

# LEARNER TRAVEL BEHAVIOUR AND PARENT ATTITUDES TOWARDS THE USE OF NON-MOTORISED MODES: Findings of school travel surveys in Cape Town

**P MUCHAKA, R BEHRENS and S ABRAHAMS\***

Centre for Transport Studies, Department of Civil Engineering, University of Cape  
Town, Private Bag X3, Rondebosch, 7701; Tel: 021-650 3499;  
patrick.muchaka@uct.ac.za; roger.behrens@uct.ac.za

\*Global Road Safety Partnership-South Africa, www.grsp.org.za;  
sianne.abrahams@grsp.org.za

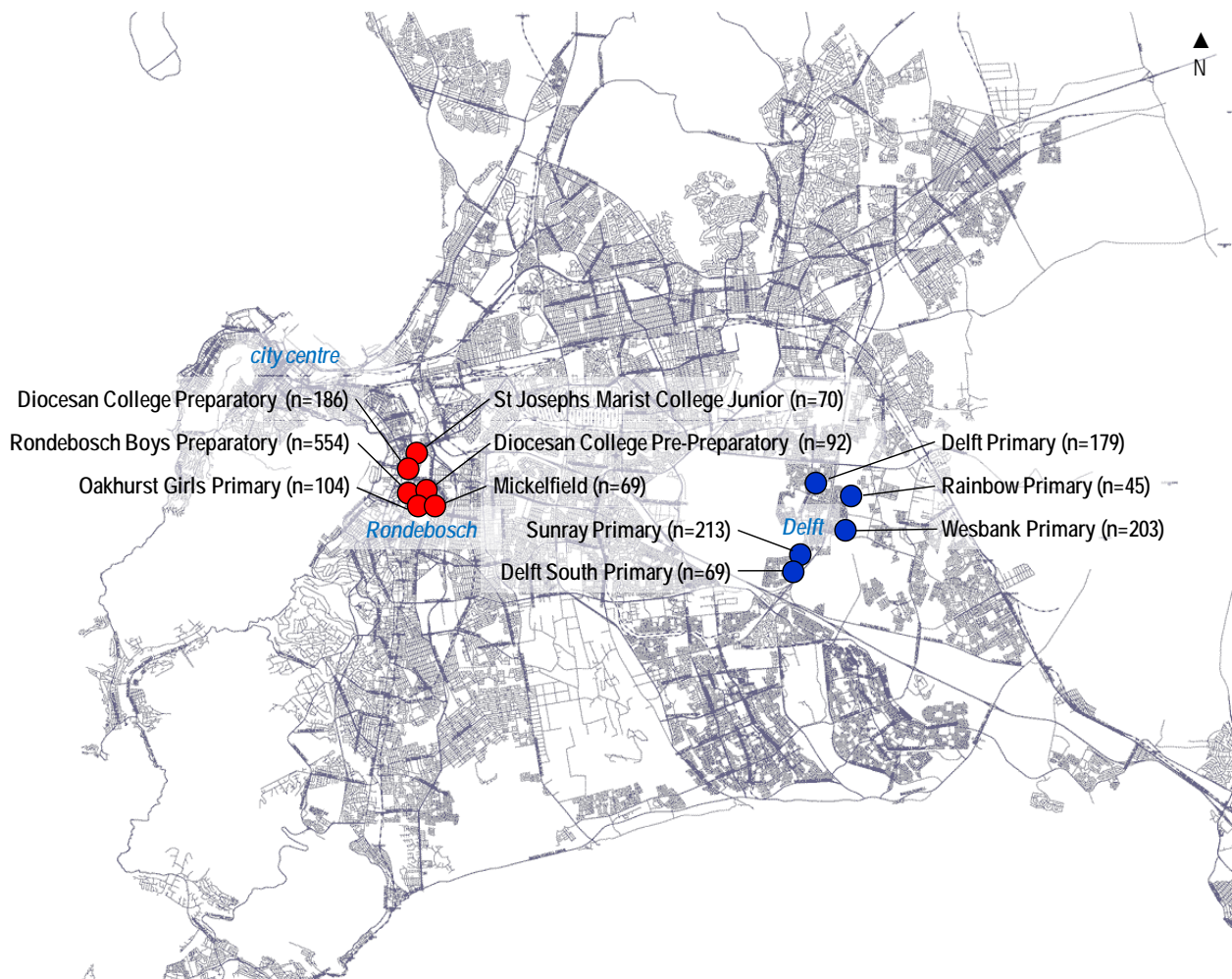
## ABSTRACT

This paper reports upon school travel surveys conducted in 2010 aimed at collecting the data required to develop, implement and monitor 'walking buses' in selected primary schools in two neighbourhoods of Cape Town (Rondebosch and Delft). A 'walking bus' is a group of children who walk to school along a set route, supervised by adult volunteers. The selected schools in Rondebosch and Delft draw learners from households with a wide range of income levels. Self-completion questionnaire surveys (Rondebosch, n=1,075; Delft, n=709) were conducted to gauge parents' interest in 'walking buses', and to create a database of potential 'walking bus' participants. The key findings of the surveys are discussed in terms of the insights they provide on how learners currently travel to and from school, and on the willingness of parents to either allow their children to participate in 'walking buses' or volunteer themselves to supervise learner 'walking bus' groups. The mode share of car use in Rondebosch schools was found to be 90% to and 88% from school, while in Delft schools walking was found to be the dominant travel mode (91% to and 86% from school). It was found that 51% and 41% of parents are willing to permit their children to participate in a 'walking bus', while 16% and 17% of parents are willing to volunteer to supervise 'walking buses', in Delft and Rondebosch respectively. The paper concludes with a discussion on the prospects for promoting greater and safer walking to school in Cape Town schools. On the basis of survey findings and early trials, it is concluded that 'walking buses' present a viable intervention in the study neighbourhoods.

