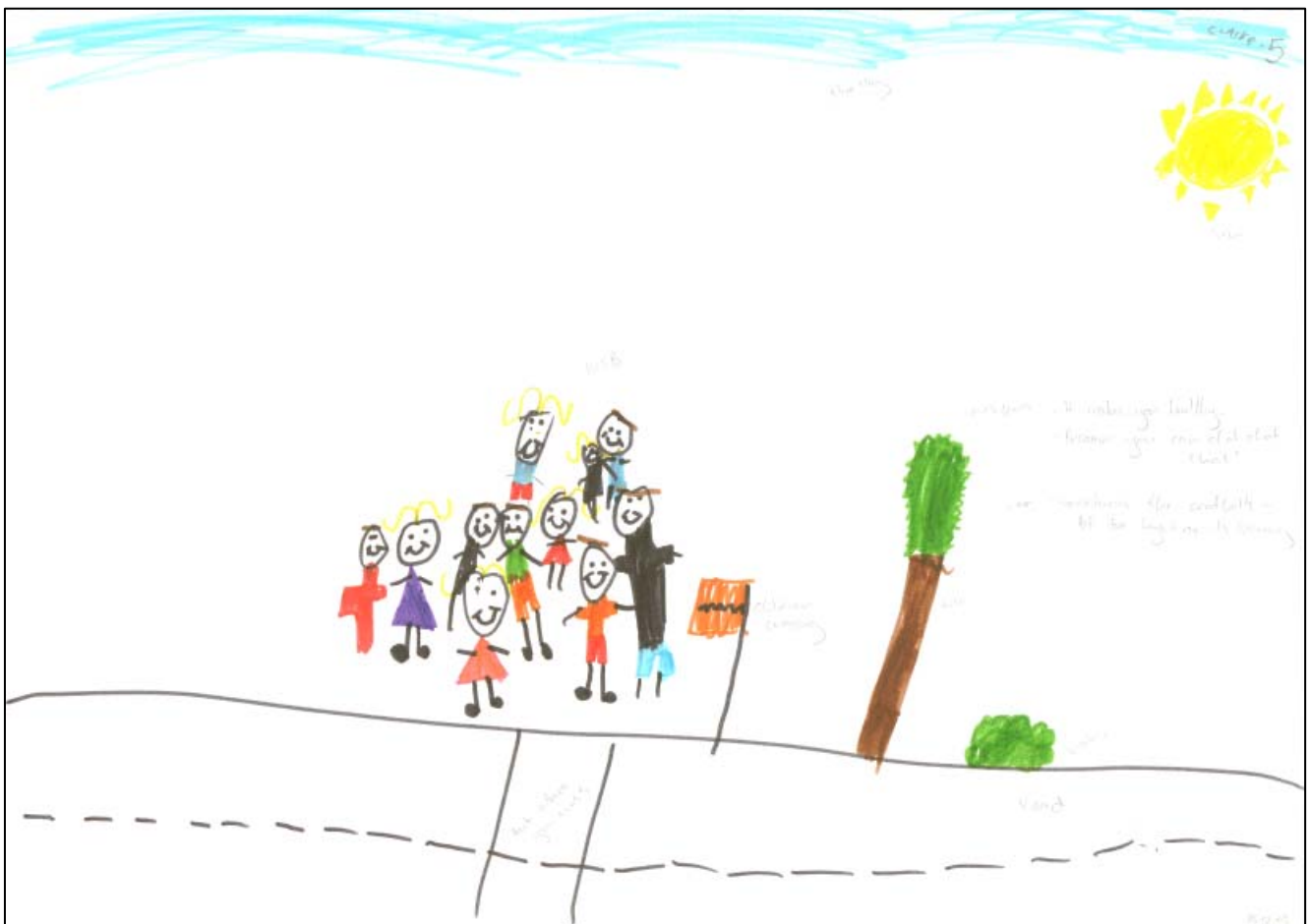


# World Transport Policy & Practice

Volume 14, Number 1

## SPECIAL EDITION 'THE JOURNEY TO SCHOOL'



Picture courtesy of Millie Rooney

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## Contents

<b>Editorial</b>	3
Paul Tranter	
<b>Abstracts &amp; Keywords</b>	6
<b>Safe Routes to Schools and School Travel Plans: An Overview</b>	8
Paul Osborne	
<b>Sustainable happiness and the trip to school</b>	15
Catherine O'Brien	
<b>Walking School Buses in Christchurch – do they encourage or discourage independent mobility</b>	27
Simon Kingham and Shannon Ussher	
<b>'Oh, you're just up the street!' The role of Walking School Bus in generating local community for children and adults</b>	39
Millie Rooney	
<b>The 50 metre dash – trials and tribulations of the Walking Journey to School</b>	48
Meg Selman	
<b>How to save time and money: Using the Walking School Bus to increase your 'effective speed'</b>	56
Paul Tranter	

## Editorial Introduction

### "The journey to school: walking toward a future"

The issues facing the world at the moment seem momentous. Global climate change, peak oil, population overload, environmental damage and economic inequities are all issues that by themselves could cause unprecedented hardships for modern societies. And if two or more of these occur simultaneously, the possible negative synergies may be truly catastrophic. Several researchers are now starting to question whether society has the ability to change course quickly enough to avoid a global crisis, for humans and several million other species. But if we assume that we have any hope at all, we have to start somewhere: to reduce our impact on greenhouse gas creation, to wisely use our remaining fossil fuels, to reduce the levels of war and violence, and to bring health, happiness and civility back to our cities. It is not an exaggeration to argue that if we want a future for a healthy human civilisation on the planet, we must start changing our lifestyles (including our transport behaviours) NOW!

In a world where hundreds of billions are spent on subsidies to the fossil fuel industry, where transport departments focus almost exclusively on road building, and where mega-motorsport events dominate inner urban streetscapes, we need to re-focus our energy and our planning on more sustainable ways of living.

One set of initiatives that might help achieve these objectives relates to the journey to school, including strategies such as "School Travel Plans", "Safe Routes to School", and specific initiatives such as the "Walking School Bus" (WSB).

The objective of this special issue of World Transport Policy and Practice is to explore the possible contributions of these strategies to the major challenges of the future. Can they make an impact on the levels of car use, both in the short term and the long term? Can they instil healthy and sustainable transport habits into children (and adults)? Can they stimulate a happier and more social environment within our cities? Or are they simply another example of strategies that are motivated by good intentions, but achieve little in practice?

One advantage of a focus on the journey to school, even if we accept that it is only a small part of the global transport problem, is that it allows us to start with an issue that people can relate to. And changes in the journey to school can be shown to provide short-term and long-term benefits for health, community, happiness and even time savings. In this issue the papers demonstrate that a focus on the journey to school can provide short-term benefits for children (evident almost immediately with some interventions), and long-term benefits for whole communities and cities. The long-term benefits apply particularly if children can be inculcated with the habits of active transport, so that as adults they are more likely to continue to walk and cycle.

The issue begins with an overview of safe routes to school (SR2S) and school travel plans. Paul Osborne uses examples from Denmark (where the Safe Routes to School programs were originally developed), from the US (which has invested considerable funding towards

implementing SR2S) and from the UK (where the Sustrans organisation has been instrumental in improving the level of active transport in the journey to school). In the second paper, the focus moves to the broad issue of “sustainable happiness” – “happiness that does not exploit other people, the environment or future generations”. Catherine O’Brien gives us an insight to a theme that people find innately fascinating, and how this relates to children’s ability to walk and cycle to school in Canada.

The remaining papers focus on one specific strategy employed in several countries around the world to increase the number of children walking to school – the walking school bus. While the concept of the walking school bus is also applied to cycling buses, the discussion here focuses on walking. The walking bus was an invention of an Australian activist for responsible transport – David Engwicht. A walking school bus consists of a group of children, accompanied by adults (usually at least two, and usually parents of children in the bus), who walk along a set route to or from school, picking up children as they travel along. This idea simultaneously overcomes parental fears about traffic danger (as children are supervised) and fears of stranger danger (as children are in a large group accompanied by adults. As the papers here show, the walking school buses can provide a range of benefits, for children, parents, teachers, the local community and the wider environment (e.g. through reduced pollution levels).

The third paper, by Simon Kingham and Shannon Ussher, examines the question as to whether the walking school buses actually do lead to an increase in children’s independent mobility (the freedom of children to explore their own

neighbourhood or city without an adult). The paper provides a New Zealand perspective, and also includes a review of some concerns about walking school buses from research in several countries. After considering the evidence, they conclude that while in truly child-friendly cities WSBs would be redundant, they have an important role to play in our cities that can be described a child unfriendly.

The next paper, by Millie Rooney, is based on research she conducted for her Honours thesis in 2006, titled: ““Oh you’re just up the street! Discovering Community as an Agent of Change”. This paper is unusual in that the author is able to draw on her own experiences as a walking school bus volunteer, an activity she has immensely enjoyed. This paper is based on research with children and parents that illustrates the role that WSBs can play in generating a sense of local, neighbourhood-based community. An interesting aspect of this paper is the research method of “rich picturing”, where Millie uses children’s drawings to gain insights into the way the children themselves value their walking school buses. The drawings show children’s journey to school before and after their involvement in WSBs, and the differences are palpable. One drawing, of a non-participant, suggests that even children not involved in the buses can appreciate the fun and the social contact they provide (This is something the parents and other adults involved also valued).

The fifth paper also involves someone with personal (and professional) involvement in the walking school buses. In this case study of the City of Port Phillip, a local government area in Melbourne, Meg Selman became involved

in the walking school bus when she saw an opportunity to improve the cross-ability of a particularly challenging road crossing near the school where her children were students. From discussions with parents, Meg realised that a major barrier to involvement in the WSBs was the impossibility of completing a road crossing within the time provided in the signalised road crossings. At one intersection, the time provided to make a crossing was ten seconds less than the time taken by the walking school bus. This paper provides an encouraging case study of the possibilities for local and state governments to work together to improve the walkability of cities.

The final paper in this issue introduces the notion of “effective speed” and applies this to walking school buses. Even planners or adults who may not be influenced by arguments about happiness or community might be motivated by a desire to save time and money. By applying the concept of effective speed to a holistic assessment of the time costs associated with NOT using walking school buses, we can see that the walking school bus is an excellent investment for those who want more time in their lives.

**Paul Tranter**

Guest Editor for Special Issue on “The Journey to School: Walking toward a future”

## Abstracts & Keywords

### Safe Routes to Schools and School Travel Plans: An Overview

Paul Osborne

This paper summarises some of the key trends in children's travel, health and social behaviour, and the influence of the city environment, particularly on the school journey. It draws on examples of school travel projects in Denmark, the United Kingdom and The United States and includes a summary of policy and

practice in the United Kingdom, with particular emphasis on lessons for other countries wishing to improve the environment for children and young people.

Keywords: pupil participation, cycling strategies, health indicators, safety

### Sustainable happiness and the trip to school

Catherine O'Brien

For decades, discussions regarding sustainable development and sustainability have been fostering interdisciplinary research, policy development and strategies. Likewise, studies of happiness and well-being are stimulating interdisciplinary research with implications for policy and practice. Bringing these two fields together within the concept of *sustainable happiness* holds intriguing possibilities for sustainable transportation. O'Brien (2005) defined sustainable happiness as the pursuit of happiness that does not

exploit other people, the environment or future generations. This concept is being used to generate awareness with respect to how individuals, communities and nations pursue happiness and the local and global consequences. Sustainable happiness is discussed with respect to the school trip, transportation and land use planning.

