Walking, riding or driving to school: what influences parents' decision making?

Phase 3: Parent Survey

Dr Jan Garrard

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Contents

ACKNOWLEDGEMENTS

The author would like to thank the many parents of primary school children in South Australia who took the time to provide valuable information about parental supports and constraints on active travel to school through their participation in the online survey.

Many thanks also, to staff from the South Australian Government Department of Planning, Transport and Infrastructure (DPTI) who provided valuable support and assistance throughout all stages of the study.

Preface

This report has been prepared by Dr Jan Garrard, Research, Evaluation and Active Transport Consultant, for the South Australian Department of Planning, Transport and Infrastructure (DPTI), May 2017. The report comprises the third component of a three-stage project aimed at providing an evidence-based understanding of parental supports and barriers to primary school children's active travel choices for the school commute. The three phases are as follows.

Phase I comprised a review of research related to children's active school travel in Australia and comparable overseas locations, with a focus on the role of parents in determining the school travel mode of primary school children. The focus is on the personal, social/cultural, and policy/regulatory factors that facilitate and constrain parents/carers permitting their children to travel actively to school, either accompanied or independently.

Phase 2 used the literature review findings to develop and administer an in-depth qualitative study which explored (i) parents' perspectives on factors that influence how their children travel to school, with a focus on motivations for, and constraints on active travel to school; and (ii) parents' suggestions for increasing primary school students' active travel to school.

Phase 3 (this report) used the findings from Phases 1 and 2 to develop and conduct an online survey of parents of primary school age children in South Australia aimed at quantifying the key factors identified in Phases 1 and 2.

Funding for the project was provided by the South Australian Department of Planning, Transport and Infrastructure.

Figures

Tables

1 INTRODUCTION

This report presents findings from an online survey of South Australian parents which investigated parental barriers to children's active travel to and from primary school. The questionnaire items were based on key findings from the literature review (Phase 1) and focus group discussions with parents (Phase 2). The survey also draws on the social-ecological model of influences on active/passive modes of travel to and from school, which describes four mutually interactive segments of influence: intra-individual factors (including demographic and psycho-social factors); the natural/built environment; the social/cultural environment; and the policy/regulatory environment (Figure 1).

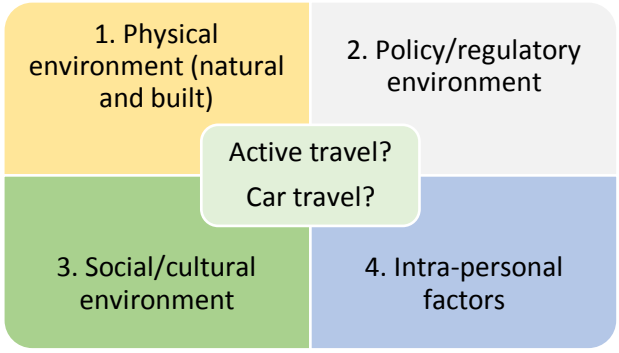

Figure 1: Social-ecological model of active/inactive travel behaviour

During the primary school years, many children are transitioning from parent-supervised travel to school to independent travel to school. Based on previous qualitative research indicating that supports and constraints on active travel to school differ for parent-supervised and independent travel to school, the survey explored both parent-accompanied and independent travel to/from school.

2 METHODS

An online survey was developed and administered using SurveyGizmo online survey development and administration software (https://www.surveygizmo.com/). The survey comprised 36 questions covering demographic questions (parents/carers and children); modes of travel to and from school; use of before and after school care programs; accompaniment while travelling to and from school; parental trip-chaining associated with school travel; parents' attitudes to active and inactive modes of school travel, and to parent-accompanied and independent active travel to/from school; parents' use of active and inactive travel modes for work and other non-school trips; participation in school-based active travel to school initiatives; and suggestions for increasing active travel to school.

A draft survey was pilot-tested with four parents of primary school children, and some minor revisions were made. The final questionnaire, which took about 10 - 15 minutes to complete, is in Appendix A. An incentive for parents to complete the survey was provided in the form of the opportunity to win one of three $300 gift vouchers for sports or stationery equipment awarded to the child's school.

Invitations to participate in the survey were distributed by email by DPTI to the principals of 30 South Australian primary schools who were requested to invite school parents to participate in the survey; together with individual invitation emails to approximately 300 parents who had previously responded to other Way2Go surveys (138 completed responses). In addition, approximately 2000 DPTI staff were invited by email to complete the survey if they had children attending primary school in South Australia (678 completed responses). The final sample comprised 816 parents/carers from 291 primary schools and 70 postcode areas. A map showing the distribution of survey respondents by postcode is in Appendix B.

3 RESULTS

Survey data were imported in Microsoft Excel 2013 for analysis. Percentages for each question have been calculated based on the number of respondents to the specific question; usually in the range 800-816, unless otherwise stated.

3.1 Respondent demographic data

Parents/carers who responded to the survey were predominantly female (n = 606, 76.4%[1]), followed by male (n = 185, 23.3%) and other (n= 2, 0.3%).

Parents/carers were mainly aged 30-49 years (Figure 2).

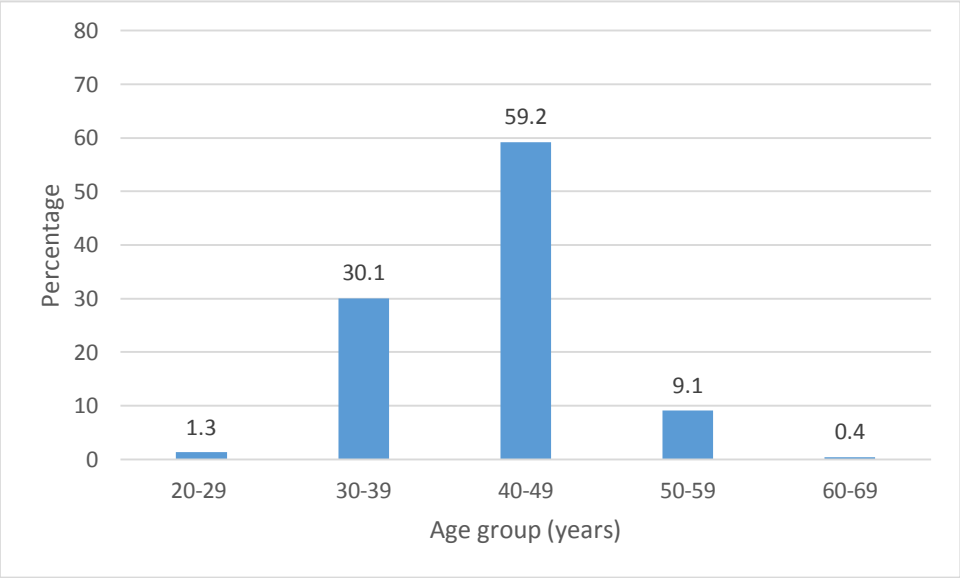

Figure 2: Parent/carer age group (years) (n = 792)

Eighty percent of respondents were born in Australia, and 20% were born overseas.

Eighty-eight percent of respondents stated that there was another parent or guardian living in the household, and 12% stated that there was not.

The majority of households had two children in the household (Figure 3).

[1] Percentages based on 793 survey respondents who provided data on their gender.

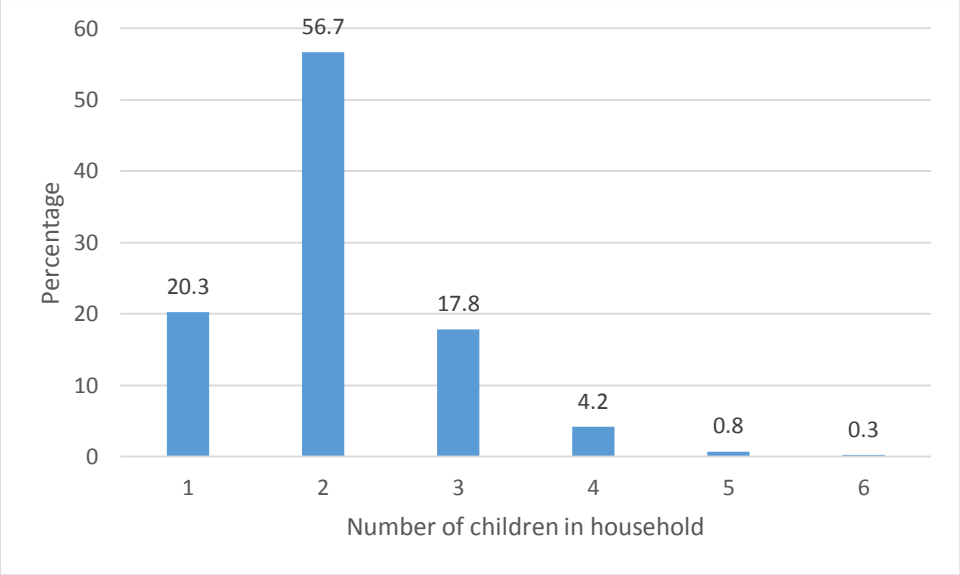

Figure 3: Number of children in household

Most parents were employed, with similar proportions employed full-time and part-time (Figure 4). Only five percent of parents/carers were mainly engaged in home duties.

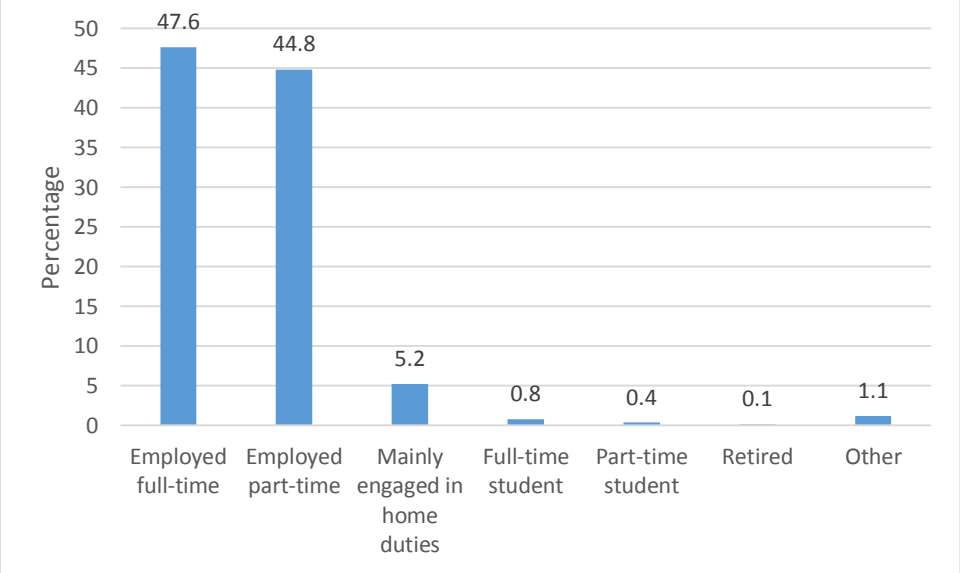

Figure 4: Parents' work/study/home situation (n = 792)

The majority of households had two motor vehicles, with about a quarter having one motor vehicle (Figure 5).

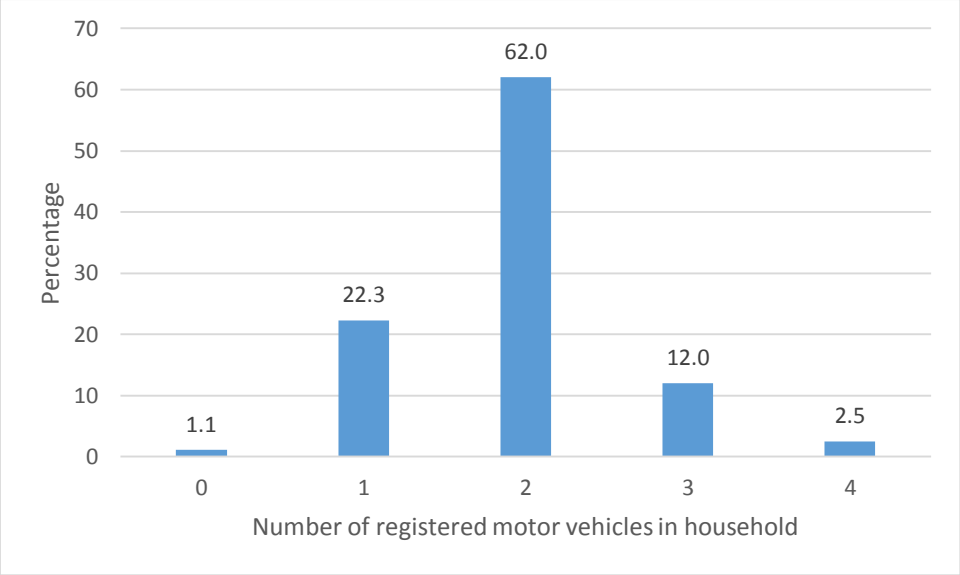

Figure 5: Number of registered motor vehicles in household

Most parents/carers travelled to work or place of study by car (63%), with 25% travelling by public transport and 9% by bicycle (Figure 6). While rates of car travel were similar to journey to work data from the 2011 Census for the Greater Adelaide area (64%), rates of travel by public transport (8% for Census data) and cycling (1% for Census data) were higher (http://profile.id.com.au/adelaide/travel-to-work). Walking to work rates were similar (2% for Census data). These differences might reflect age differences (Census data is for employed people aged 15+ years), gender differences, and differences in location for the study sample.

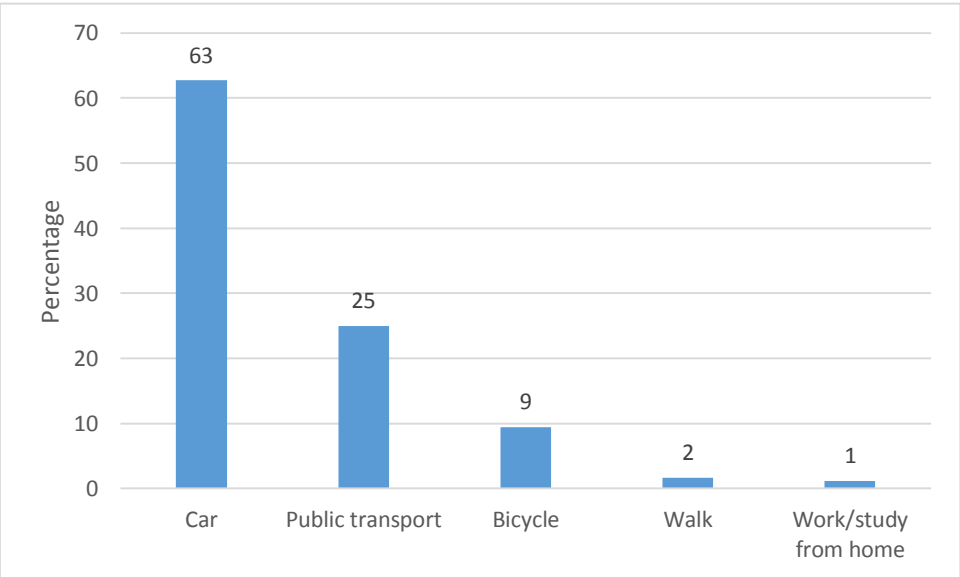

Figure 6: Parents' usual method of travel to work or place of study (n = 740)

3.2 Child demographic data

3.2.1 Child age

Parents/carers were asked to respond to the survey for one child in the household (the child whose birthday was closest to the date of the survey). Figure 7 shows that most ages within the expected age range for primary school students are well-represented, particularly ages 6 to 12 years. The mean age was 8.8 years, and the median age was 9 years.

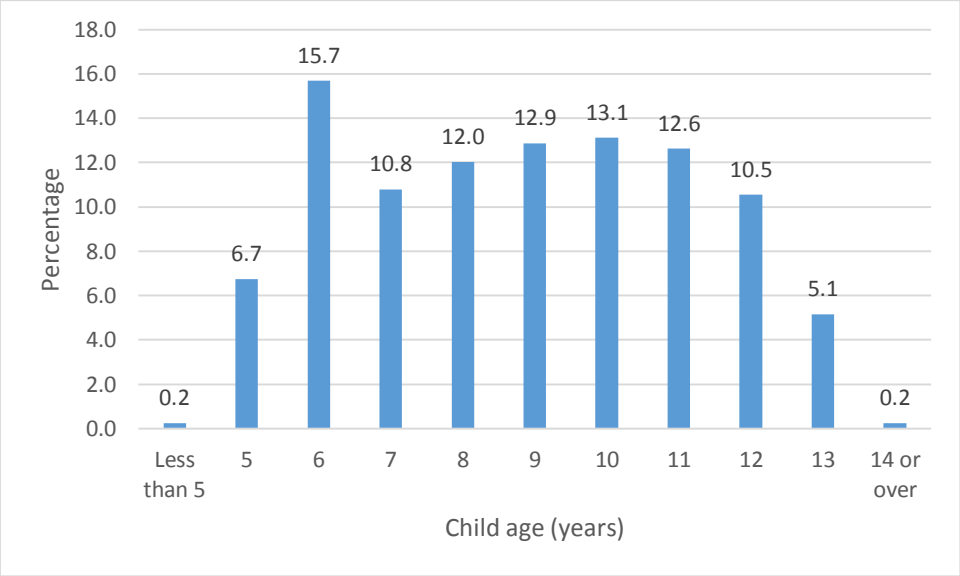

Figure 7: Child age (years)

3.2.2 School year level

Consistent with the age distribution described above, students' year levels were distributed across the eight year levels of primary school; however, there was a tendency for greater representation in the earlier year levels (Figure 8).

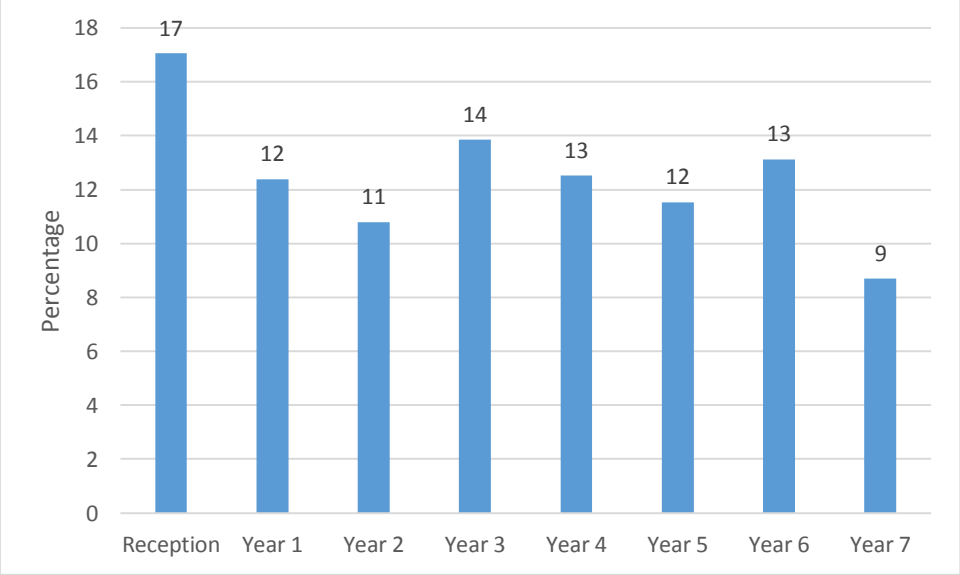

Figure 8: School year level

3.2.3 Child gender

The sample contained slightly more boys than girls, but the difference was not statistically significant (Figure 9).

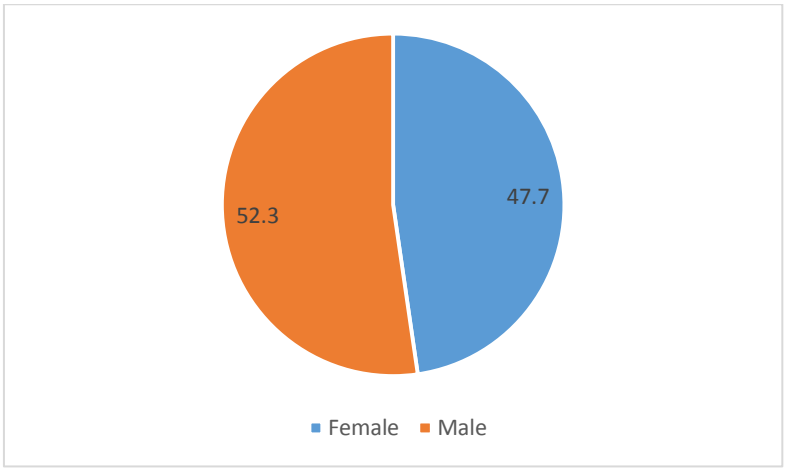

Figure 9: Child gender (%)

3.3 Distance from home to school

Nearly half of children (48%) lived less than 2km from their primary school, distances that are considered walkable/rideable for most primary school age children (http://www.saferoutesinfo.org) (Figure 10). However, one in five students lived more than 5km from school.

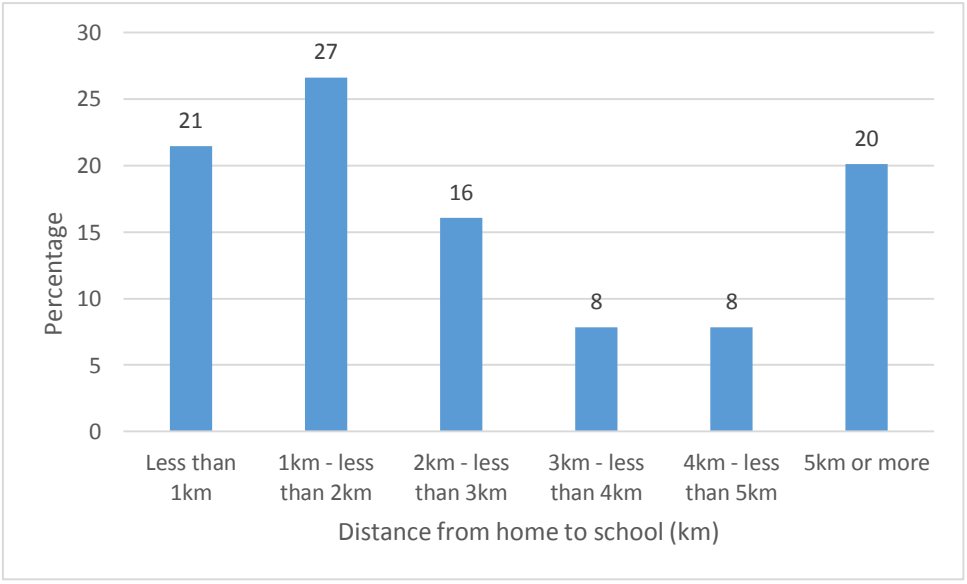

Figure 10: Distance from home to school

3.4 Attendance at before- and after-school care programs

Relatively few children attend before-school care programs (Figure 11). Attendance at after-school programs is more frequent than before-school programs. Among the 40% of children who attend after-school programs, most attend between one and three days a week.

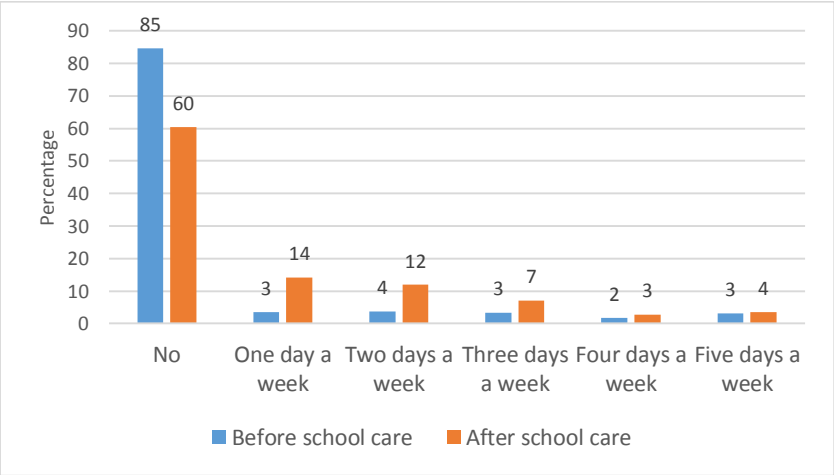

Figure 11: Attendance at before- and after-school care programs

3.5 Parent destination after school drop-off and pick-up

After parents have accompanied their child to school (by active travel or by car) they frequently go on to work or education (74%) or return home (32%) (Figure 12). However, 44% of parents occasionally go straight home, and only 24% never go straight home.

A relatively high proportion of parents occasionally go to shops, services or other activities (61%) or somewhere else (53%) after the school drop-off.

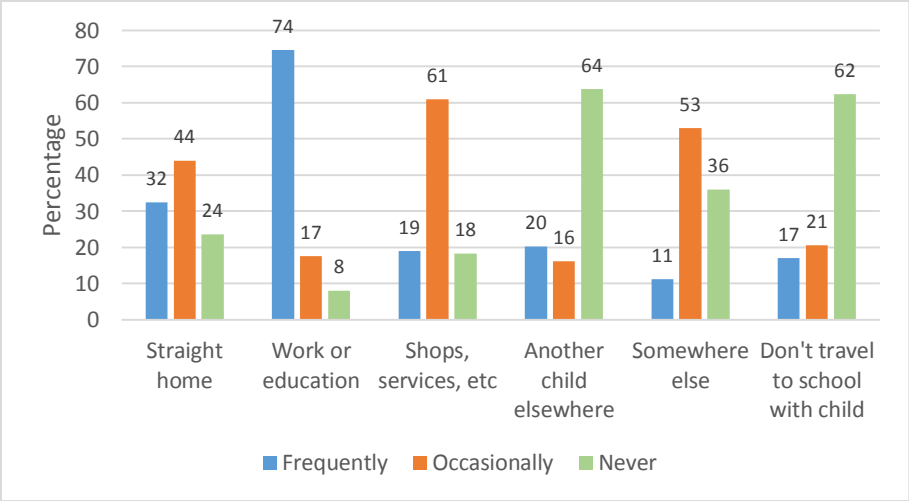

Figure 12: Parent destination after school drop-off (%)

(Note: Percentages based on the number of parents responding to each item: 717, 601, 624, 527, 515, 478 respectively)

After parents pick up their child from school (by active travel or by car) they frequently go straight home (76%), to after-school activities (33%) or to pick up another child (22%) (Figure 13).

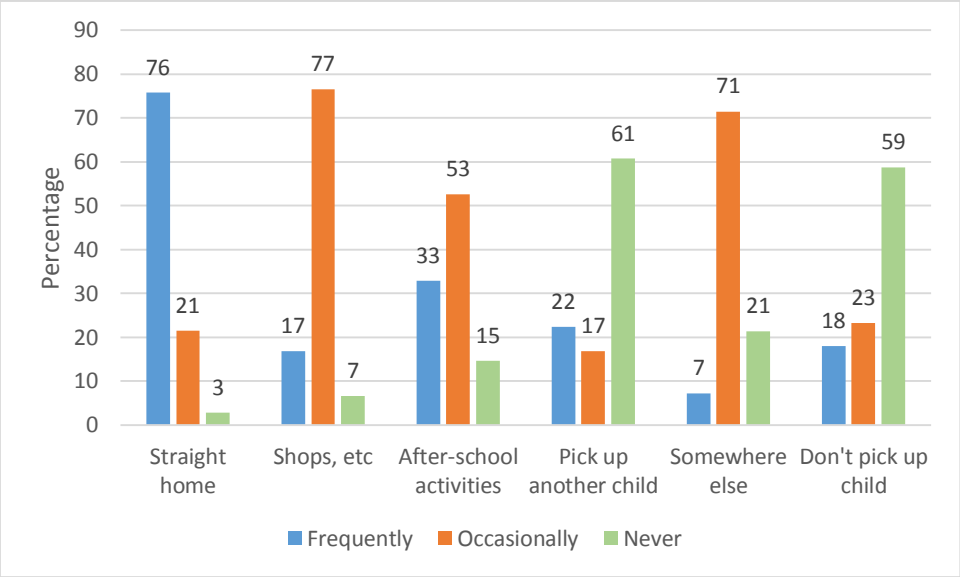

Figure 13: Parent destination after picking up child from school (%)

(Note: Percentages based on the number of parents responding to each item: 717, 601, 624, 527, 515, 478 respectively)

A relatively high proportion of parents occasionally go to shops, services or appointments (77%), somewhere else (71%), or to after-school activities (53%).

The overall pattern of travel destinations after school drop-off and pick-up indicates relatively high levels of trip-chaining among parents for a variety of trip purposes, with few stand-out post-school destinations apart from travelling on to work or education after the morning school drop-off. While more than three-quarters of parents go straight home after the afternoon school pick-up, many of these parents are likely to have come directly from work or education (Figure 12), in which case the mode of travel for the morning trip-chain (commonly home-school-work) is likely to influence the mode of travel for the afternoon pick-up.

3.6 Methods of travel to and from school

3.6.1 Mode share of school trips

The majority of children's trips to and from school are by car (67%), followed by walking (18%) (Figure 14). Methods of travel to and from school were very similar.

These data are similar to Australian data on primary school travel modes, with the exception of somewhat higher rates of cycling to school. For example, based on ABS *Censusatschool* data, 19% of South Australian students in year levels 4-10 walked to school and 3% cycled to school. The Literature Review contains detailed data on Australian children's modes of travel to and from school.

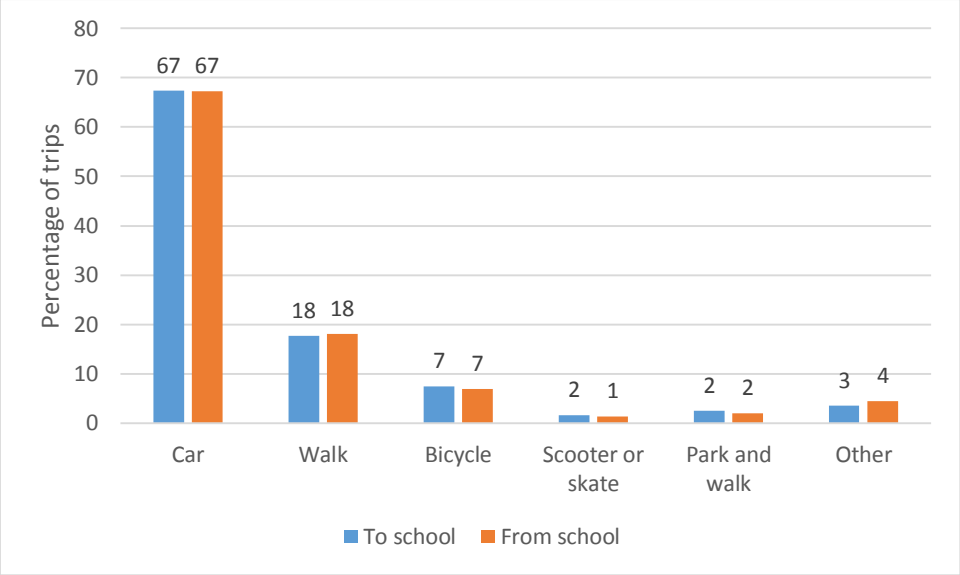

Figure 14: Methods of travel to and from school (% of trips)

3.6.2 Distribution of car trips

While just over two-thirds of trips to and from school are by car (Figure 13), about a half of students travel to and from school by car every day, with the difference made up of similar numbers of children making 4, 3, 2 and 1 car trips to (and also from school) a week (Figure 15). Most of the occasional non-car trips are active trips.

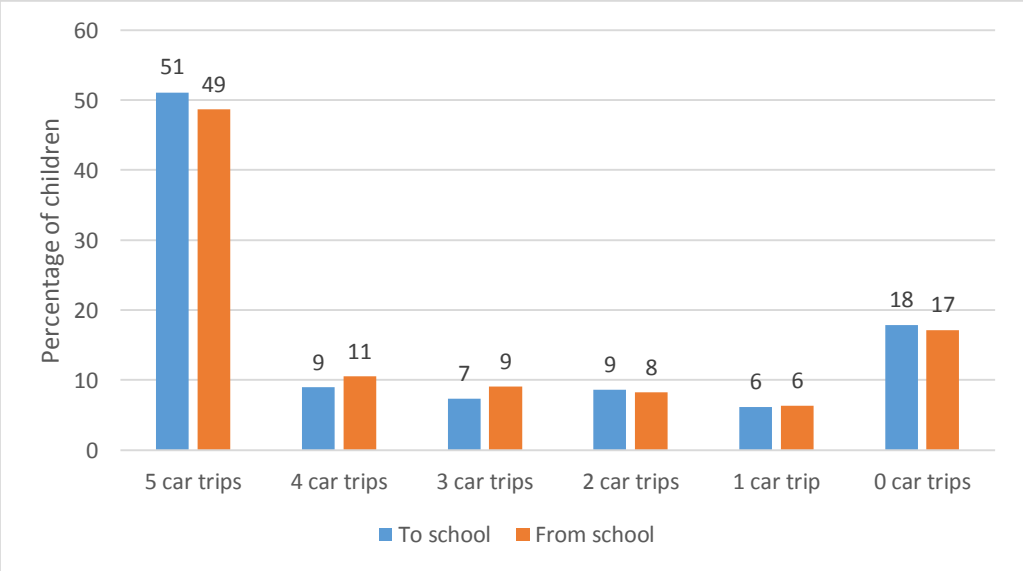

Figure 15: Number of car trips to/from school per week (% of children)

Those undertaking no car trips mainly use active trips (mostly walking), with 2% of children using "Other" (mainly public transport) modes of travel to and from school each school day.

The number of 'Park and walk' trips is relatively small: 101 trips (for 33 children) to school and 79 trips (for 29 children) from school. The frequency of park and walk trips suggests a U-shaped distribution as shown in Figure 16, but these data should be interpreted cautiously as numbers are relatively low.

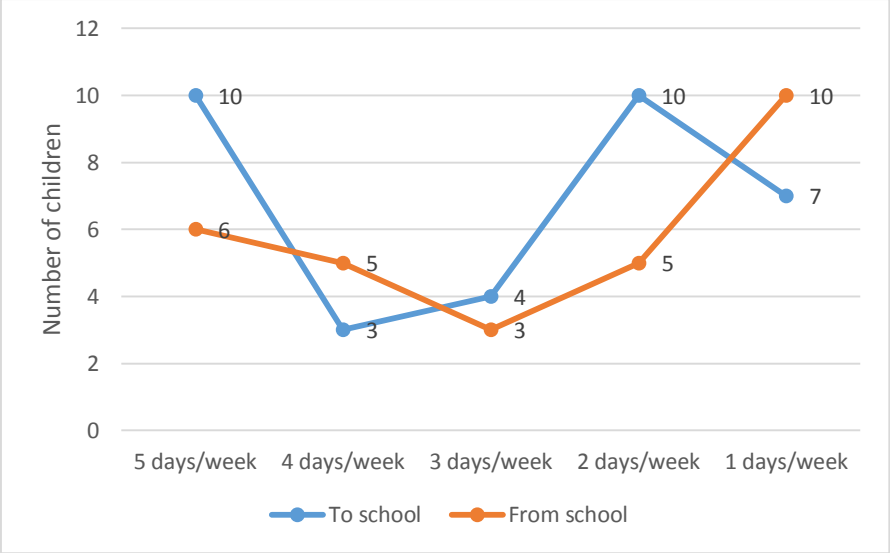

Figure 16: Number of children who 'Park and walk' to and from school

The number of "Other trips" (mainly public transport[2]) is also relatively small, with 43 children travelling to school by public transport, and 58 children travelling from school to home by public transport (the difference is not statistically significant) (Figure 17).