## 1 INTRODUCTION

In the higher income communities of Cape Town, rising levels of car use for school trips in recent decades, and associated decline in the number of learners who walk or cycle to school, is likely to have reduced child independent mobility and physical exercise, and increased traffic congestion and air pollution within school precincts. Supporting quantitative evidence of these impacts is sparse. Recent studies do, however, confirm that childhood obesity is becoming a significant public health issue in South Africa across all communities. Armstrong *et al* (2006), for instance, in a study of 10,195 South African primary schoolchildren found that 2% of boys and 5% of girls were obese, and 11% of boys and 18% of girls were overweight. While the lower income communities of Cape Town may not have experienced this modal shift to any great extent, they have to deal with a different set of problems associated with school travel, in the form of vulnerability to

road crashes and other safety risks while walking to and from school. Road crash data from 2003 indicate that child pedestrians between 6-12 years accounted for 17% of pedestrian road crash casualties in Cape Town (City of Cape Town, 2003). More recent data for the entire Western Cape Province indicate that in 2007, 31% of pedestrian road crash fatalities were children aged 17 years or less, and 16% children aged 10 years or less (Vanderschuren and Jobanputra, 2010). Given the higher prevalence of walking in lower income communities, this casualty burden is likely to fall largely on these communities. This is consistent with international literature (e.g. Collins and Kearns, 2005), which illustrates an unequal socio-spatial distribution of child pedestrian casualties within low-income neighbourhoods.



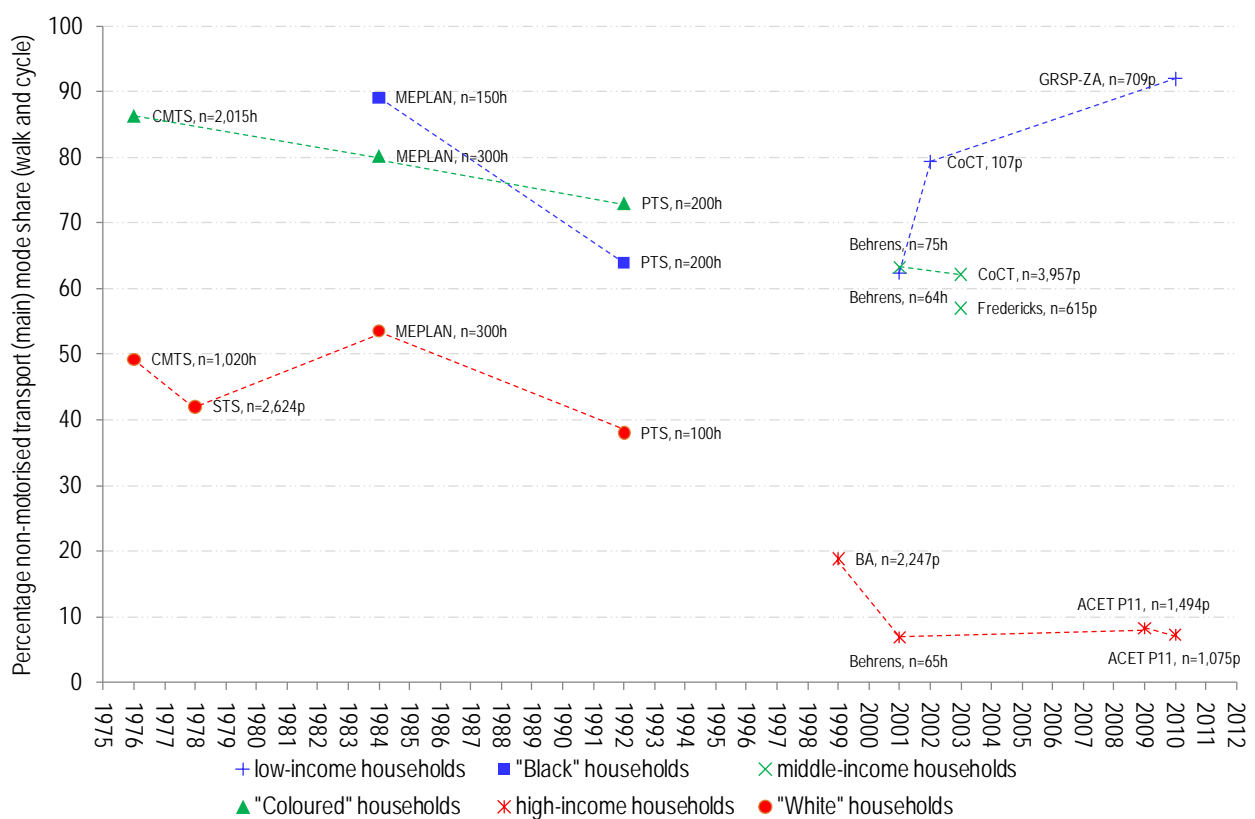
**Figure 1. Locality map of participating schools (and sample sizes)**

In an attempt to reverse the shift in mode use and improve learner pedestrian safety, two projects were initiated in a lower income and a higher income neighbourhood of Cape Town (Delft and Rondebosch respectively – see figure 1). The central aim of both projects is to develop, implement and evaluate a non-motorised school travel initiative in the form of ‘walking buses’. A ‘walking bus’ is a group of children who walk to and from school under the supervision of adult volunteers, one of whom leads at the front (the ‘driver’) and another who supervises at the back (the ‘conductor’). Children are picked up either from their homes or from designated ‘bus stops’ along a set route and dropped off at school. The concept is attributed to David Engwicht (1993), with the first ‘walking bus’ trialled in the United Kingdom in 1998. Since then, ‘walking buses’ have been introduced in many other parts of the developed world (e.g. Australia, New Zealand and the United States).