Key words: sustainable happiness, active transportation, child friendly planning, positive psychology

### Walking School Buses in Christchurch – do they encourage or discourage independent mobility

Simon Kingham and Shannon Ussher

A Walking School Bus involves parents or other adults escorting a group of children on a set route to school. The first one was established in 1996 in Canada. They can now be found in a variety of countries, including New Zealand. Many of the benefits associated with them are based on the general benefits of affecting a modal shift away from cars in favour of walking. However there is some debate

about the impact of them on children's independent mobility, with some authors suggesting they may restrict it. Drawing on published literature and primary data this paper suggests that walking school buses may encourage independent mobility in children at a younger age than if they had not been involved in them.

## **'Oh, you're just up the street!' The role of Walking School Bus in generating local community for children and adults**

Millie Rooney

The Walking School Bus is a fantastic vehicle for the development of local community. The following paper draws on qualitative research which sets out to explore the relationship between perceptions of community and participation in the WSB. The two key themes to emerge relate to the value of legitimate interaction with the social and physical environment, and the way in which the WSB empowers parents and

children to make the most of their environment. This study draws a strong case for the continued development and expansion of the WSB and aims to encourage everyone to get involved for physical and community health.

Keywords: children, community, socialisation, empowerment, belonging, Walking School Bus

## **'The 50 metre dash – trials and tribulations of the Walking journey to school'**

Meg Selman

This paper provides a case study of an important aspect of the pedestrian environment – the ability to cross major roads. A major barrier to participation in some walking school bus programs in Melbourne is the inability of these buses to complete road crossings at signal crossings, mainly due to insufficient time being allocated to the pedestrian crossing phase. The paper demonstrates the

challenges and successes of motivated individuals working to encourage greater cooperation between local government and state government departments, working toward the goal of making walking safer and more convenient for adults and children.

Keywords: major road crossing, barriers to WSB, walking safety.

## **How to save time and money: Using the walking school bus to increase your "effective speed"**

Paul Tranter

For many city dwellers in modern western societies, there is a sense that there is never enough time to get things done. One likely, but largely overlooked, reason for this lack of time relates to the dominance of cars in our transport systems. When all the time costs associated with cars are taken into account, it is possible to see how cars, rather than saving us time, are in fact stealing our time and our money. To understand this, we need to first

understand the concept of "effective speed". This paper outlines the concept of effective speed. It illustrates how this holistic approach to understanding the time requirements of transport modes can help explain why walking school buses may be a good investment for parents who never seem to be able to get everything done, or get to places quickly enough.

Keywords: time perception, effective speed, alternative modes

# Safe Routes to Schools and School Travel Plans: An Overview

Paul Osborne

Sustrans, York, UK

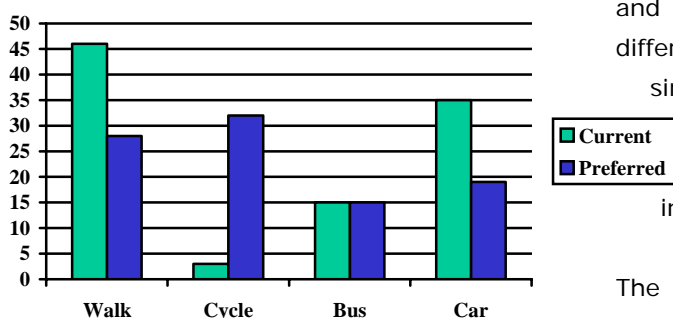
*Paper adapted from: Osborne, Paul. "Safe Routes for Children: What They Want and What Works". Children, Youth and Environments 15 (1), 2005.*

Persuading children and young people to be more active, more often would appear to be a major challenge for many societies throughout the world. An increasing proportion of journeys made by young people are made by car and there seems to be a firm link with the consequent reduction in levels of physical activity and rising obesity among young people. The 'school run' contributes to a significant proportion of car traffic in the morning peak and creates major parking/drop-off problems for schools and local residents. In the UK, 52 percent of all journeys made by under 16 year-olds are by car (National Travel Survey, Department for Transport 2004); there has been a doubling in the proportion of children travelling to school by car since 1985 (32 percent of all school journeys in 2002); and rates of child obesity in the UK are among the highest in the world and rising (National Obesity Task Force 2004). The reasons — and sometimes excuses — for these trends vary and include: busy lifestyles, increasing journey distances, laziness, lack of older role models and danger—both from traffic and from isolated attacks. The importance of these factors varies depending upon whom you ask; when asked about the school journey, adults are usually more concerned about safety or the weather, while young people worry more about the security of their bike or intimidation on the school bus.

Increasing focus on children's rights and their participation in the planning process led the UK-based National Children's Bureau, to establish an on-line survey about children's views on transport (Young Transnet), in particular about their journeys to school. By the beginning of 2004, around 43,000 young people had entered data about their current and preferred modes of travel and the results make interesting reading for transport planners and traffic engineers, but also for school transport managers, public health professionals, and children's play practitioners. Roughly one-third of the sample was driven to school and half of those responding did not want to travel by car. Nearly one-third (ten times the number who currently did so) wanted to cycle to school.

The Young Transnet survey tool and database has now been incorporated into powerful digital mapping software, enabling pupils to express their travel preferences, identify the routes they use and any hazardous locations and help schools and local authorities to track progress with school travel plans (see [www.viewfinder.infomapper.com](http://www.viewfinder.infomapper.com)).

Figure 1: Children's Preferences for School Journeys



(National Children's Bureau, London, 2004)

Influencing how school journeys are made is an important challenge for all those engaged in promoting sustainable transport, independent play, better health and safer communities. There are well established links between good habits developed early in life and continuation of those habits in adulthood, and transport is no exception. For the

purposes of this article, it is worth comparing Denmark, the United Kingdom and the United States, countries very different in size and population but similar in that each has set out specific policies and developed its own unique approach to influencing the school journey.

The table below compares several key transport and health indicators between these countries. There seem to be strong links between:

- Low levels of walking & cycling to school and higher levels of obesity
- High levels of car trips to school and higher levels of obesity
- Low levels of cycling to school and low levels of cycling to work

Table 1: International Comparison of Transport and Health Indicators

	Denmark	UK	USA
cycle to school	50%	2%	-
walk to school	25%	44%	13%
car to school	12%	32%	55%
cycle to work	22%	4%	-
children overweight & obese	15%	29%	35%
adults overweight & obese	45%	61%	66%

(Danish Roads Directorate 1998; National Travel Survey, Department for Transport 2002; National Personal Transportation Survey, Department of Transportation 2001; International Obesity Task Force 2007)

In the early 1970s, Denmark had the highest child mortality rate from traffic accidents in Western Europe and legislation was passed in 1976 to protect children from traffic on school journeys. Since then, Denmark has invested heavily in traffic calming and safe walking and cycling routes (see Image 1), and an early demonstration project in the 1980s in Odense succeeded in

reducing school journey accidents by 82 percent. The city has taken further strides forward in its aim to become Europe's foremost cycling city and over half of all school journeys and 50 percent of all city centre journeys are now made by bike. Levels of cycling to school range from 24 percent to 73 percent of all journeys in the city's schools (Andersen 2003). This has been achieved by

integrating work programmes based on 'hard' and 'soft' measures – changing the road environment and changing attitudes towards sustainable transport.

Image 1: Cycle Priority at Junction:  
Denmark



The [Cycle City](#) project in Odense, partly funded by the national government, includes promotional work in schools, including an award for the class that collectively cycles the furthest distance in one week. Trailer bikes and bike trailers are loaned for no charge to parents in kindergartens and there has been a strong emphasis on road safety training across all school year groups.

By contrast, the UK has high levels of walking to school but very low levels of cycling. In response to concerns about traffic congestion, children's safety and the environment, the government established a School Travel Advisory Group and encouraged more spending on safe routes to schools in its Integrated Transport White Paper (1998). This was

followed by a national Travelling to School Initiative (2003) which aims to have a school travel plan in place at every school by 2010. Critically, the initiative has the full support of government ministers in charge of transport, education and health departments and has a steering group which represents the interests of head teachers, school governors, road safety professionals, public transport operators and walking and cycling organisations. Among the initiatives being taken are marketing campaigns, new cycle sheds in schools, walking school buses (see Image 2), on-road cycle training between home and school, and pilot yellow school buses, along the lines of the U.S. model.

Image 2: Walking School Buses at  
Whitehall Primary School



Results from an in-depth study of 30 'early' school travel plans showed an average reduction in car use of 23 percent (Department for Transport,

2005). Schools which benefited from new secure cycle storage and cycle routes away from traffic showed the greatest increase in cycling, with one high school recording 60 percent of all journeys by bike. Walk to School Week has been particularly effective at encouraging more walking journeys and is now being extended to become a once-a-week initiative called Walk on Wednesdays (WOW).

There is increasing recognition that travel behaviour change programmes can have a significant effect on traffic levels, and importantly, these can take place within a short space of time. Government research into 'Smarter Choices' work reveals that area-wide school travel work has enabled the majority of schools with travel plans to reduce the number of car journeys, a significant proportion by 20% or more, and that the average reduction across all 'engaged' schools is between 8% and 15%.

Schools themselves are not solely interested in reducing traffic levels however, and travel plans have provided other benefits, notably:

- Safety improvements – real and perceived
- Improved pupil health and fitness
- Reduced congestion at the school gate
- Improvements in attendance and punctuality
- Improved pupil alertness and learning; and
- Improved independence and self esteem

By contrast the United States has traditionally invested in school bus transport, much of it free for children

travelling more than one mile to school. This is clearly a well-funded and popular initiative and is now being investigated as one solution to rising car use on school journeys in the UK, mindful of the need to avoid abstracting existing pedestrians and cyclists. Free school transport is given lower priority in the UK and Denmark where it is usually provided at three mile and five mile limits, respectively, for the 14/15 year-old age group.

In spite of the investment in yellow school buses, the level of car use for American school journeys remains high (55 percent) compared the UK (32 percent), with just 13 percent walking or cycling to school (46 percent in the UK) (National Personal Transportation Survey 2001 (US); National Travel Survey 2002 (UK)). Concerned over rising levels of obesity among children, car-dominated neighbourhoods and escalating school transport costs, many American communities have imported the Safe Routes to Schools model from Denmark and the UK. The US Government has established a national Safe Routes to Schools Programme, supported by a National Centre for Safe Routes to Schools which coordinates resources and best practice. The Department for Transportation has allocated a total of \$612 million over 5 years enabling each state to implement its own programme. By 2006, 22 percent of schools had become involved in safe routes to schools activities (see reports at [www.saferoutesinfo.org](http://www.saferoutesinfo.org)).

Safety must be at the heart of any campaign to persuade more young people (and their parents) to walk and cycle. Danish research has shown the effectiveness of investing in safe walking

and cycling routes. During the period 1985-2000, the number of children (6-16 years old) killed or injured fell by 46 percent; approximately half the reduction is put down to road safety and cycle route improvements (Jenson and Hummer 2003). These improvements typically include segregated cycleways and footpaths, reallocation of road space away from cars in favour of pedestrians and cyclists, 20kph (and lower) speed limits in residential areas, and requirements for motorists to defer to pedestrians and cyclists at side roads and crossings. Research in Odense has shown that continued investment in walking and cycling infrastructure has more than paid for itself in terms of reduced school bussing costs and health benefits to the wider population (Safe Routes to Schools 1998; Anderson 2003).