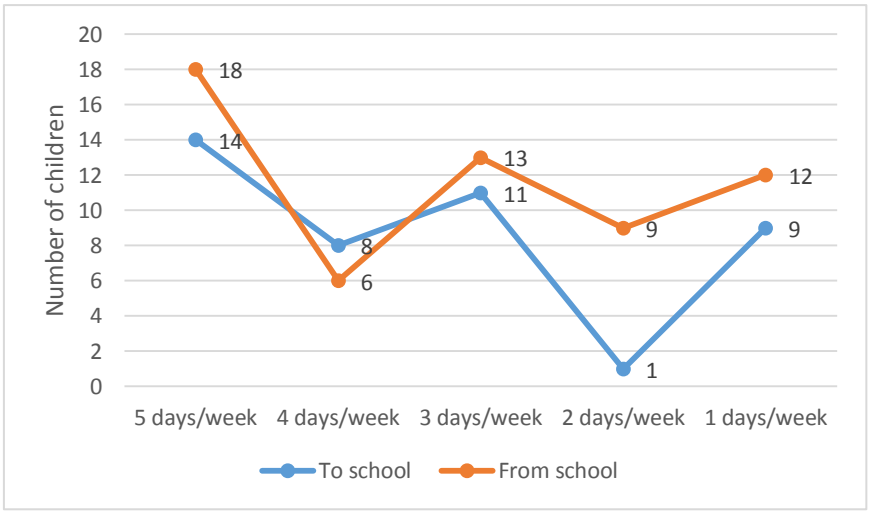

Figure 17: Number of children who use public transport to and from school

The majority of children who use public transport to and from school use this mode of travel on three to five days a week (to or from school). For those who use public transport for one to four days a week (to or from school), the alternative method of travel was nearly always by car, suggesting that public transport use is likely to be for longer trip distances between home and school.

3.7 School encouragement of active travel to school

Forty-three percent of parents strongly agree or agree that their child's school encourages children to walk and ride to school. A further 41% neither agreed not disagree, possibly

[2] Train, tram, bus – including school bus.

reflecting that many parents may not know whether or not the school supports active travel to school (Figure 18).

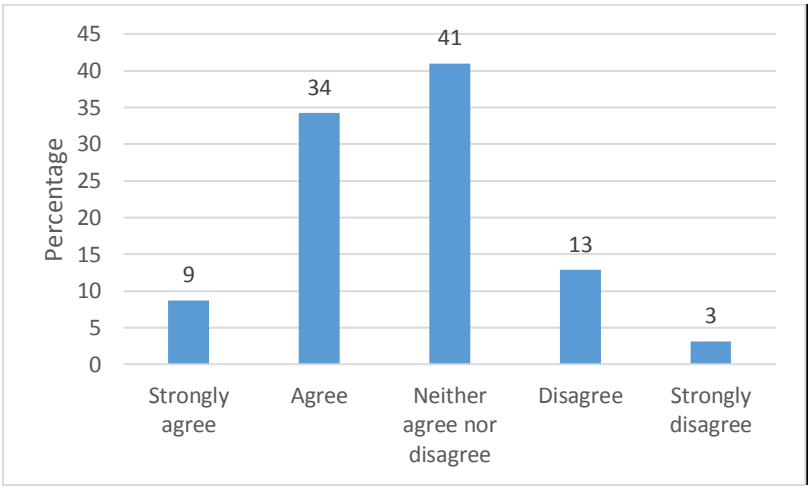

Figure 18: Parents' level of agreement with "My child's school encourages children to walk and ride to school"

3.8 Impact of school activities such as Walk2School Day, Ride2School Day, Wheels Day, Road Safety day or Park and Walk

Thirty-seven percent of parents agreed that initiatives such as Walk2School Day, Ride2School Day, Wheels Day, Road Safety Day, or Park and Walk led to their child walking or riding to/from school more frequently, though more often on the special days (24%) than on a more regular basis (13%) (Figure 19).

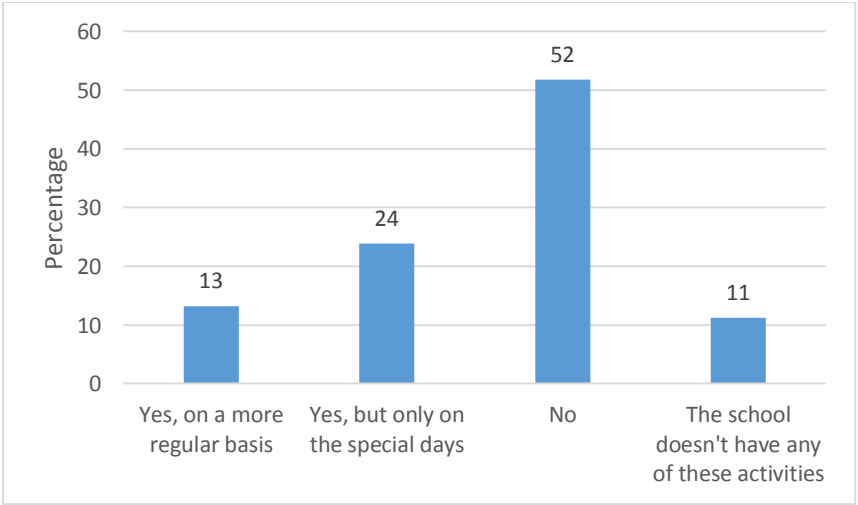

Figure 19: Impact of school activities such as Walk2School Day, Ride2School Day, Wheels Day, Road Safety Day or Park and Walk on active travel to/from school

These data pose the question of why 'special day' behaviour does not necessarily lead to more regular behaviour. Possible explanations include that parents might make a concerted effort to participate in active travel to school for special, one-off events, but then resume their 'normal' travel behaviour. Child 'pester power' might also be a factor, as children may not wish to miss out on activities, some of which may involve incentives for participation.

Relatively high participation rates for active travel to school days might also reflect social influences on active travel to school; that is, it becomes more normal, expected and acceptable to travel actively to school when the whole school community is seen to support it, and many children/families are doing it (see Section 2.18).

Brisbane City Council's *Active Travel to School* program reported increased rates of active travel to school when the program included "Walking, Wheeling Wednesdays"; an initiative designed to make 'one-off' travel to school days more frequent (ie once a week, rather than once or twice a year) (Brisbane City Council, 2010).

3.9 Child participation in *Way2Go* Bike Ed program

Nineteen percent of parents stated that their child has participated in the ***Way2Go*** **Bike Ed** program[3] (Figure 20).

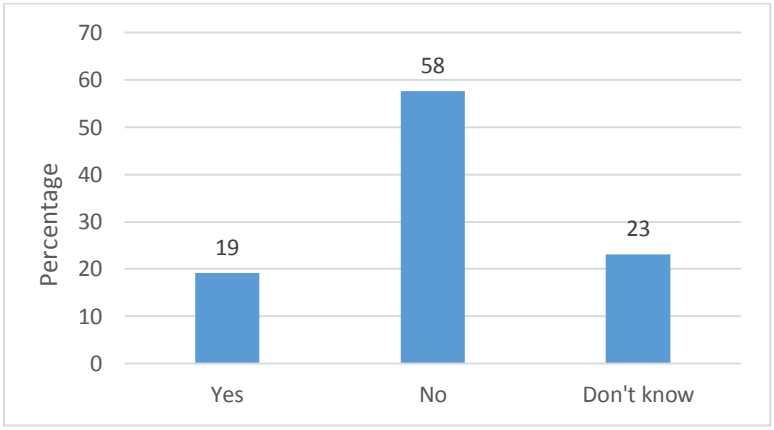

Figure 20: Child's participation in Way2Go Bike Ed program

For those parents (n = 153) whose child had participated in the ***Way2Go*** **Bike Ed** program, 38% reported that the program had assisted their child to ride a bicycle more often (Figure 21), a finding that is consistent with a recent evaluation of the ***Way2Go*** **Bike Ed** program which reported increases in students' knowledge and safe bike riding skills following participation in the program (Garrard, 2016).

[3] This program is generally offered to children in year levels 4-7.

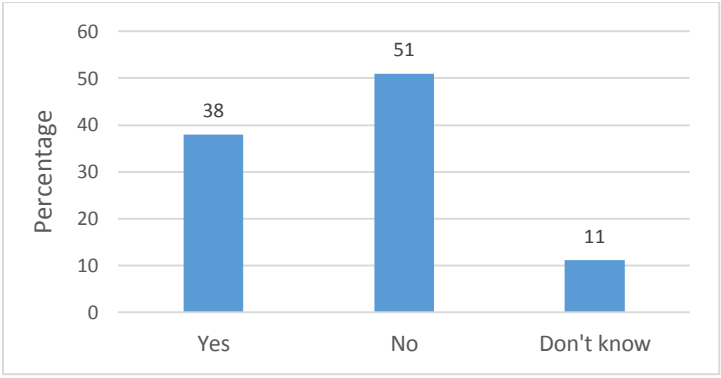

Figure 21: Impact of participation in *Way2Go* Bike Ed program on child riding a bicycle more often (n = 153[4])

3.10 Parental walking or cycling to neighbourhood destinations with their child (other than school)

Nearly half of parents (48%) walk or cycle with their child in the local neighbourhood at least once a week, while the remaining 52% do this infrequently (between about once a month and never) (Figure 22).

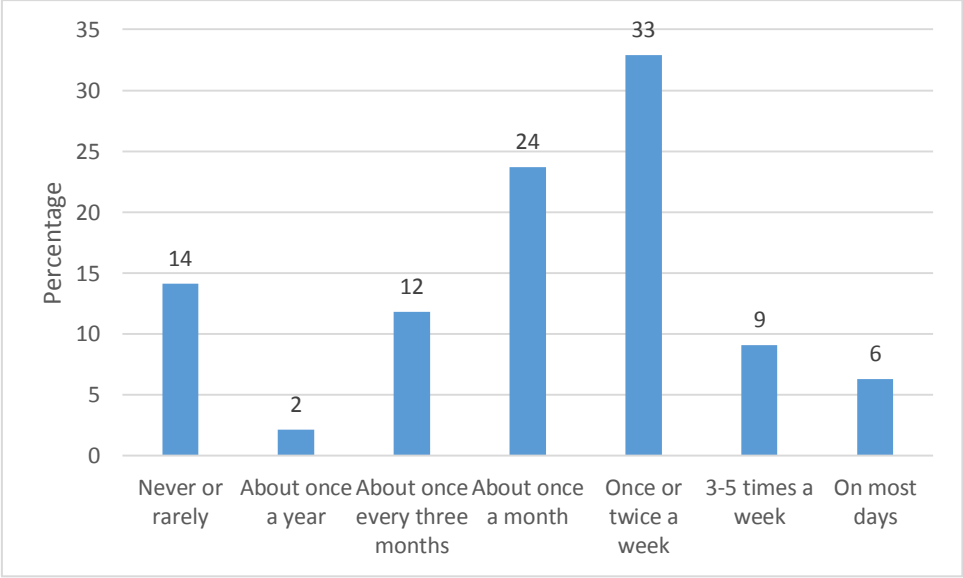

Figure 22: Parental walking or cycling to neighbourhood destinations with their child (other than school) (n = 794)

This question was included because results from the literature review, focus group discussions, and the ***Way2Go* Bike Ed** evaluation (Garrard, 2016) indicated that parents who walk or cycle with their children may be more likely to (a) walk or cycle with their children to school because they are familiar with these forms of mobility; (b) provide opportunities and experience for children to learn and practice how to walk and cycle safely (that complement the more formal instruction they may receive at school); and (c) be in a position to observe when children are capable of walking and cycling safely and independently.

[4] This program is generally available for students in year levels 4-6.

The relationship between parents' use of active travel and active school travel is investigated in Section 2.12.4.

3.11 Age at which parents allow child independent mobility

Parents were asked "At what age would you (or did you) allow your child to walk or cycle alone for short distances (up to 2km)?"

Parental approval to travel alone peaked at ages 10-12 years, though the distribution is bi-modal, with a substantial dip at age 11 years (Figure 23). The sharp increase in the number of parents who allow their children increased independent mobility at about 10 years of age is consistent with recommendations from child safety authorities in Australia, who generally recommend that "*Until the age of 10-11 years, children need active adult supervision to help them navigate driveways, cars, roads and car parks safely*." (http://raisingchildren.net.au/articles/pedestrian_safety.html/context/583).

The VicHealth and La Trobe University study of parental fear as a barrier to children's independent mobility found that the proportion of children's independent trips to school (by walking, cycling or public transport without an adult) steadily increased between the ages of 9 and 13, plateauing at age 13 (Crawford et al., 2015). This steady increase over a fairly wide age range is likely to reflect, at least in part, parents' assessments of their child's ability to walk or ride safely without adult supervision. As discussed in Section 3.16, this assessment of 'readiness for independent mobility' is considered by parents to be an important factor for independent mobility, along with the child's age, and travel routes and environments.

As discussed in the Literature Review, environmental, social and cultural factors also influence age of independent mobility. For example, in 2010, 76% of German children aged 7-11 years travelled home from school alone, while only 25% of English students of the same age did so (Shaw et al., 2013). A comparative study of Australian and English children found that Australian children were permitted even lower levels of independent mobility than English children (Carver et al., 2013) (see the Literature Review Report for a detailed discussion of children's independent mobility).

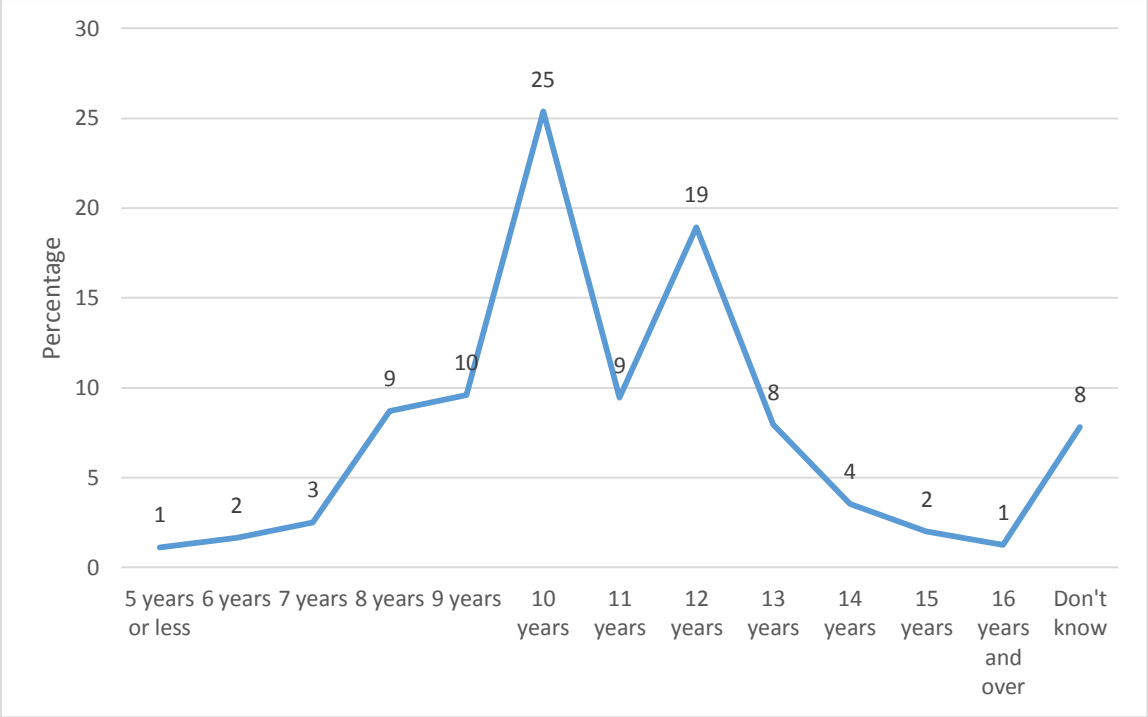

Figure 23: Age at which parents allow child independent mobility

In order to explore the issue of age of independent mobility in more depth, the closed-ended question *"At what age would you (or did you) allow your child to walk or cycle alone for short distances (up to 2km)?"* was followed by an open-ended question *"Would you like to add anything about this question, or your response?"* A thematic analysis of responses was conducted and is described in detail in Appendix C. A total of 316 parents/carers provided open-ended comments in response to this question. All comments were read to identify the emergent themes summarised in Figure 24. All 316 comments were then analysed by coding the content of the comments into these 14 themes. This resulted in 483 coded responses with an average of 1.5 coded responses per parent/carer (who provided a comment).

The key influences on the age at which parents allow their children to walk or ride short distances independently were traffic safety, child skills and abilities, travel distance and route, accompanied by siblings/friends, and social safety ('stranger danger') (see Figure 24).

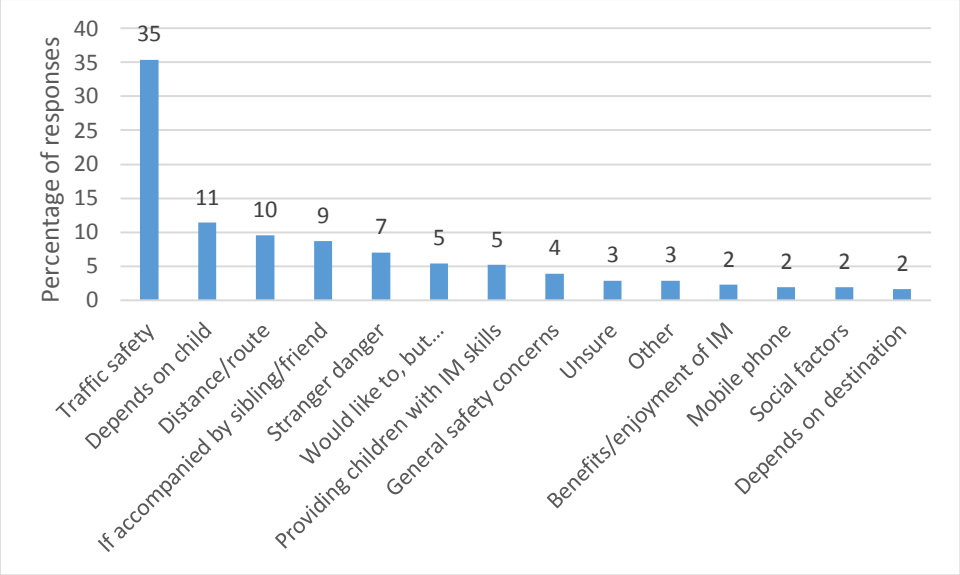

Figure 24: Parents' comments on children's independent mobility: key themes

However, as indicated in Figure 24, traffic safety is the main reason for parents restricting their children's independent mobility. Traffic safety concerns comprised:

- Infrastructure/safety en route (79 comments)
- Traffic speed (25 comments)
- Unsafe driver behaviour (23 comments)
- General road safety concerns (18 comments)
- Infrastructure/safety at school (17 comments)
- Negative experiences (9 comments)

These traffic safety issues interact with children's capabilities and skills for dealing with them, which were also mentioned by parents ("Depends on child" [11%] and "Providing children with independent mobility skills [5%]).

These survey findings, together with related data from the recent evaluation of the ***Way2Go* Bike Ed** program (Garrard, 2016) indicate that when parents are considering independent mobility for their child they are looking for *consistency* of (i) safe walking and cycling infrastructure and conditions (routes are only as good as their weakest [ie unsafe] link); (ii) driver behaviour (obeying road rules and driving safely around children); and (iii) child behaviour (knowing the road rules, obeying the road rules, being aware of the unwritten 'rules' and responding safely to instances of rule-breaking/unsafe driver behaviour).

Consistently safe infrastructure and behaviours in these three areas help to allay parents' concerns that their child might make "one false move"[5]. Concerns about "one false move"

[5] The dangers associated with "one false move" have been used extensively to promote child pedestrian safety in the UK, by "… educat[ing] parents so that they understand more fully the risks involved and therefore take responsibility for the safety of their children."(Hillman, M., Adams, J., Whitelegg, J., 1990. One false move: a study of children's independent mobility. Policy Studies Institute, London.)

can also be addressed by establishing a transport system that is 'forgiving' of possible mistakes "*so that humans are not exposed to impact forces beyond their physical tolerance*" (Australian Transport Council, 2011) (p.34). A key principle of the safe system approach that forms the basis of Australia's National Road Safety Strategy is the acknowledgement that people occasionally make mistakes, and that *"The transport system should not result in death or serious injury as a consequence of errors on the roads*". Many developed countries with high rates of both active travel to school and children's independent mobility have safe road systems (reflected in national traffic casualty rates) that are more forgiving of drivers' and particularly vulnerable road users' occasional mistakes (see Literature Review).

In summary, the individual, environmental, social and cultural differences in age of independent mobility found in this survey and in related studies (described in detail in the Literature Review) suggest that there is potential for interventions[6] that enable and support higher levels of independent mobility among Australian children. These interventions should target safe walking and cycling infrastructure and conditions (en route to and at schools), safe drivers (especially in relation to vulnerable road users), and safe child pedestrians and riders.

Many of the factors described above impact on children's use of active or inactive modes of travel to school. The influence of these factors was explored by examining associations between these factors and children's methods of travel to school categorised into three groups: regular car travel, occasional active travel, and regular active travel. This analysis is described in the following section.

3.12 School travel mode groups

3.12.1 Travel modes

Based on the number of trips to school by different travel modes, children were classified into three travel mode groups: (i) regular car travel (5 trips to school per week); (ii) occasional active travel (1 – 2 active trips to school a week); and (iii) regular active travel (3 – 5 active trips to school a week). Note that (a) trips *to* school were used in this analysis, as the data were similar for trips to and from school; and (b) active travel included walking, cycling, scooting, skating, park and walk, and other. 'Other' trips were mainly public transport trips, which usually involve some walking.

About half of children are driven to school every day, with about a third regularly travelling actively, and a smaller number occasionally travelling actively (Figure 25).

[6] Across the four segments of influences on active transport and independent mobility: intra-individual, the built environment, the social/cultural environment, and the policy/regulatory environment.

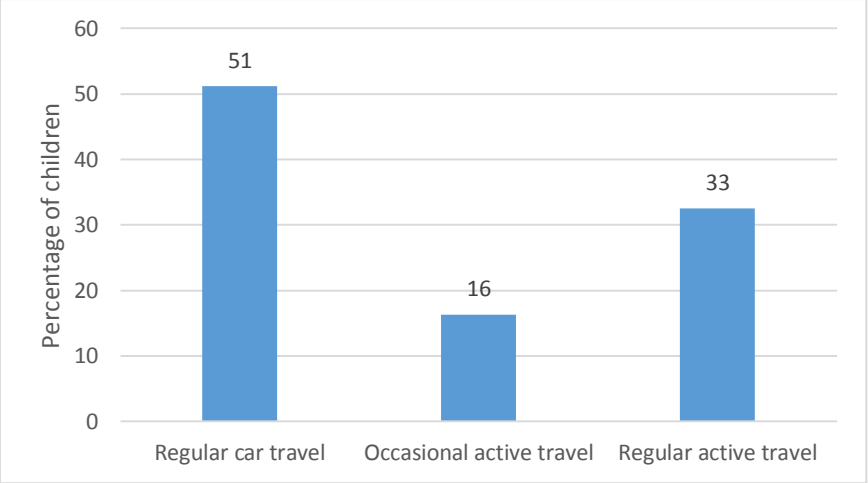

Figure 25: Proportion of children, by school travel mode group[7] (n = 815)

Occasional and regular active travel was mainly for walking, followed by cycling, other, park and walk, and scoot/skate (Figure 26). The proportions of the various non-car trips for occasional active travel and regular active travel were similar for walking, scoot/skate and park and ride, but cycling tended to be more common for occasional rather than regular travel, and 'other' tended to be a more regular form of non-car travel to school (χ^2 = 13.7, p = 0.008). The latter finding is consistent with public transport trips to school (eg by school bus) tending to be undertaken more commonly on a daily basis than on occasional days.

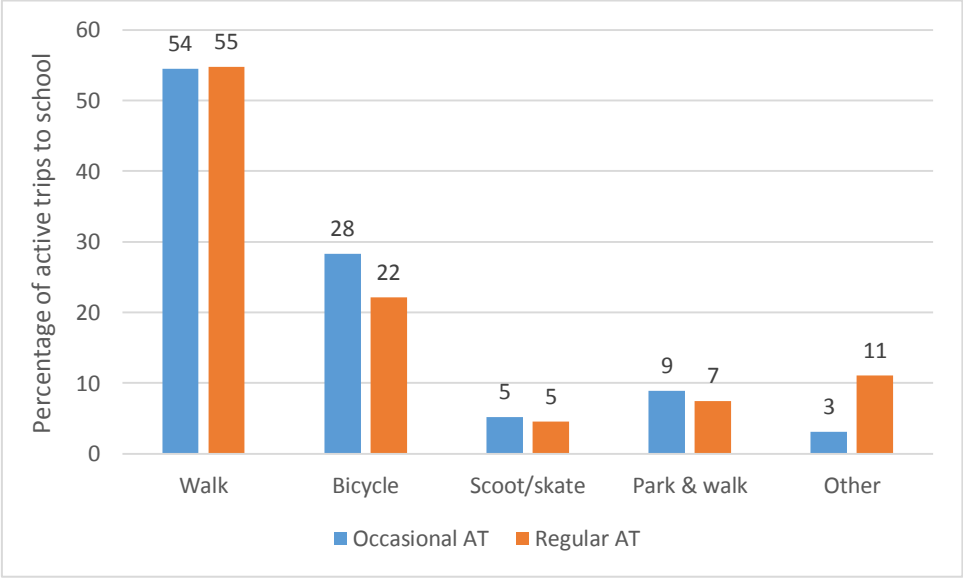

Figure 26: Percentage of active trips to school for occasional and regular active transport users (n = 398)

[7] Note that regular car travel is defined as 5 trips to school per week, while regular active travel is defined as 3-5 active trips to school per week.

3.12.2 Travel mode group and child age

Regular car travel tends to decline with child age, and regular active travel increases with age (Figure 27). Occasional active travel, which is less common than regular active travel at all ages, increases steadily to age nine, then steadily declines, as regular active travel increases. The increase in regular active travel between the ages of nine and twelve appears to come from decreasing rates of both regular car travel and occasional active travel. These data are consistent with increasing rates of 'trialling' active travel to school across the early to middle years of primary school, followed by more regular active travel in the more senior years of primary school. This transition is also consistent with the age at which parents are more likely to allow their children greater independent mobility (see Section 3.11).

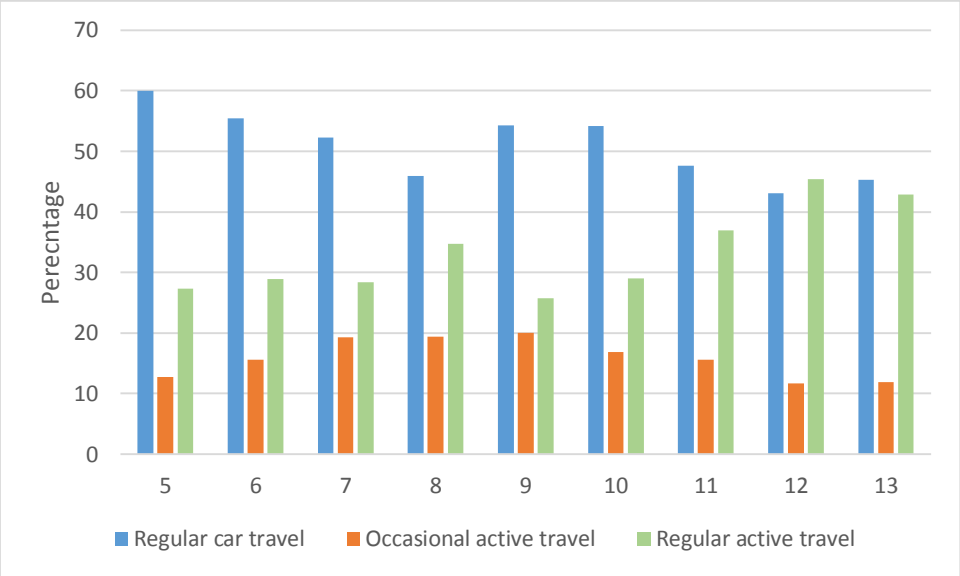

Figure 27: Active/inactive travel mode by age (years) (n = 812)

3.12.3 Travel mode group and child gender

There were no statistically significant gender differences in children's use of active and inactive modes of travel to school (Figure 28).

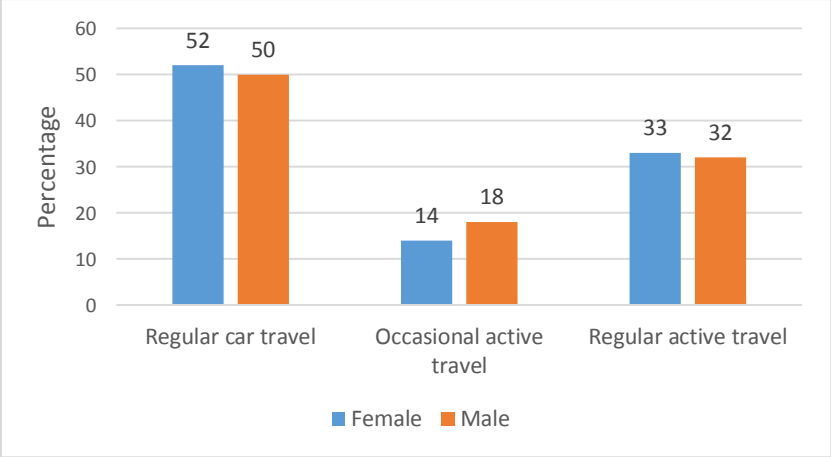

Figure 28: Active/inactive travel mode by gender (n = 812)

These child demographic findings, particularly age, indicate that strategies to increase active travel to school could benefit from an understanding of the factors that support and constrain (a) transitions from regular car travel to occasional active travel, and from occasional active travel to more regular active travel; and (b) transitions from parent- and adult-accompanied active travel to independent active travel.

Supports and constraints on occasional and regular active travel to school are examined in more detail in the following sections, and parent-accompanied and independent active travel to school are examined in more detail in Section 3.13.

3.12.4 Parental use of active travel

Many parental attitudes, behaviours and circumstances influence children's use of active travel to school, and findings from this study indicate that parents walking or cycling to places in the neighbourhood (other than school) with their child is an important influence on whether or not children travel to school actively. Thirty-nine percent of children who regularly travel to school by car have parents who regularly[8] walk or cycle with their child to places in the neighbourhood (other than school), while for children who occasionally or regularly travel actively to school the proportions are 53% and 62% respectively (Figure 29) ($\chi^2 = 35.6$, $p < 0.0001$).

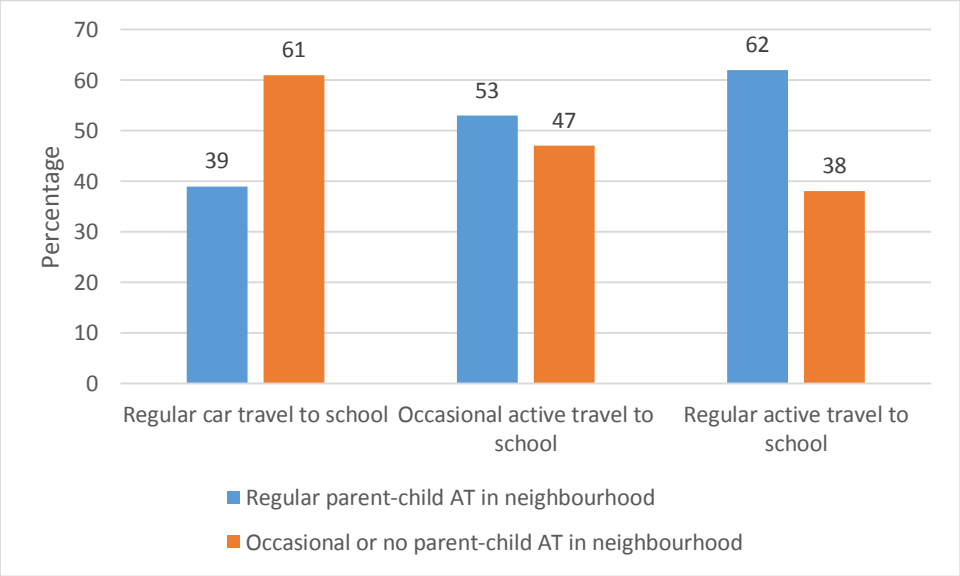

Figure 29: Active travel with child in neighbourhood (other than school) and active travel to school (n = 801)

A similar pattern emerged for the relationship between parent/carer mode of travel to work or study, and mode of travel to school (Figure 30) ($\chi^2 = 44.8$, $p < 0.001$). Note that in this analysis, walking and cycling to work or study were combined because walking numbers were low (12 walk, 70 bicycle). Work or study from home was not included because numbers were low (9).

[8] Regularly was defined as once or twice a week or more; occasionally or never was defined as between never and about once a month (see Question 25, Appendix A).

Children who regularly travel to school by car are most likely to have parents/carers who travel to work or study by car (71%). Children who regularly use active travel to school are less likely to have parents who drive to work or study (53%), and more likely to have parents/carers who ride or walk to work or study. Children in the three school travel mode groups had similar proportions of parents/carers who travelled to work or study by public transport.

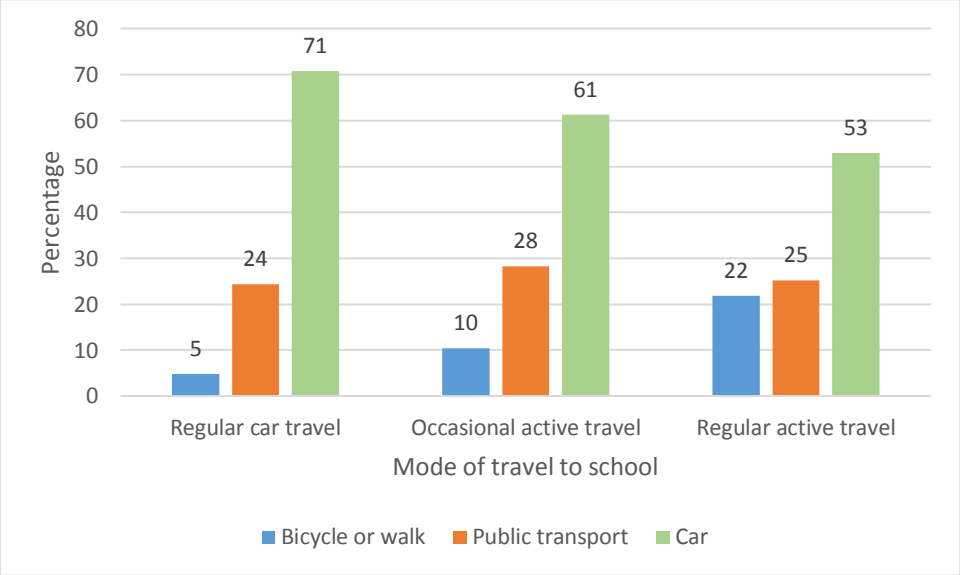

Figure 30: Parent/carer mode of travel to work or study and active travel to school (n = 731)

The combined findings described above for the relationship between parents'/carers' use of active transport for work, study and other neighbourhood trips, and children's active travel to school present a consistent picture of parents'/carers' travel modes strongly influencing children's school travel modes. This relationship has been identified in previous Australian studies for parents' work-related travel (Wen et al., 2008), but not for parents' other neighbourhood utilitarian trips, which appears not to have been investigated in previous studies.

