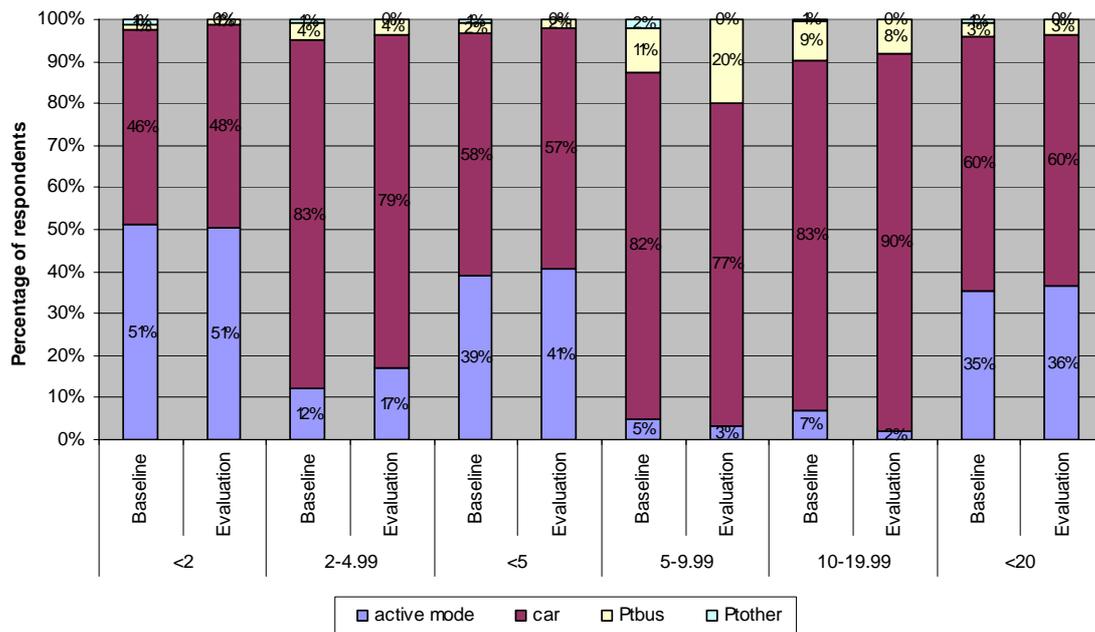


In both the baseline and evaluation surveys, around 87% of students live within 5km of their school. However, a lower proportion of students involved in the baseline survey live within 2km of their school and a higher proportion live between 2km and 5km of their school, compared to the students involved in the evaluation survey. This finding is important when looking at the changes by mode in section 4.1, as with higher

proportions of students living within 2km of school it could be expected that higher proportions of students would use active modes to get to school and thus there is likely to be a corresponding decrease in car trips.

To assess whether the observed change in mode of travel to school (Figure 15) is a result of more children walking/cycling to school, rather than due to higher proportions of the respondents living within easier walking and cycling distances to school, analysis of modal shift by distance travelled has been undertaken. Figure 18 shows the modal shift between class baseline and evaluation surveys, by distance from home to school.

Figure 18. Change in mode of travel to school between class baseline and evaluation surveys, by distance travelled to school



For students who live within 5km of their school there has been a significant increase in the proportion using active modes to get to school. The observed decrease in travel to school by car is not significant. The largest shift in travel to school behaviour was observed for students living within 2-4.99km of their school, with a five percentage point increase in the use of active modes and a four percentage point decrease in car use to travel to school. There were also significant shifts for those students living between 5km and 9.99km from their school, with an increase in bus use and a decrease in car use for travel to school.

Currently there is only a small number of primary/intermediate schools, who have been in the STP programme long enough to participate in the evaluation. However, based on the students that live within 5km of their school, there has been an increase of around 450 active mode trips to these schools each week.

If this level of mode shift was observed for all primary/intermediate students across the Wellington region who live within 5km of their school, based on 2010 rolls, there could be around 1,030 more active mode trips to school per day-around 5,150 per week. Changes in the number of car trips are detailed in the next section.