Sustrans 1 was instrumental in piloting the Danish approach in the UK as part of a pilot project in four cities. The project required a combination of traffic engineering measures and in-school initiatives to “win hearts and minds.” The involvement of young people in the political process was crucial. Perhaps the most successful intervention was youth exchanges between Danish and English schools, after which teenage students presented their experiences to local planners and decision makers. This resulted in better recognition of young people’s transport needs and increased local budgets for safe routes to schools.

While the UK has a long way to go in recreating the child-friendly street environment of Denmark and other European countries, it has made a sound

start at readdressing children’s transport and recreation needs. Government guidance for local councils requires that they consult widely with young people, that they collect annual data on school journeys and report progress with their school travel strategies in their five-year local transport plans. Several cities are now conducting trials of “Home Zones”—neighbourhoods where pedestrians, cyclists and children have priority over cars and increasing numbers of schools are promoting walking and cycling as part of their “Healthy Schools” programmes. Local authorities are being encouraged to develop ‘innovative’ approaches to school transport which reduce car use and promote physical activity whilst improving access for children in poorer families to a wider choice of schools.

Image 3: Bike It Leicester  
(Source: 'Stewart Charles/Sustrans')



For its part, Sustrans is working closely with local authorities across the UK and developing new walking and cycling routes between schools and the country’s

largest sustainable transport project, the National Cycle Network. Much of our work is focused on travel behaviour change, one example being the Bike It project (see Image 3) which has successfully trebled cycling levels at those schools we work with, and where typically, at least 20 percent of pupils are cycling once a week or more.

### **Lessons Learned**

Cities such as York, UK now have several years experience of planning for school journeys as part of longer established walking and cycling strategies. A case study describing the city's school travel strategy is included in guidance published by the World Health Organisation (2004).

Important lessons learned by planners and traffic engineers include:

School travel policy should be part of an overall strategy to reduce traffic and promotion of alternatives to the car, especially development of a city-wide walking and cycling route network.

Traffic engineers should be prepared to experiment with innovative safety measures (which benefit children in particular) even though they may have an adverse impact on traffic capacity.

A thorough, well-funded road safety training program is needed to ensure that all children have at least a basic awareness of active travel, whether their school is engaged in a travel plan or not.

Appointment of enthusiastic staff who liaise between traffic engineers, development control staff, education planning staff and schools is essential.

Their task is to reduce car use as well as improve road safety.

Linkages should be made between school travel initiatives and key education objectives, e.g., curriculum links, the national Healthy Schools Scheme, physical activity, health and safety, and alertness/readiness to learn.

Young people should be involved in the political process, e.g., school council involvement in the school's travel plan, young people discussing traffic options, making presentations to city council, etc.

Links should be developed between school travel planning and the planning system; e.g., travel plans can be secured through the planning process as a condition of planning consent.

Paul Osborne is Project Director for [Sustrans School Travel Project](#) and is an adviser to the UK government on its school transport policy. Sustrans provides information and advice to schools and school travel practitioners, provides training for school travel "champions" and works with city councils to provide safe routes to schools.

### **Useful Websites**

Sustrans [www.sustrans.org.uk](http://www.sustrans.org.uk)

Sustrans Safe Routes to Schools Project [www.saferoutestoschools.org.uk](http://www.saferoutestoschools.org.uk)

UK Department for Transport [www.dft.gov.uk](http://www.dft.gov.uk)

UK Department for Education and Skills [www.teachernet.gov.uk/sdtravel](http://www.teachernet.gov.uk/sdtravel)

Infomapper Viewfinder (UK) [www.infomapper.viewfinder.com](http://www.infomapper.viewfinder.com)

US National Centre for SRTS [www.saferoutesinfo.org](http://www.saferoutesinfo.org)

Odense Cycle City Project (in English) [www.cyclecity.dk](http://www.cyclecity.dk)

International Walk to School Day  
[www.iwalktoschool.org](http://www.iwalktoschool.org)  
World Health Organisation  
[www.euro.who.int/childhealthenv](http://www.euro.who.int/childhealthenv)

### Endnote

1. Sustrans stands for sustainable transport. It is a charity that works on practical projects to encourage people to walk, cycle and use public transport in order to reduce motor traffic and its adverse effects.

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# Sustainable happiness and the trip to school

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## Introduction

*Sustainable happiness is the pursuit of happiness that does not exploit other people, the environment or future generations (O'Brien, 2005).*

*Creating a higher quality of life requires us all – individuals and communities – to help create a new political, physical and cultural “infrastructure of well-being” (Gardner and Assadourian, 2004 p. 172).*

Ten years ago, transportation planning documents and academic literature rarely mentioned children and youth. It was assumed that “moving people and goods” efficiently encompassed the travel needs of children. Their aspirations were not considered. Today, we know that assumption is incorrect and that this younger sector of the population is particularly susceptible to the adverse health impacts of motorised transportation (Gilbert and O'Brien, 2005). There is also evidence that children are taking more trips by car than children did ten or fifteen years ago and that many of children's car trips are replacing trips that were once taken by walking or cycling (Gilbert and O'Brien, 2005). Meanwhile, evidence linking public health with transportation and land use planning has reinforced the benefits of planning walkable, liveable communities (Freeman, 2001; Frumkin, 2001) as well as the significance of ignoring the consequences of this relationship.

A Canadian provincial medical officer of health expressed it like this:

*An epidemic of overweight and obesity is threatening Ontario's health... We are now living in 'obesogenic' environments: communities, workplaces, schools and homes that actually promote or encourage obesity (MHLC, 2004).*

Planning paradigms are shifting as academics and planners have been absorbing and applying concepts related to active living, Smart Growth, New Urbanism, and active transportation. Still, planning *for and with* children and youth is a relatively new perspective in North America. Considerable credit for raising the profile of young people must go to the tenacious global network of individuals and organizations working to foster active and safe routes to school. Through their efforts, educators, municipal staff, governments, parents, students and academics have been educated about the health, safety and environmental benefits of walking and wheeling to school.

Children's view of transportation (when walking to school) reminds us that transportation is not only about “moving people and goods.” It is about wonder, discovery, joy and happiness (O'Brien, 2005). The International Walk to School web site<sup>1</sup> has captured their statements

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<sup>1</sup> [www.iwalktoschool.org](http://www.iwalktoschool.org)

and the words of this five year-old reflects the sentiments of many others.

We walk to school because...

*"We get to say hello to a kitty or a pup and sing along with the birds".*

Apart from melting the heart of most readers, what else does this statement indicate? It suggests that the child enjoys the company of a friend and that together they experience a sense of delight and connection with the wildlife along the way. Another student expressed a similar view:

*"Walking and talking with my dad was the best bit. We saw two slugs with no homes, but they still had their aerials, and someone had dropped their apple from their packed lunch. I wish my dad could walk with me all the time".*

Ensuring that children are able to travel to school using active transportation contributes to their physical well-being. Mackett and Paskins (2004) have found that the calories burned over the course of a week's school trip can be equivalent to two physical education classes. There is also evidence that the very activity of walking can elevate one's mood and contribute to both emotional and physical well-being (Thayer, Godes, Lobato, et al, 2003). There is something more. It also seems to make people feel happy. There, I've said it, the "H" word that rarely makes its way into transportation discussions. However, the scope of health benefits from active transportation is incomplete if happiness is overlooked. This paper outlines why we ought to be taking happiness more seriously and demonstrates that walking and cycling to school is an example of sustainable

happiness.

It's easy to imagine the playful sense of adventure that children bring to walking trips. They are very much engaged in the journey. They are living in the moment, the very thing that stress management experts recommend through the practice of mindfulness (now shown to be linked to positive emotions and physical well-being) (Kabat-Zinn, 2005). What about adults? Many of us can think back to childhood days when we walked to school and home again. Those were often carefree trips, talking with friends, kicking pebbles along, negotiating snow banks, jumping in leaf piles or puddles. As adults, those journeys seem like a nostalgic memory as ours daily trips focus on getting to our destinations as quickly as possible. Yet, studies that look at time affluence and subjective well-being (happiness) indicate that people who feel that they have (or make) time for things that are important to them are also happier (Kasser and Brown, 2003).

### **Positive Psychology and Sustainability**

Twenty years ago, the Brundtland Commission published *Our Common Future* (WCED,1987), which outlined concerns about the trajectory of development and the harmful impact of those development patterns for all life on the planet, including life that was yet to be born.

For decades, work regarding sustainable development and sustainability has been generating interdisciplinary research, policy development and strategies with many inspiring and effective outcomes. Nevertheless, our progress toward sustainability has fallen considerably short of what is required. Environmental educators struggle to change

unsustainable behaviour through public education, desperate to garner attention around pressing issues. It is challenging to counteract the social and cultural milieu of the consumer society. Worldwatch President, Christopher Flavin (2004), states that "the drive to acquire and consume now dominates many peoples' psyches, filling the space once occupied by religion, family, and community" (p. xvii). Increasingly, our consumption patterns in the North are dependent on the availability of cheap labour in the South (Klein, 2000) and we transport ourselves in droves to shop at 'big box' stores that provide these products.

Positive psychology and happiness studies have been realising a far more rapid course than sustainability, influencing work in economics, business, health, and social policy discussions. Over the past six years one can track its progress as one discipline after another realizes its relevance. Radio shows, television broadcasts and a multitude of books about happiness are raising the profile of happiness studies in the public's eye. *Time* magazine (2005) published a special feature on the 'science of happiness.'

There is a natural connection between sustainability and positive psychology. In a consumer society, where consumption and happiness are inextricably linked, it is understandable that individuals confuse the "path to the 'good life' as the 'goods life'" (Kasser, 2006, p. 200). One car manufacturer chose to reinforce the perception that happiness and consumption are linked through a magazine advertisement that displayed a luxury car with the following caption, "Happiness, Starting at \$37,000."

Municipal and national governments are embedded in these consumer societies and public policy grapples with meeting the goals for sustainability while enmeshed in public perceptions of happiness that are closely tied to consumption. For example, municipal planners know that denser land use planning and the reduction of car use is central to developing healthier communities. Canadian planners say, however, that many affluent suburban residents demand single-family dwellings on large lots with 3-car garages. And developers are happy to comply.

What's to be done? In a world where global warming has begun (IPCC, 2007) and climate scientists are investigating both mitigation measures *and* adaptations measures, where human suffering has reached almost unfathomable levels, what possible relevance could research on happiness have? Are happiness studies merely a pleasant diversion from all the bad news and despair while the real work is being done in the academic trenches of other disciplines? Perhaps that sentiment was best voiced by a transportation colleague who said, "I don't care if people are happy, I just want them to get out of their cars!"