There are several possible reasons for this relationship, with key factors likely to be parents' beliefs, attitudes and behaviours related to active travel and car travel, and the neighbourhood environments in which families live; with the two domains likely to be mutually interactive as proposed in the social-ecological model of active/inactive travel. The following sections explore some of these environmental and intra-personal factors.

3.12.5 Distance from home to school

The inverse relationship between active travel to school and trip distance found in most studies in English-speaking, car-oriented countries such as Australia was evident in this study, with the majority of children living up to 1km from school regularly using active travel to school (63%), dropping to about one in ten children for distances greater than 3km, as regular car use replaces active travel (Figure 31) ($\chi^2 = 177$, $p < 0.0001$).

In contrast to regular active travel, occasional active travel does not decline across the three distances up to 3km, suggesting that when circumstances allow, active travel is used by some children and parents for longer trips up to 3km. As most active travel to school is parent-accompanied (see Section 3.13), this suggests that the large decline in regular active travel with distance is influenced by parents' time and commitments as well as actual trip distance. That is, active travel (including parent-accompanied active travel) is not necessarily ruled out for trip distances greater than 2km, but is more contingent on other circumstances than shorter school trips.

The finding that the proportion of children who travel to school independently increases relative to parent-accompanied active travel as distance increases indicates that trip distance to school appears to be more of a constraint on active travel to school for parents than for children, although parent-accompanied children tend to be younger (and perhaps more easily tired) (see Sections 3.13 and 3.15).

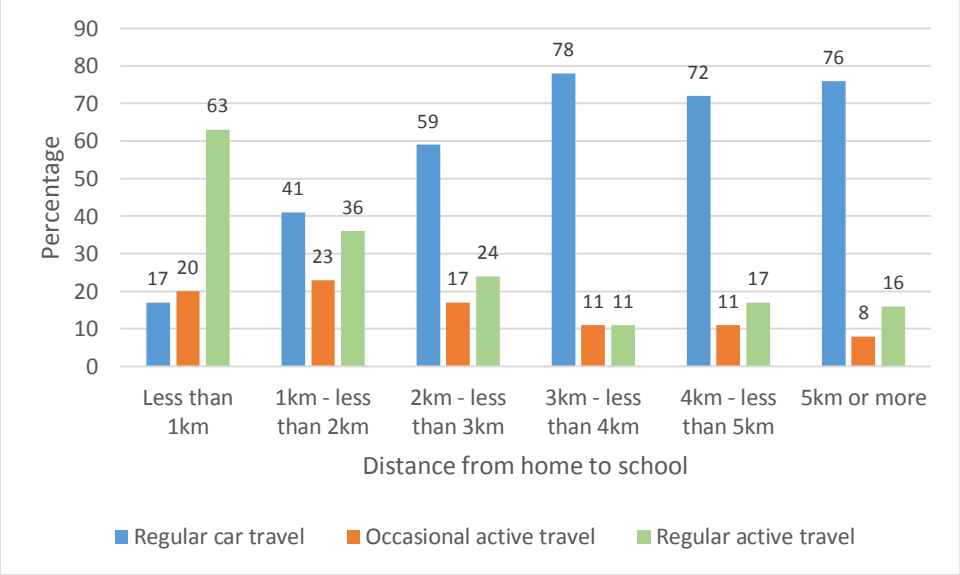

Figure 31: Mode of travel to school by distance from home to school (N = 815)

3.12.6 Parent/carer socio-demographic factors

Children's use of the three travel modes did not vary with the age of parents/carers, or with the number of children in the household.

Relative to children whose parents/carers were born overseas, children whose parents/carers were born in Australia were more likely to regularly travel to school by car (53%), and less likely to regularly travel actively to school (30%) (Figure 31) ($\chi^2 = 12.7$, $p = 0.002$). This association has the potential to be confounded by a range of factors that influence active travel to school; however, there were no significant differences based on place of birth for school trip distance, type of accompaniment for active travel to school (ie parent-accompanied or independent), or number of motor vehicles in the household.

This finding differs from a number of studies which have found that children in minority population groups were less likely to travel actively to school (see Literature Review) and requires further investigation.

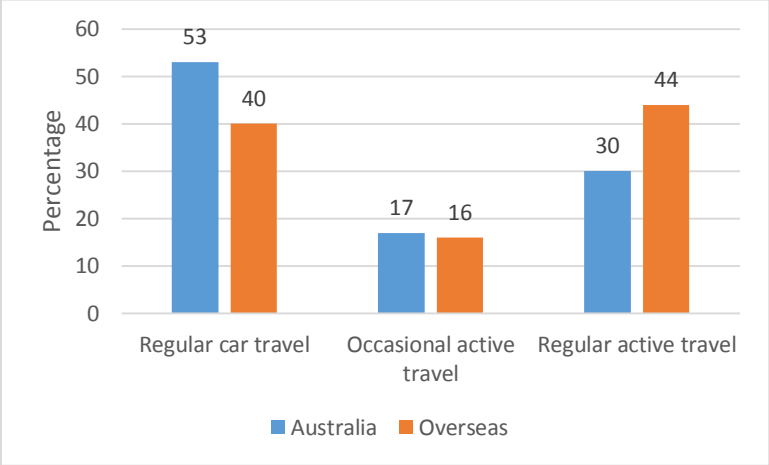

Figure 32: Mode of travel to school by parent/carer country of birth (n = 791)

Parental employment status appeared to have little impact on school travel mode, with about one third of children of parents who worked full-time (31%), worked part-time (32%) or were mainly engaged in home duties (34%) regularly travelling actively to school (Figure 32) ($\chi^2 = 1.68$, $p = 0.79$).

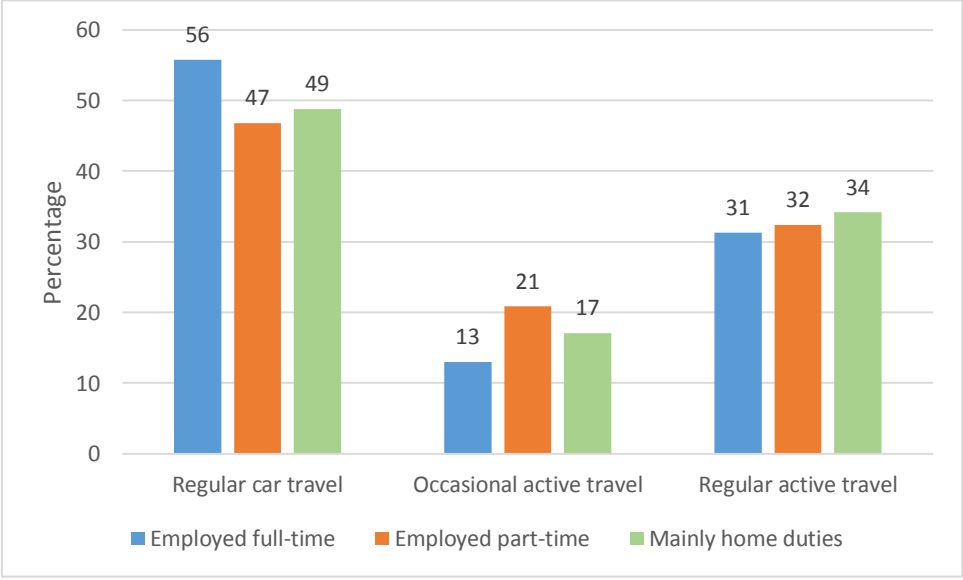

Figure 33: School travel mode by parental employment status (n = 773)

However, this association is complicated by the gender of respondents and their differing employment status. Female respondents, who comprised 76% of the sample, were less likely to work full-time and more likely to work part-time than males (Table 1). It is also likely that females in households with males who work full-time (and possibly part-time) are the parents who frequently accompany their child to and from school. This is likely to distort

the data in Figure 31, as respondents described their own demographic data, including employment status, and their child's school travel mode (which formed the basis for classifying children into regular car travellers, occasional car travellers, and regular active travellers).

Table 1: Employment status of female and male respondents

Respondent gender	Employed full-time	Employed part-time	Mainly home duties	Other	Total
Female	210 (35%)	342 (56%)	36 (6%)	18 (3%)	606 (100%)
Male	167 (80%)	13 (6%)	5 (2%)	25 (12%)	210 (100%)

For this reason, the association between employment status and travel mode group was stratified for female and male survey respondents. As shown in Table 2, females who work full-time are more likely to be regular car travellers than those who work part-time or are mainly involved in home duties. In terms of active travel, females who are employed part-time are more likely to use occasional active travel than those who are employed full-time; with similar rates of regular active travel for full-time and part-time employment. Females who are mainly involved in home duties are more likely than those employed full-time to be regular active travellers, but these data need to be viewed cautiously due to the low numbers of females who are mainly involved in home duties. Overall, for the data in Table 2, $\chi^2 = 13.2$, $p = 0.01$.

Table 2: Travel mode group by employment status, female respondents (n = 588)

Travel mode group	Employed full-time	Employed part-time	Mainly home duties
Regular car travel	127 (60%)	160 (47%)	16 (44%)
Occasional active travel	24 (11%)	71 (21%)	6 (17%)
Regular active travel	59 (28%)	111 (32%)	14 (39%)

In conclusion, there appears to be a relationship between females' employment status and their children's mode of travel to school, suggesting that the time constraints and need for trip-chaining associated with full-time employment are constraints on active travel to school for many of these parents. Relatively high rates of occasional active travel to school for females who are employed part-time relative to those who are employed full-time suggests that a number of these parents may be more likely to use active travel to school on the days they are not working. Females who are involved mainly in home duties have higher rates of regular active travel than both full-time and part-time employed females, though these data need to be viewed cautiously due to the low numbers. Nevertheless, there appears to be a consistent trend of regular car use increasing and regular active travel decreasing for female parents across the three employment groups from mainly home duties to full-time employment.

The association between travel mode groups and employment status for males is shown in Table 3. While 50% of males who are employed full-time have children who occasionally or regularly travel actively to school, as noted above, this may be more a reflection of their

female partner's employment status than their own. Very few males worked part-time or were mainly involved in home duties, rendering the percentages for these males unreliable.

Table 3: Travel mode group by employment status, male respondents (n = 180)

Travel mode group	Employed full-time	Employed part-time	Mainly home duties
Regular car travel	83 (50%)	6 (46%)	4
Occasional active travel	25 (15%)	3 (23%)	1
Regular active travel	59 (35%)	4 (31%)	0

The impact of parental trip-chaining on school travel mode was explored by asking parents who travel to school with their child how frequently they "go straight home". As shown in Figure 33, parents who frequently go straight home (n = 188), were less likely to use regular car travel and more likely to use occasional and regular active travel than parents who never go straight home ($\chi 2 = 13.6$, $p = 0.009$).

As shown in Figure 11 (see Section 3.5), the most frequent destinations after school drop-off were work or education (frequently), shops and services (occasionally), and somewhere else (occasionally). These findings are consistent with parents' (particularly mothers') employment and the associated trip-chaining being associated with lower rates of active travel to school. This association is also influenced by most active travel to school being parent-accompanied (see Figure 33).

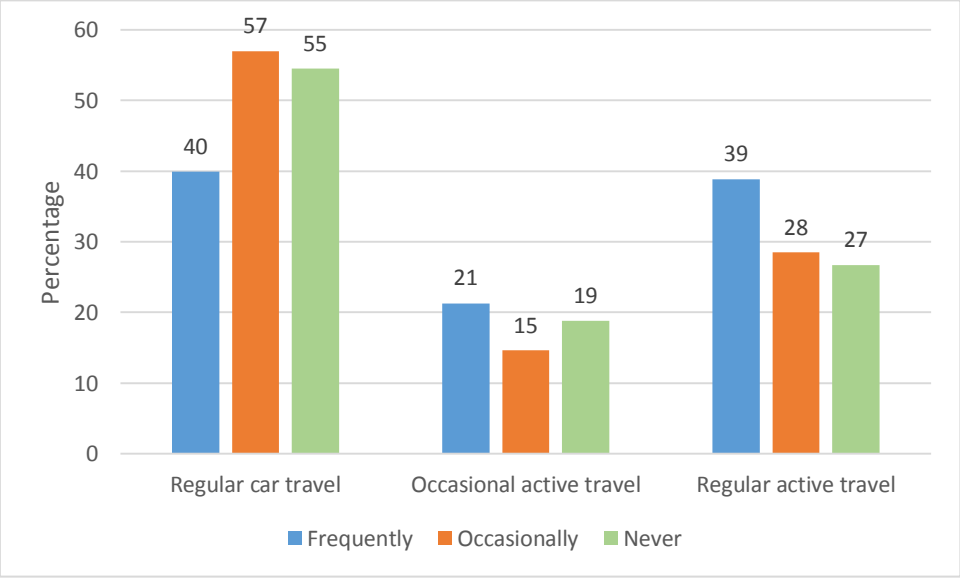

Figure 34: School travel mode by frequency of returning straight home after school drop-off (n = 580)

In terms of motor vehicle ownership, only nine households had no motor vehicles, and these nine children all regularly travelled to school using active transport. Only twenty households had four or more motor vehicles, so these were combined with the 95 households with three motor vehicles, giving three groups for analysis (ie one, two and three or more motor vehicles per household).

The usual inverse relationship between number of motor vehicles and active travel to school was found in this study, with households with one motor vehicle having similar proportions of children travelling to school regularly by car (44%) and regularly using active travel (42%), while households with three or more motor vehicles (n =115) were twice as likely to regularly drive their child to school (59%) than to regularly travel actively to school (29%). Two motor vehicle households had similar rates of regular active travel to school as three motor vehicle households, but were more likely to use occasional active travel to school (Figure 34) ($\chi^2 = 13.5$, $p = 0.009$).

While the causality and directionality of the relationship between car ownership and active travel to school cannot be determined from this cross-sectional survey, it seems likely that encouraging single vehicle ownership within households (eg by highlighting cost savings) may contribute to increased use of active travel to school.

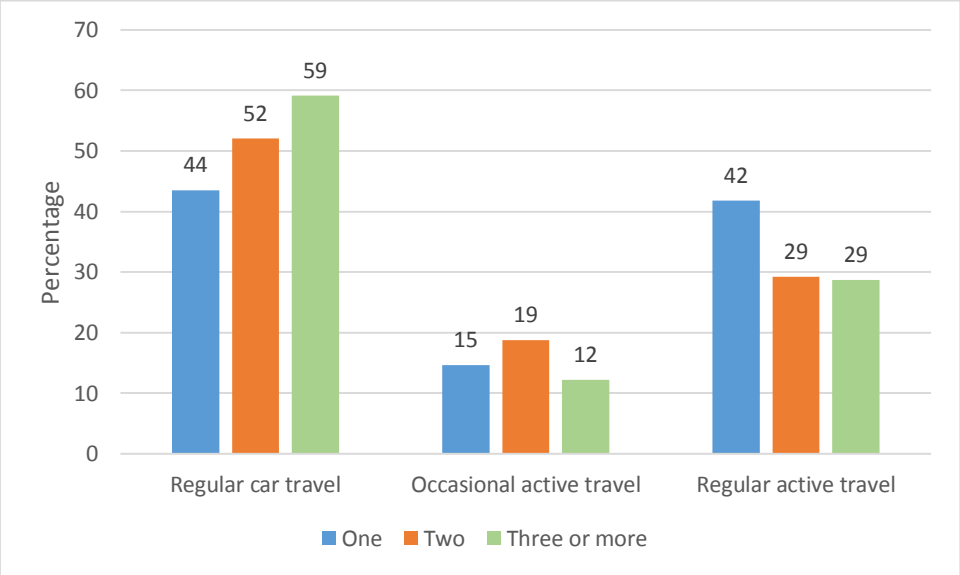

Figure 35: Mode of travel to school, by number of motor vehicles in household (n = 782)

3.12.7 School policies and programs

Children are more likely to travel to school actively (both occasionally and regularly) if parents/carers agree that that "My child's school encourages children to walk and ride to school" (Figure 35) ($\chi^2 = 22$, $p = 0.0002$). While this association is not necessarily a causal relationship, it does suggest that the perception by parents that the school supports active travel to school is likely to be supportive of parents using active modes of travel to school.

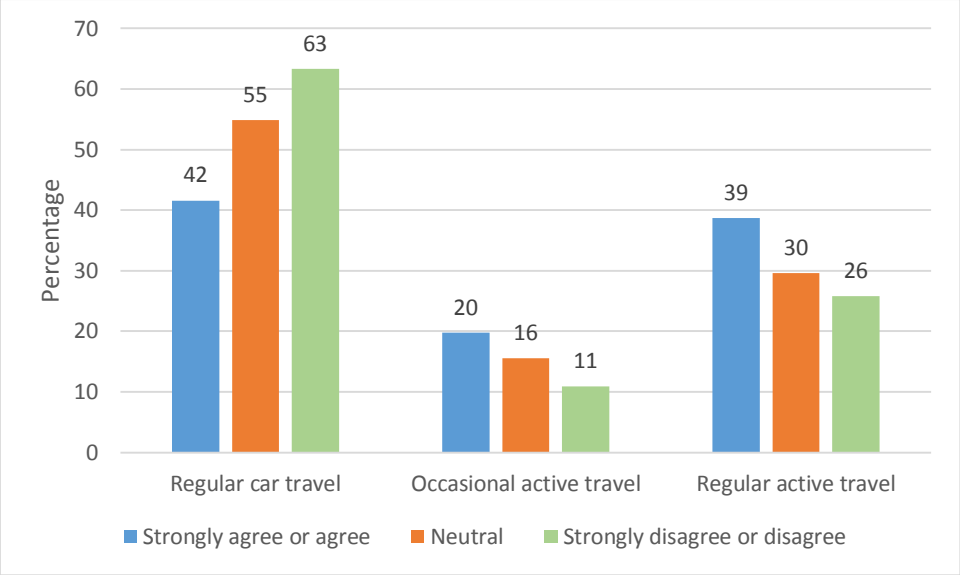

Figure 36: Mode of travel to school and level of agreement that "My child's school encourages children to walk and ride to school" (n = 800)

This finding is consistent with similar findings for the perceived impact of school activities such as Walk2School Day, Ride2School Day, Wheels Day, Road Safety Day, or Park and Walk, and also with participation in the ***Way2Go*** **Bike Ed** program.

As described in Section 3.9, a number of parents agreed that these programs have led to their child being more likely to travel actively to school and ride a bicycle.

Parents who responded that "The school doesn't have any of these activities" had the highest proportion of regular car travel to school (57%), and the lowest proportion of regular active travel to school (28%) (Figure 36) (χ^2 = 27.0, p = 0.0001).

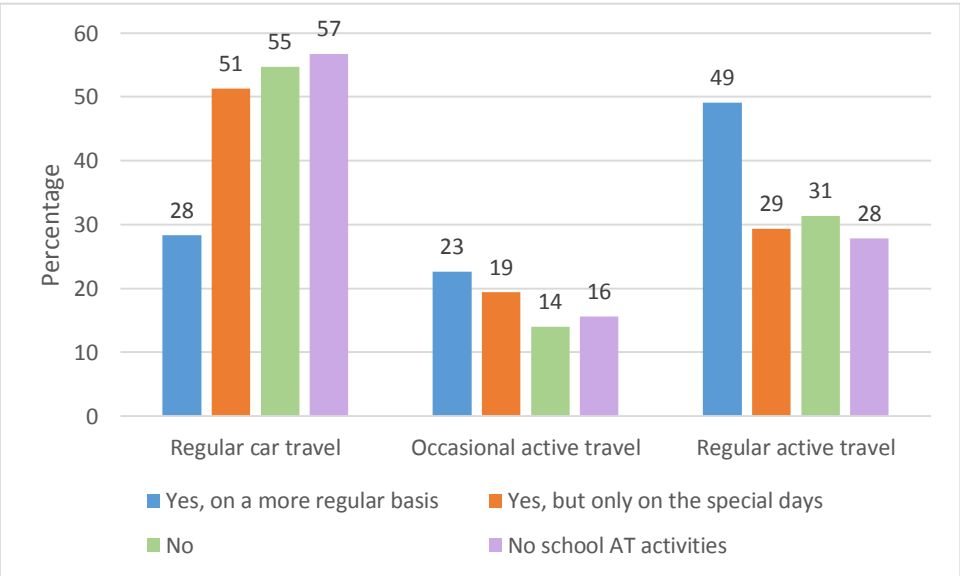

Figure 37: Mode of travel to school by parents' perceptions of the impact on active travel to school of active transport school activities (n = 802)

There may be an element of social desirability bias in these responses, and also the possibility of parents who have no interest or desire to use active travel to school being less aware of active travel messages and activities from the school. However, the strength and consistency of the associations suggest that high profile school support for active travel to school can be a major support for parents and children using active travel to and from school.

3.13 Accompaniment on active trips to/from school

When primary school students travel actively to school they can be accompanied by a parent or carer, or travel independently (alone, or with friends or siblings). Because the factors that influence adult-accompanied and independent active travel to school can differ, parents were asked about who accompanies their child on active trips to and from school. Type of accompaniment was similar for travel to and from school, so only travel to school data are presented here.

The question about accompaniment of children on active trips to school (Question 12 – see Appendix A) included the response option: "My child does not walk, cycle, scoot or skate to school". For consistency of data analysis within this question, this data is used in the following analysis as a measure of whether or not children travel actively to school. More detailed information about rates of active travel to and from school was the subject of a separate set of questions, which have been analysed and reported separately in the sections above (see Section 3.6).

Children who travel actively to or from school mainly do so accompanied by a parent, carer or other adult (Figure 37). Sixteen percent of children travel to school unaccompanied by an adult, with 19% unaccompanied on the trip from school to home. Non-adult accompaniment is fairly evenly distributed across 'alone', 'with friends' and 'with siblings'.

These findings differ markedly from parent survey data collected as part of the evaluation of the Victorian Ride2School program where active trips to primary school were fairly evenly distributed across adult accompanied and unaccompanied (23% with parent/carer, 26% with siblings, 26% with friends, and 24% alone) (Garrard et al., 2009). However, these students had a mean age of 10 years (compared with a mean age of 9 years for children in this South Australian survey), and the data were for students who undertake 8-10 active trips to and from school per week, so the data are not directly comparable.

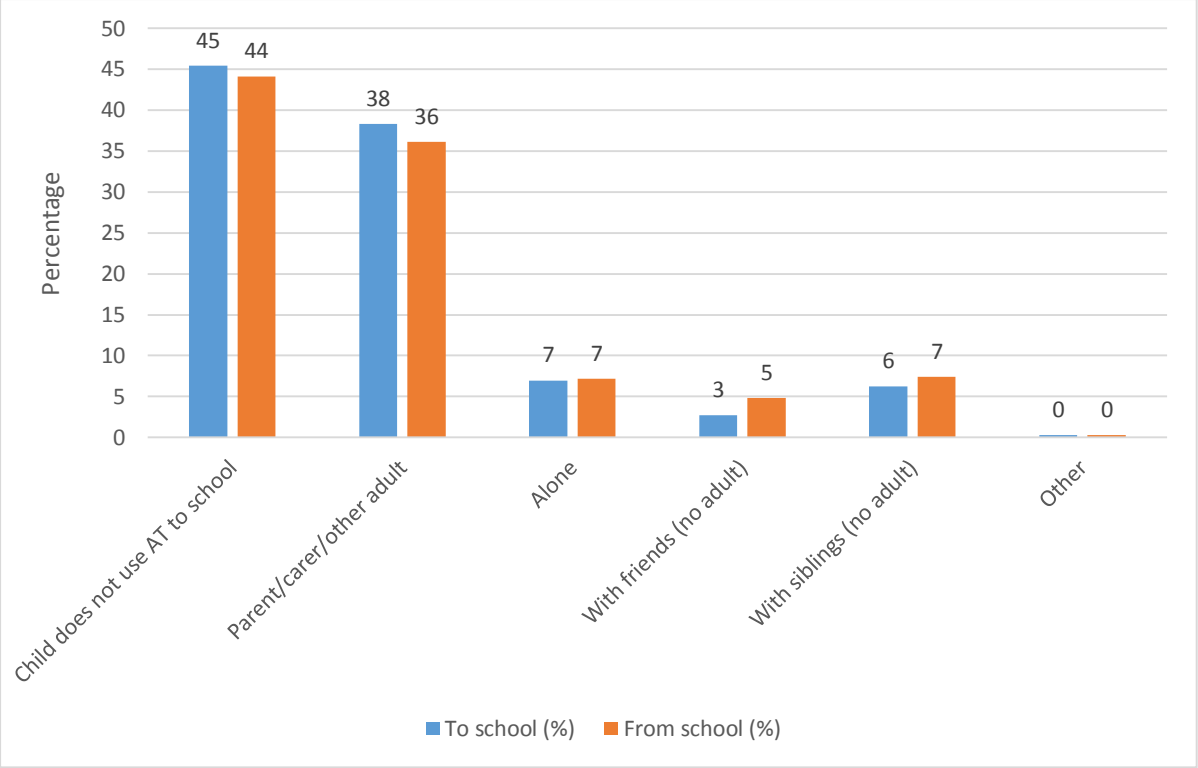

Figure 38: Accompaniment for children's active trips to and from school (%) (n = 733 [to school], n = 739 [from school])

(Note: Percentages based on total responses, including "My child does not walk, cycle, scoot or skate to school")

Child age has been associated with active travel to school in some studies. In this study (in response to Question 10 about accompaniment on active trips *to* school), the proportion of children using active travel to school at each age between 5 and 13 years showed a small increase with age that was not statistically significant (Figure 38).

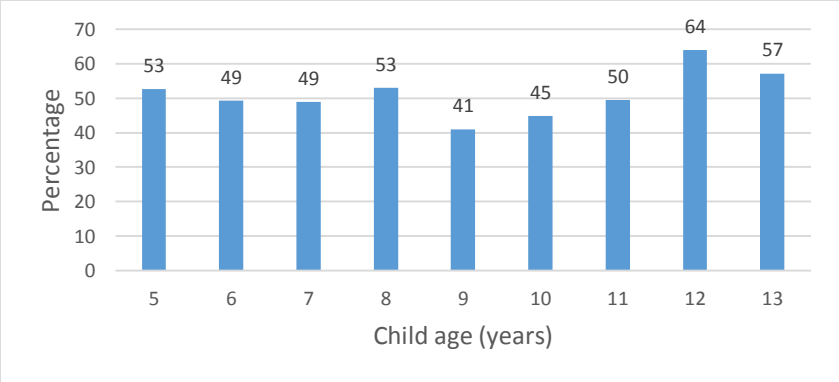

Figure 39: Proportion of children using active travel to school, by age (%) (based on Q10 responses[9])

[9] Note that rates of active travel to school were assessed in Question 9, but in this analysis of accompaniment, the proportions of children who do or do not travel actively to school are based on Question 10 responses, which included the response option "My child does not walk, cycle, school or skate to school."

While active travel to school did not vary markedly with age, method of accompaniment did. As shown in Figure 39, most 5 to 9 year-olds who travel actively to school are accompanied by a parent or other adult, but at about age 10, parent-accompaniment declines more rapidly and independent travel increases. At age 12 years, most children who travel actively to school do so independently. These findings are consistent with the age at which most parents allow children independent mobility for short (up to 2km) neighbourhood trips (see Section 3.11).

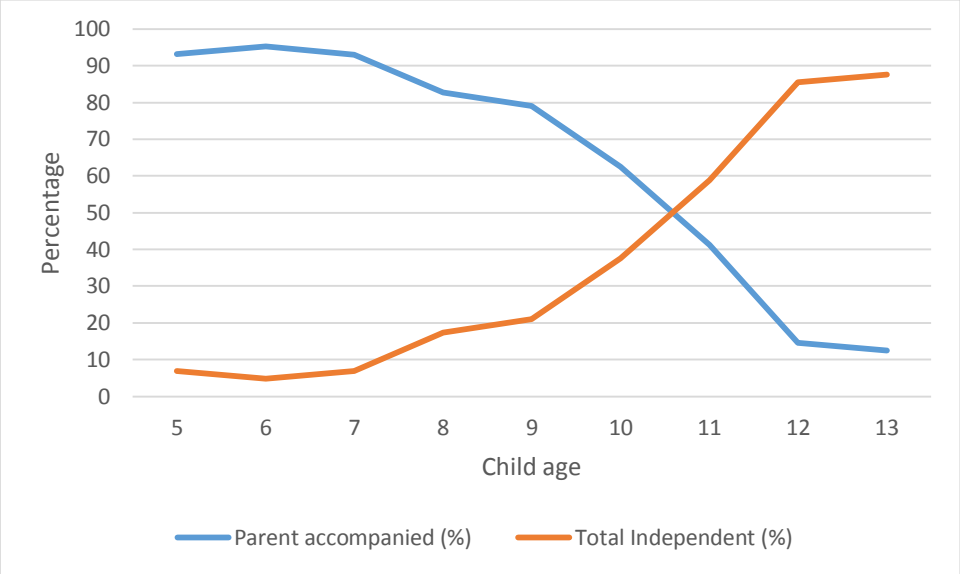

Figure 40: Parent accompanied and independent travel[10], proportion of children who ever use active travel to school, by age (n = 411)

When total independent active travel to school is disaggregated by the type of independent travel, there are some indications that travel with siblings occurs at a younger age than travel alone, possibly because a younger child might be accompanied by an older sibling (Figure 41). Travel with friends appears to occur at an older age than both travel with siblings and travel alone.

[10] Alone, or with friends or siblings.

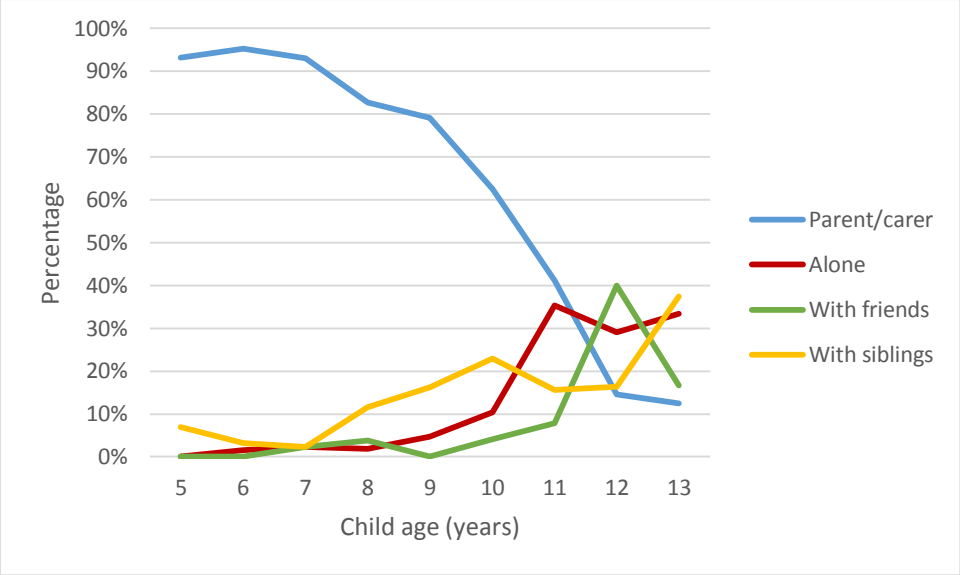

Figure 41: Type of accompaniment, proportion of children who ever use active travel to school, by age (n = 411)

In terms of gender differences in accompaniment, the majority of both girls and boys who travel to school actively are accompanied by a parent, carer or other adult, with slightly more girls (68%) accompanied by an adult than boys (63%) (Figure 42). More boys (17%) than girls (8%) travel alone. The relationship between gender and type of accompaniment (ie parent-accompanied or independent) is statistically significant ($\chi^2 = 5.42$, $p = 0.02$), consistent with previous research (Crawford, 2015; Veitch et al., 2017).

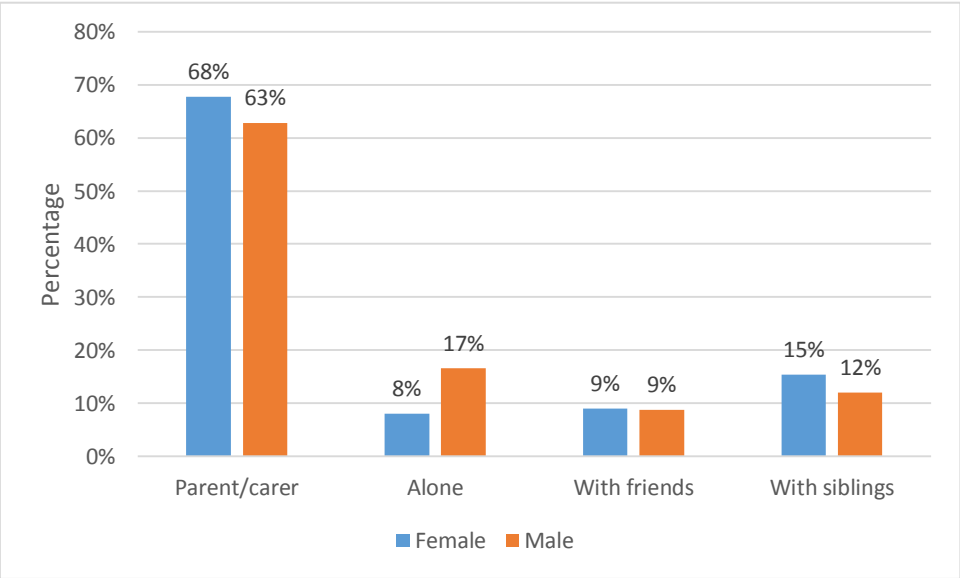

Figure 42: Type of accompaniment for active travel to school, by gender (n = 411)

Analysis of the relationship between trip distance and type of accompaniment for active trips to school produced the somewhat unexpected finding that parent accompaniment decreased with trip distance, while independent travel (all forms combined in Figure 43) increased. This relationship appears not to have been investigated in other studies of active

school travel (most of which do not include method of accompaniment for children travelling actively to school) (see Literature Review).

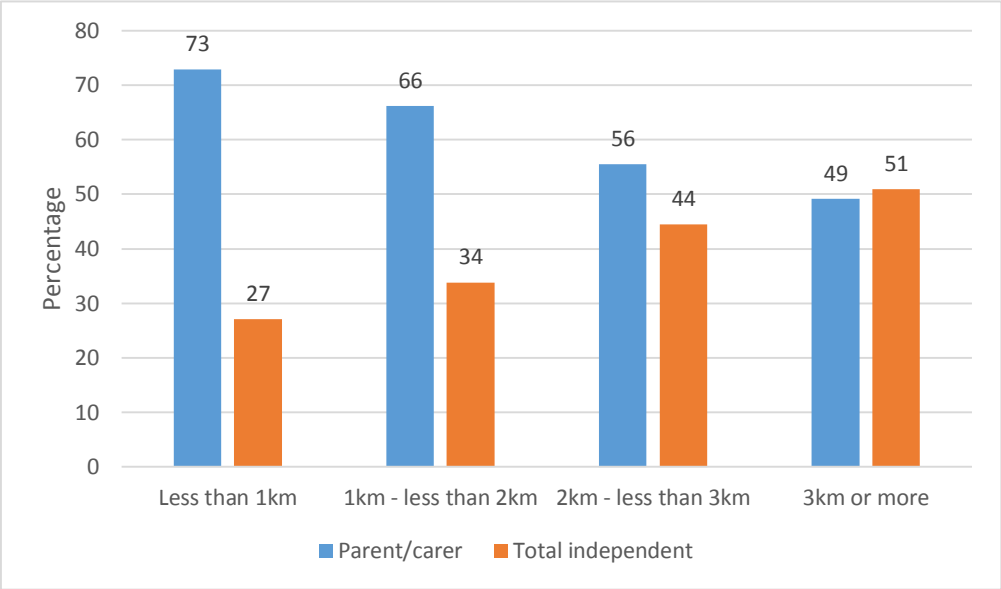

Figure 43: Accompanied and independent active travel to school, by distance (n = 411)

Breakdown by type of independent travel to school shows that the most consistent increases with distance are for children travelling alone and with friends (see Figure 44). The accompaniment-distance relationship for the data shown in Figure 44 is statistically significant ($\chi^2 = 36.18$, $p < 0.0001$).