However, the concept is still relatively new in developing countries. The increasing popularity of ‘walking buses’ stems from their ability to incorporate physical activity into children’s lives, thereby addressing obesity problems, and reducing traffic congestion within school precincts, as every child in the ‘bus’ is potentially one less car on the road. Furthermore, adult supervision ensures a safer journey to and from school. In addition, ‘walking buses’ may help to develop appropriate road safety behaviour in children, thereby building essential skills they can use later when walking independently. They can also provide children and parents with an opportunity to build friendships, and are likely to contribute to child development in the form of improved spatial cognition.

This paper reports upon school travel surveys conducted in 2010 aimed at collecting the data required to develop, implement and monitor ‘walking buses’ in selected primary schools in the two study neighbourhoods of Cape Town. It is divided into six sections. The following section discusses historical trends in learner travel behaviour in Cape Town. Section 3 describes the survey method. Section 4 presents and discusses selected results, and section 5 describes ‘walking bus’ trials in November-December 2010 established on the basis of the survey data. The paper concludes with a discussion on the next steps in the implementation of the ‘walking bus’ initiatives in Cape Town.

## 2 TRENDS IN LEARNER TRAVEL BEHAVIOUR IN CAPE TOWN



**Figure 2. Trends in non-motorised main mode share of education trips in Cape Town (1976-2010)**

Available historical data suggest that there has been a significant shift in mode use for school trips in the middle- and high-income neighbourhoods of Cape Town over the past three decades, with fewer children now using the non-motorised travel (NMT) modes of walking and cycling. For example, a survey conducted in 1976 as part of the Cape Metropolitan Transportation Study found that amongst 1,020 middle- and high-income

households living in Cape Town (assuming race to be an acceptable proxy for income), 49% of trips to school were on foot or by bicycle, 13% were by train or bus, and 38% were by car. A later survey of 100 households by Market and Opinion Surveys in 1992 suggested that, amongst the same group, school trips by foot or bicycle had dropped to 38%, trips by public transport had dropped to 9%, and trips by car had risen to 52%. A survey of 1,494 learners conducted by the Centre for Transport Studies in 2009 found that, amongst nine participating schools in Rondebosch, which serve predominantly middle- and high-income communities, trips to school by foot or bicycle have declined to 8% (7% on foot and 1% by bicycle), trips by public transport have declined to 3%, and trips by car have increased to 87% (Behrens and van Rensburg, 2009). Figure 2 presents a collation of available historical data in Cape Town on education trip NMT main mode share.

Increased private car use and a concomitant decline in walking and cycling for school trips is observable in higher income countries elsewhere in the world. In the seminal study of declining child independent mobility in the United Kingdom, for instance, Hillman *et al* (1990) found the main mode share of walking to school declined from 81% in 1971 to 63% in 1990, and that car use increased from 9% to 33% over this period. More recent data indicate that the proportion of children aged 5-10 years driven to school increased from 29% in 1993 to 41% in 2002 (Department for Transport 2002, cited in Cooper *et al*, 2005). In the United States, Davison *et al* (2008) report that the number of children aged 5-15 who walk or bike to school has also decreased dramatically, from 48% in 1969 to 16% in 2001.

### **3 LEARNER TRAVEL SURVEYS IN CAPE TOWN**

The school travel surveys administered in Rondebosch and Delft in order to collect the data required to develop, implement and monitor 'walking buses' are described briefly in terms of method and limitations.

#### **3.1 Survey method**

The Rondebosch survey (n=1,075) was conducted between 19 and 21 July 2010 by the Centre for Transport Studies at the University of Cape Town. The survey was conducted in the form of a census of learners from reception grade to grade 7 at six primary schools that had shown the greatest interest in 'walking buses' in an earlier feasibility survey carried out in 2009 amongst nine schools in the same neighbourhood (Behrens and van Rensburg, 2009). The interest in promoting NMT modes for school travel in Rondebosch emanated from a shared concern among parents, the Cape Town municipality and residents associations in the Rondebosch area for peak period traffic congestion and child pedestrian and cyclist safety.

The Delft survey (n=709) was conducted in May 2010 by the Global Road Safety Partnership-South Africa (GRSP-ZA). A preliminary set of interviews were conducted with 16 of the 32 schools located in and around Delft. From these interviews, it emerged that the majority of learners between the ages of 5-12 years walk to school, often unaccompanied. This was a cause for concern as children aged 5-12 years are widely considered to be vulnerable road users, given their physical and cognitive limitations, and the neighbourhood of Delft is located in close proximity to a freeway (R300) that has experienced a high number of pedestrian road crash fatalities. Following the preliminary interviews, five schools were selected for the more detailed survey reported upon in this paper, based on their proximity to the R300 highway and the associated pedestrian safety

risk. The Delft survey was also a census of learners. However, unlike the Rondebosch survey, the Delft survey was conducted only amongst learners from grades 1 to 3.

The gender of learner respondents in Rondebosch schools was 80% male and 20% female, and in Delft schools, 43% male and 55% female (with 2% item non-response). Respondents' ages ranged between 4 and 14 years. The schools that took part in the surveys in the two neighbourhoods, and their respective sample sizes and response rates, are shown in table 1.