My view is that the pursuit of happiness must become an essential component of our discussions – and transportation is no exception. Happiness is at the heart of who we are, what we do, as well as the decisions and policies we make. Our pursuit of happiness is changing the world, and clearly, not always for the better. Sustainability literature has only just begun to incorporate positive psychology (Starke, 2004; NEF, 2006). Conversely, few positive psychologists,

with the exception of Kasser (2006) draw connections to sustainability, unless reference is being made to sustaining happiness, (Sheldon & Lyubomirsky, 2006). Happiness is far more than the "H" word that has been sidelined in transportation literature. Rather, results from happiness research point to opportunities for shifting policy and practice that are perfectly aligned with sustainable transportation efforts.

### **Happiness and Health**

Happiness is defined by Veenhoven (2006) as "*the overall appreciation of one's life-as-a-whole*, in short, how much one likes the life one lives" (p.2). This is often measured through tests of subjective well-being and life satisfaction. While definitions of happiness may vary, researchers have demonstrated that one's subjective experience of happiness corresponds with numerous positive health outcomes (Steptoe, Wardle, and Marmot, 2005). Seligman (2002) writes that happy people "have better health habits, lower blood pressure and feistier immune systems than less happy people" (p.40). They are also more likely to seek out and act upon health information. Veenhoven (2006) completed an extensive survey of studies regarding the relationship between happiness and physical and mental well-being. "The observed positive effects of happiness on longevity [in healthy populations] are quite sizable and amount to 7, 5 and 10 years" (p. 5). He discusses the implications for preventive health care. "This finding that happiness adds to health opens new ways for health promotion, preventive public health care in particular. It implies that we can make people healthier by making them happier" (p. 6). Veenhoven's findings have tremendous implications for

transport policy and practice. Creating and sustaining environments that contribute to individual and public happiness are likely to have positive outcomes for public health. Very likely, this would include walkable, liveable communities but further research is needed to verify this.

Happiness appears to carry substantial physiological clout. Rather than being an inconsequential, but desirable, feeling it appears to be associated with physical and emotional well-being. Another facet of happiness research investigates the interrelationship between subjective well-being and the natural environment. Nisbet, Zelenski and Murphy (in press) have found that nature-relatedness is correlated with subjective well-being. Brown and Kasser (2005) write that an intrinsic value orientation is associated with higher levels of subjective well-being. Individuals who are intrinsically oriented tend to be "oriented toward personal growth, relationships and community involvement" (Brown and Kasser, 2005, p. 350). Moreover, an intrinsic value orientation has been associated with an inclination to engage in environmentally friendly behaviour such as cycling and recycling. (Kasser and Sheldon, 2000; Sheldon and McGregor, 2000; Richins and Dawson, 1992).

In summary, paying attention to what contributes to individual and public happiness ought to be an important public policy consideration given the multiple links to wellness. In addition, sustainability efforts may be augmented considerably if public education and policy reinforced a more sustainable pursuit of happiness – that is, sustainable happiness. The concept of

'sustainable happiness' is intended to strengthen the relationship between happiness and sustainability and to stimulate discussion in various domains. Another aim is to emphasise the interconnections across time and space that our policies and practices are having, as well as the potential for more extensive positive impacts.

### **Sustainable Happiness**

Sustainable happiness is relevant to essentially every definition of happiness. If we are talking about the momentary pleasure of drinking a cup of coffee, for example, we can consider whether that cup of coffee is fair trade coffee. Has one's momentary pleasure of coffee, (or anything else for that matter), come at the expense of someone else or the natural environment? On a daily basis, there are countless choices that individuals, organisations, and governments make which could contribute to sustainable happiness; whether we look at one's commute to work, an organisation's procurement policies, a municipal plan for active transportation, or a student's trip to school. All of these moment-to-moment, day-to-day choices have the potential to leave a legacy of sustainable happiness.

Perspectives from positive psychology have yet to influence transport and urban planning policy and practice. There is one notable exception – during his tenure as mayor of Bogotá, Enrique Peñalosa, chose to "plan for happiness" (O'Brien, 2005). He also focused on the needs of children. Meanwhile, research on children's health and transportation (O'Brien, 2001) has examined the needs and aspirations of children. This research brings us full circle, back to happiness.

Peñalosa created urban infrastructure and public space that gave priority to children and to those who don't own an automobile.

*We had to build a city not for businesses or automobiles, but for children and thus for people. Instead of building highways, we restricted car use. ... We invested in high-quality sidewalks, pedestrian streets, parks, bicycle paths, libraries; we got rid of thousands of cluttering commercial signs and planted trees. ... All our everyday efforts have one objective: Happiness (Peñalosa and Ives, 2002).*

Prior to Enrique's tenure as mayor, his brother, Gil Peñalosa, was the Commissioner of Parks and Recreation in Bogotá. He expanded the existing *Ciclovía*<sup>2</sup> program from 13 kilometres to 91 kilometres of road closures every Sunday. He writes about this in the context of sustainable happiness.

*Ciclovía* attracted over 1.5 million people every week to walk, run, bike or skate. Despite the multiple issues happening in the country, this was the safest and most enjoyable place. On average, people were doing 50 minutes of physical activity but stayed on the *Ciclovía* for over 4 hours, enjoying other people's company. Obviously this is very respectful of people, the environment and future generations (G. Peñalosa, 2007).

Enrique Peñalosa's focus on children and happiness led him to create "infrastructures of well-being." Similar accomplishments are being reported

<sup>2</sup> The Latin American term *Ciclovía* refers to the temporary closing of streets to allow dominance by other road users.

through work on child-friendly cities. More than 800 municipalities are now registered on UNICEF's Child Friendly City web site [www.childfriendlycity.org](http://www.childfriendlycity.org). In Canada, our Centre for Sustainable Transportation has developed *Child- and Youth-Friendly Land Use and Transport Planning Guidelines* (Gilbert and O'Brien, 2005) and we are working with municipalities to integrate the *Guidelines* into policy and practice. This includes recommendations for municipalities to support Active & Safe Routes to School.

Further evidence for the value of creating "infrastructures of well-being" are found in the Delightful Places Survey (O'Brien, 2006). Working with the National Center for Bicycling and Walking in the US, O'Brien (2006) developed a Delightful Places Survey to explore links between well-being and the urban and non-urban areas that respondents experience as "delightful." The activity that was associated most often (80%) with a delightful place is relaxation. As one survey respondent stated:

*"Delightful places are best incorporated into routine experiences and not once in a while places to enjoy. Relaxation in a city needs to be almost like routine treatments – once a year is helpful but not lasting. A little pleasantness almost every day starts to have a cumulative and positive effect".*

How does one create a delightful place (apart from those that exist naturally)? Respondents generally noted the very things that are recommended for liveable communities:

*Create a walkable city (like Vancouver), and limit cars inside the perimeter. Include wide sidewalks, good*

*transportation options, plant trees and flowers, good lighting for night time accessibility, create lots of little neighbourhood areas with all services needed within the neighbourhood. Create multiple-use buildings.*

Creating communities that enhance social interaction may also contribute to happiness and reinforce the 'virtuous circle' described by Martin (2005).

Happiness and sociability go hand in hand...research has also shown that we have a higher quantity and quality of social interactions when we are happy...Happy people find social encounters more satisfying, they adopt a less cautious social style, and they are more inclined to be cooperative and generous. What is more, this link between sociability and happiness works both ways; sociable people, become happier and happy people become more sociable, creating a virtuous.

Results from happiness studies affirm sustainability principles rather than supporting over-consumption. This leads to intriguing and potentially profound opportunities. Can we create communities, towns, and cities that make people happier *sustainably* and thus contribute to public and environmental health and well-being?

Currently, public happiness may be an inherent intention of many politicians and planners, but it is not explicit. Consequently, the question of whose view of happiness is influencing the vision for our cities tends to be unexamined. Are we incorporating the aspirations of children? Usually, not. Are we catering to the "happiness" of car drivers? Most often, the answer is, yes.

Without more explicit discussions regarding public happiness there continues to be tension between sustainability objectives and meeting the more public demands that are embedded in a consumer society view of happiness. Conversely, communities that recognise the value of community cohesion or aim to preserve a liveable neighbourhood are often thwarted in their efforts as schools are closed, roads are widened and bicycle lanes are overlooked in road development.

### **Liveable, Walkable Communities and Sustainable Happiness**

There are few studies that have looked at happiness and transportation. Kahneman and Krueger (2006) investigated the daily experiences of more than 900 Texas working women through a combination of daily diaries and a technique called experience sampling through which they registered their mood at various points throughout the day. Their daily commute was the least enjoyable activity. However, their mode of transportation was not part of the study and Kahneman has indicated (personal email) that it is unlikely that the study participants were cycling. A Statistics Canada study found that workers who walk or cycle to work are more likely to enjoy commuting than commuters who use motorised transportation (Turcotte, 2006). It is not clear whether the happiest commuters are active commuters or whether commuting actively contributes to happiness, or both.

With the limited child-related research available it is not yet possible to state definitively that walkable, liveable communities make children happier and thus contribute to their well-being

beyond the physical activity. Safe Routes to School (SRTS) programs could readily contribute to this research by gathering data on subjective well-being and the trip to school. Certainly the words of Canadian children suggest that this relationship exists:

*"Everyone in our school tries to walk for a healthy body and safer streets. I like walking to school with my friends because we could talk. Walking is way better than riding in a car because walking is more fun than getting a ride"* (Student at Morton Way Public School, Brampton, Ontario, Canada).

Some may wonder whether those happy walkers are a minority while the majority of children would prefer to be chauffeured as car passengers. The Ontario Walkability Study (O'Brien, 2001) surveyed more than 6,000 elementary students on International Walk to School Day 2001 (IWALK). The study found that *nearly 75% of students surveyed would prefer to walk or cycle to school regularly.*

On the other side of the globe, intermediate students who walk to school in Auckland were asked why they walk to school. The most common responses were that *"walking was a good form of exercise"* and they *"liked walking with friends"* (Orsini, 2006, p.4). They were also asked to suggest how their peers might be motivated to walk as well. The most common recommendations were to tell students that walking is *"healthy for your body and fun when you walk with your friends"* (Orsini, 2006, p. 5).

Also, a study involving a small group of high school youth who regularly cycle to school in Vancouver explored what

motivates them to use their bicycles (Orsini and O'Brien, 2006). The top three motivations were that it is fun, fast and makes them fit.

Jacky Kennedy has been involved with SRTS since its inception in Canada and manages the program for the province of Ontario. Her view is the following:

*"We've watched Walking School Buses start off with just two or three families and gradually increase to involve the entire community – imagine the site of 50 or so happy, smiling faces arriving at school and parents lingering on for a coffee with teachers, getting to know each other better. It's really amazing. This is how we will achieve sustainability – one person, one school, one positive experience at a time"* (J. Kennedy, email communication, 2007).

In an era when parents are struggling with extracting children from television, computer and video games it is encouraging to hear that children garner enjoyment from socializing with friends on their way to school. We have, readily at hand, an opportunity to nurture social engagement, physical well-being and emotional well-being – even better, children are telling us that this mode of travel is their preferred model!

### **School policies and sustainable happiness**

In order to support active trips to school and the associated community benefits it is paramount that the trend toward school closures and super-sized schools be re-evaluated. Economic efficiency is the argument that is often provided to support school closures. Yet this is an old economic paradigm that neglects the broader perspective demanded by

sustainability. Saving money in one part of the public purse while ignoring implications for public health simply shifts the economic burden from one pocket to another. But it is far worse than this as children are bussed out of their community, lengthening the bus ride and fragmenting the fabric of the community. Residents of a community on Cape Breton Island (Nova Scotia, Canada) attempted to demonstrate this to the Nova Scotia Department of Education when it proposed to close several rural schools.