4.4 Trip reduction

As mentioned in the previous section only a small number of schools in the Wellington region have been involved in the STP programme long enough to have completed both baseline and evaluation surveys. However, based on the students that live within 5km of their school, and if we assume (generously) each parent drives two children to school, there may have been 75 fewer car trips to these schools each week.¹⁹

While this may sound small, if this level of mode shift was observed for all primary/intermediate students across the Wellington region who live within 5km of their school, based on 2010 rolls and the assumption above, there could be around 180 fewer car trips to school per day-around 890 per week.²⁰

Table 4 shows the estimated reduction in car trips for the students (living within 5km of their school) at the evaluation schools and for all primary/intermediate students across the region. It also shows the resulting reduction in vehicle kilometres travelled (VKT) and CO₂ emissions. The reduction in car trips to schools that have participated in the STP evaluation reduced vehicle kilometres travelled by 6,570km each year and reduced CO₂ emissions by 2.3 tonnes each year. Once again if these schools are assumed to be representative of the Wellington region, the STP programme could reduce the number of car trips, of primary/intermediate students who live within 5km of their school, by 34,659 each year. This equates to 76,250 fewer vehicle kilometres and a reduction in CO₂ emissions of 26.4 tonnes.

Table 4. VKT and CO₂ reduction for the STP programme, for students living within 5km of their school

	Total students	Car trips to school saved per year*	Reduction in vehicle kilometres to school each year**	CO ₂ reduction per year*** (tonnes)
At evaluation schools	4,281	2,987	6,570	2.3
All primary/intermediate regional schools	49,682	34,659	76,250	26.4

*School runs for a total of 196 days per year and assuming two children travel in each car

**Assuming each trip is 2.20km in length (the 5% trimmed mean car distance travelled to school for students in the region, 2007-2010-see Table 3.

***Fleet weighted exhaust emissions factor for CO₂ = 346g/km (Ministry for the Environment, 2008)

Whilst it is encouraging to see a reduction in car trips following STP activities, it is acknowledged that reducing car trips to school still may not stop the car trip occurring altogether as a number of parents are already driving (see Figure 11) when they drop their child off to school. This type of behaviour change is beyond this analysis, but increased awareness of parents around mode of travel may also bring about other changes in car travel not measured through the STP programme. Even if a number of car trips are still occurring, the finding that school travel planning has increased the use of active travel modes for students is still important.

¹⁹ This is likely to be an underestimate as there are usually less than two children per car.

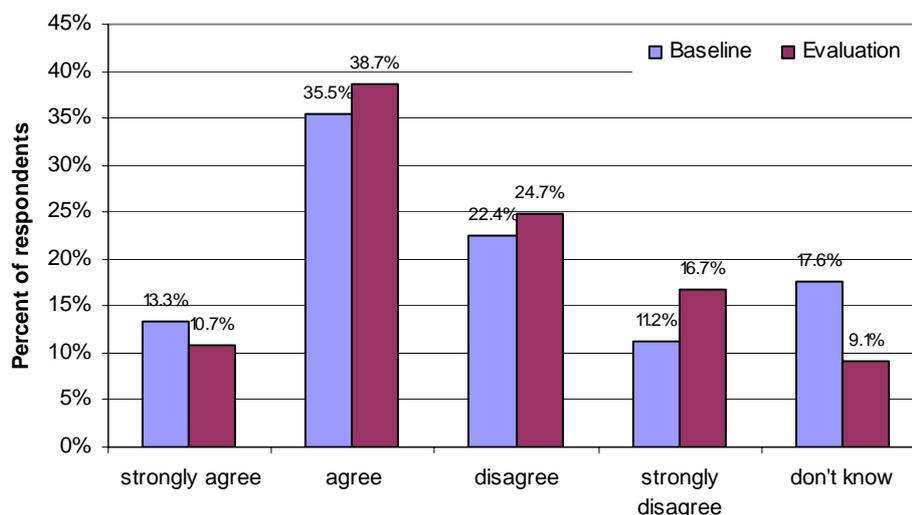
²⁰ This is likely to be an underestimate as there are usually less than two children per car.