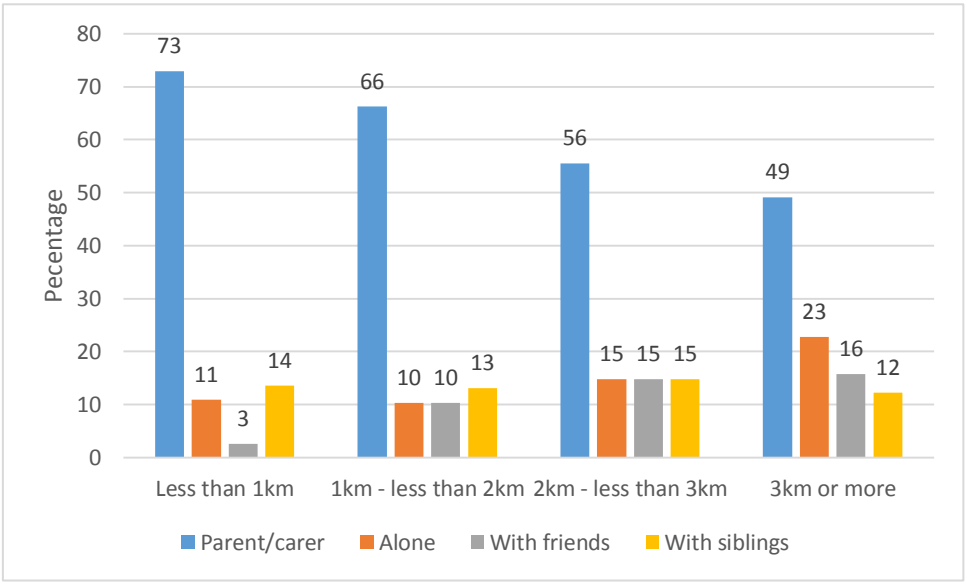

Figure 44: Type of accompaniment for active travel to school, by distance (n = 411)

These findings suggest that parents appear to be willing to accompany children actively to school for relatively short distances (up to about 2km), but for longer trips prefer to drive children to school or possibly allow them to travel independently. The number of children who travel actively and independently to school for distances greater than 3km is too small

to conduct a detailed quantitative analysis of their characteristics, but a data scan indicates that they are mainly older boys cycling to school alone.

This tentative finding is consistent with cycling being more suitable for longer active trips than walking; with boys having greater independent mobility than girls (see Figure 42); and with gender differences in cycling in Australia, which emerge in late childhood, increase markedly during adolescence, and remain substantial for adults (Garrard et al., 2012). The gender difference in cycling might also help to explain the large decline in parent-accompanied active travel to school for distances over 3km, as accompanying parents are usually females who are much more likely to walk than cycle. As a walking trip takes about three times longer than riding a bicycle, and lack of time is a major constraint on active travel to school for parents, parent-accompanied active travel to school is likely to decline more rapidly with trip distance if cycling *with* children is not considered an option by the accompanying parent (usually female).

These findings indicate that:

- Establishing cycling to school as a viable option for both children *and parents* (as a means of increasing parent-accompanied as well as independent active travel to school) has the potential to substantially increase the catchment area for active travel to school.
- Supporting more women to adopt utilitarian cycling as a substitute for short, local car trips is likely to increase parent-accompanied cycling trips to and from school for children who require adult accompaniment when travelling actively to/from school.
- Improving cycling routes and conditions is likely to support both parent-accompanied and independent cycling to school.
- Note that in many countries, high levels of active travel to school are achieved through high rates of cycling to school as well as walking to school. These countries also have similar rates of cycling among males and females (see Literature Review).

The relationship between accompaniment and occasional and regular active travel to school was also explored. This analysis indicates that regular active travel to school is more likely than occasional active travel to be alone or with siblings (Figure 45) ($\chi^2 = 19$, $p = 0.0003$). However, it is also important to bear in mind that, overall, the majority of regular active travel is parent- or adult-accompanied (62%).

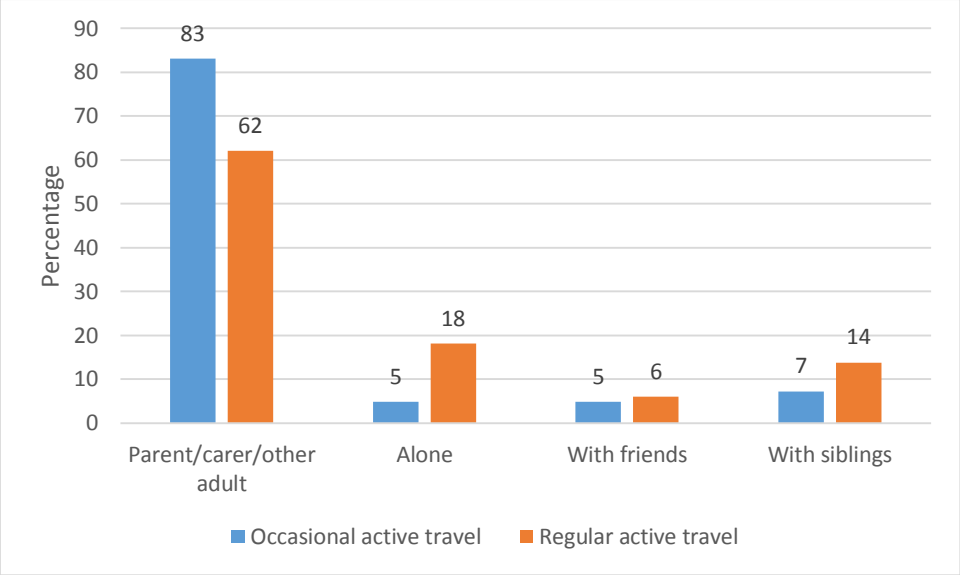

Figure 45: Accompaniment on active trips to school, by occasional and regular active travel to school (n = 356)

The sections above have explored a number of relationships between socio-demographic factors and active travel to/from school. The following section focuses on parents' beliefs and attitudes related to:

- Driving children to/from school
- Walking or riding[11] to/from school (in general)
- Children's independent active travel to/from school
- Parent-accompanied active travel to/from school
- Parents' responses to factors that might increase the likelihood of their child walking or riding to/from school.

3.14 Parents' attitudes to driving children to or from school

Understanding why parents drive children to and from school is an important component of understanding parental barriers to active travel to school, as car travel effectively competes with active travel in parents' decision-making about school travel mode.

Survey responses indicate that most parents perceive that driving their child to/from school is convenient, quick and safe (Figure 46).

[11] The survey instructions stated that 'riding' includes cycling, scooting and skating.

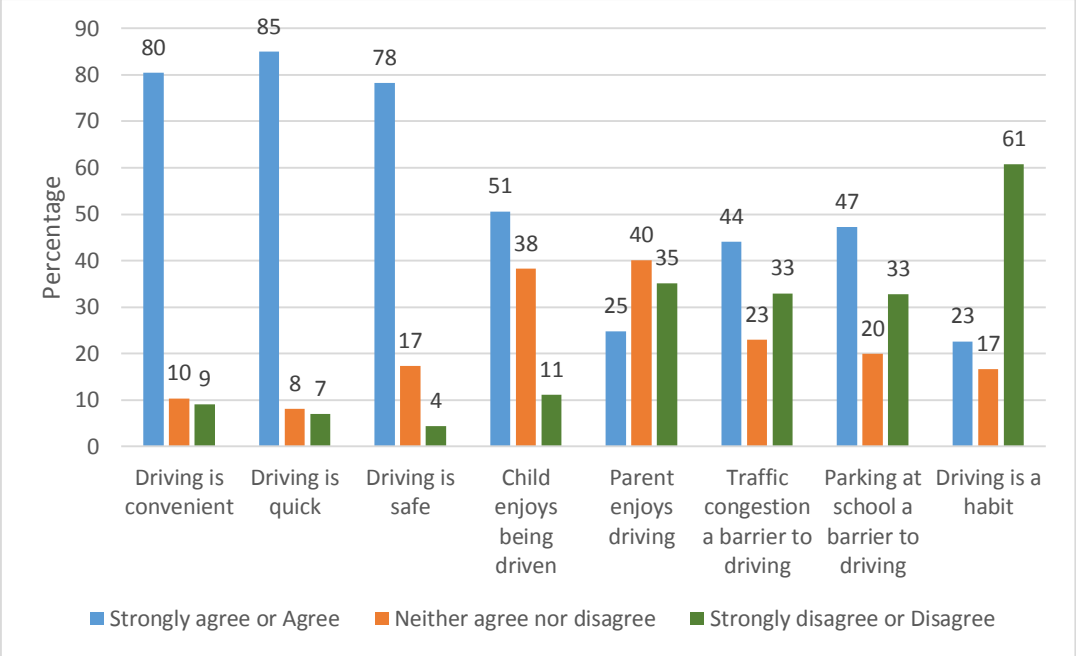

Figure 46: Parents' attitudes to driving children to or from school

About half of the parents agreed that their child enjoys being driven to/from school, with 38% expressing a neutral attitude (neither agreeing nor disagreeing), possibly due to (a) children feeling neither positive nor negative about car travel, or (b) parents not knowing whether or not their child likes being driven to school. If parents choose driving to school as the preferred option, the issue of child enjoyment/choice may not arise or be discussed.

In a subsequent question (Section 3.15), parents also largely agreed (78%) that their child "would like to (or already does) walk or ride to/from school", a higher proportion than agreed that their child likes being driven to school (51%). These findings are consistent with several studies that have reported that primary school age children prefer walking or riding to school rather than travelling by car (Garrard et al., 2009).

Parents themselves indicated lower levels of enjoyment of driving to/from school than they attribute to their children, with more parents disagreeing with the statement "I enjoy driving to/from school" (35%) than agreeing (25%), and 40% indicating a neutral attitude. Parents consider traffic congestion (44%) and parking (57%) at school as constraints on driving their child to/from school; factors that might contribute to their lack of enjoyment of driving to school. Finally, less than a quarter of parents (23%) agreed that "Driving to/from school has become a habit, even though walking or cycling is a possibility". This finding is likely to include a substantial number of parents disagreeing (for a range of reasons) that walking or cycling to/from school is a *possibility* for their child.

In summary:

- Parents consider driving children to/from school to be convenient, quick and safe.
- Parent-perceived constraints on driving include lack of enjoyment by parents, and congestion and parking at school.

- Interestingly, parents consider that their children enjoy being driven to/from school (51%) more than parents themselves enjoy driving to/from school (25%), though the remaining 49% (for children) was mainly neutral (38%) rather than a dislike of being driven to/from school (11%).
- The majority of parents (61%) reject the notion that driving to/from school is a habit, indicating that many parents view the decision to drive their children to/from school as a considered and logical travel mode choice.

The following analysis explores the relationship between parents' beliefs and attitudes associated with driving children to/from school and school travel mode group (ie regular car travel, occasional active travel or regular active travel to/from school). In this analysis, Strongly agree and Agree were collapsed into the category "Agree"; "Neutral" refers to the response option "Neither agree nor disagree", and "Disagree" includes Strongly disagree and Disagree. Chi-squared tests of significance were conducted for 3X3 contingency tables for each attitude/belief item. Statistically significant associations between attitudinal items and school travel mode group are designated as follows: $p < 0.05$ = *; $p < 0.01$ = **; $p < 0.001$ = ***; $p < 0.0001$ = ****.

Findings for Question 15 (attitudes and beliefs about driving children to/from school) are summarised in Table 4.

Table 4: Parental attitudes to driving children to/from school

Item		Agree	Neutral	Disagree
Driving is a convenient way to travel to/from school**	Regular car	92	4	3
	Occasional AT	85	8	6
	Regular AT	56	21	20
Driving is a quick way to get to/from school**	Regular car	94	5	1
	Occasional AT	87	7	5
	Regular AT	67	14	17
Driving is a safe way to get to/from school**	Regular car	86	11	2
	Occasional AT	74	21	4
	Regular AT	64	42	8
My child enjoys being driven to/from school**	Regular car	59	35	4
	Occasional AT	41	49	9
	Regular AT	40	35	22
I enjoy driving to/from school**	Regular car	33	42	23
	Occasional AT	22	46	32
	Regular AT	12	32	53
Traffic congestion at school puts me off driving to/from school**	Regular car	30	25	42
	Occasional AT	43	22	34
	Regular AT	64	19	17
Difficulty parking at school puts me off driving to/from school**	Regular car	34	22	42
	Occasional AT	50	20	28
	Regular AT	64	19	19
Driving to/from school has become a habit, even though walking/cycling is a possibility**	Regular car	23	15	60
	Occasional AT	41	18	40
	Regular AT	12	17	68

Parents who were categorised as using 'regular car travel', 'occasional active travel', or 'regular active travel' to school had significantly different levels of agreement with the eight items related to driving children to or from school. For the first five items, parents who used regular car travel were more likely to agree that:

- Driving is a convenient way to travel to/from school (92% of parents who regularly drive to school)
- Driving is a quick way to get to/from school (94%)
- Driving is a safe way to get to/from school (86%)
- My child enjoys being driven to/from school (59%)
- I enjoy driving to/from school (33%)

While the first three items (convenience, speed and safety of car travel) had high levels of agreement among regular car users, child enjoyment of being driven to school, and parent enjoyment of driving to school had substantially lower levels of agreement.

For all five of these items, parents who use regular active travel to school had significantly lower levels of agreement, with those who use occasional active travel to school having levels of agreement that fell between regular car travel and regular active travel groups.

For the next two items (potential constraints on driving to school in the form of traffic congestion and parking difficulties at school), agreement that these factors constrain driving to school was low for regular car travellers, but significantly higher for regular active travellers, suggesting that these potential constraints on driving to school may lead some parents and children to walk or ride to school rather than drive. Once again, parents who use occasional active travel to school had levels of agreement that fell between regular car travel and regular active travel groups.

The item "Driving to/from school has become a habit, even though walking/cycling is a possibility" had low levels of agreement from parents who regularly drive to school, and even lower levels for parents whose children regularly travel actively to school (presumably because driving to school is not a habit for them). The low level of agreement among parents who regularly drive to school could be due to walking/cycling *not* being feasible for these families, and/or parents rejecting the notion that driving to school has an element of habitual behaviour.

Parents whose children occasionally travel actively to school had the highest level of agreement with the notion of driving having a habitual element (41%), suggesting that these parents, who sometimes choose to drive and sometimes choose to walk or ride, may be more aware of the 'pull' to 'just hop in the car as usual'. In this sense, parents who use occasional active travel to school may be consciously resisting the habit of driving to most places most of the time, and using active transport when it is feasible. While travel mode 'habits' are an under-researched area of travel mode choice, where they have been investigated, they have been found to be important. As discussed in the Literature Review, there is some evidence that people's travel mode 'choices' can reflect habitual patterns of

travel behaviour. For example, a small number of studies have found that habit is an important influence on cycling for transport (deBruijn et al., 2009; Willis et al., 2015).

In summary, these findings indicate that:

- Parents who regularly drive to school find driving convenient, fast and safe; in contrast to occasional and regular active travellers.
- Regular drivers are also less concerned about traffic congestion and parking difficulties at school than occasional or regular active travellers.
- Most parents (including regular drivers) do not enjoy driving to/from school, though the majority of regular drivers agreed that their children did.
- Regular drivers largely reject the notion that driving to/from school has become a habit.
- Occasional active travellers are most likely to agree that driving to school is a habit, possibly reflecting that occasional active travellers make more deliberative choices about school travel mode on a daily basis, depending on circumstances (eg driving to school on the days that the parent works, and using active transport on non-work days – see Section 3.12.6)

These associations, while strong and statistically significant, are not necessarily causal, and, in particular, there is a strong likelihood that school travel behaviours influence attitudes to driving as much as the reverse process of attitudes influencing behaviour.

Nevertheless, there are indications that strategies for promoting active travel to school, particularly for regular car travellers, could include challenging the notion that most children enjoy being driven to school, and encouraging parents to make more deliberative travel mode choices based on daily circumstances, as appears to be the case for parents who occasionally travel actively to school.

The following question focuses on parents' general attitudes and beliefs about active travel to/from school.

3.15 Parents' attitudes to active travel to/from school

Relatively high proportions of parents agree that active travel to/from school is a good form of physical activity (97%) (Figure 47). However, 50% of parents also agree that their child gets enough physical activity from sport and other activities. These data indicate high levels of recognition of the physical activity value of active travel to school, albeit with about half of parents perceiving that perhaps their child does not require additional physical activity in the form of active travel to school. On the other hand, half of the parents are not sure their child does get sufficient physical activity from sport and other activities, possibly providing opportunities to increase active travel to school by reinforcing the physical activity and health benefits of active travel to school.

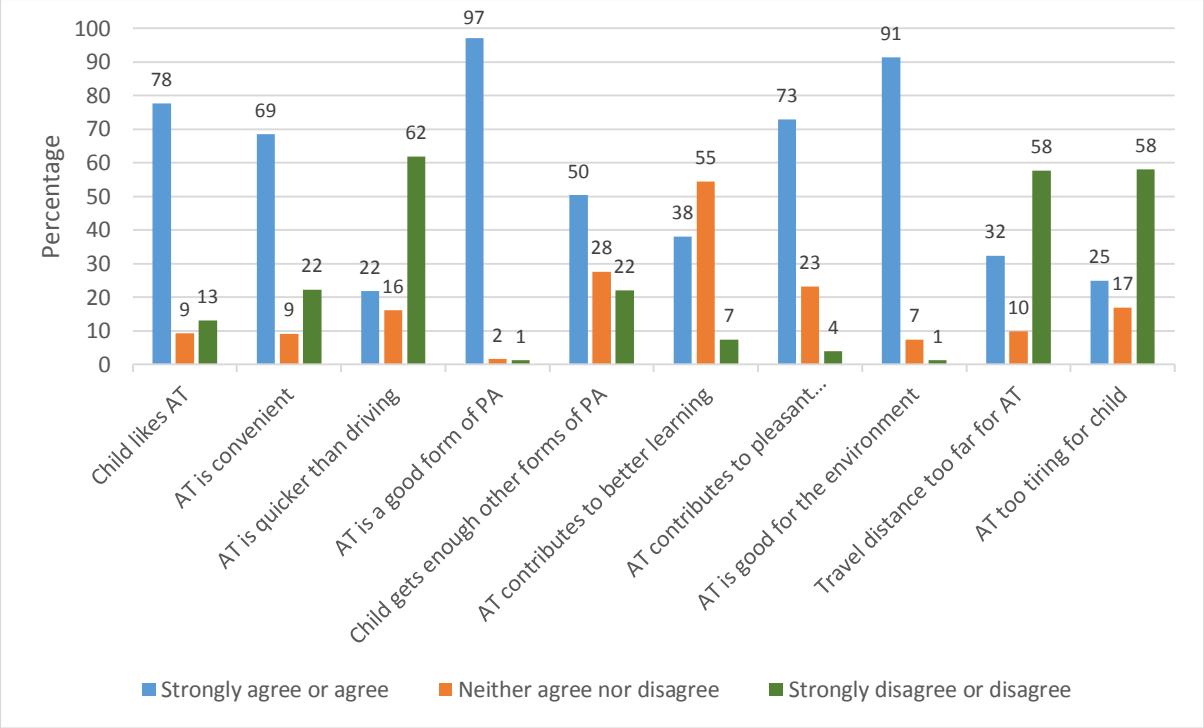

Figure 47: Attitudes to active travel to/from school

Most parents also agree that active travel to school is good for the environment (91%) and helps make the neighbourhood a pleasant place (73%). There were lower levels of agreement that "children learn better at school when they walk or ride to school" (38%), with 55% of parents neither agreeing nor disagreeing, suggesting that parents may be unsure about this benefit, which is well-established in the research literature (Egelund, 2013; Sibley and Etnier, 2003).

Parents also largely agree (78%) that their child "would like to (or already does) walk or ride to/from school", a higher proportion than agreed that their child likes being driven to school (51%) (see Figure 46). Perhaps surprisingly, 69% of parents agreed that "walking or riding is a convenient way to travel to/from school", not markedly lower than the 80% of parents who agreed that "driving is a convenient way to travel to/from school" (see Figure 46). However, there were much lower levels of agreement that "walking or riding is quicker than driving to/from school" (22%), so, in terms of travel speed (though not convenience), driving is considered by many parents to have a considerable advantage over active travel to school.

Also somewhat surprisingly, 58% of parents disagreed that "we live too far away to walk or ride to/from school", indicating that travel distance is not a barrier for many parents, including a substantial number of parents who drive to/from school. Consequently, although distance is identified as a major barrier to active travel to school in the research literature, a sizeable number of parents in this study drive to school for reasons other than "too far to walk/ride".

A quarter of parents agreed that "walking or riding to/from school would be too tiring for my child", with 58% disagreeing and 17% neutral. Once again, as for distance, this appears

not to be a major barrier for many parents, though it is likely to be more so for younger children.

The following analysis explores the relationship between parents' beliefs and attitudes associated with active travel to/from school and school travel mode group (ie regular car travel, occasional active travel or regular active travel to/from school) (Table 5).

Table 5: Parental attitudes and beliefs about active travel to/from school

Item		Agree	Neutral	Disagree
My child would like to (or currently does) walk or ride to/from school****	Regular car	66	13	20
	Occasional AT	87	7	5
	Regular AT	88	4	6
Walking or riding is a convenient way to travel to/from school****	Regular car	50	13	35
	Occasional AT	82	9	8
	Regular AT	89	3	8
Walking or riding is quicker than driving to/from school****	Regular car	8	12	78
	Occasional AT	17	21	62
	Regular AT	44	20	35
Walking or riding to/from school is a good form of physical activity	Regular car	94	2	2
	Occasional AT	98	1	0
	Regular AT	98	1	0
My child gets enough physical activity from sport and other activities*	Regular car	56	25	18
	Occasional AT	44	30	25
	Regular AT	44	29	26
Children learn better at school when they walk or ride to school****	Regular car	27	61	11
	Occasional AT	45	50	4
	Regular AT	50	44	4
Walking or riding to/from school helps make the neighbourhood a pleasant place to be****	Regular car	63	30	6
	Occasional AT	80	17	2
	Regular AT	82	15	1
Walking or riding to/from school is good for the environment**	Regular car	87	10	2
	Occasional AT	93	4	2
	Regular AT	94	5	0
We live too far away to walk or ride to/from school****	Regular car	50	12	37
	Occasional AT	13	10	77
	Regular AT	14	6	79
Walking or riding to/from school would be too tiring for my child****	Regular car	39	23	37
	Occasional AT	13	14	73
	Regular AT	8	9	82

As noted above, most parents agree that their child would like to, or currently does, walk or ride to/from school, though levels of agreement were significantly higher for parents who use occasional or regular active travel to school. These findings suggest that children's reluctance to walk or ride to school is not a major constraint on active travel to school, as two-thirds of parents who regularly drive to school report that their children would like to walk or ride to school. This proportion increases to nearly nine out of ten for children who use occasional or regular active travel to school.

Significant differences were found between travel mode groups for level of agreement with walking or riding comprising convenient or fast methods of travel to school. Half of regular car travellers agree that walking or riding is a convenient way to travel to/from school, but only eight percent agreed that is was quicker than driving. In comparison, the majority of occasional active travellers and regular active travellers agreed that it was convenient (82% and 89% respectively).

The proportion of occasional active travellers and regular active travellers who considered active travel quicker than driving (17% and 44% respectively) was substantially higher than for regular car travellers, but, nevertheless, the majority of occasional active travellers and regular active travellers did not agree that active travel is quicker than driving, indicating that these parents are prepared to trade-off the extra travel time required for active travel to school for other perceived benefits.

These findings suggest that for parents who drive children to school, travel speed is a key consideration. There are many potential reasons why travel speed might be more important to some parents than others, with trip distance, parental employment and other commitments and the consequent need for trip-chaining likely factors (see below).

It is also important to recognise that cycling is substantially faster than walking, so promoting the time advantage of cycling over walking may help to address this important constraint on active travel to school. It is also likely that, particularly for relatively short school trip distances, the difference in door-to-door time for walking or cycling compared with driving to school might be less than is sometimes perceived.

In addition, the actual travel time differences between driving and active travel can be reduced by measures such as car-exclusion zones around schools, reduced parking around schools, and lower speed limits en route to (ie in residential areas) and around schools. These measures, which improve safety and also make active travel more time-competitive with car travel, may help to 'nudge' more parents into using active travel to school.

Nearly all parents agreed that walking or riding to school is a good form of physical activity, thus countering the notion that active travel to school is not a 'real' or valued form of physical activity. However, parents may not necessarily agree that their child needs this form of physical activity, with the majority of regular car travellers (56%) agreeing that their child gets enough physical activity from sport and other activities. Even among occasional and regular active travellers, 44% agree that their child gets enough physical activity from sport and other activities. So, while recognition of the value of active travel to school as a form of physical activity is high, the need for their own child to participate in this form of physical activity is less well-recognised.

The perception that children may not need to participate in active travel to school because they are adequately active through other forms of physical activity provides an opportunity to emphasise the co-benefits of active travel that are not generally associated with other forms of children's physical activity. These include the regularity of active travel to school (up to twice a day); the educational benefits of walking or cycling to school; and the

opportunity to acquire important life skills that support the transition from adult-accompanied to independent mobility (see Section 3.16).

In particular, parents had low levels of awareness of the learning advantages of active travel to school (27% for regular car travellers). This item had the highest proportion of 'neutral' responses (61% for regular car travellers), indicating that the majority of parents appear to be unaware of the educational benefits of active travel to school.

The relationship between physical activity and cognitive skills is well-established (Sibley and Etnier, 2003), and a large Danish study (about 20,000 school students aged 5-19) recently reported this association for active travel to school. Examination of the link between diet, exercise and concentration at school found that, relative to children who are driven to school, children who walk or cycle to school have an increased ability to concentrate for about four hours into the school day (Egelund, 2013) (http://sciencenordic.com/children-who-walk-school-concentrate-better).

Most parents, irrespective of travel mode, agreed that active travel to school is good for the environment. However, there was less agreement among regular car travellers that active travel to school improves community liveability (63%), though agreement with this item was higher among occasional (80%) and regular active travellers (82%). It may be that people walking and cycling are more likely than car drivers to perceive high levels of motorised traffic in neighbourhoods as unpleasant.

Living too far away to walk or ride to school had the expected relationship with active travel use, though it is important to note that only half of regular car travellers agreed that they lived too far away to travel actively to school, indicating that while trip distance is an important influence on school travel mode, it is not the only factor. Relatedly, the majority of regular car travellers did not agree that walking or riding to school would be too tiring for their child, with 37% disagreeing, and 23% neutral.

In summary:

- Key constraints on active travel to school include trip distance, but, more specifically, travel time.
- The promotion of cycling to school (a substantially faster method of active travel than walking) has the potential to address these constraints for some parents.
- Measures that make walking and cycling more time-competitive with driving will make driving to school less appealing as a time-saving measure. These include car-exclusion zones around schools, shared pedestrian zones around schools [with low speed limits where drivers must give way to pedestrians], reduced parking around schools, and lower speeds en route to (ie in residential areas) and around schools.
- There may be a role for challenging the perception that the door-to-door travel time for driving is substantially less than for walking (and especially cycling).
- Lack of awareness of the physical activity benefits of active travel to school is not a constraint in general terms, though some parents questioned whether their child

was already sufficiently active and therefore may not need the additional physical activity associated with active travel to school. The regular, daily nature of active travel to school as a form of physical activity has several advantages over less regular sports and other physical activities, including educational benefits in the form of improved concentration at school.

- There is potential to increase awareness of the co-benefits of active travel to school as a form of physical activity - particularly the educational benefits.
- Awareness of the environmental benefits of active travel to school is high, but the community liveability benefits of reduced motor vehicle traffic is less well-recognised.
- Children's dislike of active travel to school, or active travel being too tiring for children are not constraints on active travel to school for the majority of parents and children.

The parental attitudes described in this section were those associated with active travel to school in general. In the following section, attitudes to children's *independent* active travel to school are examined.

3.16 Parents' attitudes to children walking or riding to/from school independently

Most parents (88%) agreed that independent walking or riding to/from school helps children develop useful life skills (Figure 48). Over three-quarters of parents also agreed that independent walking or riding to/from school saves time for parents (77%) and that independent walking or riding to/from school is convenient for parents (77%).

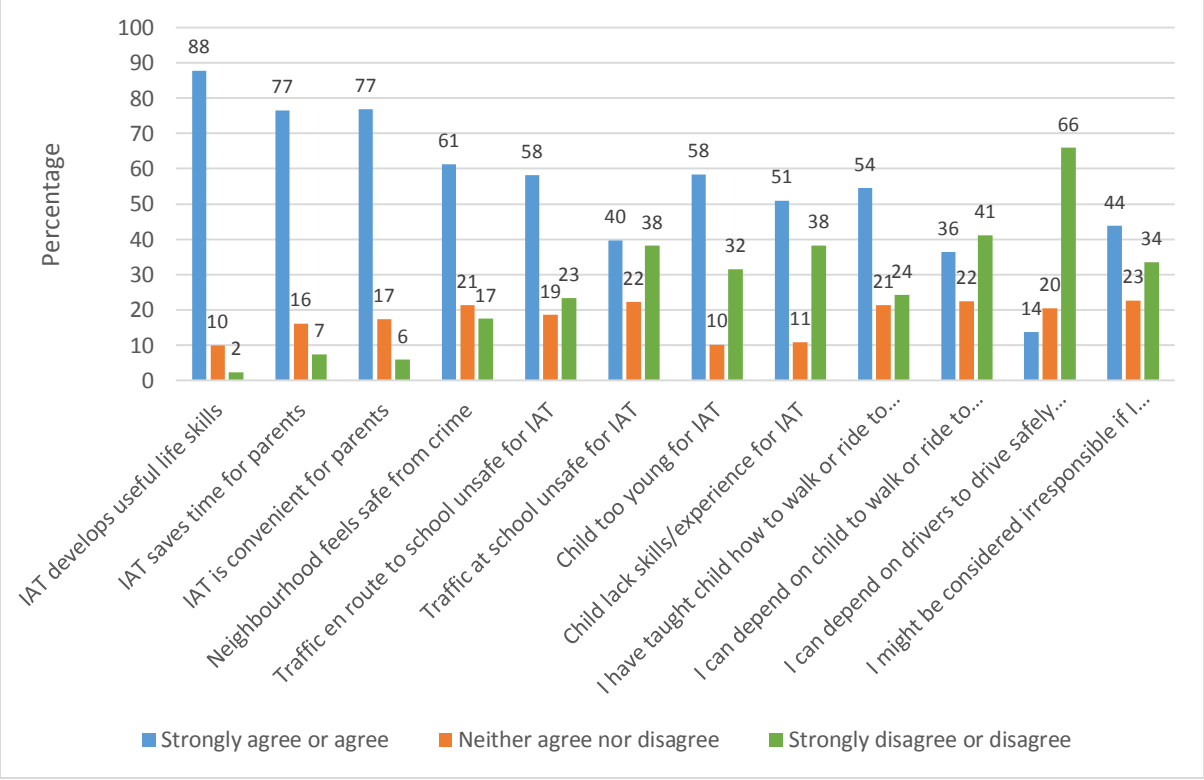

Figure 48: Attitudes to independent active travel to/from school

However, a number of constraints on independent active travel to school were also apparent. Sixty-one percent of parents agreed that they live in a neighbourhood that feels safe from crime, leaving 39% of parents unsure (21%) or feeling unsafe (17%).

There were also concerns about traffic safety *en route* to school and at school, with 58% of parents agreeing that traffic *en route* to school is unsafe. There was less concern about traffic safety *at school*, but, nevertheless, 40% of parents agreed that traffic at school is unsafe for independent active travel to school. Consistent with these concerns about traffic safety, only 14% of parents agreed that they can depend on drivers to drive safely near the school.

Parents also identified a number of constraints on independent active travel associated with their child; including age, skills and experience; with more than half of parents agreeing that their child was too young, or lacked the necessary skills/experience. Although the majority of parents (54%) agreed that "I have taught my child how to walk or ride to school safely", fewer (36%) agreed that "I can depend on my child to walk or ride to school safely". This difference is likely to be influenced by parents' concerns about their child 'making one false move'. Parents need to be confident that their children can *consistently* walk and ride safely before they allow them to travel independently (Garrard, 2016).

In terms of the concept of the road system being 'forgiving' of road users' occasional errors (a key principle of the Safe System road safety approach that underpins most Australian states' road safety strategies), parents are not confident that the traffic system will be forgiving of children's occasional errors, because they cannot depend on people driving safely near schools (86% of parents).

In addition, the 44% of parents who agreed that "I might be considered an irresponsible parent if I let my child walk or ride to school independently" are reflecting a social norm in Australia that it is primarily the responsibility of walkers and riders (including children and their parents) to keep themselves safe from both 'strangers' and motor vehicle drivers, rather than the other way around. In many European countries it is 'the other way around' (in relation to traffic safety), with a range of measures (including 'strict liability' and strict licence-testing procedures) placing a high duty of care on drivers to avoid collisions with cyclists and pedestrians, especially child pedestrians and cyclists due to their greater vulnerability (Pucher and Buehler, 2008; Vincent, 2015).

In the focus group discussions conducted in Phase 2 of this study, there were some indications that female and male parents/carers had differing attitudes to children's independent mobility. Parents' attitudes to children's independent active travel to school were analysed for any differences based on parents' gender. Questions about neighbourhood safety and traffic safety *en route* to school and at school were the only questions with statistically significant differences in levels of agreement for male and female survey respondents, with females consistently expressing higher levels of safety concerns for both personal safety and traffic safety.

Females were less likely than males to agree that "We live in a neighbourhood that feels safe from crime" (Figure 49) ($\chi 2 = 9.3$, $p = 0.01$).