Parents and school children staged a noisy protest that disrupted traffic on the trans-Canada highway near their town and vowed to continue their 'battle' with the school board (King, 1999h, p.13 in Corbin and Hunter, 2002, p. 191).

Parents in two other small communities, who learned of a proposed school closing and a one-hour commute for children, staged protests. Seeing a community without children as no community at all, indignant parents occupied the school, locking out administrators, teachers and students for more than a week...Most of the community supported the protest. Local businesses closed their doors and darkened storefronts one afternoon, in an attempt to show the media and politicians what the towns might eventually look like if the school was closed (Corbin and Hunter, 2002, p.191).

Corbin and Hunter noted that residents elevated their efforts to become activists after attempts to gain attention to their concerns through 'normal' channels proved to be ineffective.

Following these more dramatic efforts the Minister of Education met with the communities and recognised the merit of

their position. Nevertheless, the schools were closed.

Diener and Seligman (2004) articulate the limited perspective that comes from evaluating progress through the lens of economics and efficiency alone. They point to the fact that the GDP in the US tripled over the last 50 years, while measures of life satisfaction did not rise and the incidence of depression has escalated. They discuss the loss of social capital and Twenge's (2002) conclusion that "rising dysphoria in the United States is in part due to the breakdown of social connectedness" (p.7). The hyper mobility of American society is also discussed and the authors warrant that "policies that encourage long-distance mobility and discourage individuals from forming long-lasting community ties" (p.20) are not conducive to fostering well-being.

**Declining enrolment is a reality that will continue to face many education authorities. Finding solutions that do not create longer commutes for children than adults; solutions that foster active transportation and community connection are sorely needed. Education policies that are made in isolation from public health considerations are not consistent with principles of sustainability and the systems that reinforce this silo decision making are outdated.**

### **Conclusion**

Children are telling us that they prefer active modes of transportation and experiences of happiness appear to coincide with these travel choices. Sustainable transportation research, policy and practice could be augmented through happiness literature, particularly

with regard to fostering sustainable behaviour. Further research that investigates the potential links between happiness, active transportation and urban planning has promising implications for public health. Future empirical research may indeed confirm that happiness and walking or wheeling to school contribute to happiness and well-being. Children already know this.

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# Walking School Buses in Christchurch – do they encourage or discourage independent mobility?

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## Introduction

The scene outside many schools today often sees vehicles lining both sides of the street as far as the eye can see as parents jostle to park as close to the school gate as possible, employing whatever means necessary to be nearest to the gate, including double-parking or blocking driveways. Where children once strolled with their siblings or played tag with their friends, their parents now compete in a giant game of cat and mouse with others in cars, and children are taken along for the ride. Those students who still walk to school are now lost in a sea of vehicles and exhaust fumes, while those who are driven are hurriedly escorted to and from the safety of their car. There is little space left for the children to enjoy on their own as these streets have been taken over by vehicles, and their freedom to explore their neighbourhood has faded along with their safety. Unfortunately, this situation is not restricted to a handful of urban schools, but rather it has become a common problem plaguing primary schools throughout many parts of the world.

An ever increasing proportion of children are driven to and from school in private motor vehicles, at the expense of more active and sustainable modes, such as walking (Hillman, 2002). This decline in children walking to school, and the related dramatic increase in those being driven, is of significant concern.

In response to these rising concerns, local government and other interested organisations around the world have introduced a variety of road safety initiatives to schools in order to reduce the dominance of cars on the school journey. One such initiative has been the development of Walking School Buses. A Walking School Bus (WSB) involves parents or other adults acting as drivers in which they walk a set route, much like a school bus, collecting children along the route and delivering them safely to school (see Engwicht, 1992). The first WSB was started in Canada in 1996 (Go for Green, 2004) and since then WSBs have been set up in a number of countries including New Zealand.

WSBs should be inherently good for children in that they encourage walking. One of the biggest concerns arising from the dramatic decline in the number of children walking is the detrimental effect this is having on children's health due to a lack of regular exercise (SPARC, 2001; Sustrans, 2003; Tudor-Locke et al., 2001). The most obvious link is between inactivity and increasing levels of child obesity, seen throughout the world (WHO, 2004a; WHO, 2004b). As Hillman explains "*We may have a time bomb on our hands which will explode in 20 or 30 years as the incidence of heart disease could rise sharply owing to the insufficiency of daily exercise during the critical years of childhood*" (Hillman,

1999, 3). In addition research has shown a relationship between physically active lifestyles and the physical, psychological and social health of children (Chief Medical Officer, 2004; Ross, 2000), with some suggesting that active children (including active travel to school) perform better academically at school (Sustrans, 2003; VTPI, 2003). In addition an obvious concern related to changes in mode away from active modes is the physical safety of people, especially children, on the roads. In many countries around the world where car ownership is high, pedestrian injuries are a leading cause of childhood mortality (Collins and Kearns, 2001a; Roberts et al., 1992; Thomson, 1996) and a clear relationship between traffic volume and the threat to children's safety has been shown (Roberts, 1993; Roberts et al., 1995). This perception of danger from traffic has resulted in children being allowed less access to active transport modes (DiGuseppi et al., 1997; Roberts, 1993)

However, there are relatively few evaluations of the benefits of WSBs, One of the primary reasons for this is that few of the suggested positive outcomes of WSBs are easily quantifiable (Mackett et al., 2003). There have specifically been question marks raised about whether they inhibit children's independent mobility.

This paper will begin by reviewing the nature and progress of WSBs in New Zealand. It will then briefly look at some of the reported benefits of WSBs, before looking specifically at issues relating to children's independent mobility. Reference will be specifically made to the results of some research carried out in Christchurch, New Zealand (Kingham and

Ussher, 2005; Kingham and Ussher, 2007). This was derived from interviews with thirty-three current or past WSB coordinators attached to eleven different schools in Christchurch (a city of 330,000 people situated on the east coast of New Zealand's South Island). In addition local authority officials responsible for WSBs and school principals where WSBs operated were also consulted. Questionnaires were also sent to all the remaining Christchurch primary school principals to find out why WSBs had not been established at their school.

### **WSBs in New Zealand**

The first WSBs started up in Christchurch in 2000 and within two months there were thirteen WSBs operating through three different schools involving 112 children (O'Fallon, 2001). Soon after the first WSB was set up in Auckland at Gladstone School (Collins and Kearns, 2001b). The success of this received considerable media attention and support for the concept slowly spread, with two more schools joining in 2001 and a further 18 schools in 2002 (Kearns and Collins, 2003). During 2002, Infrastructure Auckland examined the programme and found it contributed to a modest but valuable reduction in the city's traffic congestion. They consequently made \$1500 grants available through Road Safe Auckland for schools that adopted the system and maintained the WSB for a year. Promotion of the concept also increased, with Road Safety Co-ordinators at most of Auckland's Councils encouraging local schools to become involved. In September 2002, the Auckland Regional Council created a new role for a WSB Co-ordinator to organise and oversee the region's efforts. As a result of this funding and official endorsement, the

popularity of WSBs has grown considerably over the last two years, with 39 bus routes in operation at 21 schools by the end of 2002, 53 by mid-2003, and 2007 saw the 200<sup>th</sup> WESB launched by the Minister of Transport (Travelwise, 2007). The WSB programme also spread to several areas across New Zealand, including Gisborne, Tauranga, and Wellington in the North Island, and Nelson, Dunedin, Invercargill and the West Coast in the South Island. As at June 2007, there were approximately 400 WSBs in New Zealand in approximately 186 schools (Land Transport New Zealand, pers com)

WSBs are managed locally by schools with support from local councils. Central government support initially resided with the Energy Efficiency and Conservation Agency, which is a crown entity responsible for helping to deliver the Government's energy efficiency agenda. In July 2006 the responsibility for the WSB programme was handed to Land Transport New Zealand, a Crown entity responsible for promoting land transport sustainability and safety, and allocating government funding for land transport. There is both political support for WSBs with the Prime Minister actively promoting them (Clark, 2005) and public interest highlighted by a recent article in Woman's Day magazine with a well known newsreader, Mike McRoberts, 'driving' the bus with his children.

### **Reported benefits of walking to school**

As suggested earlier, WSBs should be inherently good in that they encourage more exercise. Few studies have actually looked at the health effects of WSBs. Kingham and Ussher (2007) found that respondents reported a substantial

improvement in the fitness levels of the children on their Bus. They also found that the children then encouraged more sustainable travel behaviour among their parents, confirming findings reported elsewhere (O'Brien, 2000). Improved safety of the children on their journey to school and a decrease in traffic congestion outside the school have also been noted as benefits of WSBs (Kingham and Ussher, 2007). The most commonly reported benefit attributed to the Christchurch WSBs related to the social connections the adults and children built through their involvement (Kingham and Ussher, 2007). These social benefits are closely related to the promotion of community spirit. This was also found in evaluations of WSBs in Auckland (Collins and Kearns, 2005; Neuwelt, 2005) and Canada (Informa Market Research, 2001). Parents have also been shown to benefit from the introduction of WSBs through increased time not spent taking children to school and reduced stress levels (Collins and Kearns, 2005; Kingham and Ussher, 2007), although the counter is that the organisation of the WSBs can place a significant burden on some individuals (Collins and Kearns, 2005; Kingham and Ussher, 2005).

### **Children's independent mobility**

While the decline in the proportion of children walking to and from school, and the related increases in traffic, have clear implications for the health and safety of children and their environment, some research has also explored the potential impacts on children's mental development. One of the earliest theorists to focus on the geographies of children was Colin Ward, with the first publication of his book 'The Child in the City' in 1978. This examines children's relationships with various aspects of the

urban environment, including transportation systems, and investigates whether the quality of children's interaction with their surroundings has been diminishing over time.

In a chapter on children and transport, Ward (1978) explains that traffic in the modern city not only poses a physical threat to the safety of young people, but also limits their development by restricting the activities they can enjoy in daily life. He suggests that it is no longer possible for children to freely explore their neighbourhood or participate in spontaneous play on the street with their friends, as these spaces have now been procured to make room for motor vehicles.

"The assumption that the car-driver has a natural right to take his vehicle anywhere in the city has, quite apart from the threat to life, gradually attenuated many of the aspects of the city that made it an exciting and useable environment for children" (Ward, 1978, 118).

Ward emphasises the intrinsic value of such adventures, as they enhance children's social and mental development and are an important part of what it means to be a child.

Ward uses playgrounds as an example of the detrimental impacts of increasing traffic on children's quality of life, by arguing that, ultimately, there should be no need for playgrounds, as children should be free to explore their local area at will and play wherever they choose. For children, play is constant and can happen anywhere at any time, so playgrounds are both unnatural and unnecessary. He describes them as a "fenced-off child-ghetto" which separates children from the rest of the world that

they should be able to share equally with adults.

By providing segregated play areas for children, urban planners are illustrating a lack of understanding of children's needs. An urban setting that best serves its children will ensure that the whole city is accessible to them rather than try to restrict their play to designated areas and deprive them of this essential element of childhood. Short emphasises the importance of these encounters: "*Children have a capacity and a need for exploration; it is a source of play and a way of increasing knowledge of themselves and their surroundings. We have a responsibility to make safe and interesting environments for people at this stage of development, yet children are locked out of much of urban life. Our cities fail our children*" (Short, 1989, 63).