**Table 1. Sample size and response rate, by neighbourhood and school**

School	Total number of learners in school	Number of questionnaires distributed in school		Number of questionnaires returned		
			% of school		% returned	
Delft <sup>1</sup>	Delft Primary School	1,214	499	41.1	179	35.9
	Delft South Primary School	1,012	437	43.2	69	15.8
	Rainbow Primary School	1,151	430	37.4	45	10.5
	Sunray Primary School	1,222	587	48.0	213	36.3
	Wesbank Primary School	1,317	319	24.2	203	63.6
	<b>Sub-total</b>	<b>5,914</b>	<b>2,272</b>	<b>38.4</b>	<b>709</b>	<b>31.2</b>
Rondebosch	Diocesan College Preparatory School	373	373	100.0	186	49.9
	Diocesan College Pre-Prep. School	212	212	100.0	92	43.4
	Mickelfield School	215	215	100.0	69	32.1
	Oakhurst Girls Primary School	220	220	100.0	104	47.3
	Rondebosch Boys Preparatory School	732	732	100.0	554	75.7
	St Josephs Marist College Jun. School	300	300	100.0	70	23.3
	<b>Sub-total</b>	<b>2,052</b>	<b>2,052</b>	<b>100.0</b>	<b>1,075</b>	<b>52.4</b>

Note:

1. Only the first three grades of the Delft schools were included in the survey – representing between 26% and 51% of the total learners in these schools.

Following research ethics clearance, the surveys began with a series of meetings with school principals to obtain their permission to conduct surveys and get their input on the appropriate dates for data collection. Both surveys were carried out using a pen-and-paper self-completion questionnaire. A pilot survey (n=20) was carried out at three of the participating schools in Rondebosch in order to test the questionnaire and the data coding system. In Delft, the questionnaire was translated into Afrikaans in order to cater for the large number of children who use Afrikaans as their home language. The questionnaire was divided into two sections. The first section was for completion by learners with a parent or guardian's help. It covered learner demographics, travel time to school, mode used to and from school, reasons for not walking among learners who use modes other than walking, and problems faced by learners who currently walk to school. The second section was for completion by a parent or guardian and was meant to elicit parent or guardian attitudes towards 'walking buses' and collect the contact details of those parents who were willing to either let their children join a 'walking bus' or supervise such 'buses', in order to create a database of 'walking bus' participants. The overall questionnaire response rate was 52% in Rondebosch schools, and 31% in Delft schools.

Data capture was undertaken by GRSP-ZA for Delft and by the Centre for Transport Studies for Rondebosch, while data analysis was undertaken by the Centre for Transport Studies. Data were analysed in two phases: an initial phase aimed at extracting

information that could be used to set up 'walking buses'(i.e. names, contact details and addresses of those willing to join 'walking buses'),and a second phase aimed at more detailed analysis of current travel patterns, the reasons why some learners do not walk to school, the problems faced by learner pedestrians, and the reasons why some parents are unwilling to participate in the 'walking bus' initiative.

### 3.2 Limitations of survey method

The results of the analysis of respondent group data should not be regarded as fully representative of all learners and parents at the participating schools in the two study neighbourhoods, or of all schools in the city, for the following reasons. Firstly, in Rondebosch, the schools surveyed in 2010 were only those that showed the greatest parent interest in 'walking buses' during an earlier feasibility survey conducted in 2009. It is inevitable that this introduced bias, in favour of NMT use, in the results obtained. Had all schools been surveyed, including those that showed lower levels of interest in the 'walking bus' initiative in the feasibility survey, it is likely that overall levels of parent interest in the initiative would have been lower. Secondly, the school group response rates of 52%and 31% would have introduced bias. More specifically, it is probable that parents and learners who were more predisposed to walking to school, or lived within walking catchments, were more likely to respond, than those who were not. The actual statistical indicator of all learners' and parents' support of the 'walking bus' concept lies somewhere between the indicator for the responder group, and the same indicator calculated on the assumption that all non-responders were by definition not supportive of the initiative in question. Thirdly, in Delft, the choice of only grade 1-3 may also have introduced some bias, as it is possible that the attitudes towards learner NMT use among parents of more vulnerable children in lower grades are different to those of parents of less vulnerable children in higher grades.

Given that the primary purpose of the surveys was to collect the data required to plan and implement 'walking buses' at schools with the greatest potential for success, the above limitations were not regarded as a major source of concern.

## 4 **SURVEY FINDINGS**

The main findings of the surveys are presented and discussed in terms of current learner travel patterns (including mode use, travel time, reasons for not walking, and problems encountered by learners who walk to school), and parent attitudes towards learner walking (including willingness to participate in 'walking buses', and reasons for rejecting the 'walking bus' concept). In spite of the dataset being heavily skewed in favour of male respondents in Rondebosch, there were no significant gender differences in the findings. The findings were also remarkably uniform across grades in both neighbourhoods. The following analysis, therefore, does not present the findings disaggregated upon the basis of gender and age.