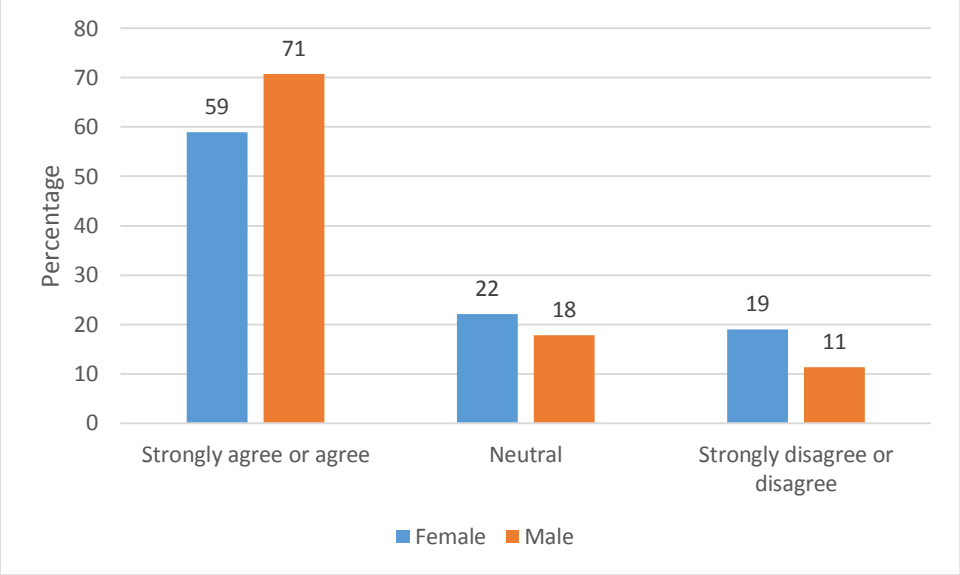

Figure 49: Level of agreement with "We live in a neighbourhood that feels safe from crime", by gender (n = 784)

Females were also more likely than males to agree that "Traffic conditions on the way to school are unsafe for children to walk or ride independently" (Figure 50) ($\chi 2 = 8.9$, $p = 0.01$), though levels of disagreement were the same, with males more likely than females to indicate a neutral position. This might reflect males being less familiar with the route to school than females, who are more likely to accompany children to school.

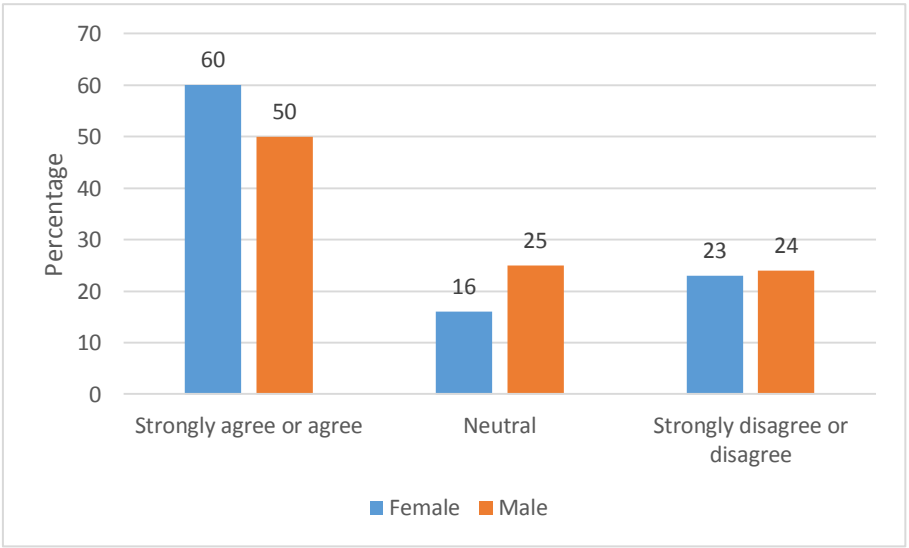

Figure 50: Level of agreement with "Traffic conditions on the way to school are unsafe for children to walk or ride independently", by gender (n = 786)

Similarly, females were more likely than males to agree that "Traffic conditions at school are unsafe for children to walk or ride independently" (Figure 51) ($\chi 2 = 8$, $p = 0.02$), though, once again, levels of disagreement were similar, with males more likely than females to indicate a neutral position. This might also reflect males being less familiar than females with traffic conditions *at* school.

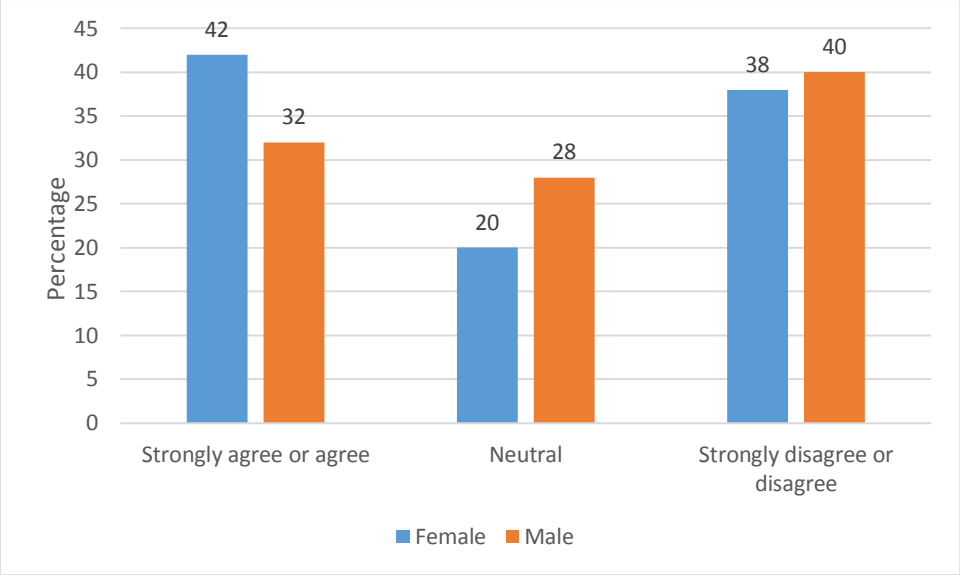

Figure 51: Level of agreement with "Traffic conditions at school are unsafe for children to walk or ride independently", by gender (n = 783)

In summary, for the 12 items in Question 17 related to children walking or riding to school independently, only three safety related questions yielded statistically significant gender differences in responses; with women consistently expressing higher levels of safety concerns than men. While this gender difference (for the two traffic safety related items) might be due to men being less familiar with traffic conditions *en route* to school and at school, they are also indicative of a perceptual component of parents' safety concerns when considering independent mobility for their children.

Interestingly, the items related to *children's* safety behaviour ("My child is too young to walk or ride to school independently"; "My child doesn't have the skills and experience to walk or ride to school independently"; "I have taught my child how to walk or ride to school safely"; and "I can depend on my child to walk or ride to school safely") had no statistically significant gender differences. It therefore appears that men and women tend to hold similar views about their children's capabilities to walk or ride to school independently, but differ about the safety of the external environment in relation to both personal safety and traffic safety.

The implications of gender differences in parents' perceptions of safety for strategies aimed at increasing active travel to school are not obvious, other than that they confirm that there are perceptual components to parents' concerns about the safety of their children walking or riding to school independently. Both females and males recognise that safety risks reside with both children's and drivers' (and 'strangers') behaviours in public travel spaces, but females appear to be less confident that providing children with independent mobility skills is sufficient to keep them safe due to external, environmental threats. Measures that improve both actual and perceived neighbourhood safety will assist in increasing children's independent active travel to school.

In addition to gender differences in parents' attitudes to independent active travel to school, attitudes are also likely to vary based on parents' use of active or inactive methods of travel to school. The following analysis explores the relationship between parents' beliefs and attitudes associated with children's independent active travel to/from school and school travel mode used (ie regular car travel, occasional active travel or regular active travel to/from school) (Table 6).

Table 6: Parental attitudes and beliefs about children's independent active travel to/from school

Item		Agree	Neutral	Disagree
Independent walking or riding to/from school helps children develop useful life skills	Regular car	84	12	3
	Occasional AT	91	6	2
	Regular AT	89	9	1
Independent walking or riding to/from school saves time for parents	Regular car	73	16	9
	Occasional AT	76	16	8
	Regular AT	80	15	4
Independent walking or riding to/from school is convenient for parents*	Regular car	72	19	8
	Occasional AT	75	21	3
	Regular AT	82	12	4
We live in a neighbourhood that feels safe from crime****	Regular car	51	26	22
	Occasional AT	65	20	13
	Regular AT	73	14	12
Traffic/road conditions on the way to school are unsafe for children to walk or ride independently******	Regular car	69	19	11
	Occasional AT	49	23	28
	Regular AT	44	15	39
Traffic conditions at school are unsafe for independent walking or riding to/from school***	Regular car	45	24	30
	Occasional AT	35	21	44
	Regular AT	33	20	46
My child is too young to walk or ride to school independently******	Regular car	67	11	21
	Occasional AT	59	9	31
	Regular AT	43	9	47
My child doesn't have the skills and experience to walk or ride to school independently******	Regular car	61	12	26
	Occasional AT	49	9	41
	Regular AT	34	10	55
I have taught my child how to walk or ride to school safely******	Regular car	32	28	39
	Occasional AT	67	20	12
	Regular AT	54	21	24
I can depend on my child to walk or ride to school safely******	Regular car	21	26	51
	Occasional AT	40	19	41
	Regular AT	58	17	24
I can depend on drivers to drive safely near the school*	Regular car	10	18	70
	Occasional AT	19	20	61
	Regular AT	16	23	60
I might be considered an irresponsible parent if I let my child walk or ride to school independently*	Regular car	46	24	29
	Occasional AT	48	21	31
	Regular AT	37	21	40

There were generally high levels of agreement across the three travel mode groups that independent walking or riding to or from school helps children develop useful life skills, saves time for parents, and is convenient for parents.

However, safety concerns comprised a major constraint on parents actually realising these benefits of independent active travel to school. Only about a half of parents who regularly drive to school considered that they live in a neighbourhood that was safe from crime. This increased to nearly three-quarters of parents who used active transport. While it is possible that parents who use active travel to school live in neighbourhoods with lower crime rates, the extent of the difference in safety concerns between car travellers and active travellers suggests that there might be an element of some parents adopting an oft-cited and socially acceptable reason for driving their children to school. As was the case for gender differences in safety concerns, differences across travel mode groups also point to perceptual components to parents' concerns about the personal safety of their children walking or riding to school independently.

Similar patterns emerged for traffic safety, both *en route* to school and at school; that is, higher proportions of parents who drive children to school expressed concerns about traffic safety than did parents who use active transport to school. As was the case for safety from crime, these differences are likely to reflect a combination of environmental conditions, parents' perceptions of these conditions and how their children interact with them, differing parenting styles, and also parents' school travel behaviour shaping their traffic safety attitudes.

Other concerns for parents who regularly drive their children to school are that their child is too young to walk or ride to school independently (67% of regular car travellers), or doesn't have the skills or experience to ride or walk to school independently (61% of regular car travellers). Occasional active travellers were less likely to agree with these two items (59%, and 49% respectively), with regular active travellers stating even lower levels of agreement (43% and 34% respectively).

Occasional (67%) and regular (54%) active travellers were significantly more likely than regular car travellers (32%) to have taught their child how to walk or ride to school safely. Once again, it is difficult to disentangle the causal nature of this association; however, there is a consistent pattern in the findings that children whose parents (a) use active travel to work or study; (b) travel actively with their children to neighbourhood destinations other than school; (c) teach their children how to walk or ride to school safely, and (d) agree that their children have the skills and experience to walk or ride to school independently, are more likely to use occasional or regular active travel to school.

While parents who use occasional and regular active travel to school are substantially more likely than regular car travellers to agree that they can depend on their child to walk or ride to school safely, much lower proportions of parents in all three travel mode groups agree that they can depend on drivers to drive safely near the school. These findings indicate that, while teaching children how to walk and ride safely, and being confident that children have the necessary skills and experience are important enablers of children's independent

mobility, not being able to depend on motorists to drive safely around children is an important external environmental constraint on independent active travel to school.

Regular active travellers were less likely than occasional active travellers and regular car travellers to agree that they might be considered an irresponsible parent for allowing their child to walk or ride to school independently, though overall, less than half of all parents agreed with this statement. Level of agreement with this item is likely to be strongly influenced by child age.

In summary:

- Parents expressed high levels of agreement that independent walking or riding to or from school helps children develop useful life skills (88%), saves time for parents (77%), and is convenient for parents (77%).
- There were lower levels of agreement that the neighbourhood feels safe from crime (61%), though the majority of parents agreed with this item.
- Parents expressed higher levels of concern about traffic safety *en route* to school (58% agreeing that it was unsafe); with less concern about traffic safety *at* school (40% agreeing that it is unsafe).
- More than half of parents (58%) considered their children too young for independent active travel to school, a level that is not inconsistent with the median age of children in the sample (9 years).
- About half of parents (51%) agreed that their child lacked the skills and experience to walk or ride to school independently, a level that is also likely to be influenced by the child's age.
- A similar proportion of parents (54%) have taught their child how to walk or ride to school safely; however, fewer parents (36%) agreed that they can depend on their child to walk or ride to school safely.
- This discrepancy between teaching children to walk and ride safely to school, and being able to depend on them to travel safely is likely to be due in part to parents' concerns about "one false move" by their child, together with very low levels of parents agreeing that they can depend on drivers to drive safely near the school (14%).
- These findings also indicate parents have more confidence in their child's ability to walk or ride safely (36%) than in drivers' ability to drive safely (14%).
- Social judgements about being an irresponsible parent for allowing their child independent mobility were less of a barrier for independent active travel to school than environmental barriers in the form of traffic safety concerns.
- For the 12 items in this question about independent mobility, only three items showed statistically significant differences for male and female parents/carers; namely the three safety items (crime, traffic safely *en route* to school, and traffic safety at school), with females expressing significantly higher levels of concerns than males.
- When responses to the 12 items were analysed by travel mode group (regular car travel, occasional active travel, and regular active travel), the benefits of

independent active travel to school were widely recognised by all three travel groups.

- However, safety concerns were significantly greater for regular car travellers, who were also more likely to agree that their child was too young, and that they cannot depend on them to walk or ride safely to school.
- Regular active travellers were more likely to agree that they have taught their child to walk or ride safely to school.
- Being able to depend on drivers to drive safely near the school was low for all groups, but somewhat higher for occasional and regular active travellers.
- Regular car travellers were somewhat more concerned about being considered an irresponsible parent if they allowed their child to walk or ride to school independently, but social judgement appeared to be less of a barrier to independent active travel to school than environmental factors and child characteristics.

As discussed in the Literature Review, there is some overlap, but also some differences between the supports and constraints on children's independent mobility and those that influence parent-accompanied active travel to school. The following section explores parent-accompanied active travel to school.

3.17 Parents' attitudes to parent-accompanied walking or riding to/from school

Most parents expressed positive attitudes to walking or riding to school with their child, with most parents agreeing that "Walking or riding to/from school is a good opportunity to spend time with my child" (90%); "Walking or riding to/from school is a good form of physical activity for me" (93%); "Walking or riding to/from school is something I'd like to do (or already do)" (85%); and "Walking or riding to/from school with my child is a good way to start the day" (84%) (Figure 52).

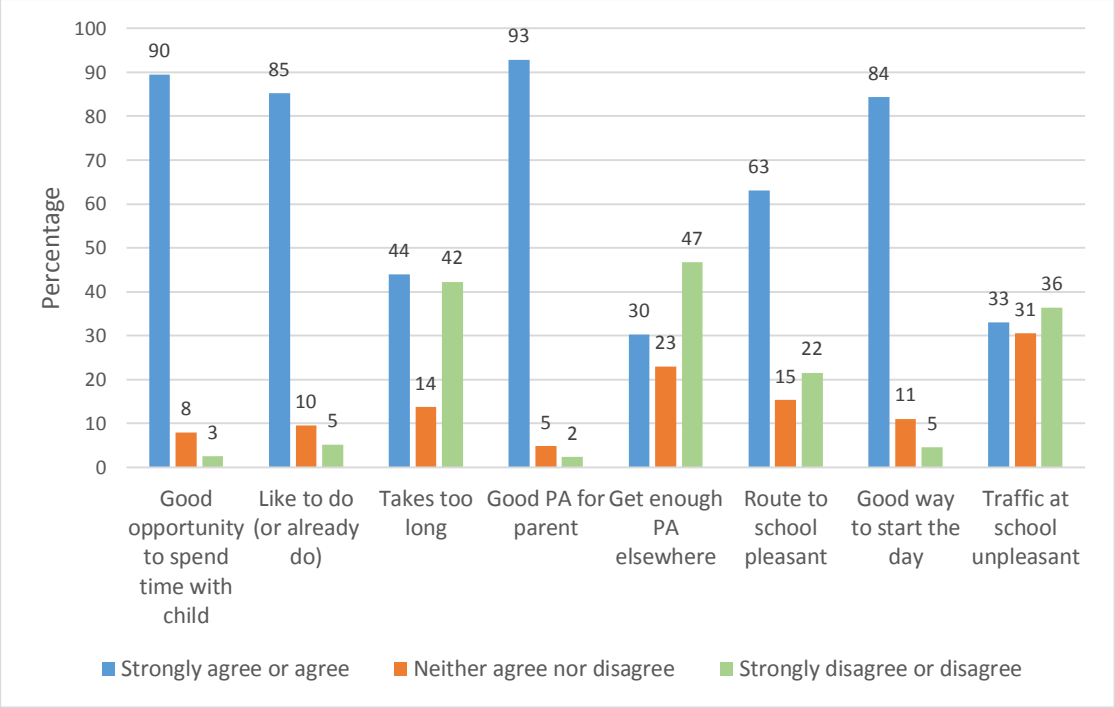

Figure 52: Attitudes to active travel to/from school with child (%)

Fewer parents agreed that "The route to school is pleasant for walking or riding" (63%), and about a third of parents agreed that "The traffic at school is unpleasant for parents and children walking or riding" (33%), slightly less than those who disagreed (36%). Forty-four percent of parents agreed that "Walking or riding to/from school with my child would take too long". Nearly half of parents (47%) disagreed that "I get enough physical activity from other things I do", suggesting that many parents view active travel to school as a good form of physical activity whilst also acknowledging that active travel to school could (or does) fill a personal physical activity 'gap'.

These findings indicate considerable potential for promoting active travel to school as a good opportunity for physical activity for parents. Australian women with school-age children have relatively low levels of physical activity (Brown and Trost, 2003), and active travel to/from school clearly ticks several important boxes for these women (76% of survey respondents were female – see Section 3.1). Building on this potential will require a strategy that promotes these benefits, addresses the environmental barriers that prevent these positive attitudes to active travel to school being realised, and assists parents (particularly women) to address the personal and household barriers to active travel to school.

The following analysis explores the relationship between parents' beliefs and attitudes associated with parent-accompanied active travel to/from school and school travel mode used (ie regular car travel, occasional active travel or regular active travel to/from school) (Table 7).

Table 7: Parental attitudes to parent-accompanied walking or riding to/from school

Item		Agree	Neutral	Disagree
Walking or riding to/from school is a good opportunity to spend time with my child	Regular car	86	9	3
	Occasional AT	94	5	1
	Regular AT	90	7	2
Walking or riding to/from school with my child is something I'd like to do (or already do)* **	Regular car	79	13	6
	Occasional AT	93	4	2
	Regular AT	88	7	6
Walking or riding to/from school with my child would take too long** **	Regular car	65	16	19
	Occasional AT	24	14	61
	Regular AT	20	11	68
Walking or riding to/from school is a good form of physical activity for me	Regular car	92	5	2
	Occasional AT	94	2	3
	Regular AT	91	6	3
I get enough physical activity from other things I do	Regular car	31	22	45
	Occasional AT	28	26	46
	Regular AT	29	22	48
The route to school is pleasant for walking or riding** **	Regular car	49	18	31
	Occasional AT	77	13	9
	Regular AT	76	12	12
Walking or riding to/from school with my child is a good way to start the day** **	Regular car	76	16	6
	Occasional AT	92	5	2
	Regular AT	90	6	3
The traffic at school is unpleasant for parents and children walking or riding*	Regular car	33	33	33
	Occasional AT	25	32	43
	Regular AT	36	25	38

Most parents, regardless of mode of travel to school, agreed that walking or riding to/from school is a good opportunity to spend time with their child, and represents a good form of physical activity for parents. The majority of parents, regardless of mode of travel to school, also disagreed or were neutral that they obtained enough physical activity from other things they do, suggesting that parents could potentially view active travel to school as an opportunity to increase their physical activity levels. The majority of parents also agreed that "walking or riding to/from school with my child is a good way to start the day", with significantly more occasional and regular active travellers agreeing with this item.

These findings indicate that, as was the case for children, parent-accompanied active travel to school is generally considered 'a good thing', including for parents who believe that they don't get enough physical activity, and would therefore benefit the most. Active travel to school with their child is also something most parents would like to do (including 79% of regular car travellers). However, the finding that school travel behaviour does not necessarily reflect these positive attitudes to active travel to school indicates that the perceived benefits of active travel to school are insufficient to outweigh many parents' constraints on active travel to school.

One such constraint is that "Walking or riding to/from school with my child would take too long", which had about three times the level of agreement for car travellers than for occasional or regular active travellers, confirming that travel time (actual and perceived) is a key constraint on parent-accompanied active travel to school. Nevertheless, 35% of regular car travellers did not agree that active travel to school would take too long, indicating additional barriers to active travel besides travel time for these parents.

One of these additional barriers appears to be that the route to school is not perceived to be pleasant for walking or riding for about half of regular car travellers, while over three-quarters of occasional and regular active travellers perceived the route to school to be pleasant. Accompanying children to school can address parents' safety concerns about their children's independent travel to school, but if the route to school is unpleasant, parents may be unwilling to walk or ride with their children because it is not enjoyable. In many neighbourhoods, alternative more pleasant routes may be available, but these might also be longer and therefore increase travel time.

Only about a third of parents (one quarter for occasional active travellers) agreed that the traffic at school is unpleasant for parents and children walking or riding to school. This finding indicates that an unpleasant route to school is more of a barrier to parents walking or cycling to school than traffic conditions *at* school.

In summary:

- The health (through physical activity) benefits of active travel to school are widely recognised by parents, and they do not distinguish between parents who use regular car travel and those who use occasional or regular active travel.
- A key difference between car travellers and active travellers is the time required to walk or ride to school; however, as noted earlier, for some parents "takes too long" might have a perceptual as well as an actual component.
- The time competitiveness of driving can be also be reduced by reducing traffic speed in the vicinity of schools and limiting car parking at schools.
- "Takes too long" (for parents) is also potentially a support for children's independent active travel to school; however, as described in Section 3.16, independent active travel to school has other constraints.
- Because most active travel to school is by walking (see Section 3.6), travel time as a barrier could be addressed by encouraging and supporting cycling to school, as cycling is about three times faster than walking.
- A current constraint on parent-accompanied cycling to school is that most accompanying parents are women. In Australia, in contrast to the high-cycling countries in Europe and Asia, women have much lower rates of cycling than men (Garrard et al., 2012).
- Supporting and encouraging more women to use a bicycle for getting around the local neighbourhood (as opposed to the more vigorous style of road cycling preferred my many men) would be likely to increase parent-accompanied cycling to school.

The findings reported in this section also demonstrate that scepticism about the value of active school travel (in the form of physical activity and other benefits) is *not* a constraint on parent-accompanied active travel to school. Very positive attitudes to active travel to school provide a useful foundation for taking action to address the constraints that have been identified in this study. Underlying positive attitudes also indicate that parental support is likely to be good for measures taken to address constraints (eg traffic safety improvements) if framed as measures to improve the safety, convenience and pleasantness of walking and cycling to school for children and parents.

These findings also indicate that creating pleasant walking and riding environments may be more important for increasing parent-accompanied walking and riding to school than the traffic safety measures that are important for children's independent active travel to school. There may be a role for schools to identify safe *and* pleasant routes to school, and for local governments to assist in identifying what makes some routes unpleasant, and how to improve them.

Some active travel to school programs have placed decals on footpaths along common walking routes, aimed at both marking the route and making the walk or ride more interesting. Perhaps a 'parents and kids' walking school bus could be encouraged, as many adults and children enjoy the social aspects of walking with others. This could transition into informal walking school buses as parents and children get to know others. It might also assist parents to teach children safe walking skills, and give them the experience needed to transition to independent travel to school.

A final attitudinal question sought parents' views about factors that might help to increase walking or riding to/from school.

3.18 Parents' attitudes to measures that support walking or riding to/from school

There were few standout supports for walking or riding to school that attracted high levels of agreement from parents (Figure 53).

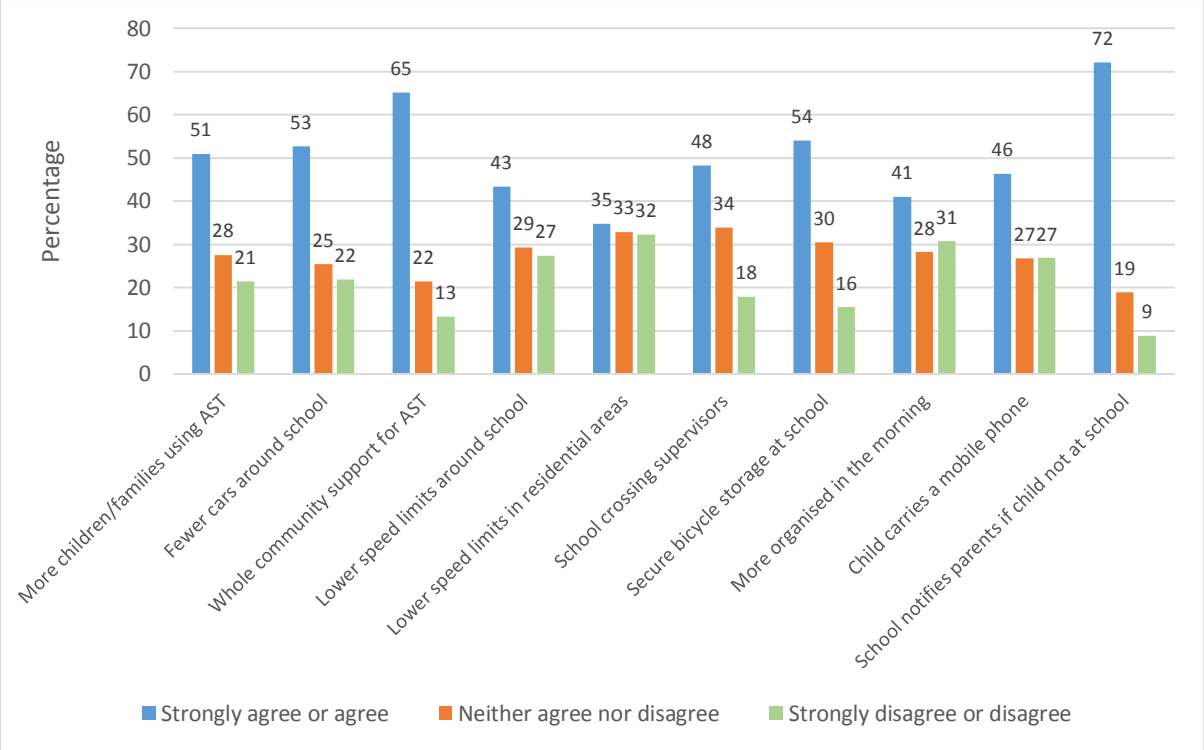

Figure 53: Supports for children walking or riding to/from school

Among the listed supports for children walking or riding to/from school, a school policy of notifying parents if their child has not arrived at school had the highest level of agreement (72%). Children carrying a mobile phone when travelling unaccompanied by an adult has a similar purpose (ie parents being reassured that their child has arrived safely at school, or can contact them quickly if necessary), though this had a lower level of agreement (46%). This lower level of agreement might reflect some parents not wishing their children to have and use mobile phones (especially smart phones) for other purposes (see Focus Group Discussions report).

Whole community support for active travel to school was the second most frequently agreed item (65%). This item taps into social norms, attitudes and behaviours, as does "more children/families using active travel to school" (51% agreement). As discussed in the Literature Review, these social influences on school travel behaviour are important, though relatively neglected factors in active school travel research and promotion. Social support for active travel to school would also help to address the concern among a number of parents that they might be considered irresponsible parents for allowing their child to walk or ride to school independently (see Section 3.16).

Interestingly, social factors tend to be more frequently agreed upon than environmental factors, with secure bicycle storage at school (54%) followed by a number of traffic safety factors: fewer cars around schools (53%); school crossing supervisors (48%); lower speed limits around schools (43%); and lower speed limits in residential areas (35%). Support for lower speed limits as a means of increasing children's active travel to school was relatively evenly distributed across the three response categories (agree, neither agree nor disagree

and disagree), particularly for lower speed limits in residential areas, suggesting a degree of polarisation among parents on this issue.

The following analysis explores responses to these items based on school travel mode (ie regular car travel, occasional active travel or regular active travel to/from school) (Table 8).

Table 8: Parental attitudes to factors that might increase walking or riding to/from school

Item		Agree	Neutral	Disagree
There were more children/families doing it*	Regular car	47	26	26
	Occasional AT	53	26	20
	Regular AT	54	30	15
There were fewer cars around the school	Regular car	49	25	24
	Occasional AT	55	24	21
	Regular AT	56	26	18
The whole community supported walking and riding to/from school**	Regular car	58	23	16
	Occasional AT	69	18	12
	Regular AT	71	20	9
Speed limits were lowered around the school**	Regular car	37	29	32
	Occasional AT	47	29	25
	Regular AT	50	29	20
Speed limits were lowered in residential areas***	Regular car	31	30	38
	Occasional AT	32	39	28
	Regular AT	41	33	24
School pedestrian crossing had crossing supervisors	Regular car	46	33	20
	Occasional AT	47	35	17
	Regular AT	51	34	14
The school provided secure bicycle storage	Regular car	51	29	18
	Occasional AT	52	32	15
	Regular AT	58	30	11
We were more organised in the morning******	Regular car	41	24	32
	Occasional AT	55	20	25
	Regular AT	32	37	30
My child carried a mobile phone when travelling unaccompanied by an adult	Regular car	49	25	25
	Occasional AT	41	32	26
	Regular AT	43	27	29
The school had a policy of notifying parents if children have not arrived at school	Regular car	69	19	11
	Occasional AT	72	19	9
	Regular AT	76	18	6

Significantly more occasional and regular active travellers agreed that they would be more likely to walk or ride to school if more children/families did it. These parents are acknowledging the important role of social influences on active travel to school, in the form of other parents effectively modelling that active travel to school is normal, acceptable, and

supported by the school community. Parents might also be responding to a sense of 'safety in numbers', in that increased numbers of children walking and riding to school contribute to their safety by increasing awareness of their presence among drivers, and increasing personal safety through 'passive surveillance' by passers-by.

This item is also linked to the concept of wider community support for active travel to school, with about two-thirds of parents agreeing that their child would be more likely to walk or ride to school if the whole community supported walking and riding to/from school. Once again, significantly more occasional and regular active travellers agreed with this statement.

The findings for these two items related to social and community support for active travel to school are consistent with higher levels of active travel to school among parents who agreed that their school encourages children to walk and ride to school (see Section 3.7).

About half of parents also agreed that their child would be more likely to walk or ride to/from school if there were fewer cars around the school, but the differences between travel mode groups were not statistically significant.

Less than half of parents agreed that their child would be more likely to walk or ride to school if speed limits were lowered around schools and in residential areas, with significantly more occasional (school speed limits only) and regular (school and residential speed limits) active travellers agreeing that lower speeds would increase active travel to school. This might reflect car travellers not wishing to be 'slowed down' by lower residential and school speed limits.

About half of parents agreed that supervised school pedestrian crossings and secure bicycle storage would support more active travel to school, with no significant differences between travel mode groups; however, these findings might have been impacted by some schools already having these measures in place. There is some evidence that secure bicycle storage is important for children who ride to school, and that providing secure bicycle storage increases cycling to school (Garrard et al., 2009); however, rates of cycling to school are currently low, so this issue may not emerge strongly for the general parent population.

"Being more organised in the morning" emerged in the focus group discussions as a requirement for walking or riding to school rather than driving for some parents. Occasional active travellers had the highest level of agreement with this item (55%), possibly because active or inactive travel to school is more discretionary for this group of parents, and "being organised" favours the choice of active travel over car travel on the day of travel. This interpretation is consistent with occasional active travellers being significantly more likely than either regular car travellers or regular active travellers to agree that "Driving has become a habit" (see Section 3.14). This travel mode group therefore appears to be more amenable to being 'nudged' (possibly by this and other measures) towards more frequent use of active travel to school.

Finally, parents were asked about measures that can reassure parents that their unaccompanied child has arrived safely at school, or have the means to contact parents

quickly if necessary. There was some support for these two measures, particularly for the school notifying parents if children have not arrived at school, with no significant differences for active and inactive travellers for these two items.

Finally, it is interesting to note that for many of the items in this question, while levels of agreement were not high (about 50%), generally more parents "neither agreed nor disagreed" than "disagreed". This indicates a somewhat ambivalent attitude to many items, suggesting that a number of parents may be unsure about whether or not these changes would encourage them to use active travel to school more often. This uncertainty could indicate potential for increasing active travel to school, including by implementing some of these and other measures identified in previous sections for parents who currently drive to school but may be amenable to 'trying out' active travel to school.

3.19 Parents' suggestions for interventions aimed at increasing active travel to school

Parents were also asked to respond to the open-ended question *"Do you have any suggestions for things that could be done (eg by the school, local government or state government) to encourage more walking and cycling to school?"*

A thematic analysis of responses was conducted, which is described in detail in Appendix D. A total of 389 parents/carers provided open-ended comments in response to this question. All comments were read to identify the emergent themes summarised in Table 9. All 389 comments were then analysed by coding the content of the comments into these 11 themes. A number of parents' comments covered more than one theme, giving a total of 487 coded responses.

Table 9: Parents' suggestions for actions to increase active travel to school

Theme	Count (%)
Traffic safety: improve walking infrastructure (including footpaths and road crossings)	149 (31%)
Traffic safety: improve cycling infrastructure	66 (14%)
Traffic safety: lower speeds (including protection from high speed traffic)	58 (12%)
Traffic safety: increased enforcement of road rules, supervision, monitoring	45 (9%)
Traffic safety: increase safe and responsible driving	25 (5%)
Traffic safety: address car parking issues around schools	19 (4%)
Traffic safety: general	17 (3%)
Personal safety	12 (2%)
Promote and support active travel to school	53 (11%)
Organise group walking and cycling	37 (8%)
School planning, location and zoning policies	6 (1%)
TOTAL	487 (100%)

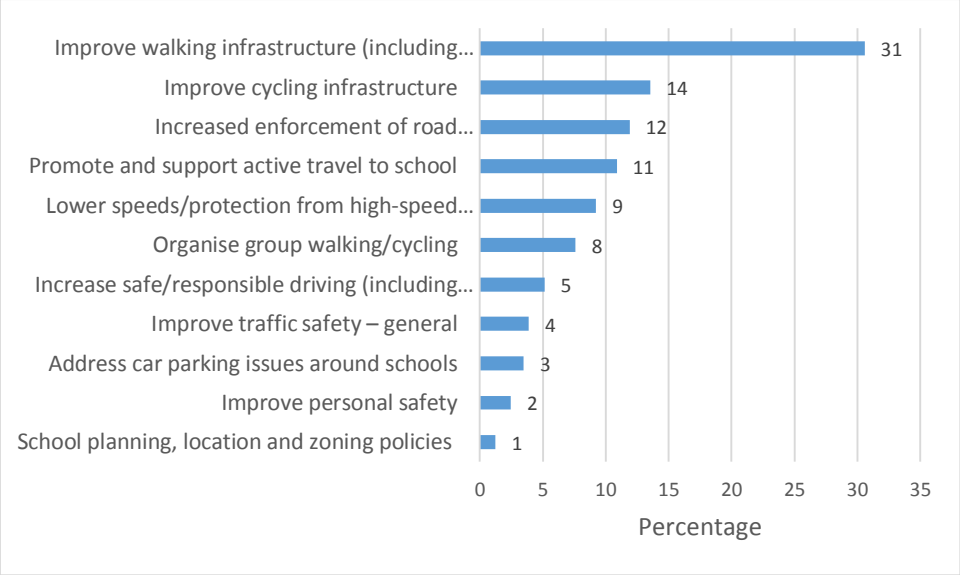

Figure 54: Parents' suggestions for actions to increase active travel to school (percentage of coded responses [487])

As shown in Table 9 and Figure 54, the vast majority of suggestions were for improved traffic safety (78% in total), followed by school encouragement of active travel to school (school programs and organisation of walking/cycling groups) (19% in total), improved personal safety (2%) and school planning, location and zoning policies (1%). A summary of these 11 themes is as follows.