Ward (1978) suggests that the only way to improve this situation and restore children's access to their local environment is to reassess societal priorities so that the rights of people, especially children, are no longer second to those of vehicles. While road safety education is important for children and may improve their safety, this is a remedial strategy rather than a preventative approach and can only have a limited effect (Roberts, 1995). Although children may learn some basic road rules, they are simply not capable of understanding or predicting the movement of motor vehicles at a young age, and should not be expected to do so (Ward, 1978). Ward therefore believes that local authorities should direct their efforts to restricting traffic to allow children and the community to freely enjoy and access their local environment without threats to their personal safety.

Ward's concerns were later reflected in Hillman et al's work on children's independent mobility (Hillman et al., 1990). In one of the first in-depth studies to focus on the travel patterns of children, they compared existing survey results from England in 1971, with findings from similar surveys that they conducted in England and Germany in 1990, to identify spatial and temporal changes in children's independent mobility. The results of this study clearly indicated that the independent mobility of British children had declined dramatically over the past three decades. This is clearly illustrated by the figures regarding children's journey to school which showed that in 1971, 80% of 7-8 year old children in England were allowed to travel to school on their own, but by 1990 this had fallen to only 9%.

In several articles since then, Hillman has suggested that this significant decline in children's independent mobility has had numerous detrimental effects on their physical and mental development (Hillman, 1999; Hillman, 2002; Hillman, 1993). While recognising the physical impacts relating to health and safety Hillman places considerable emphasis on the psychological costs of children's loss of independence. In a similar spirit to Ward, he argues that without the opportunity to experience the outdoor environment on their own, children do not develop basic and essential social skills or acquire a sense of identity. Away from adult supervision, children learn to socialise with others in spontaneous situations and build their confidence and self-esteem through increased independence and responsibility (Hillman, 1999). These views were reaffirmed by Tranter and Pawson, who conducted similar studies in Canberra

and Christchurch and asserted that "children's local environments help shape their level of cognitive development, their social and motor skills and their personal identity" (Tranter and Pawson, 2001, 27).

Like Ward, Hillman believes that exploring the local neighbourhood provides children with an important learning environment and allows them to develop a sense of place, which is crucial to their identity. However, a recent British poll revealed that 40% of 5-11 year old children are not even allowed to play outside their homes (Hillman, 1999). This is of concern as children need to have their own adventures and take some risks to learn the extent of their abilities. Hillman (2002) suggests that although parental advice is useful, often the best way for children to learn is through experience. Similarly, he believes that by reducing children's exposure to risk, they actually become more vulnerable:

*"There is insufficient recognition of the fact that, in the same way that resistance to germs is promoted by exposure to mild levels of infection, so too is coping with bullying, intimidation and so on, best promoted by developing defensive mechanisms based on personal experience as well as sound advice"* (Hillman, 2002, 2).

In essence, through their loss of independent mobility children are being deprived of, what Hillman calls, some of the "*basic elements of growing up*" (Hillman, 1999, 4).

Hillman takes this further, as he believes that restricting children's independence not only limits their development, it can

also damage their mental disposition. By keeping children in virtual “detention” in their homes, Hillman argues that a false perception is fostered in their minds of a hostile and dangerous world outside that they should not be exposed to (Hillman, 1999). This largely stems from parental fears of stranger danger, which is a leading reason for the restrictions placed on children’s independent mobility. A study in the London Borough of Camden, revealed that 90 per cent of parents were ‘very’ or ‘quite worried’ about the possible abduction or molestation of their children (DiGiuseppi and Roberts, 1997). Hillman (1999) suggests that these risks have been exaggerated by excessive media coverage and need to be put in perspective. In fact, statistics indicate that there are now fewer cases of child molestation in the United Kingdom than there were in the 1960s, but those cases which do occur are given so much publicity that people believe it is widespread (Environmental Transport Association, nd). Hillman points out that only a very small number of British children are murdered by strangers, and adds “it could be wryly observed that far more are killed by strangers behind the steering wheel of a motor vehicle than are killed by strangers on foot” (Hillman, 1999, 3). In fact, between 1985 and 2001 in Britain an average of five to six children were killed by strangers each year, whilst an average of four to five children are now killed on the roads every *week*, and half of those are pedestrians (Sustrans, nd).

Hillman (1999) believes that ‘Safe Routes to School’ initiatives, such as the WSB, further contribute to this siege mentality in children’s minds. He compares taking children to school on a WSB to walking “as if going through a minefield”, which

makes it seem like a dangerous exercise which they should not tackle alone (Hillman, 1999, 5). He argues that this promotes paranoia amongst children and adults and reinforces perceptions of a hostile outdoor environment. Hillman also believes that these programmes make parents feel irresponsible if they let their child walk to school alone, further curbing children’s independent mobility. A study of mothers in a suburb of Sydney (Dowling, 2000), confirmed that driving children to school was indeed seen as a sign of “good mothering” by many parents, as it was perceived to be too unsafe for children to walk alone and would be negligent to put your children in such a dangerous situation.

Although the WSB encourages physical activity amongst children, Hillman (2002) points out that they are still under constant adult supervision so do not enjoy the benefits of independent mobility. He suggests that programmes of this nature, while well intentioned, ignore the root cause of the problem and fail to address the underlying issue at hand, which is the increase in traffic density and speed. Like Ward’s playground analogy, Hillman views WSBs as another example of withdrawing children from danger rather than withdrawing the danger from children; an adult response to a problem in an adult-centred world, which ignores the effects on children’s development and hinders their right to freely access their environment. He concludes by suggesting that we are consequently producing “battery-reared” children, rather than the “free-range” children of past generations, with all the related implications for their health and quality of life (Hillman, 1999).

Looking specifically at the WSB concept, Kearns et al (2003) reaffirm some of Hillman's views of the programme. They recognise that although WSBs may improve children's health through regular exercise, reduce traffic congestion and promote social cohesion within a community, they do little to address the underlying problem posed by the dominance of vehicles on our streets. *"Although WSBs offer children some agency as vulnerable road users, they are highly structured initiatives that ultimately seek to control children as opposed to traffic...[and]...represent acquiescence to the established order in which cars and roads come first"* (Kearns et al., 2003, 290-91). Whilst children on a WSB may experience more of their environment than when travelling in a car, they are still being chauffeured by their parents so their independence is limited, and existing power relations of adult authority are reinforced on the landscape. Kearns et al therefore believe *"that although WSBs extend children's geographies they are, at best, an ambivalent response to the hegemony of motorized transport"* (Kearns et al., 2003, 285).

David Engwicht, who originally suggested the WSB concept in 1992, recently wrote a follow-up article reviewing the progress of the Buses, which considers some of the issues raised by Ward, Hillman and Kearns et al (Engwicht, 2003). In this, he begins by restating the primary objective that he hoped to achieve through the WSB proposal. Although he was eager to see more children walking to school safely and a reduction in traffic congestion around schools, he emphasised that his main aim was *"to give kids independent mobility"* (Engwicht, 2003, 1). Much like Ward and

Hillman before him, Engwicht stresses the importance of children's independence for their mental development and sense of identity: *"This freedom to explore the local neighbourhood is probably the key ingredient in children developing a feeling that they belong to a neighbourhood, a place. It not only gives them an opportunity to develop relationships with people of all ages who live in their neighbourhood, it gives them an opportunity to develop a relationship with the placeness of their physical environment. Robbing children of a sense of place robs them of the very essence of life."* (Engwicht, 2003, 39).

Engwicht expresses similar concerns to Hillman and Ward, recognising the intrinsic value of children's independence, particularly on the journey to school, and worries that greater parental restrictions on their children's movements are depriving young people of significant childhood experiences (Engwicht, 2003). When Engwicht originally came up with the WSB concept, he saw this as an intermediary step towards the overall goal of granting children more independence, by slowly rebuilding the confidence of children and parents to walk to school alone. However, in his reassessment of the programme, he conveys doubt about the potential of the initiative, as he fears that the main objective is being forgotten and the programme is becoming an end in itself. Although he recognises the health and safety benefits that may result from WSBs, the chauffeuring by an adult results in their independence remaining limited. He therefore argues that it is critically important that the WSB is always viewed as the first step on a child's road to independence, and once

they have developed their confidence and road safety skills, they can walk on their own and enjoy truly independent mobility. He also suggests that to have a larger impact on children's independence, the WSB could be adopted as part of a more holistic approach aimed at calming the traffic in the neighbourhood to improve children's safety and access to their local environment (Engwicht, 1999).

Sissons-Joshi et al (1999) conducted research to investigate Hillman's claim that parents are hindering their children's mental development and limiting their knowledge of the local environment by escorting them to school. They began by acknowledging the importance of the school journey, which Hillman (2002) had earlier downplayed, because, even though children travel to many other destinations, this is a daily and universal trip amongst nearly all children. They studied an equal number of children who were driven to school, walked with an adult, and walked alone or with other children, aged 7-12 who were asked to perform a variety of exercises that were used to measure their intellect and knowledge of their local surroundings, such as locating north, a vocabulary test and a map-drawing task. They concluded that adult accompaniment to school does not impede children's development of spatial and social skills. In fact, in direct contrast to Hillman's suggestions, they discovered that children who were taken to school by an adult, whether on foot or by car, actually demonstrated a greater knowledge of their local environment than those who travelled without an adult. They suggested that conversations with adults during the school journey may help heighten children's awareness of their surroundings, as they can talk about and identify local landmarks along

the way. Other independent studies have also found that adult accompaniment on the school journey may be beneficial to children, because there is a clear relationship to a reduced risk of child pedestrian injury (Roberts, 1995). A Land Transport Safety Authority report on child pedestrian accidents in Christchurch confirmed that lack of supervision was one of the main features in crashes involving children (LTSA, 1999), supporting Sisson-Joshi et al's view that adult supervision enhances the journey to school.

Sissons-Joshi et al (1999) also found that, although 91% of parents identified stranger danger as a prime concern, less than a third of the children mentioned it at all: *"We did not find stranger danger to be more common amongst accompanied children, nor did we find such an anxiety being transmitted from individual parent to child as there was no association between parental and child mentions of stranger danger"* (Sissons-Joshi et al., 1999, 137). These results challenge Hillman's suggestion that by restricting children's independent mobility because of fears of their abduction, parents promote paranoia in their children's minds and contribute to their perceptions of a hostile environment, which may allay several of Hillman's grounds for concern about the WSB concept. It indicates that adult accompaniment is beneficial to children because it enhances their local knowledge and, contrary to Hillman's suggestion, it does not contribute to fears amongst children about stranger danger. Such research therefore lends support to the WSB concept, as the programme not only ensures children receive regular exercise and get to school safely, but may also help them learn

more about their neighbourhood from the adult accompanying them on their journey.