### 4.1 Current learner travel patterns

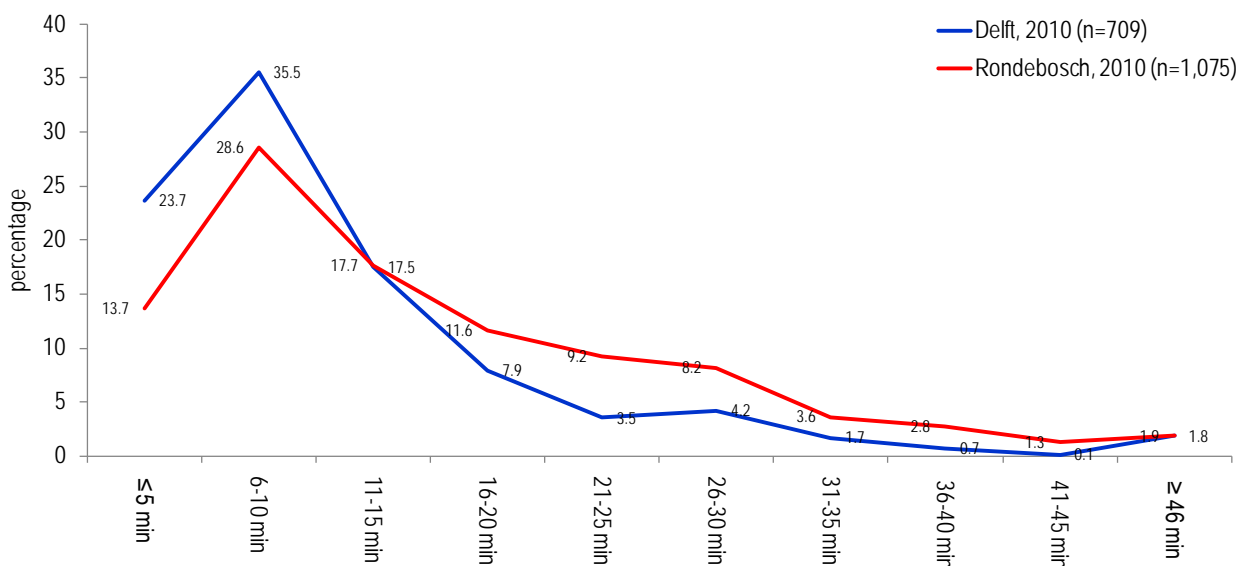
#### 4.1.1 *Mode use*

Walking was found to be the predominant mode of school travel in Delft with 91% and 86% of respondents walking to and from school respectively. In comparison, walking accounted for a small percentage of school trip mode share in Rondebosch (6% to and from school). Instead, the private car was the dominant mode of school travel accounting for 90% and 88% of home to school and school to home trips respectively (of which 52% and 24% were

with a parent on the way to and from work). Schools in this neighbourhood are therefore a major vehicle trip generating land use. The use of public transport is low in both neighbourhoods. Main mode use to and from school is summarised in table 2.

**Table 2. Main mode share for trips to and from school, by school group (percentage)**

		Walked most of/all the way	Cycled	Minibus taxi	Bus	Train	Car passenger (parent driver on way to/from work)	Parent driver specifically for school trip	Car passenger (organised lift club)	Car passenger (other parent driver/hot lift club)	Other	Recording error	Non response	Total
Delft, 2010 (n=709)	to school	91.0	1.0	1.0	0.7	0.0	1.7	1.6	0.7	0.1	0.3	0.0	2.0	100
	from school	85.8	0.6	0.8	0.6	0.1	1.0	0.6	0.7	0.1	0.1	0.0	9.6	100
Rondebosch, 2010 (n=1,075)	to school	5.9	1.5	0.3	0.5	0.4	51.6	32.1	5.5	1.0	0.1	1.1	0.1	100
	from school	6.0	1.5	0.4	0.4	0.1	24.1	49.3	10.4	4.0	2.1	0.9	0.7	100



Note: Distributions do not add up to 100% in the chart as item non-response and recording error categories are omitted (3.2% in Delft schools and 1.5% in Rondebosch schools).

**Figure 3. Distribution of trip to school travel time by all travel modes, by school group (percentage)**

#### 4.1.2 Travel time

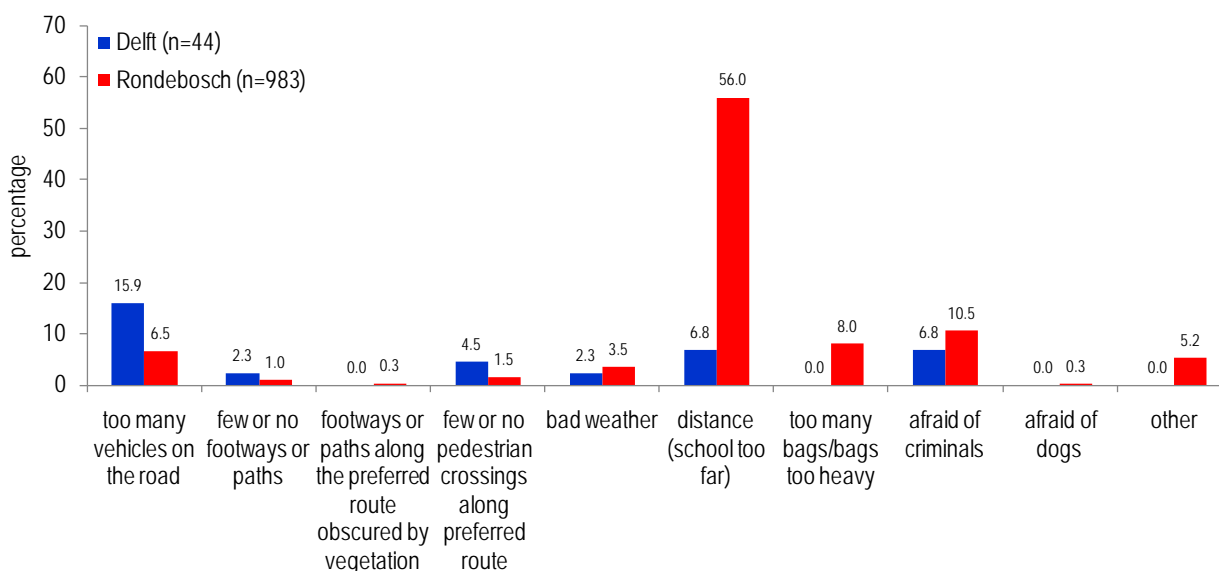
The majority of learners spent less than 30 minutes travelling to school in both neighbourhoods, with only 10% and 4% of learners spending over 30 minutes travelling to school by all modes in Rondebosch and Delft respectively. This is broadly consistent with comparable data for the entire Western Cape province which indicates that 8% of primary school-age children spend over 30 minutes travelling to school (Children’s Institute analysis of StatsSA’s General Household Survey 2006, cited in The Presidency 2009). The difference in the two neighbourhoods’ figures is likely to be the result of differences in the catchment areas of schools in the two neighbourhoods. Rondebosch schools have larger