4.5 Travel Safety

Evaluation of the STP programme in the Auckland region found that stakeholders thought that the success of the programme should be measured on both modal shift change and improved safety for child pedestrians and cyclists (ARTA, 2008). Auckland travel co-ordinators also commented that shifting parent's perceptions about safety was essential in order to achieve reductions in car use.

The extent that parents, at the 11 schools which have been in the STP evaluation programme agree or disagree that their "child's route to school" is safe is shown in Figure 19. Since the introduction of STP activities at these schools there has been a significant increase in the proportion of parents who "strongly disagree" that their child's route to school is safe, and parents were significantly less likely to answer "don't know" indicating a growing awareness of route safety. Unfortunately, from the wording of this question, it is not known whether the "route to school" that respondents rated was a walking, cycling, or driving route.

Figure 19. Extent that parents agree or disagree that their child's route to school is safe between parent baseline and evaluation surveys



In response to the national government's new Safer Journeys Strategy and NZTA's consequent focus on safety, the parent survey's safety question will be expanded in future surveys. The expanded question will further investigate respondents' perceptions of children's safety when walking or cycling to school, the behaviour of drivers in the school area, the behaviour of adult pedestrians and respondents own confidence teaching road safety to their own children.

4.6 Summary

Currently there are only a small number of primary/intermediate schools in the Wellington region that have been in the STP programme long enough to have implemented some travel plan activities and participate in an evaluation survey, however early results are encouraging. Overall, there has been an increase in travel by active modes to these schools. An increase in active mode use is only observed for new entrant to Year 5 students and not for older primary/intermediate students.

Mode of travel to school is influenced by the distance between a child's home and their school, with active modes of transport not feasible for longer journeys to school. Analysis of mode of travel to school for those students that live within 5km of their school showed significant increases in the proportion of students using active modes to travel to school since the schools became involved in the STP programme. The largest shifts are observed for students living within 2-4.99km of their school. A decrease in the proportion of students travelling to school by car is also observed for the students living within 2-4.99km of their school.

Since the introduction of the STP programme, at the eleven schools that have participated in evaluation surveys, it is estimated that at a minimum there has been an increase of around 90 active mode trips to these schools each day for students living within 5km of their school, and a decrease of around 15 car trips each morning.²¹ Whilst these numbers may sound small, if these changes were observed across the whole Wellington region there could be around 1,030 more active mode trips and at least 180 fewer car trips to primary/intermediate schools each morning.

The reduction in car trips means that there will be a reduction in vehicle kilometres travelled, which brings with it an associated decrease in CO₂ emissions from car travel to school. Whilst it is encouraging to see a reduction in car trips for travel to school following the STP programme, it is acknowledged that reducing car trips to school still may not stop the car trip occurring altogether, as a number of parents are already driving when they drop their child off to school. However, even if some car trips still occur the observed changes in mode of travel to school must mean that parents are becoming increasingly aware of other travel to school options for their children.

This increasing awareness was also observed in terms of parents' perceptions of route safety to school. Since implementation of travel plan activities, parents perception of their child's route safety to school is still mixed, but it is interesting to note that parents were significantly less likely to answer "don't know" how safe or unsafe their child's route to school is. Awareness of route safety and other travel to school options should be seen as a positive step in bringing about behaviour change.

Initial findings from the schools included in this evaluation is encouraging and shows some positive shifts towards achieving some of the programmes aims. Each year increasing numbers of schools are signing up to the STP programme, and of the schools at the evaluation stage significant increases in active mode trips and decreases in car trips have been observed. The largest shifts appear to be occurring with younger students and students living within 5km of their school.

Lastly, a move away from a dependence on car travel suggests that parents are becoming increasingly aware of other travel to school options, and it was also found that they are increasingly aware of safety aspects of their child's route to school.

²¹ Car trip estimates assume there are two children in every car. This is likely to result in an underestimate as there are usually less than two children per car.