A limited amount of research has attempted to examine this issue in relation to WSBs. Kingham and Ussher (2007) found that an increase in children's independence was a perceived benefit of WSBs. Over half of the WSB parent co-ordinators interviewed commented that by walking on the Bus, children enjoyed more freedom than when they were driven because they are only accompanied by their parent once a week:

*"It gives the kids some security on their way to school, but also gives them some independence because they aren't being taken to school everyday by their parents."*

This is also strongly supported by the fact that one of the key reasons why the buses can fail (see Kingham and Ussher, 2005) is that children want to walk on their own and the buses collapse through lack of children. What appears to happen is that children involved with WSBs develop the skills and confidence when they are young while travelling on the WSB, and that they want to make the journey to school on their own once they are older, usually around the age of 9 or 10:

"The kids got older and were confident enough to walk on their own instead, which is great! They really got into the habit of walking."

*"It is really good for the kids' independence to start walking on their own, and you don't want to stop that."*

Bickerstaff and Shaw (2000) support this finding and have gone on to suggest that the children would soon be ready to

make the journey entirely on their own, this increasing their independent mobility at a younger age. This pattern has been experienced in Christchurch where many of the original WSB participants have developed the confidence and road safety skills to walk to school alone once they are older, and they then enjoy true independence. An examination of WSBs in Auckland found that while they offer a highly structured form of walking (Collins and Kearns, 2007b) there is evidence that *"Children who 'graduate' from WSB participation appear willing to continue to walk to and from school (and elsewhere) independently"* (Collins and Kearns, 2007a, 1). An example is given where one respondent in their work states of a friend's son that *"she trusts him to walk a year earlier than her older son because of walking on the WSB"* (Collins and Kearns, 2007a, 27). The same respondent goes on to say that she views one of the roles of the WSB as *"training my kids to walk"*, with other respondents sharing the same sentiments. This may ease the doubts of those who feared that WSBs simply replaced one form of chauffeuring for another and severely limited children's independent mobility, as the Buses appear to be providing a positive step towards full independence for children (Engwicht, 2003; Hillman, 1999; Kearns et al., 2003). This suggests some potential of WSBs to enhance children's independence at a younger age, rather than reduce it as previously feared.

Tranter and Malone (2003) suggest we should strive to develop sustainable child-friendly cities where there are *"opportunities for children to have freedom of movement to explore their environment uninhibited by physical, social or cultural constraints"* (Tranter

and Malone, 2003, 1). In such cities it may be argued there would be no need for WSBs. However in reality many children grow up in car dominated cities where it can be argued that WSBs enable some independent mobility among those who take part at an earlier age than would otherwise occur.

### Conclusions

This paper has reviewed some of benefits of WSBs including strong social benefits, health and safety benefits and timesavings. In addition it has shown that WSBs can get children into the habit of walking, and can also increase walking in other family members. It has also been suggested that WSBs can increase children's independent mobility at an age younger than if there had been no WSB. While we should continue to strive for more child-friendly cities, where it could be argued WSBs would be redundant, in our child unfriendly cities we suggest that WSBs have a valuable role in increasing children's independent mobility.

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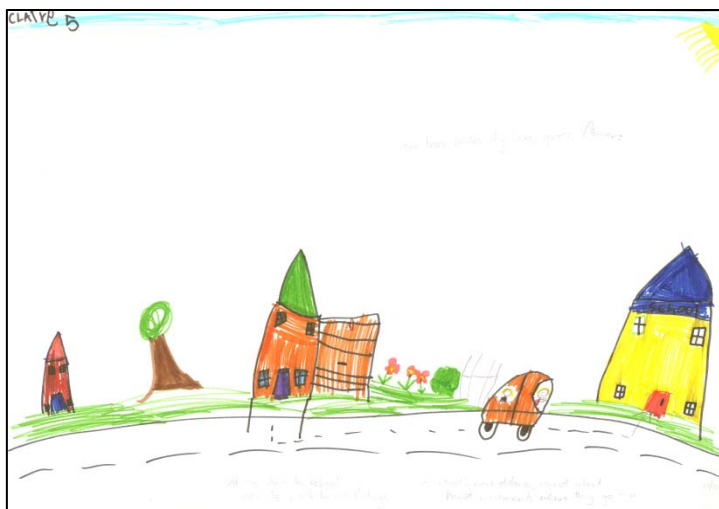
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# 'Oh, you're just up the street!' The role of Walking School Bus in generating local community for children and adults

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It took nine years of living across the road, three years of schooling in the same class and one walking school bus, for two neighbours to meet.

Recent years have seen an erosion of local communities with the closure of local schools, shopping centres and an increasing reliance on the private vehicle. Events such as the 'get to know your elderly neighbour day' established in Australia in 2003 (Santaro 2006), and the number of media articles lamenting the decline of community (Office of the Commissioner for the Environment 2003, Mackay 2004, The Canberra Times 2005) indicate that a lack of community is considered undesirable. The Walking School Bus (WSB) is a practical activity which is helping to informally bring back an awareness of the social and physical environment, or community.

This paper shows that a key element of local community (as defined by those perceiving it) is the visibility, consistency and legitimacy of people within it. This paper draws on my Honours Research Thesis which considered people's notions of community and looked at the factors

responsible for positive physical and social environments. The WSB is used as a case study, showing the value of walking to school in nurturing community by drawing on qualitative data sets collected during the research.

The aim of this paper is to highlight the value of the WSB in generating community and to encourage others to participate in the program.

The WSB helps to provide a legitimate and visual way for people to interact with each other in the local social and physical environment. It also provides a way in which children are empowered to do this and serves as an educational tool as children learn about the place in which they exist. Above all, the WSB is fun, positive and a fantastic generator of community interaction and wellbeing.

## **Defining Community**

Although frequently used in everyday speech, the term 'community' is not well defined. Before launching into the value of the WSB in developing community, it is important to come to a clear definition. When approaching this research, the

term community was left only loosely defined as it was important that participants developed their own relevant definition and implications for behaviour and participation. When referring to 'community', the definition used in this paper is that "a community is a basic unit through which desired social and environmental changes can be introduced" (Brown and Pitcher 2005: 123).

In our modern world, the above definition of community may be used to refer to a variety of community types. For example communities may develop over thousands of kilometres; they may be physically located in a workplace, based on the internet or bounded by small geographical locations such as neighbourhoods and schools. In this paper the term community is also defined as the physical and social environment of a place and thus also makes the assumption that the generation of local community is seen as a desirable outcome for people.

### **The Walking School Bus**

The Walking School Bus (WSB) is a volunteer run program initially established as a way of providing a safe and healthy way for children to travel to school. Volunteers walk along a set route to school, at a set time, collecting children from 'bus stops' along the way. In the Australian Capital Territory (ACT), where this research was conducted, the program is coordinated by the Young Women's Christian Association (YWCA). The YWCA employs two part time staff to establish the WSB and provide support to schools and volunteers. The Australian Federal Police also assist by providing free Police Checks to allow volunteers to work with children.

This study focussed on two schools in the ACT. Both schools were of similar size and location in two different parts of Canberra. In conducting this research I was able to talk with adults and children both before and after the establishment of WSB routes, allowing for comparison in attitudes towards walking and other transport, as well as perceptions of community.

### **Research Design**

The research design, upon which this paper is based, uses qualitative measures with which to determine the link between positive perceptions of community and participation in the WSB program. Both adults and children were included in the research and participated in a variety of semi-structured interviews, group sessions and *rich picturing* exercises. Participants were involved in the research both before and after participating in the WSB. Some non-WSB participants also took part in this research.

### **Adults**

A variety of adults participated in semi-structured, hour long interviews. Interviewees ranged from parents who drove children to school (non-participants), parents who volunteered on the WSB (volunteers) and parents who allow their children to participate in the program but do not volunteer themselves (participants). Interviews covered a range of issues such as their understanding and perceptions of their local community and place within it, as well as opinions on the WSB.

Interviews were recorded, transcribed and then manually coded.

As will be explored below, there were obvious differences between the

responses of parents before and after participation.

### **Children**

Children between the ages of five and ten participated in small focus group sessions both before and after participation in the WSB.

A slightly modified version of Checkland's (2000) *rich picturing* technique was employed as a research method both to provide focus for the group of children as well as to glean further insight into the topic. Rich picturing is used to help "encourage holistic rather than reductionist thinking about a situation" (Checkland, 2000, S17) and can provide non-verbal explanations of the way in which a situation is perceived. This process was especially helpful when dealing with children who are perhaps less articulate in a more formal situation. Children were asked to draw pictures showing *how they got to school and what they saw along the way*. These pictures make up the primary data of this research regarding children's perceptions of community and transport to school. Children were asked to explain their images privately and this was recorded. As will be shown below, a striking difference appears in the images of those being driven to school and those walking.

### **Developing a sense of Community for adults**

It became clear during the data analysis that concepts of empowerment and belonging were key factors in the generation of community. As will be shown, the WSB helps to facilitate feelings of empowerment and belonging in adults and children, thus playing an integral role in establishing community.

### **Empowerment**

A key function of the WSB is the way in which it helps parents to feel empowered in allowing their children the freedom to walk to school. Many of the parents interviewed spoke about their fears in letting children interact with the physical and social environment without adult supervision. While traffic danger was not mentioned, terrorists, paedophiles and 'stranger danger' were listed as key dangers. The data showed that this fear was a direct result of disconnect with the community. One woman commented that she only allowed her eight year old child to play in the local park if he took a walkie-talkie with him and radioed back regularly. She was concerned about his safety in regards to possible human interactions which may occur.

A lack of visible community, as a result of the absence of other visible adults and children, was a key reason for not allowing children to walk to school. As one parent said:

*"Everyone's too worried that the person next door might be a terrorist or might be into drugs or whatever the case may be, I think personally from my experience that's what's happening now... I think community spirit is dying – think community is definitely fading away". (Female, non-participant)*

Another parent suggested that due to the decline of visible community and the resulting lack of awareness as to the legitimacy of people in the area, people were less willing to help strangers. She felt that no one would help her child in a stranger danger situation as this would be seen as 'parenting other people's children', an action no longer perceived as socially acceptable:

*"Because people don't feel that they can step in when a child is doing something dangerous because of 'oh mustn't parent other peoples children' sort of thing. I think it doesn't help with people's sense of security as far as their own children are concerned. If someone drags my child into a car, will anyone even question?"* (Female, participant)

By participating in the WSB, parents were empowered to learn about their neighbourhood in a socially non-threatening way. As one woman said:

*"I just like to interact and be a part of the kid's lives at school, plus i wanted to meet some of the other kids and suss out who was around".*  
(Female, participant)

This is further enhanced by the fact that the WSB is a practical and legitimate reason for people to meet in the local environment:

*"There's umm a boy further up the street... they've been here for eight or nine years and I didn't even know they existed [before the WSB]. He's in Zoe's class and I didn't even know they lived in this street. They just joined one day and I was talking to his mum and she said, 'so what number are you?' I said '99', she's like 'I'm number whatever', 'Oh! That's just up the street!', 'So is Zoe in Miss Green's class?', 'Yeah', 'Oh Lachlan is too, we should let them play!'*  
(Female, participant, at home)

The value of physically putting people in the environment to generate community can also be seen in people's perceptions of community and what it means. One woman stated that:

a sense of belonging is when you start to see the same people when you're shopping, who you don't know, but who are just familiar faces... you don't know the names of people but you have an awareness of who they are and what their role is  
(Female, participant)

The WSB provides a legitimate 'vehicle' for engagement with others in the local community. It also helps to develop community networks and social resources. Examples of this can be seen in comments such as:

*"Well I think the benefits are you sometimes, you know, if you are having trouble [with your own children] it's quite nice you can go and talk to the parents and find you're not the only person having this particular issue or whatever, and then together you can sort of work out strategies to try and cope with it*  
(Female, volunteer)

and

*"I said to her, 'you get yourself ready to get home and I'll find you a lactation consultant' and I was able to do that with my network. I'd miss out on support".*  
(Female, volunteer)

The WSB is more than a way of transporting children from home to school. As outlined above it is also a tool for empowering parents to legitimately engage with their local social and physical environments. By providing practical reasons for social interaction and by creating a physical presence of people in the environment, the WSB program helps to generate a sense of community for participants as well as other people within the physical neighbourhood.