catchment areas with learners drawn from more distant suburbs (e.g. as far away as Simon’s Town).

Travel time distributions for the two neighbourhoods are shown in figure 3. Given the significant differences in modal splits across the two neighbourhoods (see table 2), the travel time distributions are remarkably similar – suggesting perhaps a similar tolerance to maximum travel time (mean travel times were 11 and 15 minutes in Delft and Rondebosch schools respectively). In Rondebosch, however, the mean travel time was longer in the private schools (19 minutes) than in the government schools (13 minutes), reflecting the wider catchments commonly associated with private schools in the city. The distribution of travel times for the two neighbourhoods shown in figure 3 is broadly consistent with earlier data for the whole Western Cape province, which indicated that 50% of learners and students reach educational institutions within 15 minutes (NHTS, 2003).

#### 4.1.3 Reasons for not walking

The majority of learners in Delft currently walk to school. Among the few who do not walk to school – noting the high item non-response for this question in the survey – the most commonly cited barrier to walking was high traffic volumes, followed by distance and security concerns. In Rondebosch, in comparison, the majority of learners do not walk, and most of these respondents identified distance as the main reason for not walking, followed by fear of criminals and the number of bags (containing heavy extra-mural equipment) that need to be carried. The most important reasons cited for not walking to school in the two neighbourhoods are shown in figure 4. The prominence of distance as the most important barrier to walking in Rondebosch schools points towards the potential for ‘walking buses’ that operate between schools and points in less congested locations where children can be dropped off by car and join a ‘bus’. The relative prominence of distance over safety and security concerns is also encouraging from the perspective of ‘walking bus’ establishment, suggesting that parent concerns for safety and security may not be intractable.



Notes:

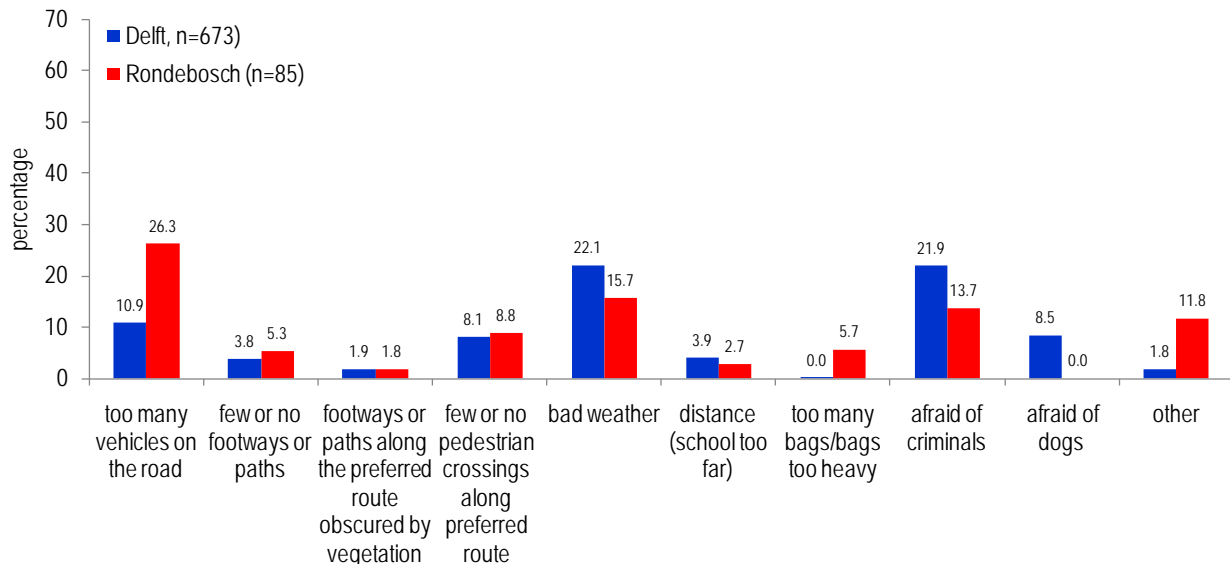
1. The question asked “Which of the following most prevents you from walking to or from school? (Tick one)”. Some respondents (183 in Rondebosch) selected more than one reason. In these cases responses have been weighted as a fraction of one, depending on the number of reasons selected.
2. Distributions do not add up to 100% in the chart as the item non-response category is omitted (61.4% in Delft schools and 7.1% in Rondebosch schools). The high item non-response rate for this question amongst the Delft schools renders these data unreliable.