1. Improve walking infrastructure (footpaths, road crossings, intersections)

Suggestions for improving walking infrastructure included the construction of footpaths on streets and roads around schools and in residential areas that currently have no footpaths; providing safe street and road crossings (pedestrian crossings, school crossings, intersections and roundabouts); and footpath maintenance (clear of vegetation, obstructions, potholes, etc).

2. Improve cycling infrastructure (bike paths/lanes, bike storage at schools)

Suggestions for improving cycling infrastructure included the construction of bicycle paths and trails to create a more extended network of safe (usually separated) cycling infrastructure; and secure, weather-protected, readily accessible bicycle storage at schools.

3. Lower speeds/protection from high-speed traffic

A number of parents recommended lower speeds, including around schools, in residential areas and on busy roads that lacked footpaths and/or bicycle paths/lanes. There were suggestions for 25km/hr school zones to be extended (ie in more locations around the school and extended to cover a greater area), and more clearly signed/marked as a low-speed school zone. Suggestions also included traffic-calming measures such as speed humps, and greater enforcement of current speed limits to increase compliance with

current speed limits (including the installation of speed cameras around schools) (also see Theme 4. below).

4. Increased enforcement of road rules/monitoring/supervision of driver behaviour around schools

Many parents suggested greater enforcement, monitoring and supervision of driver behaviour through increased penalties for road rule violations, particularly those that occur around children/schools; supervision of school crossings; a greater police presence; and installation of safety cameras. These recommendations mainly related to speed control; failing to stop for pedestrians at intersections, pedestrian crossings and school crossings; illegal/unsafe parking and opening of car doors; and cars failing to give way to pedestrians and cyclists when reversing (too rapidly) out of driveways and when entering and exiting off-road car parking areas, including at schools.

5. Increase safe/responsible driving (including attitude/cultural change)

This theme is linked to 3. and 4. above, but comments included under this theme were more about increasing safe/responsible driving through measures aimed at improving driver education and raising awareness of the importance of driving safely around children. There were also suggestions for changing driving attitudes and culture to place more importance on active travel modes in terms of both infrastructure provision and safety.

6. Address car parking issues around schools

A number of parents recommended parking restrictions around schools, including establishing no-parking zones in the immediate vicinity of the school and using park and walk facilities from nearby locations. There were also suggestions for improved “drop and go” facilities, and for “no parking” days when walking and cycling access to school is prioritised. One parent recommended increased parking at school to prevent illegal actions such as double parking.

7. Traffic safety – general

This theme refers to general comments about the need to improve traffic safety.

8. Personal safety

This theme refers to suggestions for improving personal safety such as teaching children how to deal with incidents with strangers, and programs such as Safety Houses.

9. Promote and support active travel to school

Parents made a wide range of recommendations for promoting and supporting active travel to school, most of which were school-based measures. These included incorporating road safety (with a focus on safe walking and cycling) within the school curriculum; participation in programs such as Bike Ed (more schools, more frequently, and including younger children); providing incentives for walking and cycling to school; removing school policies prohibiting children under the age of 10 from walking or cycling to school independently;

establishing park and walk venues and routes; early release from class for children who walk or cycle home so they can avoid school traffic; school uniforms (especially for girls) more suited to walking and cycling; and reducing the need for children to transport books and equipment in large, heavy backpacks.

10. Organise group walking and cycling

There was strong support for schools to facilitate the formation of walking and cycling to school groups for parents and children. This was frequently seen as having the added benefit of increasing social contact between school families. While some parents mentioned formal programs such as the 'walking school bus', many referred to schools assisting parents and children to organise more informal walking/cycling groups.

11. School planning, location and zoning policies

These suggestions referred to reducing school travel trip distances though school planning, location and zoning policies.

In summary, parents made a range of suggestions for increasing active travel to school. As was the case for responses to the open-ended question about age of children's independent mobility (see Section 3.11), improving traffic safety (78% of coded comments) was the standout issue that parents raised, followed by school encouragement of active travel to school (school programs and organisation of walking/cycling groups) (19%).

Suggestions for improving traffic safety covered three key principles of the Safe System approach to road safety, namely, safe roads (with a focus on safe walking and cycling infrastructure); safe road users (with a focus on drivers); and safe speeds, including suggestions for both lowering speed limits (especially near schools), and greater compliance with and enforcement of existing speed limits.

Suggestions for improving driver behaviour also included education and awareness of the importance of driving safely around children, and adherence to several road rules that are relatively infrequently policed. These include yielding to pedestrians at pedestrian and school crossings and at intersections, reversing out of driveways, and yielding to pedestrians and cyclists on footpaths when entering and exiting off-street car parking areas, including at schools.

Individually, these traffic code violations may not be considered as important as 'the big three' that are the focus on most road safety campaigns (drink/drug driving, speeding, distracted driving), however, both individually and in combination, they make a large contribution to parents' assessment and perceptions of an environment in which it is safe (or unsafe) for their children to walk or cycle to school.

There was also considerable support from parents for a range of school-based measures for encouraging and supporting active travel to school. These included school policies, programs and activities. There was particularly strong support for schools to facilitate the formation of walking and cycling to school groups for parents and children.

4 CONCLUSIONS AND RECOMMENDATIONS

The case for investing in measures designed to increase currently low levels of active travel to school is strong and multi-sectoral; with well-established benefits for health, education, traffic management, the environment and community liveability (Rojas Lopez & Wong, 2017). However, transitioning from a transport system that has traditionally prioritised travel by motor vehicle to one that also supports alternative mobility choices such as walking and cycling will be a gradual process that will take time. Such a change is not only desirable, but also achievable, as demonstrated by high levels of safe walking and cycling to school and other neighbourhood destinations in many developed countries in Europe and Asia (see Literature Review).

This study has demonstrated that many parents' and children's underlying preferences are for walking or riding to school rather than driving; however, their behaviour does not necessarily reflect these preferences, as children are mainly driven to/from school. This mismatch is indicative of a number of factors intervening between positive attitudes to active travel to school and actual behaviour. These factors are many, varied and interactive; with some operating at the population level, and others specific to individual families (Mitra, 2013). As a consequence of this complexity, there is no 'magic bullet' for increasing active travel to school. Rather, there are a range of measures that can be adopted, with each contributing to a greater or lesser extent to the overall process of change.

In the interests of efficient investment in increasing active travel to school it is appealing to address a small number of factors that appear to have the greatest influence; however, these are also among the most difficult to change, particularly in the short term. These factors include travel distance, travel time, personal safety, traffic safety, and family circumstances and commitments. Nevertheless, as demonstrated by countries that have achieved high levels of active travel to school, these factors are amenable to change over time.

In the shorter term, action can also be taken on the perceptual element of a number of these key factors. An important finding from this study (consistent with the wider body of research) is that a number of these factors act as barriers to active travel to school due to both perceptual and actual components. Increases in active travel to school require establishing safe, pleasant, walkable/bikeable environments whilst also addressing *perceptions* about "too far", "too unsafe from crime", "too unsafe from traffic", and too "young, inexperienced, unskilled and/or vulnerable" to walk or ride to school.

As noted above, there are also a number of factors that are individually less influential, but are more numerous, and often more amenable to change in the short-to-intermediate term. The cumulative impact of numerous small changes can add up to a substantial overall impact, and these should be considered for inclusion in a multi-faceted strategy for increasing active travel to school.

Key findings from this study that provide a basis for recommendations for increasing active travel to school include:

- High levels of child and parent support for active travel to school, including among parents who regularly drive to and from school. This provides a supportive base within school settings and the wider community for measures to increase active travel to school, particularly traffic safety measures.
- Home-school trip distance (especially greater than about 2km) is a barrier to active travel to school, but travel *time* (and parents' perceptions of the relative travel times for active travel and travel by car) appears to be the key consideration for parents, especially for parent-accompanied active travel to school.
- The supports and barriers to active travel to school differ for parent-accompanied and children's independent active travel to school.
- For parent-accompanied active travel to school, important considerations include travel time; parental commitments and associated trip-chaining; parents' use of active travel for other (non-school) purposes; enjoyment of the walking or cycling trip to school, and having a pleasant route to school.
- For children's independent travel to school, child readiness, traffic safety and personal safety are key considerations, with traffic safety the main factor.
- Parents' assessments of traffic safety and personal safety have both actual and perceptual components, and both need to be addressed.
- Parents' own use of active transport to work and other neighbourhood destinations supports both parent-accompanied and independent active travel to school.
- School support for active travel, and participation in active travel programs and activities, together with wider community support for active travel assists in increasing active travel to school.
- Consistent messages from school principals, teachers, local government, police, community leaders, and the media that active travel to school is safe, normal, and widely supported will assist in increasing active travel to school.

The following recommendations are based on these, and additional study findings.

4.1 Address travel distance/time as a barrier to active travel to school

As noted above, travel distance/time is a key constraint on active travel to school; particularly for parent-accompanied active travel to school.

Travel distance/time can be reduced by:

- The development of compact, mixed use neighbourhoods with good street connectivity. These neighbourhood design features help to reduce trip distance/time to schools and other local destinations.
- Avoiding the establishment of fewer and larger primary schools; avoiding locating schools on the outskirts of residential areas; discouraging competition between schools for pupils; and promoting the benefits of children attending the nearest local school. The benefits of these measures include, but are not restricted to reduced school travel distance/time.

- Establishing school enrolment zones, which have contributed to reduced school-related traffic and increased active travel to school in a number of OECD countries (see Literature Review).

Travel *time*, which is a greater constraint for parents than children, can be reduced by:

- Encouraging, supporting and enabling children's independent active travel to school (see below).
- For parent-accompanied active travel to school, encourage and support cycling to school, which is quicker than walking. This will be facilitated by encouraging more women to cycle *as a means of everyday transport* (to address the perception that cycling is a vigorous form of physical activity mainly undertaken by men in lycra travelling at speed on road bikes).
- Promoting more cycling to school for longer distances will require a more extensive network of safe routes to school. This is supported by low-speed traffic-calmed residential areas (see Section 4.3.2), the establishment of which will also support more active travel within communities to multiple local destinations, which in turn supports more active travel to school (see Section 3.10).
- Increase the number of schools conducting the ***Way2Go*** **Bike Ed** program as a means of increasing both parent-accompanied and independent cycling to school.
- Challenge perceptions that the door-to-door travel time for walking or cycling to school is substantially greater than door-to-door driving time. This could be addressed through information and activities exploring actual travel times as a component of schools' overall active school travel policy (see below).
- Measures that make walking and cycling more time-competitive with driving will make driving to school less appealing as a time-saving measure. These include car-exclusion zones around schools, shared pedestrian zones around schools [with low speed limits where drivers must give way to pedestrians], reduced parking around schools, and lower speeds en route to (ie in residential areas) and around schools. These measures serve a dual role, as they also make walking and cycling to school safer for children (see Section 4.3.2).
- Flexible work hours and working from home can assist in addressing constraints on active travel to school associated with paid employment and the need for work-related trip-chaining.

4.2 Encourage and support parent-accompanied active travel to school

Parent-accompanied active travel to school can be supported by reducing trip distance and perceived and actual travel time as described above. Additional recommendations include the following.

Promote parent-accompanied active travel to school as an opportunity for parents to:

- Build physical activity into the activities of daily life for busy parents who "don't have time for physical activity" (a key constraint on physical activity for mothers of school age children).

- Spend time interacting with their children in a pleasant and interesting outdoor environment.
- Teach children important life skills, including those needed to transition to safe, independent mobility.
- Provide children with the experience (in addition to knowledge and skills) required for independent mobility, and observe/assess when children are ready for safe independent mobility.

In addition, factors that support *adult* walking and cycling in general will support parents (usually women) walking or cycling to school with their children.

Accordingly, encourage schools, parents and local councils to identify and promote pleasant, interesting routes to school, and assist in identifying what makes some routes unpleasant, and how they can be improved to make them more appealing.

Opportunities for social interactions are also an important motivation for walking. Facilitating the establishment of informal 'walk to school groups' for parents and children could be a component of schools' overall active school travel policy (see below).

4.3 Encourage, enable and support children's independent active travel to school

As described above, the key constraints on children's independent active travel to school are parents' assessments of child readiness, traffic safety and personal safety.

4.3.1 Child readiness

Chronological age is associated with children's ability to interact safely with the road environment; however, children's safe walking and cycling knowledge, skills and experience are also important.

Recommendations for providing children with the knowledge, skills and experience required for safe walking and riding to school are as follows.

- Recognise that there is a role for both formal safety education (provided by schools and parents) and gaining experience (mainly provided by parents).
- Develop resources to assist schools and parents to provide these learning experiences.
- Resources and guidelines should address both traffic safety and personal safety, and include guidance for parents to (a) assist their children to transition from parent-accompanied walking and cycling to independent walking and cycling, and (b) assess when their children are ready for independent mobility.
- Draw on existing guidelines for enabling and supporting children's independent mobility such as those produced by the VicHealth/La Trobe University project "Parental fear as a barrier to children's independent mobility and resultant physical activity"; including "*How to help your kids get around safely on their own*" (https://www.vichealth.vic.gov.au/media-and-resources/publications/parental-fear). (See Section 4.4).

4.3.2 Traffic safety

In addition to children having the skills and experience required for independent mobility, the travel environment must also be safe, be perceived to be safe and *feel* safe for child pedestrians and cyclists. National and state road safety strategies in Australia are broad-based strategies that potentially impact on all road users, but have traditionally focussed on the safety of motor vehicle occupants rather than more vulnerable/unprotected road users such as pedestrians and cyclists (Garrard et al., 2010; Lydon et al., 2015).

The following recommendations are aimed at addressing this current imbalance through additional road safety measures that focus more specifically on vulnerable/unprotected road users, young road users, and those who are more likely to be moving around in local neighbourhoods and school settings rather than on freeways, highways and arterial roads.

- Assist schools, in partnership with local government and state government departments, to develop a 'Safe System' strategy (ie safe roads, safe speeds, safe vehicles and safe road users) specifically targeting the safety of children walking and riding to school.
- School road safety strategies should be a key component of schools' active school travel policies (see Section 4.4), to demonstrate to parents that a key barrier to active travel to school is being addressed as an integral part of strategies to encourage and support active travel to school.
- Safe Roads should include consistently good walking and cycling infrastructure in local neighbourhoods.
- Consistent with the Safe System approach, the traffic environment around schools should be one that is 'forgiving' of occasional child pedestrian/cyclist mistakes.
- 'Safe neighbourhood and school spaces' should prioritise the safety of children walking and riding to school over motor vehicle flow.
- Safe Speeds should include reduced speed limits in residential areas (ideally 30km/h, based on world's best practice), and reduced speed zones around schools (once, again, 30km/h is the recommended speed). Other options include shared zones around schools (low speed, with drivers required to give way to pedestrians and cyclists).
- Safe Road Users include safe child pedestrians and cyclists, and safe drivers. Driving safely where child pedestrians and cyclists are moving around requires a greater duty of care being placed on drivers, as currently the main emphasis is on parental and child responsibility for the safety of child pedestrians and cyclists.
- Countries with high rates of safe, independent active travel to school (eg the Netherlands, Germany, Denmark, Japan) can provide guidance on road safety strategies that include measures specifically aimed at the safety of vulnerable road users.

4.3.3 Personal safety

As with traffic safety concerns, both perceptual and actual risks need to be addressed. Actual risks can be reduced through improved neighbourhood crime prevention, and conducting protective behaviours type programs that empower children to deal with any incidents that might occur, and reassure parents that their children can deal with these incidents.

It is important that these programs (and all safety communications within the school community) strike the right balance between alerting parents and children to potential risks so that action can be taken to avoid the risks, and the 'alerting' possibly leading to increased and unwarranted fear of 'stranger danger' (see Focus Group Discussion report).

Adopting a school policy of notifying parents if children have not arrived at school, and children carrying basic mobile phones serve to reassure parents that their children have arrived at school safely.

Perceptions that neighbourhoods are unsafe can be the result of neighbourhoods looking unkempt and neglected. The 'broken windows' approach to preventing civil disorder and crime can assist in establishing neighbourhoods that are both safe and *feel* safe (Hinkle and Weisburd, 2008).

Perceptions that neighbourhoods are safe for children walking and cycling to school are also strongly influenced by parents observing that other children *are* walking and cycling to school, and that parents, schools and the wider community support and encourage children travelling actively to school. Parents are unlikely to know the actual risk of child assault by 'strangers' in their neighbourhood, so their risk assessments are frequently based on what other parents and children are saying and doing. Hence, parents' assessments of 'safe for children to walk or cycle to school' are supported by providing parental, school and wider community support for active travel to school, as described in the following section.

4.4 Parental, school and wider community support for active travel to school

Consistent support for active school travel from schools, parents and the wider community provides practical support as well as social approval for parents to allow their children to walk or cycle to school independently, and removes the fear of being blamed for being a neglectful parent. However, this consistent support is dependent on making independent active school travel both safe and perceived to be safe. School policies that promote active school travel and discourage driving to school, and include a safe system strategy for children walking and cycling to school (see Section 4.3.2) facilitate these interconnected processes by establishing an environment that is safe, perceived to be safe, and therefore socially safe for the school community to promote to the parent community.

Recommendations outlined above include several targeting parents in their role of assisting children to acquire the knowledge, skills and experience required for walking and cycling safely to school (see Section 4.3.1). Other forms of parental support include parents themselves using active travel to work and for local neighbourhood trips.

Consequently, all initiatives that encourage a general mode shift from driving to active transport within local communities will help to foster active travel to school. Interventions that focus on females, everyday cycling within local neighbourhoods, and safe cycling infrastructure will be particularly relevant (Garrard et al., 2008).

There is also a role for parents whose children currently travel actively to school to act as role models and advocates for active travel to school within school communities. This addresses social influences on other parents' school travel mode choices by communicating that active travel to school is feasible, safe and 'normal'. Parental involvement in this and other ways, could be included in schools' overall "Active Travel to School" policies (see below).

Wider community support has a similar role. Parents who perceive support for active travel to school from community leaders, local government, SAPOL and road safety authorities are more likely to use active travel to school. Mechanisms to communicate this support to parents and schools should be developed and included in schools' "Active Travel to School" policies (see below).

Finally, schools have an important role in encouraging, enabling and supporting active travel to school. It is recommended that schools be encouraged and supported to become "Active Travel to School" schools, along the lines of "SunSmart" schools and similar programs, whereby an active travel to school policy acts as an umbrella for the implementation of a range of promotional, educational and safety components.

Examples of promotional/educational measures include:

- The development and communication of resources and guidelines such as active transport 'Fact Sheets' (including one targeting the transition from kindergarten to primary school that includes the advantages of being able to travel actively to school).
- Fact sheets should include the educational/learning benefits of children travelling actively to school, and the advantages of regular, daily physical activity associated with active travel to school, including for children transitioning into adolescence when other forms of physical activity such as sport and play decline (Australian Bureau of Statistics, 2013).
- Fact sheets should also include the environmental and community benefits of reduced traffic volumes within neighbourhoods, and the advantages (eg cost savings, environmental benefits) of single vehicle ownership within households.
- Disseminate the guidelines for parents that were recently developed as part of the VicHealth/La Trobe University study of parental fear as a barrier to children's independent mobility. The guidelines: "*How to help your kids get around safely on their own*" (https://www.vichealth.vic.gov.au/media-and-resources/publications/parental-fear) provide summary information on:
    - Why allowing children to get places on their own is so important
    - What you can do to make it easier for your child (and you!)
    - How will you know when the time's right?

The guide also lists stage-specific suggestions to assist parents to guide their children through a three-step process of increasing independence covering dependent, pre-independent and independent mobility.

- Participation in programs and activities that support active travel to school such as ***Way2Go*** **Bike Ed**, Walk2School Day, Ride2School Day, Wheels Day, Road Safety Day, and Park and Walk. Note that while these programs and events are useful for promoting active travel to school, more frequent activities appear to be more effective for achieving sustained changes in travel behaviour. An example is 'Walking, Wheeling Wednesdays" (Brisbane City Council, 2010).
- Safety improvements include those that address personal safety and road safety. These involve education of children and parents, and establishing safe walking and cycling environments for children, as described above (see Sections 4.3.2 and 4.3.3).

In summary, supports and constraints on active travel to school are numerous and multi-faceted, and vary across communities, schools and individuals. A degree of market segmentation and working with individual school communities will be required to optimise strategies for these varying environments and the parents and children who move about within them.

Planning for active travel to school can also benefit from a consideration of frameworks such as the social-ecological model of active/inactive travel behaviour, which emphasises that supports and constraints on active travel to school arise from interactions between individual factors and numerus influences within the built/natural, policy/regulatory, and social/cultural environments.

The community-based social marketing model also includes valuable guidance for promoting sustainable behaviours such as active travel to school. This model emphasises addressing supports and constraints on both the desired (active travel to school) and the competing (car travel to school) behaviours; the importance of addressing perceived and actual constraints; using market segmentation to address differing needs and circumstances (for individuals, schools and communities); and using social influence and communication as part of the behaviour change process (McKenzie-Mohr, 2011).

Finally, findings from this study of high levels of positive attitudes to active travel to school (including among regular car drivers) indicate that measures aimed at increasing the safety, convenience and enjoyment of active travel to school are likely to be supported by school communities.

Appendix A: Online survey questionnaire

School travel survey

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1) Do you have at least one child attending a South Australian primary school?
( ) Yes
( ) No

2) How old is your child? (If you have more than one child attending primary school please answer for the child whose birthday is closest to today's date)
( ) Less than 5 years old
( ) 5 years old
( ) 6 years old
( ) 7 years old
( ) 8 years old
( ) 9 years old
( ) 10 years old
( ) 11 years old
( ) 12 years old
( ) 13 years old
( ) more than 13 years old

3) What school does your child attend?
_____

4) What school year is your child in?
( ) Reception
( ) Year 1
( ) Year 2
( ) Year 3
( ) Year 4
( ) Year 5
( ) Year 6
( ) Year 7

5) What gender is your child?
( ) Male
( ) Female

6) What is the approximate distance from your child's home to school?
( ) Less than 1km
( ) 1km - less than 2km
( ) 2km - less than 3km
( ) 3km - less than 4km
( ) 4km - less than 5km
( ) 5km or more

7) Does your child attend a before-school care program?
( ) No
( ) Once a week
( ) Twice a week
( ) Three times a week
( ) Four times a week
( ) Five times a week

8) Does your child attend an after-school care program?
( ) No
( ) One day a week
( ) Two days a week
( ) Three days a week
( ) Four days a week
( ) Five days a week

9) In a USUAL SCHOOL WEEK how many times does your child travel TO SCHOOL by the following methods?
Please write the number of times (0-5) in each box, giving a total of 5 trips to school a week.

Car	
Walk	
Bicycle	
Scooter or skate	
Park and walk (park car more than 500 metres from school and walk to school):	
Other (eg, bus, train, tram)	
TOTAL	**5**

10) If your child walks, cycles, scoots or skates TO SCHOOL, who does she/he usually travel with?
( ) Parent/carer/other adult
( ) Alone
( ) With friends (no adult)
( ) With siblings (no adult)
( ) Other
( ) My child does not walk, cycle, scoot or skate to school

11) In a USUAL SCHOOL WEEK how many times does your child travel FROM SCHOOL by the following methods?
Please write the number of times in each box (0-5), giving a total of 5 trips from school a week.

Car	
Walk	
Bicycle	
Scooter or skate	
Park and walk (park car more than 500 metres from school and walk to school):	
Other (eg, bus, train, tram)	
TOTAL	**5**

12) If your child walks, cycles, scoots or skates FROM SCHOOL, who does she/he usually travel with?

( ) Parent/carer/other adult
( ) Alone
( ) With friends (no adult)
( ) With siblings (no adult)
( ) Other
( ) My child does not walk, cycle, scoot or skate from school

13) If you travel TO school with your child (by any method), after school drop-off do you:

	Frequently	**Occasionally**	**Never**
Go straight home	( )	( )	( )
Go to work or education (away from home)	( )	( )	( )
Go to shops, services, appointments or other activities	( )	( )	( )
Take another child to day care, kinder or another school	( )	( )	( )
Go somewhere else	( )	( )	( )
I don't travel to school with my child	( )	( )	( )

14) If you pick up your child FROM school, do you then:

	Frequently	**Occasionally**	**Never**
Go straight home	( )	( )	( )
Go to shops, services or appointments	( )	( )	( )
Take your child to after-school activities such as sport, music, dance, etc.	( )	( )	( )
Pick up another child from day care, kinder or another school	( )	( )	( )
Go somewhere else	( )	( )	( )

I don't pick up my child from school	( )	( )	( )

15) This question seeks your ideas about driving children to or from school. Please answer regardless of whether or not you drive to/from school.

	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**
Driving is a convenient way to travel to/from school	( )	( )	( )	( )	( )
Driving is a quick way to get to/from school	( )	( )	( )	( )	( )
Driving is a safe way to get to/from school	( )	( )	( )	( )	( )
My child enjoys being driven to/from school	( )	( )	( )	( )	( )
I enjoy driving to/from school	( )	( )	( )	( )	( )
Traffic congestion at school puts me off driving to/from school	( )	( )	( )	( )	( )
Difficulty parking at school puts me off driving to/from school	( )	( )	( )	( )	( )
Driving to/from school has become a habit, even though walking or	( )	( )	( )	( )	( )

cycling is a possibility					

16) This question seeks your ideas about walking or riding to/from school. 'Riding' includes cycling, scooting or skating. Please answer regardless of whether or not your child does this.

	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**
My child would like to (or currently does) walk or ride to/from school	( )	( )	( )	( )	( )
Walking or riding is a convenient way to travel to/from school	( )	( )	( )	( )	( )
Walking or riding is quicker than driving to/from school	( )	( )	( )	( )	( )
Walking or riding to/from school is a good form of physical activity	( )	( )	( )	( )	( )
My child gets enough physical activity from sport and other activities	( )	( )	( )	( )	( )
Children learn better at school when they walk or ride to school	( )	( )	( )	( )	( )
Walking or riding to/from school helps make the	( )	( )	( )	( )	( )

neighbourhood a pleasant place to be					
Walking or riding to/from school is good for the environment	( )	( )	( )	( )	( )
We live too far away to walk or ride to/from school	( )	( )	( )	( )	( )
Walking or riding to/from school would be too tiring for my child	( )	( )	( )	( )	( )

17) This question is about walking or riding to/from school independently without adult supervision (ie child walking or riding alone or with friends or siblings). Please answer regardless of whether or not your child does this.

	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**
Independent walking or riding to/from school helps children develop useful life skills	( )	( )	( )	( )	( )
Independent walking or riding to/from school saves time for parents	( )	( )	( )	( )	( )
Independent walking or riding to/from school is	( )	( )	( )	( )	( )

convenient for parents					
We live in a neighbourhood that feels safe from crime	( )	( )	( )	( )	( )
Traffic/road conditions on the way to school are unsafe for children to walk or ride independently	( )	( )	( )	( )	( )
Traffic conditions at school are unsafe for independent walking or riding to/from school	( )	( )	( )	( )	( )
My child is too young to walk or ride to school independently	( )	( )	( )	( )	( )
My child doesn't have the skills and experience to walk or ride to school independently	( )	( )	( )	( )	( )
I have taught my child how to walk or ride to school safely	( )	( )	( )	( )	( )
I can depend on my child to walk or ride to school safely	( )	( )	( )	( )	( )
I can depend on drivers to drive safely near the school	( )	( )	( )	( )	( )

I might be considered an irresponsible parent if I let my child walk or ride to school independently	( )	( )	( )	( )	( )

18) This question is about walking or riding (ie cycling, scooting, skating) to/from school with your child. Please answer regardless of whether or not you do this.

	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**
Walking or riding to/from school is a good opportunity to spend time with my child	( )	( )	( )	( )	( )
Walking or riding to/from school with my child is something I'd like to do (or already do)	( )	( )	( )	( )	( )
Walking or riding to/from school with my child would take too long	( )	( )	( )	( )	( )
Walking or riding to/from school with my child is a good form of physical activity for me	( )	( )	( )	( )	( )
I get enough physical activity from other things I do	( )	( )	( )	( )	( )

The route to school is pleasant for walking or riding	( )	( )	( )	( )	( )
Walking or riding to school with my child is a good way to start the day	( )	( )	( )	( )	( )
The traffic at school is unpleasant for parents and children walking or riding	( )	( )	( )	( )	( )

19) Do you agree or disagree with the following statements?
My child would be more likely to walk or ride to/from school if:

	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**
There were more children/families doing it	( )	( )	( )	( )	( )
There were fewer cars around the school	( )	( )	( )	( )	( )
The whole community supported walking and riding to/from school	( )	( )	( )	( )	( )
Speed limits were lowered around the school	( )	( )	( )	( )	( )

Speed limits were lowered in residential areas	( )	( )	( )	( )	( )
School pedestrian crossing had crossing supervisors	( )	( )	( )	( )	( )
The school provided secure bicycle storage	( )	( )	( )	( )	( )
We were more organised in the morning	( )	( )	( )	( )	( )
My child carried a mobile phone when travelling unaccompanied by an adult	( )	( )	( )	( )	( )
The school had a policy of notifying parents if children have not arrived at school	( )	( )	( )	( )	( )

20) Do you agree or disagree with the following statement?

	Strongly agree	**Agree**	**Neither agree nor disagree**	**Disagree**	**Strongly disagree**
My child's school encourages children to walk and ride to school	( )	( )	( )	( )	( )

21) Have school activities such as Walk2School day, Ride2School day, Wheels day, Road Safety day, or Park and Walk resulted in your child walking or riding to/from school more often?
( ) Yes, on a more regular basis
( ) Yes, but only on the special days
( ) No
( ) The school doesn't have any of these activities

22) Has your child participated in the *Way2Go* Bike Ed program?
( ) Yes
( ) No
( ) Don't know

23) (If "Yes") Has participation in the *Way2Go* Bike Ed program assisted your child to ride a bicycle more often?
( ) Yes
( ) No
( ) Don't know

24) Do you have any suggestions for things that could be done (eg by the school, local council or state government) to encourage more walking and cycling to school?
_____

25) Do you or your partner walk or cycle to places in the neighbourhood (other than school) with your child?
( ) Never or rarely
( ) About once a year
( ) About once every three months
( ) About once a month
( ) Once or twice a week
( ) 3-5 times a week
( ) On most days

26) At what age would you (or did you) allow your child to walk or cycle alone for short distances (up to 2km)?
( ) 5 years or less
( ) 6 years
( ) 7 years
( ) 8 years
( ) 9 years
( ) 10 years
( ) 11 years
( ) 12 years
( ) 13 years
( ) 14 years
( ) 15 years
( ) 16 years and over
( ) Don't know

Would you like to add anything about this question or your response?:

_____

27) What is your gender?
( ) Male
( ) Female
( ) Other

28) Which age group do you belong to?
( ) Less than 20 years
( ) 20-29 years
( ) 30-39 years
( ) 40-49 years
( ) 50-59 years
( ) 60-69 years
( ) 70 years and over

29) Where were you born?
( ) Australia
( ) Overseas

30) What is your postcode?

_____

31) Is there another parent or guardian living in your household?
( ) Yes
( ) No

32) What is the age of each child aged 16 years and younger living in your household?

	Age of child
Child 1	
Child 2	
Child 3	
Child 4	
Child 5	
Child 6	
Child 7	
Child 8	

33) How many registered motor vehicles do you have in your household? Include motorbikes and motor scooters.
( ) No motor vehicles
( ) One motor vehicle
( ) Two motor vehicles
( ) Three motor vehicles
( ) Four or more motor vehicles

34) Which one of the following best describes your situation?
( ) Employed full-time
( ) Employed part-time
( ) Mainly engaged in home duties
( ) Full-time student
( ) Part-time student
( ) Retired
( ) Other

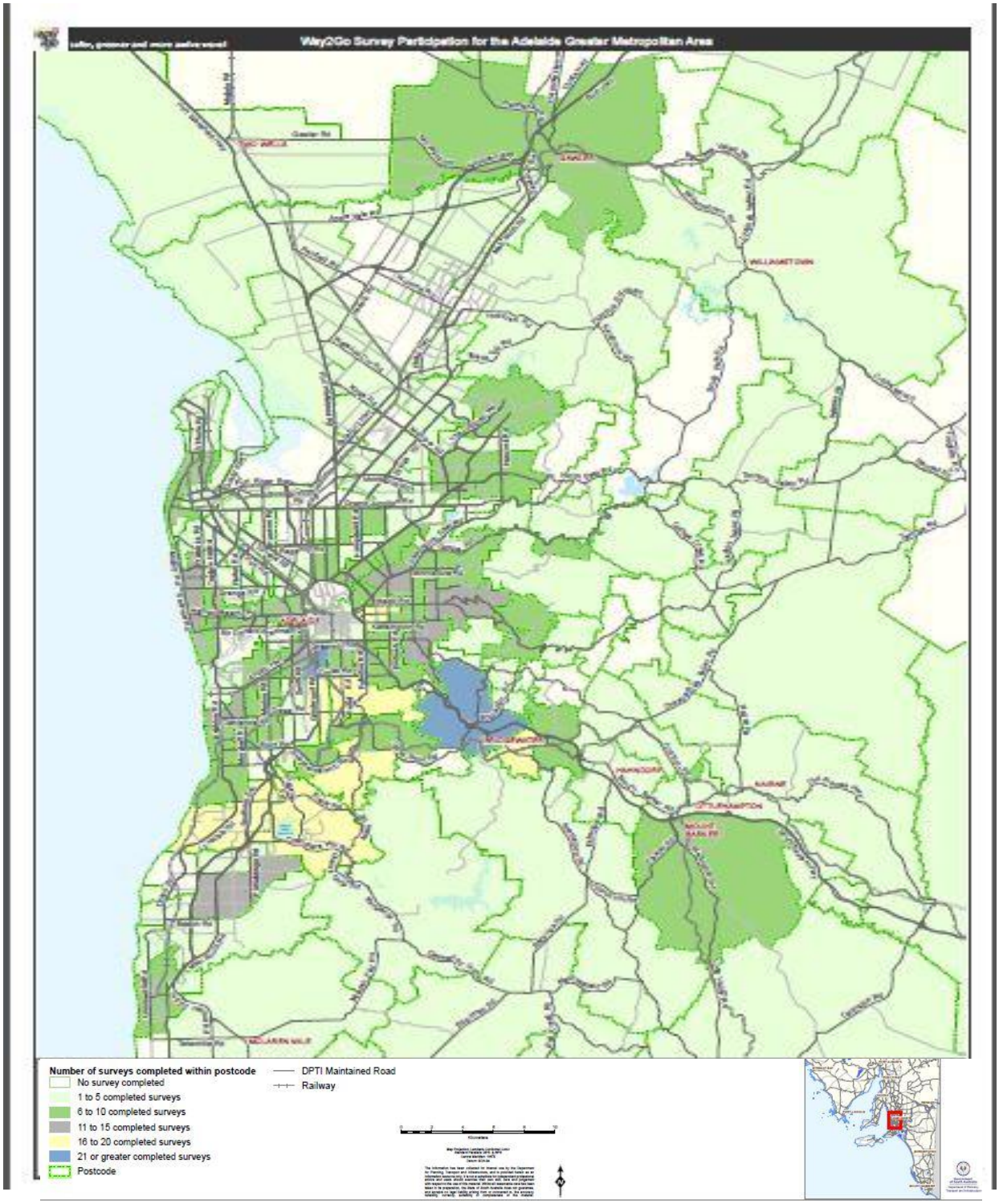
35) How do you usually travel to your work or place of study?
( ) By car
( ) By public transport
( ) By bicycle
( ) By foot
( ) Work/study from home

36) Would you like to add any comments about travelling to/from school?