5. Activities of the School Travel Plan programme

5.1 School Travel Plan Activities by Territorial Authority

Each school's action plan initiatives are selected by working parties which consider the results of the parent and class surveys in the context of the local environment. The working party members can be parents, school staff, police, road safety coordinators, community members or other organisations. The composition of these groups varies between schools as do the actions that the working parties select (see Table 5).

Table 5. STP Activities and Participants by Territorial Authority

TA	Schools/ Students	Activities
KCDC	9 4,203	<ul style="list-style-type: none"> • Increasing local capacity to deliver cyclist skill training • Cyclist skills training for students • Milo mornings to encourage community awareness of safe walking and cycling to school • Parking changes to improve student safety • Walking school buses • Participation in Movin' March • New "drop-off area" for Kapiti School
PCC	2 716	<ul style="list-style-type: none"> • Walking school bus "graduation" • Alternative parking area promotions to decrease traffic in front of the school and increase student safety
WCC	16 6,737	<ul style="list-style-type: none"> • Fluorescent yellow backpack covers provided to all schools to increase pedestrian conspicuity • Five walking school buses established – growing community support for children walking to school • Cycle skills training to increase the safety of child cyclists • Parent valet system to help children safely out of vehicles • Parent patrol for crossing at busy intersection
UHCC	7 1,780	<ul style="list-style-type: none"> • Participation in Movin' March • Installing parent patrolled informal crossing • Active travel mural

TA	Schools/ Students	Activities
		<ul style="list-style-type: none"> • Young Cyclist competition – road safety and bicycle control skills
HCC	8 2,066	<ul style="list-style-type: none"> • Fancy Feet Days (walking to school in decorated shoes) • Participation in Movin’March • Nine Walking school buses • Road safety education • “Feet First” walk to school programme participation • Motorist speed monitoring near school gates, incorporating the results in math classes • Road Safety video creation through curriculum work • Road patrol training in conjunction with the Police • School zone – 40km/hr at Randwick School
WRSC	6 1,466	<ul style="list-style-type: none"> • Taking part in Walk & Wheel Wairarapa • Mapping safe routes to schools • Movin’March participation • Working to improve safety of parents parking behaviour
TOTAL	48 16,968	

5.2 Regional active transport week: Movin’March

Movin’March 2011 was the Wellington region’s second annual active travel week for schools. This year 38 schools with over 10,000 children registered to participate. This year’s Movin’March promotion focused on getting active and being safe on the way to school.

Schools received a resource booklet, with details of competitions, links to other programmes and ideas for celebrating the week. Those who registered on-line, or with the School Travel Plan coordinator or Road Safety Coordinator from their Territorial Authority, received additional resources to use for their events. Schools were invited to take part in Movin’March in a way that suited their community – being able to choose from a list of activities or create their own Movin’March event.

The resource booklet, which went to all schools, contained safety messages for child pedestrians, promoted by Melissa Moon, world champion runner - and safe cycling tips promoted by Robyn Wong, Olympic mountain biker.

Fourteen local bike shops across the region supported Movin' March by providing free safety assessments for children's bicycles and helmets. In addition, schools were provided with bike and helmet checklists to distribute to their young cyclists.

A competition was offered to school staff to encourage them to be role models for their students. Staff members from seven schools signed up to take part in the challenge to walk, cycle, bus or carpool to the school during Movin' March week. Kapanui School went to take the challenge farther and chose to change their travel choices for the entire month of March.

Movin' March linked participating schools to existing resources such as:

- ❖ NZTA's Feet First initiative
- ❖ the Wellington region school travel plan programme
- ❖ NZTA's education portal, competitions and curriculum resources

5.3 Summary

Schools in the region participating in the STP programme use the survey results to plan activities that are appropriate to the local community. Schools from the majority of territorial authorities tend to involve people in activity planning from outside the school to ensure that activities get support from the wider community.

Analysis of mode of travel to school for those students that live within 5km of their school showed significant increases in the proportion of students using active modes to travel to school since the schools became involved in the STP programme.

Initial findings from the schools included in this evaluation is encouraging and shows some positive shifts towards achieving some of the programme's aims.

The move away from a dependence on car travel suggests that parents are becoming increasingly aware of other travel to school options.

6. References

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