**Figure 4. Most important reason cited by learners for not walking to and from school, by school group (percentage)**



#### 4.1.4 Problems encountered by learner pedestrians

Findings with respect to the most important problems encountered by learners while walking to and from school in the two neighbourhoods are shown in figure 5. In Delft, the main problems identified include fear of criminals, bad weather and road safety concerns due to high traffic volumes. In Rondebosch, road safety concerns associated with high traffic volumes, bad weather and security concerns were identified as the most important problems experienced. The introduction of ‘walking buses’ may help to allay concerns for safety and security in both neighbourhoods.



Notes:

1. The question asked “Which of the following is the biggest problem that you encounter while walking to and from school? (Tick one)”. Some respondents (268 in Delft and 16 in Rondebosch) selected more than one reason. In these cases responses have been weighted as a fraction of one, depending on the number of reasons selected.
2. Distributions do not add up to 100% in the chart as the item non-response category is omitted (17.1% in Delft schools and 8.2% in Rondebosch schools).

**Figure 5. Most important problem encountered by learners who walk to and from school, by school group (percentage)**

## 4.2 Parent attitudes towards learner walking

### 4.2.1 Willingness to participate in ‘walking buses’

There was positive interest in the concept of ‘walking buses’ among parents, both in terms of letting children join ‘walking buses’ and supervising those ‘buses’. Parent interest in permitting children to join a ‘walking bus’ was found to be higher in Delft than in Rondebosch (51% vs. 41%). However, parent willingness to volunteer to supervise ‘walking buses’ among Delft schools was marginally lower when compared to Rondebosch schools (16% vs. 17%). These responses are summarised in table 3.

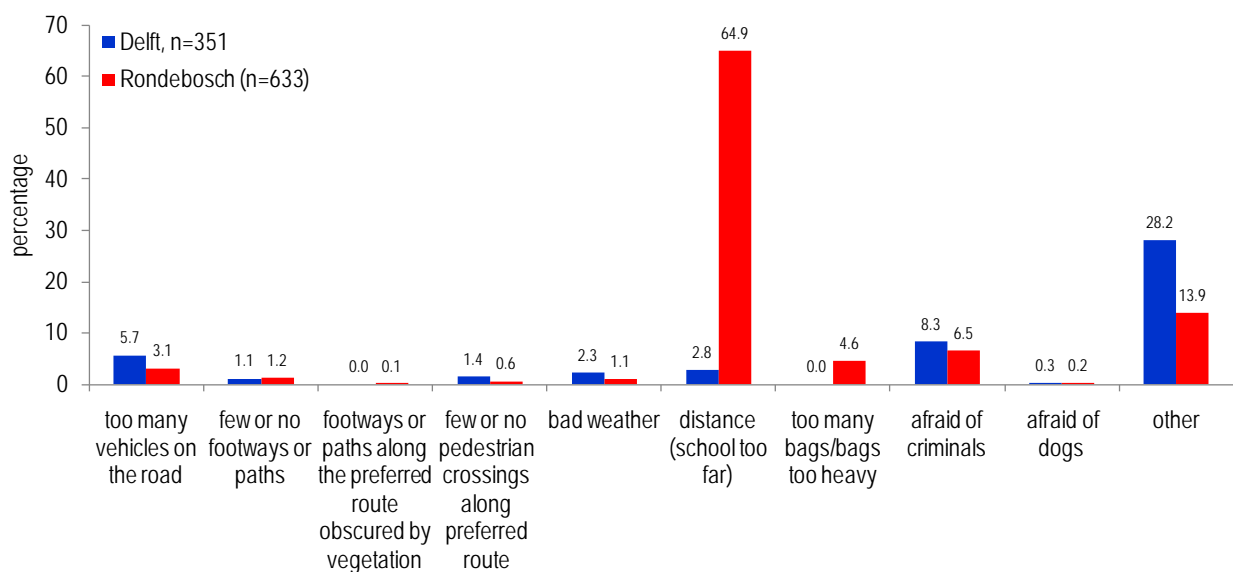
In the case of the Delft ‘walking buses’, parents were ultimately not recruited as supervisors. Instead, volunteers from the Red Cross have been escorting children to school. In the case of the Rondebosch schools, the decline in willingness from the feasibility survey in 2009 (in which parents were simply asked to state an ‘in principle’ response) to the implementation survey in 2010 (in which parents were asked to provide physical addresses and contact details when providing permission and volunteering) – from 53% to 41% for child permission, and 33% to 17% for parent volunteers – reflects the limitation of stated preference type responses and a gap between stated intention and preparedness for action.

**Table 3. Parent permission for learner participation in, and parent willingness to supervise, 'walking buses', by school group (percentage)**

		Yes	No	Item non-response	Recording error	Total
Delft, 2010 (n=709)	permit child to join walking bus	50.5	29.8	19.7	0.0	100
	volunteer to supervise walking bus	15.5	57.3	27.2	0.0	100
Rondebosch, 2010 (n=1,075)	permit child to join walking bus	41.1	57.3	1.4	0.2	100
	volunteer to supervise walking bus	17.2	77.2	5.6	0.0	100
Rondebosch, 2009 (n=1,1494)	permit child to join walking bus	52.5	43.1	4.3	0.0	100
	volunteer to supervise walking bus	33.1	62.7	4.3	0.0	100

**4.2.2 Reasons for rejecting the 'walking bus' concept**

Among the parents who were not interested in participating in 'walking buses' in Rondebosch, the main reason cited was distance. This is likely to be because of the large catchment areas served by Rondebosch schools, which results in a significant proportion of learners living outside a maximum walking distance radius (in the region of 1.5 km). In Delft, security was cited as a major hindrance. The 'other' reason category was also important, and reasons cited by parents in this category included, *inter alia*: 'my child is too old to use a walking bus'; 'car use is more convenient for me on my way to work/dropping off siblings at other schools'; and 'other parent volunteers may not be reliable or suitable'.