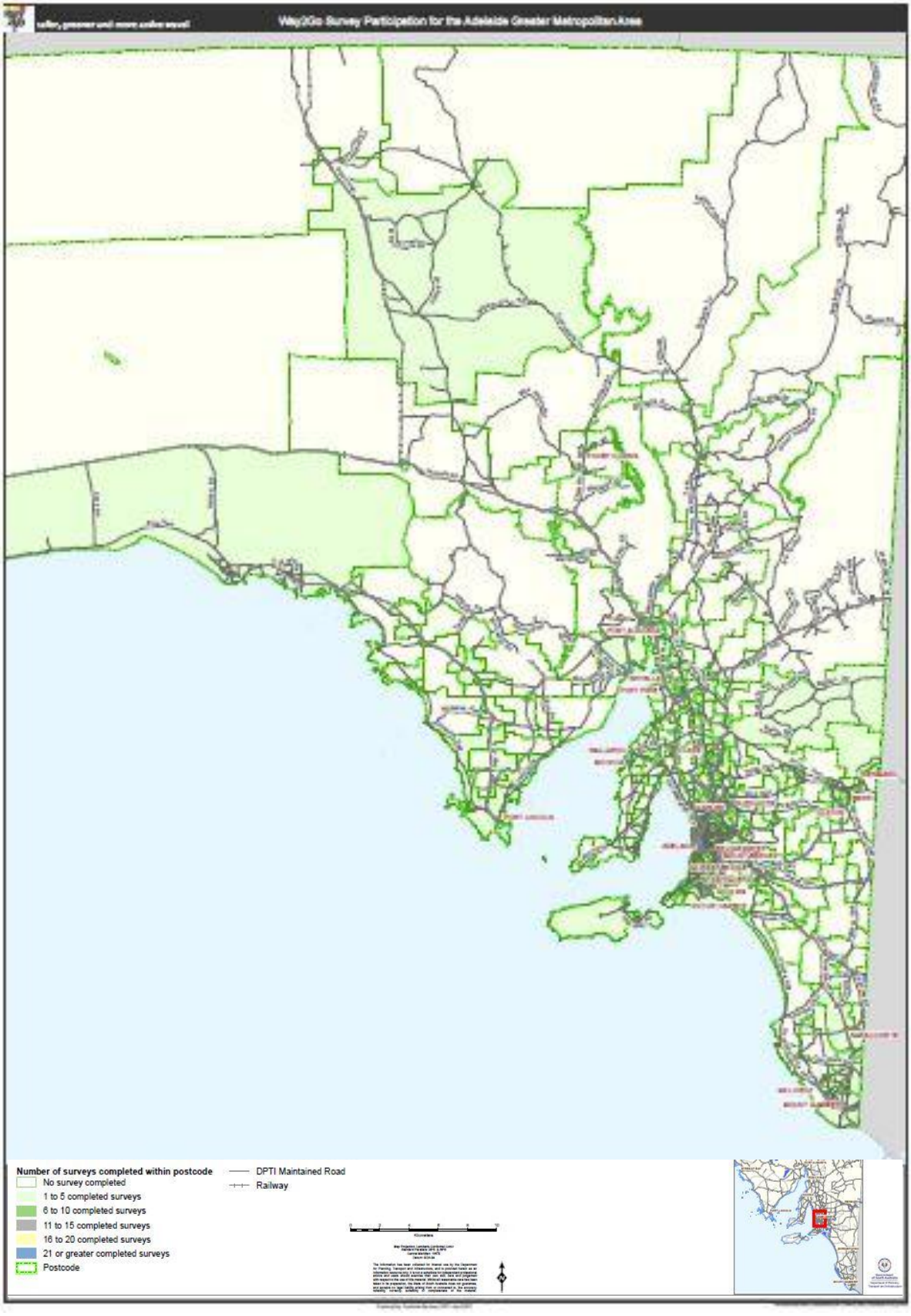
_____

Thank You!

Appendix B: Location of survey respondents (Adelaide Greater Metropolitan Area)



Appendix B: Location of survey respondents (South Australia)



Appendix C: Analysis of open-ended comments in response to question *"At what age would you (or did you) allow your child to walk or cycle alone for short distances (up to 2km)*? Would you like to add anything about this question or your response?

A total of 316 parents/carers provided open-ended comments in response to this question. All comments were read to identify the emergent themes summarised in Table 1. All 316 comments were then analysed by coding the content of the comments into these 14 themes. This resulted in 483 coded responses with an average of 1.5 coded responses per parent/carer (who provided a comment).

Table 1: Parents' comments on children's independent mobility: key themes

Theme	N	%
1. Traffic safety	171	35
2. Depends on child	55	11
3. Distance/route	46	10
4. If accompanied by sibling/friend	42	9
5. Social safety ('stranger danger')	34	7
6. Would like to, but…	26	5
7. Providing children with IM skills	25	5
8. General safety concerns	19	4
9. Unsure	14	3
10. Other	14	3
11. Benefits/enjoyment of independent mobility	11	2
12. Social factors	9	2
13. Mobile phone/other communication	9	2
14. Depends on destination	8	2
TOTAL	**483**	**100**

The large 'Traffic safety' theme was further broken down into the sub-categories summarised in Table 2.

Table 2: Traffic safety sub-themes: number of responses and percentages[12] of responses

Traffic safety sub-themes	N	%
Infrastructure/safety en route	79	16.4
Traffic speed	25	5.2
Unsafe driver behaviour	23	4.8
General road safety concerns	18	3.7
Infrastructure/safety at school	17	3.5
Negative experiences	9	1.9
TOTAL	**171**	**35.4**

[12] Percentages based on the total number of responses (N = 483).

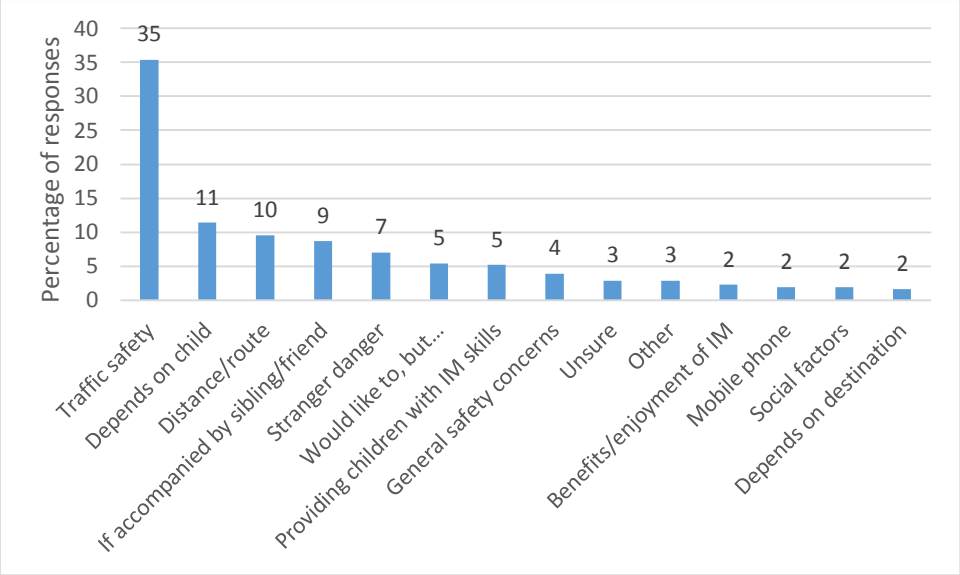


Figure 1: Parents' comments on children's independent mobility: key themes

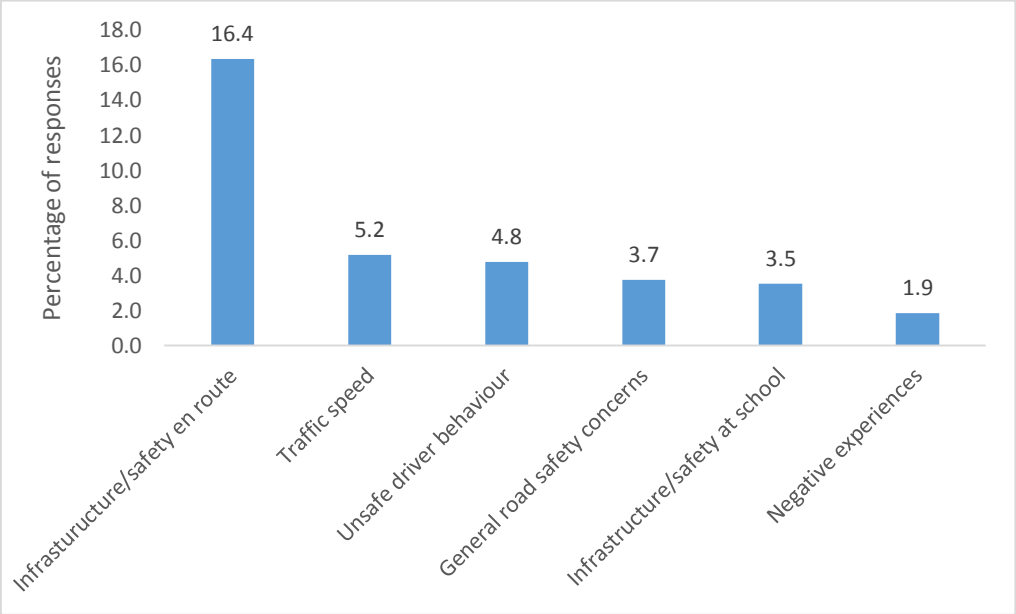


Figure 2: Traffic safety issues (percentage of total responses)

Results

While the question that parents commented on was about the age at which they would (or did) allow their child to walk or cycle alone for short distances, most comments were effectively reasons why parents do or do not allow their children independent mobility. They therefore provide insight into parent-identified barriers to children's independent active travel to school.

Many parents also mentioned multiple factors (eg work, distance, other children, traffic safety, personal safety), for example:

"Age, experience, steep hills, narrow footpaths, no bicycle lanes, attempts by predators trying to abduct children, multiple street crossings and a major arterial road crossing between our home and the primary school are the primary factors in not letting my child ride to/from school alone."

"We live at the Western fringe of the city and my son attends [named] School. He could ride along the cycle paths alongside West Tce (approx. 6 lane major arterial road) however, traffic congestion/noise etc. would impact on his level of attention, and the cycle path is dominated by lycra commuter/protein people who would probably shout at him to get out of the way. His sister would be able to ride with him halfway but won't do it due to having to carry an immense bag of high-school books and a laptop."

As indicated in Tables 1 and 2, and illustrated in Figures 1 and 2, traffic safety concerns are the stand-out reason for parents restricting their children's independent mobility; however, this major concern is accompanied by a wide range of other issues, which together contribute to 65% of all coded responses. These findings indicate the importance of addressing the key factor (traffic safety) whilst also considering multiple additional factors (some of which are potentially amenable to change), each of which might only have a small impact alone.

The key themes are described below.

1. Traffic safety (171 comments)

Traffic safety is the main reason for parents restricting their children's independent mobility. A very small number of comments were positive comments about infrastructure that supports children's safe mobility (eg being able to ride bicycles on footpaths; though another parent expressed concerns about cyclists and pedestrians sharing footpaths).

Traffic safety concerns included:

- Infrastructure/safety en route
- Traffic speed
- Unsafe driver behaviour
- General road safety concerns
- Infrastructure/safety at school
- Negative experiences

The key traffic safety concern was about ***poor infrastructure*** or other unsafe conditions en route to children's destinations (most references were to school travel, though occasionally parents referred to places like parks, shops, and relatives' or friends' houses) (79 comments) (Table 2).

Comments included lack of footpaths or bike lanes, traffic volume (speed was coded separately – see below), having to cross busy roads, having to walk or cycle on the road due to poor quality or absent footpaths or bike paths, and lack of continuity of safe walking or cycling infrastructure en route from home to the child's destination. A number of parents also noted that they would permit walking but not cycling; for example:

"Regarding answers that lumped attitude to walking/riding together it should be noted the answers are not necessarily the same. I am sure my kids would be ready to walk to school alone before they are ready to ride alone purely due to traffic and safety issues for example."

Examples of other comments within the theme of Infrastructure/safety en route include:

"At the moment, there are NO footpaths or bike paths and people drive at high speeds constantly with impunity."

"Will not allow them to walk or cycle at any age as the roads around our area are too dangerous for children."

"The limitations for us are: taking all children to drop off eldest - riding or walking is not always feasible. Although we live close to school my child has to cross 3 main thoroughfares into the estate to get there all with blind spots and are curved limiting visibility but not car speed."

"Roads in the Adelaide Hills are very dangerous for riding and walking. Even when I do walk my daughter to school there are instances where you don't feel safe due to blind corners, narrow roads and lack of footpaths. Unfortunately school time coincides with heavy traffic. I would never ride her to school as the roads are far too dangerous for that. I am only just letting my son ride on the roads and he is age 15."

"We have tried riding daily to school, but I don't feel it is safe enough for cyclists on the roads, cycling lanes or footpaths. It doesn't matter whether my son rides in front or behind me, the types of danger change, but the risk levels remain too high. Morning drivers' reflexes are slower, they are not as alert to cyclists. Fear factors include: driveways, side roads, car doors opening... *We have had so many near misses already that we both prefer and feel safer driving."*

Several comments reflected the notion of the negative impact of the 'weakest link' en route to school in terms of walking and cycling safety:

"Have faith in my child's ability but concerns about isolated points along routes."

"Crossing the main road near our house to get to the "back streets" is the biggest concern in our willingness to let the kids ride/scoot/walk to school independently."

"Most SA urban areas have roads that can be used for cycling, but they are always shared with cars, which makes for increased risk. The further away from metropolitan areas, the less interconnected the bike paths become. If more dedicated bike paths and crossings could be integrated, cycling would become safer, and parents would feel more at ease letting their children cycle."

These comments suggest that sections and areas of relatively good walking and cycling infrastructure may not be used if access to and use this infrastructure is impeded by an unsafe section, crossing, etc. This is the infrastructure equivalent of parents' concerns about their child making "one false move" (see Literature Review). Parents require consistency of safe walking and cycling infrastructure along the route to their destination to allow their children independent mobility.

Some parents' comments also revealed that poor walking and cycling infrastructure and conditions makes walking and cycling stressful and unpleasant as well as hazardous, thus negating the potential motivating factor of enjoyment of walking or cycling (see Section 3.15):

"The lack of safe footpaths are the only reason we do not walk very often. I have a 7 year old, 3 year old and a 16 month old in a pusher. I feel very anxious and unsafe walking with them on the road as

there is nowhere safe to walk. It is dangerous. We cannot relax and enjoy the walk. We would definitely walk or ride if we had footpaths."

"Our neighbourhood would be a magnificent place to walk and ride if something was done about the safety of the roads."

Traffic speed was the next most frequently mentioned road safety concern (25 comments) (Table 2). Responses included general comments about the dangers of vehicle speed for child pedestrians and cyclists; concerns about lack of enforcement of speed limits; requests for school zone speed reductions; and lack of effectiveness of current school zone speed reduction measures. Some comments referred to the desirability of speed limit reductions, while others referred to 'speeding drivers' (possibly, but not necessarily travelling above the speed limit).

Examples of comments include:

"Not safe enough with speeding cars….."

"Despite speed restrictions at school time, many motorists still speed around the crossing point."

"The removal of the yellow flashing lights around schools in South Australia and relying on 'if children present' speed signs does not work. I have reported numerous drivers for failing to reduce speed in a school zone, include SAPOL cars and the answer I get every time is well maybe your child was not visible. No trees or obstacles for 300 metres and my child at fault because drivers do not pay attention. At least the old lights warned the driver to slow down."

"The main problem with walking to/from school is cars driving too fast, that has to be controlled furiously, and that will leave space for children to walk, run, ride, play, etc."

"Too much traffic in the morning that is going too fast to be safe for kids. My children need more practice at cycling walking which I would be happy to do if the traffic was safer. Traffic is my only safety concern for the children in Mt Marker."

"Hopefully the feedback will assist with speed cameras placed at [named] school crossings to prevent a tragic incident occurring."

"There is no safety in terms of vehicles speed etc on our route to school."

"The road in front of the school has a 60km/h road speed and cars frequently go faster than this. The road has many curves and so cars can only be seen at the last minute. There are no footpaths and it is very difficult to cross safely. I would let my children walk part way to school however don't because of this safety issue."

"A little more signage about the speed/children present to slow the traffic down would be of great benefit for many families."

"With an 80 km speed limit on our road and cars regularly cutting corners and speeding, this will never happen until they are in their teens."

"Our school needs the roads around it to be designated school zones and the speed lowered during school hours or when children are present."

"I believe School zone speed limit would be much appreciated by all parents."

Unsafe driver behaviour was the next most frequently mentioned road safety concern (23 comments) (Table 2). Responses included a range of driver behaviours that are not usually the focus of road safety campaigns and road safety messages in Australia, which tend to focus more on speed, drink/drug driving and distracted driving.

Examples include:

"There are too many idiot drivers on the road for it to ever be safe for kids, regardless of whether it is near the school or not."

"Earlier if something were done about some parents in a hurry driving into kerbs and footpaths with large cars, with sometimes complete disregard to other children's safety."

"Vehicles, especially 4WDs need to slow down, obey STOP signs and generally realise that they are not the centre of the universe."

"I would trust my child, but not other people."

"I have no issues with allowing my children to walk or cycle to school if the traffic lighted pedestrian crossing outside Brighton Road was a safe place for children to cross independently. It is not. I have taught my children that even if the light indicates that the green man is visible, they should expect a car to ignore the red stop light. This is because they do. In 2 years, we have had 5 near misses, where cars have jumped the red light."

The above comment indicates that measures designed to improve safety for pedestrians and cyclists (eg signalised pedestrian crossings) may have limited impact on children's active travel to school if drivers cannot be relied upon to obey the road rules. As this comment illustrates, illegal and unsafe driver behaviour around pedestrians and cyclists shifts the responsibility for safety from drivers to child pedestrians and cyclists, adding another level of responsibility for children to behave safely under all circumstances, and on parents to teach their children how to deal safely with these circumstances. As some parents commented:

"Drivers in SA are selfish and dangerous, having the skills to deal with this comes in later in childhood."

"The main limiting factor is relying on child to negotiate traffic & understand that drivers aren't necessarily reliable."

Many of the above comments highlight that illegal and other unsafe driver behaviours pose a threat to child safety, leading parents to restrict their children's independent mobility, sometimes beyond the age at which many children are considered to have the capacity to walk or cycle independently (usually aged 10 years and over). Traditionally, the focus of child road safety has been on children's capabilities and experience, but these parents' responses highlight the two-way nature of child/driver interactions. In an environment in which drivers cannot be trusted to drive legally and safely, children must learn, not only to obey the road rules, but also how to deal with unexpected and illegal driver behaviours. This requires that children acquire additional, higher-order skill sets.

As described in the road safety literature, many driving behaviours are governed by unwritten norms of behaviour that sit alongside the system of road rules, some of which involve regularly breaking

the formal road rules. It is this set of normative road user behaviours that children must acquire in addition to knowledge of the road rules and the ability to obey them. It is perhaps not surprising that these requirements are perceived by parents as requiring children to be older and more capable of dealing with these more complex traffic environments than would be required in a safer traffic environment where driver behavioural norms include a high duty of care towards vulnerable road users (as exists in many European countries with high levels of children walking and cycling to school) (see Literature Review). This finding is also consistent with the important role played by parents in not only teaching children the road rules relevant to walking and cycling, but also giving them the practice and experience to understand and respond to the 'unwritten' codes of traffic behaviour.

The next most frequently mentioned traffic safety sub-theme was ***general road safety concerns*** (19 comments) (Table 2). These comments were of a general nature, for example:

"Not that nervous about anything related to possible kidnapping etc risks, just road safety issues."

"The roads are not safe and not many kids do it."

"Traffic is SO dangerous and congested on Keithcot Farm Drive, someone will get killed there."

"It's too unsafe on the roads in our area."

In the focus group discussions with parents that were conducted in an earlier phase of this study, parents raised road safety concerns *at* school as well as *en route to* school as constraints on active travel to school. In this analysis of survey data about children's independent mobility, ***Infrastructure/safety at school*** was mentioned by 17 parents (Table 2).

Examples of comments include:

"The most dangerous area of the route from home to school is the area immediately around the school, where parents do not drop off safely. Additional traffic control could assist."

"The traffic congestion around our school and regular unsafe driving practices are a major concern to me."

"I think the whole school zone should be car free to encourage walking."

"School parking is shambolic! Should have an option of roam zone school buses."

"Our school does not have any school crossing and cars speed along Eyre Street Seaview Downs. If there was a crossing there that was manned I would feel more comfortable about walking to school."

"The drop off/parking situation is less than ideal (can be dangerous). Parents do stupid/dangerous things in cars & ignore requests by the school re basic courtesy/rules."

"Street design and school property access go a long way to creating greater traffic congestion and or undermines the safety of walking immediately around the entry points to the school."

While there were many more parents' comments about road safety concerns en route to school, road safety *at* school comprises one of the multiple, though less commonly mentioned constraints on independent (and possibly parent-accompanied) active travel to school. Road safety *a*t school

may also be more amenable to road safety improvement measures for children walking and cycling to school as it involves a smaller area than the wider school catchment area, and is a focal point for the movement of children. Measures designed to improve the safety of children (eg reduced speed limits near schools) appear to be more acceptable within the community than more general road safety measures.

The final road safety sub-theme, mentioned by nine parents (see Table 2), was parents' descriptions of **Negative experiences** experienced by parents and/or children while walking or cycling to or from school or other destinations. Examples include:

"I don't feel comfortable letting my child ride on the road with or without me as I don't trust drivers (have been hit and seriously injured twice myself)."

"We have had so many near misses already that we both prefer and feel safer driving."

"The footpaths along Snows Road (and others) are too narrow and vegetation further impinges along them, forcing the children to walk along the gutter in places. Last week my child was almost hit by a fast moving car when doing this."

"….as a driver I see risky behaviour from both cars and adult cyclists on the road, and I consider the risk to be too high for my child to currently ride to school."

These comments are a reminder that there are both perceptual and actual components to parents' road safety concerns for their children. When parents experience crashes, injuries or near miss incidents they are a powerful reminder that the road system can be a hazardous place for their children. Some of these comments refer to the parents' own experiences using the road network, indicating that parents' concerns for their children using active transport to school and other destinations are shaped by the wider road transport system and general driver behaviour. Road safety improvements in general are therefore likely to create safer conditions for children walking and cycling to school and other places, and increase the likelihood that parents will allow their children greater independent mobility.

2. Depends on the child (55 comments)

After traffic safety concerns, the second most frequently mentioned theme was that age of independent mobility depends on the child. Some parents commented that their child was too young or was not yet capable of safe independent mobility, while others referred to children's knowledge, skills, maturity, experience and capabilities, which are only partly dependent on children's age. Examples of parent's comments include:

"It's totally dependent on each child."

"I think 10yrs, that is what we did with our older children but we would evaluate with this child."

"Age could vary depending on development of child."

"It isn't the age but when the individual child is developmental and cognitively mature enough."

"For me, it's not about age.. but rather emotional maturity and whether the child has exhibited behaviour that suggests they can walk to/from school safely. My school aged children (11, 9 and 7)

do not walk to school because despite being taught multiple times about road safety, continue to make bad choices around roads (in my presence)."

".....it's not an age thing, it's being confident that my child can cross roads and deal with south road (busy) confidently. Until this time, I won't allow my children to walk to school alone."

"Their age depends on their skills and experience or if they are with siblings."

"Each child is actually different and it's more a question of capacity rather than age. For example my 12 year old was quite independent and after a series of rides to schools with Dad when he was 9 we knew he was capable of riding approximately 3.6km to school and back safely so when he started the new school year (Year 5 turning 10 that year) he had the option to ride to school. Prior to this when he was 7-8 he was able to walk or ride to his grandparents' house or to the local delis."

Many of these comments indicate that parents consider that their child's demonstrated ability to walk or cycle safely on their own (or with siblings or friends – see Sections 3.11 and 3.16) is a crucial determinant of independent mobility, rather than actual age (though the two are clearly related). As illustrated in the last comment above, these abilities are commonly taught and assessed by parents, indicating that the time, interest, commitment and investment of parents in assisting their children to acquire these skills is likely to have a considerable impact on whether or not children are permitted independent mobility, including walking or cycling to school, and at what age.

Resources and programs designed to assist parents in this role may contribute to children acquiring these skills, and, consequently, parents being more confident that their child has the ability to walk or cycle safely without adult supervision.

3. Distance/route (46 comments)

The third most frequently mentioned theme was distance/route. These included references to "too far", "too hilly", or "too much traffic". Positive, supportive comments about distance/route included short travel distance to destinations and familiarity with the route. For example, some parents mentioned allowing children to walk to nearby parks by themselves, or to walk the dog, or visit nearby relatives or friends.

Examples of comments referring to route/distance include:

"We live too far away from the school and on country roads with no bike path so although we are cycle friendly, there is no way my kids can ever ride to school from our current house."

"Depends on route and traffic."

"The route to our school is very hilly and there are no bike lanes."

"With a phone, known route and only daytime."

"Depending on how comfortable I am with the roads and area where my child goes."

"We live at the top of a steep hill with no footpath on a busy road!"

"This would depend on the route to school."

"We need to get out more to build confidence and abilities in our children to cope with the terrain as well as manage emergency braking and control of their bikes."

"If we lived closer to the school walking/riding would definitely be an option!"

4. **If accompanied by sibling/friend** (42 comments)

Another "it depends" theme referred to parents' comments about being more likely to allow their child to walk or cycle independently if accompanied by a sibling or friend. Sometimes these comments referred to school travel, but also short local trips to parks, shops, or relatives' or friends' houses. Some parents were more comfortable about children walking the dog than walking or cycling alone.

The reasons for parents preferring sibling/friend accompaniment over walking or cycling alone were not always clear, though there were references to both improved personal safety and improved road safety. A number of parents perceived children to be more 'vulnerable' when travelling alone. Also, particularly for sibling accompaniment, the younger child is assisted by the presence of an older, presumably more capable child who can assist with supervising the younger child.

The other role of sibling/friend/dog accompaniment appears to be as an intermediate transitioning function from parental supervision through to sibling/friend accompaniment and finally unconditional independent travel alone.

Examples of parents' comments in this theme include:

"It's a big step for many parents to let their kids walk/cycle on their own. An interim step is walking with a group of other kids - I'm comfortable for my kids (8 and 11) to do that sometimes now, but not for either of them to travel on their own."

"I only allow my child to walk some days unaccompanied by an adult as long as she is with a group of children who I feel are responsible and are older than 10yrs old and have good road sense."

"The child I am responding about is the 2nd in our family. Once her older sibling is old enough to navigate the traffic, they will be able to walk together."

"The rule is that my 3 kids 11,11 and 13 stay together."

"It would be good to know what kids in our area would like to ride so they could ride as a group together. Set up a Facebook page?"

"If travelling with others the age might be younger, say 10 years to local park with friends.
I would love my daughter to ride to school and I think it would be great for schools to organise riding clubs among students in each area, so parents know the groups, and time or meeting point for the whole group to ride to school."

"My kids walk in pairs to the shops (about a mile) for errands. It's nice to see them step up to that responsibility."

"My child walks/scooters to local supermarket with a friend."

"I allow my 10yo to walk or cycle to school with her 12yo sibling. She is also allowed to walk to the park just down the street with her 8yo brother and/or with the dog. I wouldn't let her walk to school on her own get."

"We used to live closer to a school and I would let my son walk to and from school with other children on the same route."

The following comments expresses concern about the perceived vulnerability of a young child walking or cycling alone:

"My main concern about my child walking is that for part of the trip she is walking alone. I am concerned that given her age and gender she might be a target for someone who sees her as an easy person to abduct. I am much more comfortable with her walking with others, or riding her bike as I feel that lessens the risk."

"Only with a friend as I believe times have changed for child safety."

A small number of parents were more comfortable about children walking the dog independently:

"Would rather her to walk with family dog."

"My child walks the family dog most days on her own."

5. ***Social safety*** *('stranger danger'*) (34 comments)

Social safety ('stranger danger') comments included negative experiences, reports of incidents and school warnings; some comments about the extent to which 'stranger danger' was a real threat, or a cause of unnecessary fear and worry; and also children's concerns about 'stranger danger'.

Examples of comments include:

"Stranger Danger is my biggest concern."

"Not safe enough with…..undesirable people around."

"There have been a couple of occasions where it has been reported that children have been followed by a van which increases concern about walking alone."

"I have a 10 year old and 7 year old and I do not feel confident that they would be safe walking home. It is a 15-20 minute walk however there have been instances of cars trying to lure kids away in the area in the last few years."

"I am still worried, at that age, there is no community 'protection' for kids, especially girls, from strangers. There have been a number of attempted abductions and strange events around [named] schools where the perpetrators have never been apprehended and I would not want any of my girls to become the first victim. There are no community agreements on safe zones or practices if children are approached by predators - and they do exist. But where do kids go if they are threatened?"

"I'm not sure what could be done to allay a parent's fear of their child being taken by a predator/criminal etc while walking to or from school. That is my main reason for not wanting my

child to walk to school and we are in a major school zone - Unley High, Mitcham Girls, Mitcham primary & St Joseph's Kingswood."

"Riding, scooting or walking to school with the kids is something I have been trying to work towards for a while. I'm scared of kids being abducted….."

"I'm terrified of my child being abducted/attacked so cannot see myself allowing my child to walk/cycle alone while these things happen in my city."

"We live too far away to have him cycle or walk on his own. Repeatedly we are receiving notifications from schools around the area about children being nearly abducted whilst walking to and from school. Not safe."

"We are generally more nervous about protecting our kids from predators as you never know when they will act. It is a main factor for not letting the kids walk alone."

"Sadly society has allowed predators to roam the streets. We need a strong government and Law agencies to create a safe neighbourhood."

"It's hard to let young children to walk alone especially with the incidences of kids being kidnapped :("

"It would be great to allow the kids to ride/walk to school alone. While traffic safety is a concern parents are able to teach children how to be safe on the road (in conjunction with the way2go program). My primary concern as a parent in the city is the risk of assault or potential abduction. I don't want to scare the kids by telling them this but at the same time educating them of the possibility is essential. There have been a few recent reports this year of children being approached and this has deterred me from allowing my girls (11 & 8) to walk home alone even though we are only 2kms away from school. We live in a safe neighbourhood at Henley Beach."

"The whole Daniel Morecombe thing scares me."

"I am haunted by the story of Daniel Morecombe."

"I have 8.5yr and 5.5yr girls, who would love to ride to school. Independent travel to school is scary to parents based on the amount paranoia around children getting abducted or abused - and it shouldn't be that way, but unfortunately it is."

"There….have been a number of attempt abductions."

"The issue is paedophiles. My son's friend was nearly abducted in [name]. There have been 2 attempts in [name] as well. Nothing has been done."

"Unfortunately, probably not til high school. I'm too scared of my child getting kidnapped."

"Stranger awareness strategies also need to be taught, and communities in general should look after one another."

A few comments referred to children's concerns about 'stranger danger', for example:

"13-year old walks home with 10 year old sibling but I do not allow 10 year old sibling to walk home on her own. She would be too easily distracted and has fear with 'stranger danger'."

"We allowed our eldest child to ride alone to school (<1km) a few times this year. On the last occasion, as a result of a series of notices about attempted abductions in our area, when he saw a van on one of the streets he panicked and arrived at school very distressed. He thought the van was moving towards him and didn't know what to do. We decided that he wasn't ready to ride alone as he wasn't able to identify what to do in an emergency or how to perceive genuine risks. He now either rides with a parent or with a friend."

It appears from the comments above that, in contrast to road safety concerns, social safety concerns are largely received rather than experienced. The sources of these received communications that were mentioned by parents included the media (eg references to Daniel Morecombe) and schools (eg warnings of incidents). A small number of parents mentioned children's concerns about stranger danger arising from these reports and warnings, indicating that the manner in which stranger danger warnings and protective behaviours education is delivered to children (and parents) needs to strike an optimal balance of information and skill acquisition without being overly alarmist.

6. "**Would like to, but…"** (26 comments)

Most parents' comments across most themes implied that they would like their children to be able to walk or cycle to school (independently or accompanied), but were constrained by factors such as traffic safety and personal safety concerns. Comments that were categorised under the theme "Would like to, but…" were those that specifically mentioned that they would like to, but were constrained by non-safety factors such as work requirements, younger or older siblings' travel needs, lack of time, and adverse weather conditions.

Examples of these comments included:

"We would like to but with work, distance from school and younger children we cannot. Our kids will ride to high school."

"Because we live in a different town to the school, and my husband and I both work, it makes it impossible to walk/ride etc to and from school. But if either of us have a day off, we try to walk at least part of the way. Grandma also picks our daughter up from school 4 days per week and they always walk."

"The issue of independence is complicated when there are siblings. My soon to be 9 year old would be fine walking to school on her own next year, but her 5 year old brother will start in reception then, and he will be walked to school with mum or dad, so the biggest sister and middle 6 year old sister will still have an adult with them past the age when they could really manage."

"We are not able to walk/ride as work full time and have to drive straight to work when I drop my children off at before school care."

"I have tried parking and walking but distance to school and getting to work on time hinder my ability to do so."

"We live out of town therefore need decent bikes and need to wait until younger sibling is old enough to participate."

"If I didn't have to travel to work straight after school drop off, I would walk my children to school more frequently."

"The main factor that impacts on our decision to walk or not is the weather. This is especially important since the road we use has neither a footpath or kerb and I believe that it is dangerous in rainy, wet conditions."

"We'd love to be able to walk our child to school and back, but work commitments prevent us from doing so."

Note that a number of these comments referred to parent-accompanied walking or cycling rather than children's independent active travel. This appeared to be due to parents ruling out children's independent travel for mainly safety reasons, and then going on to described why parent-accompanied active travel is difficult for their family even though they would prefer active travel to school.

7. Providing children with the skills required for independent mobility (25 comments)

This theme is closely linked to most of the earlier themes, as "Depends on child", "Distance/route", "Road safety" and "Stranger danger" are constraints on independent mobility to the extent that children are not considered to have the ability to deal safely with these issues. Comments that were categorised in the 'skills acquisition' theme were those that explicitly referred to assisting children to acquire these skills.

Many comments referred to parents assisting children to acquire safe walking and cycling skills; providing children with opportunities to practice the skills and gain the necessary experience; and parents assessing their children's capabilities as a basis for deciding whether or not the child is ready for independent mobility. Underlying the various processes of skills acquisition was the concept of 'transitioning' to independent mobility via a series of steps along the way.