Notes:

1. The question asked "What is the main reason you are not willing to let your child use the walking bus? (Tick one)". Some respondents (68 in Rondebosch) selected more than one reason. In these cases responses have been weighted as a fraction of one, depending on the number of reasons selected.
2. Distributions do not add up to 100% in the chart as the item non-response category is omitted (49.9% in Delft schools and 3.7% in Rondebosch schools). The high item non-response rate for this question amongst the Delft schools renders these data unreliable.

**Figure 6. Most important reason cited by parents for rejecting 'walking bus', by school group (percentage)**

## 5 'WALKING BUS' TRIAL RUN IN RONDEBOSCH

As part of preparations for the launch of 'walking buses' in Rondebosch, trial runs were conducted over four days in November and December 2010 at Rondebosch Boys Preparatory School and Oakhurst Girls Primary School, with two buses at the former and one at the latter (see figure 8).<sup>1</sup>



Figure 7. A 'walking bus' in Delft



Figure 8. A 'walking bus' in Rondebosch

Table 4. 'Walking bus' trial run and potential growth, by neighbourhood and school

School	Planning phase			Trail phase			Potential growth in learners	
	no. routes identified	no. parent volunteers	no. learner permissions	no. routes operated	no. parent volunteers	no. learner participants		
Delft	Delft Primary School (AM only)	3	17	84	3	n.a.	113	0
	Delft South Primary School	1	10	23	0	n.a.	n.a.	23
	Rainbow Primary School	1	2	23	0	n.a.	n.a.	23
	Sunray Primary School	1	48	132	0	n.a.	n.a.	132
	Wesbank Primary School	1	33	96	0	n.a.	n.a.	96
	<b>Sub-total</b>	<b>7</b>	<b>110</b>	<b>358</b>	<b>3</b>	<b>n.a.</b>	<b>113</b>	<b>274</b>
Rondebosch	Diocesan College Preparatory School	3	20	53	n.a.	n.a.	n.a.	53
	Diocesan College Pre-Prep. School	1	20	23	n.a.	n.a.	n.a.	23
	Mickelfield School	2	24	34	n.a.	n.a.	n.a.	34
	Oakhurst Girls Primary School	2	28	53	1	3	6	47
	Rondebosch Boys Preparatory School	4	116	248	2	26	34	214
	St Josephs Marist College Jun. School	0	3	23	n.a.	n.a.	n.a.	23
<b>Sub-total</b>	<b>12</b>	<b>211</b>	<b>434</b>	<b>3</b>	<b>29</b>	<b>40</b>	<b>394</b>	

### Notes

1. The number of children using 'walking buses' at Delft Primary School exceeds the number of parent permissions to use 'walking buses' obtained from the survey. This is because the learner participants included children from grades that were not part of the survey. This suggests growth potential is greater than that reflected in the table.

<sup>1</sup> The first walking buses in Delft began operating at Delft Primary school in early November [see figure 7], but were not preceded by monitored trials. The insights obtained from the monitoring of these first 'walking buses' will be incorporated in the planning and implementation of 'walking buses' at three of the other primary schools included in the school survey.

The objectives of the trial runs included: determining the level of (learner and parent) participant attrition from survey to action; checking assumptions with respect to child walking speed; checking the adequacy of pedestrian crossing times at signalised intersections with a pedestrian phase; and observing the degree to which volunteers are able to supervise 'walking buses' (e.g. route and schedule adherence). A total of 23, 36, 31 and 28 learners used the 'buses' on the first, second, third and fourth days respectively. There was, however, significant 'churning' with some participants dropping off and being replaced by new participants. Interestingly the number of parents volunteering to supervise the 'buses' during the trials considerably exceeded minimum requirements (specified as a maximum ratio of one adult to 10 learners). In addition, the parent volunteers played an active role in route improvement by identifying sections of the routes that required cleaning or re-alignment. The trial runs highlighted the importance of introducing 'walking buses' that cater for learners from different schools in the neighbourhood, because some parents have children at different schools. The City of Cape Town and the Western Cape Department of Community Safety provided reflective vests for participants and helped in route improvement (e.g. cleaning NMT subways).

Table 4 estimates the potential for growth in learner participation in the selected schools, based on the survey responses. It is estimated that there is significant growth potential.

## **6 CONCLUSION**

With the caveat that significant interest expressed in surveys may not necessarily result in the successful and sustained implementation of NMT initiatives in mind, the results presented in this paper suggest that there is sufficient interest among parents and learners in the two neighbourhoods concerned to make 'walking buses' a viable intervention. 'Walking buses' will therefore be implemented at the various schools that participated in the surveys. It is envisaged that the 'buses' will, among other things, help to reduce car use for school trips, increase levels of daily physical activity, and improve learner pedestrian safety. Qualitative evaluations (e.g. *ex post* interviews with parent and learner participants) and quantitative before-and-after evaluations (e.g. school gate vehicle drop-off counts, and pedometer and odometer measurements) over a six month period will be used to estimate the extent to which some of the envisaged benefits will have been achieved. The results from the evaluation of impacts, and from the experience of planning and implementing the 'walking bus' schemes more generally, will be used to develop a 'tool kit' that can be used by other schools in Cape Town, and elsewhere, to facilitate the spread of the initiative.

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