It is also important to note that "Accompanied by siblings/friends" (see above) is also part of the transitioning process, as is the child's route and destination. For example, short walks to parks, etc, precede longer walks to destinations such as schools as parents monitor children's behaviour, and judge their readiness for 'the next step'.

Examples of comments about the transitional process involved in assisting children to acquire the skills required for independent mobility include:

"It's a big step for many parents to let their kids walk/cycle on their own. An interim step is walking with a group of other kids - I'm comfortable for my kids (8 and 11) to do that sometimes now, but not for either of them to travel on their own."

"I would let him walk part of the way and walk with him the rest until we both were confident he could walk to school independently."

A small number of parents commented that they felt that the skills required to cycle independently were greater than those needed to walk independently, for example:

"Regarding answers that lumped attitude to walking/riding together it should be noted the answers are not necessarily the same. I am sure my kids would be ready to walk to school alone before they are ready to ride alone purely due to traffic and safety issues for example. However, I'm unable to

say what age I would let them ride as it's not just based on age, but on their skills which I will assess based on ability as they develop."

Some comments indicate that it is also parents themselves who undergo a transition process from close supervision of children in public places, to gradually 'letting go', for example:

"There was some apprehension about this the first few times, so we drove around in the car after 10-15min to check whereabouts at local park."

"It's a trust that builds slowly over time."

"We do let our children ride alone and supervise at the beginning and the end of route."

"I would let him walk part of the way and walk with him the rest until we both were confident he could walk to school independently."

"Get to know neighbours and find buddies to walk to and from school with. I would drive behind and in front of group of kids practicing walk home from school once they'd tried it were happy to just go straight home so I was able to remain at work half hour longer."

Some comments referred to children requiring experience to travel independently, for example:

"My children need more practice at cycling walking…."

Finding the time to assist children to acquire this experience is an issue for some parents, for example:

"The problem is about finding the time at the weekend to take the children out on their bikes regularly and exposing them to traffic and learning situations. We both work full time and have the usual sporting, shopping, washing, cleaning, socialising commitments which leaves little time for the children to learn these skills. Having a course that I could register them on when they could be exposed to these learning situations would greatly assist. Encourage the private schools to use the BikeEd course."

The above comment was one of a few comments suggesting that walking/cycling education programs would assist children to acquire these skills. A similar comment was:

"My daughter is nearly 11 but I would not be comfortable for her to ride around by herself. This is because I don't think she has good enough road awareness yet and also I worry for her personal safety. So as parents we need to educate her more about road safety. Unfortunately her year level missed out on the Bike programme run at school (not sure why this was) but I know it has been done in other year levels (or maybe it is next year?)"

Identification of the educative and transitional, step-wise nature of providing children with the skills (and parents with the confidence) required for children's independent mobility highlight the potential for supportive resources and measures at multiple 'entry points'. These findings also help to explain the relationship between parents' use of active transport and their children's use of active transport (see Sections 3.10 and 3.12). It appears that parents who walk or cycle themselves are better placed (and possibly more motivated) to teach children safe walking and cycling behaviour, provide them with the experience they require, and assess when children are ready for independent mobility. If parents are unable to assess their children's walking and cycling skills they may be more

likely to ‘err on the side of caution’ and not engage in the process of transitioning to independent mobility described here.

8. General safety concerns (19 comments)

These general comments reinforce the importance of traffic safety and social safety concerns as constraints on children’s independent mobility, but the general nature of the comments precluded categorising them as either traffic safety concerns or social safety concerns (see above).

Examples of these general comments include:

“I am sad that where I live now does not feel safe enough for my own children to get to and from school on their own because they would like to.”

“Our society is unfortunately not safe enough for children to be able to get to school independently. This is a sad fact from my own personal experiences and not an "irrational fear".”

“I'm sure the child is capable of doing it. More my fear.”

“She is my only child and I wouldn't let her out my sight at this age.”

“I know that more than likely nothing would happen to my child but am still very wary of them walking by themselves.”

“We do not live in a safe culture any more and kids are not street smart.”

“I don't know if I’ll ever be comfortable allowing my child to walk to school. Parental instinct tells me that it is unsafe, and putting her at risk.”

“My wife is still concerned about allowing our son to do too many things alone.”

“My daughter would love to walk to school, but I feel it is unsafe.”

“Safe community is the key for walking or cycling independently. Some CCTV may help.”

“I lived in a town area so accessing school, shop and friends was easy to do. My husband lived on a farm so they rode to/from home (and left their bikes at the bus stop). Different world now.”

“I feel uncomfortable in letting our 10 and 7 year olds travel to school together alone, particularly in today's environment.”

“I’m concerned about my child’s safety.”

A number of these comments reflect parents’ general fears, concerns and worries; with a couple of parents adding that these concerns may not necessarily be warranted. Another thread within some comments was that ‘the world is a different (ie less safe) place’ now than in the past. Once again, this may be more perceptual that actual in terms of changes over time in levels of child traffic injuries and personal assaults.

The remaining six themes each had relatively small numbers of comments, though, as noted above, addressing several issues, each of which affects a relatively small number of parents, can result in a sizeable combined impact.

These final six themes were:

- **Unsure** (14 comments): these comments referred to parents who were unsure or didn't know because they would need to 'wait and see'; looking for guidance on an appropriate age for independent mobility; or querying the legal aspects of allowing children to move around in public spaces without adult supervision. Examples include:

"Guidance on when it's appropriate."

"There is conflicting information on how old a child can be before they can walk alone."

- **Other** (14 comments): these comments included a wide variety of responses that did not fall into other themes. Examples include:

"Great initiative…if actions result!"

"His sister….. won't do it due to having to carry an immense bag of high-school books and a laptop."

"Sufficient safety and access for pedestrians and motor vehicles MUST be incorporated into all School funding for build or re-design projects as well as in planning approvals."

"I think the walking school bus concept could be more widely applied."

"Children should be encouraged to be independent from an earlier age. Children are becoming wrapped in cotton wool by parents and unable to function properly in society."

"There are aggressive dogs that travel in packs and temperatures are over 36 for up to 4 months of the year."

"Single parents like me find it difficult to purchase a bicycle for a young child, especially since they will grow out of them very fast. If there is a student discount and exchange program, or a long-term rent-a-bike program, it makes it more affordable, allowing single parents to inculcate environment friendly travel practices, as well as independence."

- **Benefits/enjoyment of independent mobility** (11 comments):

These comments referred to the perceived benefits/enjoyment of independent mobility, for example:

"The mental health of my kids when walking has been by far the greatest notable difference. When they are driven (extremely rare) they are grumpy and irritable after school yet when walking they are much nicer, happier and generally easy going."

"We live in small rural town and only 2 blocks away from the school. I love that my kids can independently ride/walk to school."

- **Social factors** (9 comments):

Several of these comments reflected the notion of 'safety in numbers', referring to both traffic safety and social safety. That is, when more children are walking and cycling, drivers are thought to be more aware of their presence and take more care, and children less likely to be threatened by a stranger when there are more people around. A couple of comments also referred to social disapproval of parents allowing children independent mobility. Interestingly, these two alternative perspectives interact in what has been labelled the 'social trap' of fewer parents allowing active travel to school for safety reasons assisting in creating the conditions that further reduce safety. Examples include:

"I think it is a widely held belief that it is irresponsible and/or potentially unsafe to let primary school age children move to and from school without adult supervision."

"Great imitative, as the more kids we see independently travelling, the more likely we are to follow suite and feel it is the norm rather than the exception. My younger daughter will be on her own at primary school next year as the elder one starts high school, so I need to feel more confident she will be ok on her own, which is easier if there are more people out doing the same thing….."

"For us, it is the peer parental community pressure of not leaving your child/ren unsupervised. At what age is it acceptable to let your children walk to school unsupervised?"

"I consider traffic to be the major danger in my area. There are plenty of other kids and parents walking around our neighbourhood so I feel that it is quite safe in other ways."

- **Mobile phones/other communication** (9 comments):

These comments were about children carrying mobile phones, and schools notifying parents if children have not arrived at school. Parents appear to find both of these measures reassuring, suggesting that extended periods of worrying about whether their child has arrived safely are an important component of parents restricting children's independent mobility. Measures that communicate to parents that their children are safe support them in allowing their children independent mobility. This is another example of a supporting factor in the 'transitioning to independent mobility' process. Examples of these comments include:

"My child rides from our house and catches the train up to the Primary School and home again each day, he enjoys the independence that this has given him. He calls me on the mobile when he gets to the station and also when he arrives home, he has a mobile with him at all times."

"I purchased a cheap mobile phone for my son so that he can call me if anything happens and he must call me when he arrives at school."

"Not everyone is able to afford a mobile phone for their child to provide the sense of safety."

- **Depends on destination** (8 comments):

These comments are another example of the way in which parents assess multiple factors when considering independent mobility for their children; that is, child capabilities; sibling/friend/dog accompaniment; route characteristics; notification of safe arrival; and destination. The type of destinations whereby children 'practise' independent mobility appear to be those that are nearby, do not require crossing busy roads, and are populated by other children and adults.

And, once again, independent travel to these ‘safe’, local destinations represent another step in the process of transitioning to increasingly more challenging and longer trips to a wider range of destinations, including travel to school.

Examples of comments include:

“Hard to answer as they are 5 and 6 but I do let them do laps around the park on their own.”

“I think it would depend where they we going. I'd be happy to let them go somewhere in the neighbourhood. I'm not sure I would let them go if they had to cross one of the busy main roads around our neighbourhood.”

“These comments I think it would depend where they we going. I'd be happy to let them go somewhere in the neighbourhood. I'm not sure I would let them go if they had to cross one of the busy main roads around our neighbourhood.”

“Locally only and timed.”

“My child walks/scooters to local supermarket with a friend.”

“I allow my 10yo to walk or cycle to school with her 12yo sibling. She is also allowed to walk to the park just down the street with her 8yo brother and/or with the dog. I wouldn't let her walk to school on her own yet.”

Appendix D: Analysis of open-ended comments in response to the question *"Do you have any suggestions for things that could be done (eg by the school, local council or state government) to encourage more walking and cycling to school?"*

About half of parents (n = 389) provided responses to this open-ended question. Responses were coded into eleven themes that emerged from the comments. A number of parents' comments covered more than one theme, giving a total of 487 coded responses. The eleven themes are listed in Table 1, and the percentages of comments within each theme are shown in Figure 1.

Table 1: Parents' suggestions for actions to increase active travel to school

Theme	Count (%)
Traffic safety: improve walking infrastructure (including footpaths and road crossings)	149 (31%)
Traffic safety: improve cycling infrastructure	66 (14%)
Traffic safety: lower speeds (including protection from high speed traffic)	58 (12%)
Traffic safety: increased enforcement of road rules, supervision, monitoring	45 (9%)
Traffic safety: increase safe and responsible driving	25 (5%)
Traffic safety: address car parking issues around schools	19 (4%)
Traffic safety: general	17 (3%)
Personal safety	12 (2%)
Promote and support active travel to school	53 (11%)
Organise group walking and cycling	37 (8%)
School planning, location and zoning policies	6 (1%)
TOTAL	487 (100%)

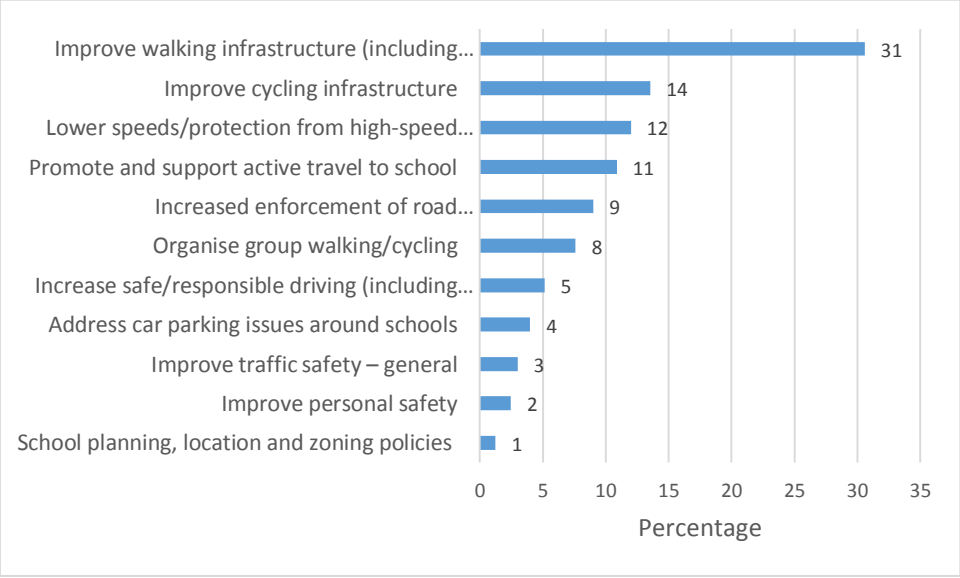


Figure 1: Parents' suggestions for actions to increase active travel to school (percentage of coded responses [487])

As shown in Table 1 and Figure 1, the vast majority of suggestions were for improved traffic safety (78% in total), followed by school encouragement of active travel to school (school programs and

organisation of walking/cycling groups) (19% in total), improved personal safety (2%) and school planning, location and zoning policies (1%).

These themes are described in detail below.

1. Improve walking infrastructure (footpaths, road crossings, intersections)

Suggestions for improving walking infrastructure included the construction of footpaths on streets and roads around schools and in residential areas that currently have no footpaths; providing safe street and road crossings (pedestrian crossings, school crossings, intersections and roundabouts); and footpath maintenance (clear of vegetation, obstructions, potholes, etc). Examples include:

"Yes!!! Give us footpaths!! It is dangerous to walk on the road especially with a pusher! Spend money on footpaths!!! Make it safe to walk!"

"As we live in the hills, it would be helpful if the council would build footpaths so my child would not have to share the road with cars in an 80km zone."

"Living in the hills I find that there aren't enough safe footpaths for children and crossing main roads is very dangerous in peak school drop off and pick up times."

"Better sidewalks on Wembley Ave, Bridgewater SA, in particular (some very high risk areas which leave kids exposed to traffic). Bins are always in the way on the sidewalk on bin day making it hard for riding safely and prams."

"Safe footpaths cleared of overhanging trees and hedges etc along with clearly Identified road crossings for both cars and pedestrians to identify as child crossings on the primary travel roads to and from the school."

"I am nervous about roundabouts - the kids forget to look in 4 directions before crossing the road. We have a busy one on the way to school."

"Better foot paths and crossings at major roundabout near the school."

"In our area, it is simply 100% unsafe for children to walk. There are no footpaths, no traffic lights."

"A safe option for walking to school would be wonderful - this means investment in walking paths from Ashton to Norton Summit - currently we need to walk on the road shared with cars at 80km per hr with low visibility due to winding roads. We love to walk to school together but even with an adult it feels unsafe. Crossing the road near the school feels unsafe due to poor visibility and speeding vehicles. If the roads were safe the school will support and promote walking and riding as a safe option."

"Making roads around the surrounding streets more safe for children crossing, I find that once cars are outside of the school safety zone they do not have consideration for children walking to school."

"To be walking, we would need better, wider or actual footpaths on the route to school. There are at least two blind corners where we would have to cross to get to a safe footpath. This is unacceptable on a main road where the 60kmph speed limit is often broken by at least 10-20kmph."

There were also examples of the 'weakest link' in the journey to school presenting a barrier to active travel to school, reflecting the need for *consistently* safe walking and cycling infrastructure, for example:

"Safer crossings at the two main points where the Bike Trail intersects busy roads in McLaren Vale - Main Road near Hardy's Winery, and the Kanagarilla Road crossing."

"Footpaths that are wide enough and well paved and don't vanish every few hundred metres."

"We have to cross a busy main road and it doesn't have a crossing or lights so it's not safe for my children to cross alone."

"David Terrace is a nightmare for children to cross especially during school drop off/pick up times. I won't allow my children to cross that road unsupervised at any time."

"We have no footpaths for most of our journey and, at one point, there is minimal verge to escape traffic."

2. Improve cycling infrastructure (bike paths/lanes, bike storage at schools)

Suggestions for improving cycling infrastructure included the construction of bicycle paths and trails to create a more extended network of safe (usually separated) cycling infrastructure; and secure, weather-protected, readily accessible bicycle storage at schools. Examples include:

"Safe bike paths (there are none)."

"Bike lanes!! There are none between our home and the school."

"Better infrastructure, more dedicated cycle paths and lanes."

"I believe that all new and redeveloped main roads should have separate bike lanes with a physical concrete barrier to encourage. I believe if this was provided more people would ride."

"Better infrastructure, more dedicated cycle paths and lanes, changing driver and media attitudes to cyclists and pedestrians."

"More bicycle lanes - clamp down on cars parked in them."

"Bike lanes closer to school, reduced parking on narrow roads around school."

"Dedicated bike path network to be expanded throughout suburban streets.

"Making roads safer for children on bikes. Reducing traffic on designated bikeways."

"More cycle lanes that lead to school."

"Safer and more bike paths."

"Bike storage made more accessible instead of being tucked out of the way."

"More and more accessible bike racks."

"Enable better bike storage facilities (secure and rainproof) at school."

3. Lower speeds/protection from high-speed traffic

A number of parents recommended lower speeds, including around schools, in residential areas and on busy roads that lacked footpaths and/or bicycle paths/lanes. There were suggestions for 25km/hr

school zones to be extended (ie in more locations around the school and covering a greater area), and more clearly signed/marked as a low-speed school zone. Suggestions also included traffic-calming measures such as speed humps, and greater enforcement of current speed limits to increase compliance with current speed limits (including the installation of speed cameras around schools) (also see Theme 4. below).

For a number of parents, the main problem was not the speed limit per se, but drivers' lack of compliance with the posted speed limit, lack of enforcement of existing speed limits, and driving too fast for the conditions/circumstances.

Examples include:

"Reduce speed limits."

"Lower speed limit on main rd, where the school is situated."

"A reduced speed limit around the school. Cars are driving too fast around school and through intersection. I personally have seen a few near misses of cars hitting children, hence why I won't allow my children to ride to school independently."

"School zone (ie 25 limit) needs to be from any side of the school."

"Reduce speed limits. Tougher penalties for those who do speed."

"Cars speeding past the school, through give way signs and pedestrian crossings."

"Speed humps in and around school grounds. Also lowering of speed limit to 25km/hr."

"The only thing I could suggest is to make cars and buses drive slower in the neighbourhood."

"Safer roads, maybe speed bumps on the roads around the school (Particularly Bowker Street North Brighton) as the crossing gets ignored unless someone is standing there all the time. When I pick up my children there is no crossing monitors so speed bumps would help all hours of the day."

"Drivers often fly straight thru the red light of the ped crossing, even though its monitored and flagged, as they are in a hurry on such a busy rd and inattentive to the lights. We've had to jump back off the road twice when speeding cars ignored the lights. And have seen others have to do the same. We are all very conscious of it."

"As there are no footpaths on school access roads (or residential areas), there should be lowered speed limits at the appropriate times."

"The school 25km speed limit being extended out onto the main roads (Mt Barker Road and Bridgewater Road) near the school."

4. Increased enforcement of road rules/monitoring/supervision of driver behaviour around schools

Many parents suggested greater enforcement of driver behaviour through increased penalties for road rule violations, particularly those that occur around children/schools; supervision of school crossings; a greater police presence; and installation of safety cameras. These recommendations mainly related to speed control; failing to stop for pedestrians at intersections, pedestrian crossings and school crossings; illegal/unsafe parking and opening of car doors; and cars failing to give way to pedestrians and cyclists when reversing (too rapidly) out of driveways and when entering and exiting off-road car parking areas, including at schools. Examples include:

"More vigilant police action for speeding drivers."

"Police or security presence to enforce rule adherence."

"It would be nice if people took young children into consideration while driving. I think harsher penalties for speeding through school zones and residential areas to deter motorists."

"*More policing of school zones, on a daily basis vehicles speed through children hot spots, they don't stop at crossings to allow safe passage of children and never are the police around to help the children. We have a near miss on school crossing at least once a week."*

"Police enforcement of the speed limit (not a reduction, just deter speeding in adjacent streets)."

"The school is currently in the process of improving the school crossing area. However, the crossing is never supervised by teachers or staff!"

"Higher penalties for traffic offenses near schools/children."

"Monitored crossing points by teachers, volunteers or student assigned monitors. Zebra crossings marked on roads. Signs that cars must give way to walkers."

"People drive like maniacs and there are no speed cameras or traps, and despite excessive complaints from the community, nothing is ever done."

"At both school pedestrian crossings to install speed & camera to catch the cars that constantly drive through the red light. It shouldn't take a child to get seriously injured or killed before Adelaide City Council or DPTI installs these cameras for the safety of the girls who attend the school. Cars going through the pedestrian crossings happen on a daily basis at both front and back of the school."

"By far the biggest danger on the way to school is residents reversing out of their driveways or coming onto the main road too fast. Too many near misses already."

5. Increase safe/responsible driving (including attitude/cultural change)

This theme is linked to 3. and 4. above, but comments included under this theme were more about increasing safe/responsible driving through measures aimed at improving driver education and raising awareness of the importance of driving safely around children. There were also suggestions for changing driving attitudes and culture to place more importance on active travel modes in terms of both infrastructure provision and safety. Examples include:

"Encourage parents that drive their own children to be mindful of independent travellers, not just rushing to get their own children to school on time."

"Govt support of cycling as a normal mode of transport would help a lot. E.g. build bike paths and educate drivers that they do not own the road. Cyclists are vulnerable road users and need to be protected, not vilified as it seems is they are by drivers currently. It is an attitude of society, which needs to start from the government."

"Our roads have been designed for only one thing, cars. Infrastructure needs to be improved to get more people out of cars. Look at what Belgium has done."

"Make the built environment conducive to walking and riding. Way too much focus on allowing cars to speed through every single road. Adopt filtered permeability to prevent rat-running."

"Priority for walking and cycling in the design of the local traffic system."

6. Address car parking issues around schools

A number of parents recommended parking restrictions around schools, including establishing no-parking zones in the immediate vicinity of the school and using park and walk from nearby locations. There were also suggestions for improved "drop and go" facilities, and for "no parking" days when walking and cycling access to school is prioritised. One parent recommended increased parking at school to prevent illegal actions such as double parking. Examples include:

"Avoid parents parking on kerb and footpath close to school entrance. Large cars with low visibility swiftly driven onto footpaths pose a very serious threat to primary school children walking to school, even when accompanied by parents."

"Reduce car-parking in the area."

"More monitoring of dangerous parking."

"Less parking spaces around school."

"Monitor parking, double parking and doors flinging open around the roads close to the school."

7. Traffic safety – general

This theme refers to general comments about the need to improve traffic safety. Examples include:

"Unfortunately it is the volume of traffic and the number of roads that must be crossed which makes it too unsafe for young children to be going by themselves."

"I am not sure what can be done but I think one of the biggest issues for me is road safety/traffic."

8. Personal safety

Suggestions for improving personal safety included:

"Bring back the concept of Safety Houses/ places in the community."

"Stranger danger safety."

"Extension of safety houses to include high visibility community volunteers walking the street."

"Police information sessions about safe walking and what to do if approached by people on way to school if alone."

"'Abduction safety' - this is the primary reason I don't let my children walk alone to/from school. There has been recent local reports of adults approaching children."

9. Promote and support active travel to school

Parents made a wide range of recommendations for promoting and supporting active travel to school, most of which were school-based measures. These included incorporating road safety (with a focus on safe walking and cycling) within the school curriculum; participation in programs such as Bike Ed (more frequently, and including younger children); providing incentives for walking and cycling to school; removing school policies prohibiting children under the age of 10 from walking or cycling to school independently; establishing park and walk venues and routes; early release from class for children who walk or cycle home so they can avoid school traffic; school uniforms

(especially for girls) more suited to walking and cycling; and reducing the need for children to transport books and equipment in large, heavy backpacks.

Examples of these suggestions include:

"Compulsory bike ed."

"Education campaigns, buddy system, nominated "champions" to encourage others to get involved, walking trains etc."

"More funding to support full reach of Way2Go Bike Ed to all primary schools every year."

"More cycling skills programs and road safety programs."

"Develop a course similar to the cycling proficiency test in the UK."

"Community Cycling Stewards (Volunteers/Retirees)."

"More funding so schools kids could attend bike safety training session."

"Kids riding home could be allowed out 5 minutes early to avoid heavy traffic and motivate more kids to do it."

"Often school don't allow children to come to school before a certain time which clashes with parents work time. A bit of flexibility around that would help walk with kids a bit more."

"Parking areas nearby to school then can walk part of way to school."

"Have bicycle days when streets are blocked around the school to allow some cycling."

"Have more "Ride your bike to school" days/weeks."

"Establish clearly and colourfully marked bike and walking routes."

"Excursions in middle primary focusing on cycling and road safety."

"Contact families asap if children not arrived at school on time."

"If the kids didn't have to carry so much "stuff" (sports uniforms, text books, sporting equipment etc) it would be easier to ride to school. At present we have to drive due to the volume of "stuff" the kids have to take!"

10. Organise group walking and cycling

There was strong support for schools to facilitate the formation of walking and cycling to school groups for parents and children. This was frequently seen as having the added benefit of increasing social contact between school families. Example include:

"A lot of families live quite close to the school but have no way of connecting with each other to share journeys. It'd be great if the school could facilitate this."

"Encourage or facilitate communication between families to coordinate groups of children walking or riding to school together."

"Walking buddies (ie let's walk to school together) would encourage more children walking independently without parents. ("Safety in numbers")."

"Organise 'walking school buses' for younger children to walk to school with older children or an adult."

"Schools/parents could organise carpooling style supervisor for groups of children walking e.g. meet at nearby park at 8:30am and walk together as group."

"Concerted campaign about doing it with friends, in groups."

"Community walk to school were kids accompanied by an adult pick up kids along the way."

"Organise walking groups to buddy children up without adults, allowing for children to walk to school and parents to get to work."

11. School planning, location and zoning policies

These suggestions referred to reducing school travel trip distances though school planning, location and zoning policies. Examples include:

"Stop closing schools, many are too far for walking now."

"Encourage people to send their kids to the local school instead of a far away private school. Perhaps look at making schools more centred in their zone so that kids end up at a school they can walk or ride to."

"The nearest Primary school is across the road from where we live, but not accepting enrolments. It would encourage walkers and riders if residents near schools were given preference over out of area students."

Yes! Provide greater funding to all local primary schools so that parent's weren't travelling distances into the zones of "good" public schools. If everyone felt confident in attending their local public school, then we'd all live closer and have the opportunity to travel shorter distances by walking/riding. I'd estimate 60-70% of students at our Primary School are from outside the 2km zoned radius due to the high quality of the school."

"Stop closing schools so the ones left aren't so far away - oh, sorry, that's already happened and is THE MAIN REASON why people cannot walk to school!!!"

In summary, parents made many and varied suggestions for increasing active travel to school. As was the case for responses to the open-ended question about age of children's independent mobility (see Section 3.11 and Appendix C), improving traffic safety (78% of coded comments) was the standout issue that parents addressed, followed by school encouragement of active travel to school (school programs and organisation of walking/cycling groups) (19%).

Suggestions for improving traffic safety covered three key principles of the Safe System approach to road safety, namely, safe roads (with a focus on safe walking and cycling infrastructure); safe road users (with a focus on drivers); and safe speeds, including suggestions for both lowering speed limits (especially near schools), and greater compliance with and enforcement of existing speed limits.

Suggestions for improving driver behaviour also included education and awareness of the importance of safe driving around children, and adherence to several road rules that are less frequently policed than violations such as speeding, drink/drug driving, and distracted driving. These include yielding to pedestrians at pedestrian and school crossings and at intersections, reversing out

of driveways, and yielding to pedestrians and cyclists on footpaths when entering and exiting off-street car parking areas, including at schools. Parents would also like to see safer car parking behaviour around schools, with some suggesting increased parking restrictions around schools.

Individually, these traffic code violations may not be considered as important as speeding, drink/drug driving, and distracted driving; however, in combination, they can make a substantial contribution to parents' assessment and perceptions of an environment in which it is safe (or unsafe) for their children to walk or cycle to school.

There was also considerable support from parents for a range of school-based measures for encouraging and supporting active travel to school. These included school policies, programs and activities. There was particularly strong support for schools to facilitate the formation of walking and cycling to school groups for parents and children.

Appendix E: Summary of key supports and constraints for active travel to school and possible measures for addressing them

Table 1: Supports for active travel to school and possible measures for addressing them

Support	Comments/action
Positive attitudes to active travel to/from school among parents and children.	▪ Widespread support for active travel to school suggests that, if handled appropriately, measures aimed at increasing active travel to school will be likely to be supported by parents and children; and when implemented, likely to be effective.
Many parents do not enjoy driving to school, and are discouraged from driving by congestion and parking problems.	▪ Measures that make driving less appealing effectively support active travel to school as a more appealing alternative.
High awareness of the health through physical activity benefits of active travel to school for both parents and children, though less agreement that children 'need' active school travel.	▪ Provides a good basis for promoting active travel to school. ▪ The perception that children may not need to participate in active travel to school because they are adequately active through other forms of physical activity provides an opportunity to emphasise the co-benefits of active travel that are not generally associated with other forms of children's physical activity (including frequency of physical activity sessions). ▪ Promote parent-accompanied active travel to school as an opportunity to build physical activity into the activities of daily life for busy parents who "don't have time for physical activity" (especially many mothers of school age children). ▪ Due to low levels of recognition of the educational benefits of active travel to school, include "children arrive ready to learn" in communications promoting the physical activity benefits of active travel to school.
High awareness of the environmental benefits of active school travel.	▪ Provides a good basis for promoting active travel to school.
School policies, programs and activities that support and promote active travel to school.	▪ Provide support for schools to implement active travel to school policies, programs and activities, possibly under the umbrella of establishing "Active Travel Schools" along the lines of similar initiatives such as "SunSmart Schools". ▪ Encourage schools to adopt a policy of notifying parents if children have not arrived at school.

Wide community support for active travel to school.	▪ Encourage school/community/local government partnerships for promoting and supporting active travel to school and within the wider community.
Parents' use of active travel to work.	▪ Promote active travel communities that include active travel to work, including active travel to access public transport. ▪ Promote active travel to work as an opportunity to build physical activity into the activities of daily life for busy parents.
Parents' active travel with children in neighbourhood.	▪ Promote active travel communities that encourage and support walking and cycling to neighbourhood destinations for parents and children.
Providing children with the skills and experience required for safe walking and riding to school.	▪ A role for formal safety education (schools and parents) and gaining experience (mainly parents). ▪ Include personal safety and traffic safety. ▪ Promote guidelines such as those produced by the VicHealth "Parental fear" project. ▪ Provide encouragement, support and guidelines for parents to assist their children to transition from parent-accompanied active travel to school to independent active travel to school.
Independent active travel to school associated with longer trip distances than parent-accompanied active school travel.	▪ Support for independent active travel to school (particularly cycling) helps to address trip distance as a barrier to active school travel. ▪ Longer active trip distances will require a wider network of safe routes to school than previously considered – this is where low speed, traffic-calmed residential areas become important.
Being organised/prepared for active travel to school.	▪ Helps to address the habit of driving to school every day – can 'tip the balance' towards active trips on days when this is feasible.
High levels of recognition of the child development, travel time and convenience advantages of independent active travel to/from school.	▪ Provides a sound basis for assisting parents and children with the transition from parent-accompanied to independent active travel to school. ▪ Indicates the potential for parental support for measures aimed at removing barriers to independent active travel to school (eg to improve traffic safety for child pedestrians and cyclists)

Table 2: Summary of constraints on active travel to school and possible measures for addressing them

Constraint	Comments
Trip distance (>2km) and travel time.	▪ The promotion of cycling to school (a substantially faster method of active travel than walking) has the potential to address these constraints for some parents and children. ▪ Compact, mixed use neighbourhoods help to reduce trip distances. ▪ Promote the benefits of children attending local schools (including, but not restricted to reduced school travel distance/time). ▪ Address the perceptual element of "too far to walk or ride to school".
Traffic safety concerns.	▪ Assist schools (in partnership with local government and relevant state government departments) to develop a 'Safe System' strategy for the safety of children walking or riding to school. The focus should be on safe environments, safe road users [drivers and children] and safe speeds. ▪ The Safe System strategy should be a key component of schools' active travel policies, to demonstrate to parents that a key barrier to active school travel is being addressed as an integral part of the process of encouraging and supporting active travel to school. ▪ Improve children's traffic safety knowledge, skills and experience. ▪ Assist parents to teach these skills to children; practice the skills with their children; and observe and assess when their children are ready for independent walking and riding.
Social safety concerns.	▪ As with traffic safety concerns, both perceptual and actual risks need to be addressed. ▪ The challenge is to strike the right balance between alerting parents and children to potential risks so that action can be taken to avoid the risks, and the 'alerting' leading to increased and possibly unwarranted fear of independent mobility. ▪ Protective behaviours programs can empower children to deal with any incidents that might occur, and reassure parents that their children can deal with these incidents. ▪ Schools notifying parents if children have not arrived at school, and children carrying basic mobile phones can reassure parents that their children are safe. ▪ Perceptions that neighbourhoods are unsafe can be caused by neighbourhoods looking unkempt and neglected, and by observing anti-social (though not necessarily illegal)

	behaviour. The 'broken windows' approach to crime prevention can assist in making neighbourhoods *feel* safe.
The route to school is unpleasant for walking or riding.	▪ Creating pleasant walking and riding environments may be more important for increasing parent-accompanied walking and riding to school than the traffic safety measures that are important for children's independent active travel to school. ▪ There may be a role for schools to identify safe and pleasant routes to school, and for local governments to assist in identifying what makes some routes unpleasant, and how to improve them.
Driving to school perceived to be quick, convenient and safe.	▪ Reduce speed limits near schools and in residential areas. ▪ Restrict parking at and around schools. ▪ Establish car-free zones around schools. ▪ Test/challenge perceptions that driving is substantially quicker than walking or cycling to school. ▪ Promote cycling to school, as it is more time-competitive with driving than walking for longer distances.
Relatively low levels of recognition of the educational and community liveability benefits of active school travel.	▪ Include these co-benefits in communications about the benefits of active school travel.
Relatively high levels of trip-chaining.	▪ Compact, mixed-use neighbourhoods support more active travel to school and on to subsequent destinations by reducing the overall trip distance. ▪ Locating popular children's after-school activities (eg sport, music, dance, gymnastics, etc) *at* schools could support active travel to/from school by reducing the number of trip-chain trips.
Two or more motor vehicles in the household.	▪ Promoting the advantages (eg cost savings, parking requirements) of single vehicle ownership within households may contribute to increased use of active travel to school.
Low rates of cycling to/from school.	▪ Encourage more cycling to reduce active travel trip time, as currently most active trips to/from school are walking trips. ▪ Conduct Bike Ed programs, improve cycling routes and cycling conditions, encourage more parents (particularly women) to cycle with children.
Low rates of cycling among women and girls.	▪ Encourage and support women and girls to cycle for utilitarian trips to/from school and other neighbourhood destinations. This will encourage more women to accompany their children on longer active trips to school (than walking), provide role modelling for girls' cycling to school, and assist girls to cycle to school independently.
Driving to school can become a habit.	▪ Encourage/assist parents to make more deliberative travel mode choices based on daily circumstances.

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