One volunteer noted the way in which the children were becoming more familiar with the other people in the neighbourhood commenting that:

"We see people along the way and we've only just started but I can see these people more and more, we're seeing the same few at the bus stop now, you've got something in common, you see them ever morning". (Female, volunteer)

Comments such as the above were common, as one woman summed up: "I think that's the biggest benefit [of the WSB], that sense of being a part of something"

(Female, participant)

As the above comments from parents show, participation in the WSB has two iterative benefits. Firstly it empowers people to legitimately interact with the neighbourhood and comments such as "If I hadn't had any involvement with them I may not have felt so comfortable. But the way I would have overcome that though is to get more involved in it... not so much because I wanted to do it but to make sure I was comfortable to leave them there. So I'd build the trust".

(Female, participant)

People who join recognise the value of community and see the WSB as a positive manifestation and easy way of establishing those links with the community; empowerment to engage with the social and physical environment.

At the same time the WSB in itself acts to counter local neighbourhood fears. Parents connect, people become visible and legitimate, and parents feel safer about their children in the local social environment. It is possible even to make

a link between those people who may not be directly connected to the school, but who themselves see a visible and consistent portion of the community, further establishing a safe social context. The WSB therefore creates community, but is in many ways *created* by a sense of community in the first place.

The role of visible and consistent behaviour in generating feelings of belonging is vital for community development and is facilitated by activities like the WSB and is relevant not only to adults but children as well.

### **Developing a Sense of Community for Children**

As discussed above, a key benefit of the WSB is its ability to empower people to participate and engage with local community. It is not only the adults who benefit; the children are also advantaged as they are allowed greater freedom to engage with both the physical and social aspects of their local environment.

The data collected showed that children who walk to school, alone and with others, experience a greater sense of community than those who travel by car. As I spoke with children about the ways in which they travelled to school this became obvious. Those who participated in the WSB enthusiastically talked about the people they walked with, the details of the landscape and the relationships between people and place.

One of the best things about the WSB, in the eyes of the children, was the ability it gave them to spend time with their friends. Responses from children included "I like to walk because I can walk with my friends" (participant, six years), "yeah it's great, you can go chat chat

chat chat!" (participant, 5 years) and "we have lots of fun together!" (participant, 8 years). No child spoke against the social value of the WSB.

Parents also recognised the value of the WSB for increasing child awareness of the local social context and appropriate behaviour, stating that:

"It's getting the kids involved in meeting new people... I thought this was a way of getting them to know other people who are not that far away".  
(Female, participant)

and,  
"When you're next to someone else you have to be social with someone, even if there is something going wrong, it's just a learning experience".  
(Female, participant),

and,  
"She needs that [participation in the WSB] 'cos she's got no siblings".  
(Female, child participant)

Participation in the WSB was one of the few, or only, occasions in which children were able to engage with the local community outside the school environment within the local context. Many parents afraid to let their children play outside in public spaces recognised the importance of the WSB in allowing them to do so legitimately.

The value of this for children can be seen in the following images. Images A, B and C show drawings by children before they participated in the WSB. Note the generic and distant nature of the images, all three show a standard image of a tree, a house, and a car. Images D, E and F were drawn by the same children after

participation in the WSB and it is interesting to see a distinct change in focus of the pictures. The first two images show a group of people and when discussing the images with me each child proceeded to explain the individuals in the picture their relationships with others. These secondary images also show a far greater attention to local detail. Image F shows a house with palm trees out the front, a feature in the landscape which appeared interesting to the child. Image G shows a similar level of awareness with the primary focus of the drawing being on the weeds in the cracks of the footpath. You might also be interested to know that behind the brown fence lives a very loud dog. Image H shows a drawing from a non-participant. After talking with the six year old boy, it became clear that he had drawn himself as the sad person watching all the happy children walk to school.

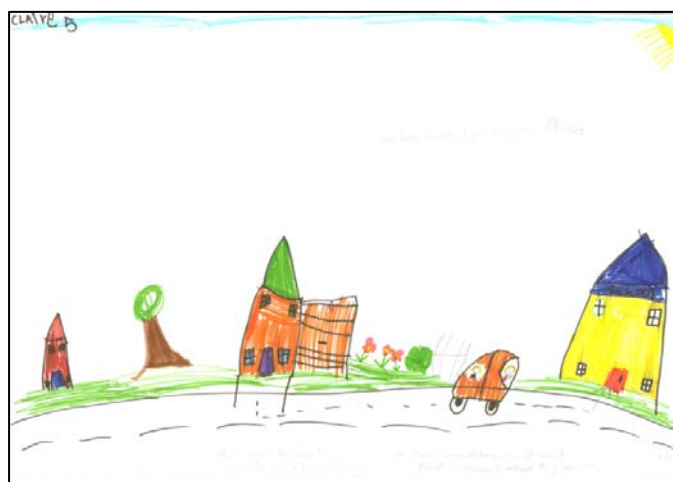


Image A

These images suggest that walking to school not only increased the children's understanding of their local community in terms of people and relationships, but also their awareness of the physical and social space in which they move.



Image B



Image E



Image C



Image F



Image D

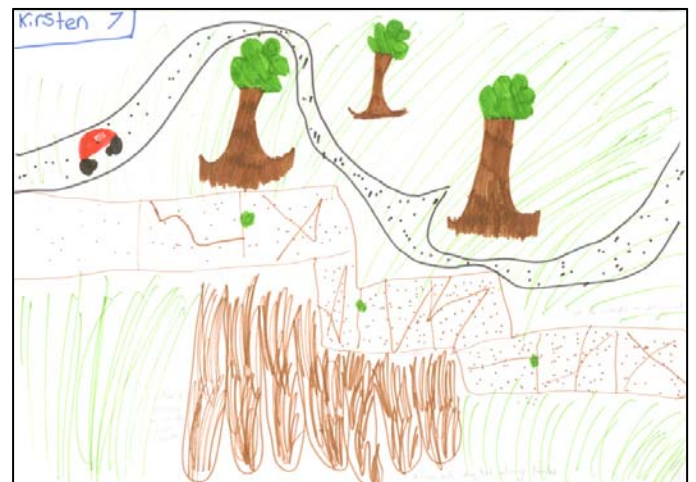


Image G



Image H

Conversations with children served to reinforce the messages of their pictures. As so clearly explained by one child

“When you're in a car you just go straight past, I never noticed the flowers on the hedge when I was just driving past”.

(Nine year old participant)

As well as providing adults and children with a chance to place themselves in the physical and social environment. The WSB also provides an informal learning area and both children and adults recognise the value of the learning that happens when walking to school.

Studies have shown that children are more willing to engage with nature and environment when they are immersed in the environment (Kong 2000). The learning which occurs through active involvement is recognised as lasting far longer than the 'learning' process of reading a text book. This type of informal learning is yet another key benefit of the WSB and learning was recognised as being both about the natural and social environments. Learning can be social

learning, as discussed previously, or based more in the physical environment. As some parents noted:

“I think they make a lot of discoveries along the path as they are walking, you know like a dead bird or you know, very sad, but you just sort of see incidental things happening and learn responsibility”.

(Female, volunteer)

And,

“It's just nice, it's part of their education you know, the walking”.

(Female, participant)

The action of walking to school was also recognised as being a key learning experience for health as it helped to

*“Build it [exercise] into their way of being that you walk when you get the chance, that it's not like 'I'm going to walk now', it's part of life! [Emphasis added]*

(Female, volunteer)

The WSB is a fantastic way in which to initiate the development of a local community. It provides a legitimate and visual way of bringing people together in their local social and physical environments, enabling a sense of community awareness to develop. This has been highlighted in the various responses from both parents and children in their discussions and illustrations on the value of the WSB. Key factors for the development of community as facilitated by the WSB include the empowerment to legitimately connect with the social and physical environment in which both parents and children live, the opportunity

for children to engage with each other and the physical environment, and the sense of place and belonging that was generated.

The WSB is especially important for children in the development of community as it allows them the access to people and place they are usually denied in locations of minimal community interaction. It enabled them to 'chat' with their friends, notice the flowers and gain some independence.

Given the role of the WSB in generating community, it is key that timely support is provided to schools and parent groups to implement such programs. Schools which already have a strong sense of local community are far more likely to establish a program and need less support because, as shown, the WSB in itself becomes a catalyst for interaction.

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# 'The 50 metre dash – trials and tribulations of the Walking journey to school'

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Local Government, as the third tier of government in Australia, has responsibility for local roads. VicRoads, the State authority in Victoria, controls the rest. In the last five years the local authority, City of Port Phillip has adopted a very strong policy position of supporting, encouraging and advocating for Walking. This mode is the preferred travel mode for its citizens, workers and visitors, closely followed by Cycling and Public Transport.<sup>3</sup>

In Port Phillip, flat wide tree lined local streets with smooth footpaths make ideal conditions for active transport. It's true; people do walk a fair bit and cycling levels are on the rise across inner Melbourne. On the other hand Port Phillip, as a local government authority, has not traditionally seen itself having a role to support Active Transport (Walking & Cycling) for School travel. State Governments run schools and schools communities are school's business, therefore State Government has the job and for local government to do anything would be cost shifting. Certainly that was the view I first encountered at Port Phillip where I have worked in transport planning for the last four years. However, with VicHealth's<sup>4</sup> behaviour change initiative, the *Walking School Bus* program, Port Phillip got financial incentives to 'have a go' and use this opportunity for some community building

to 'grow' interest in Active Transport for school travel. Possibilities for better social connection, stronger communities as well as some environmental benefits were enough for Port Phillip to take on the program. The outcomes of this initiative are well documented<sup>5</sup>, with very wide ranging results across the state of Victoria. There are many more variables at play here than can be covered in this short discussion but suffice to say, 'right time, right place' features strongly in this story.

I became directly involved when I saw the chance to get my own community active on some big issues, namely an almost impossible road crossing outside the primary school my children then attended. Parents were telling me they wouldn't be part of the *Walking School Bus* initiative because they didn't feel safe enough getting themselves across the busy roads, let alone a group of primary school age kids.

Parents saying 'we don't want to be part of this program' really got me thinking. Does it have to be like this?

Major roads, carrying huge trucks as well as thousands of single occupancy private vehicles cut through the inner ring of Melbourne's established urban heartland every day. St Kilda, as an inner medium density residential suburb on the south east edge of Melbourne's CBD, has a massive eight lane arterial road cutting

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<sup>3</sup> City of Port Phillip Integrated Transport Strategy 2005, Walk Plan 2005

<sup>4</sup> VicHealth is the State government's health promotion arm

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<sup>5</sup> VicHealth 2007

through its heart, carrying thousands of freight, commuter and business vehicles every hour. The Nepean Highway extends out from the central city of Melbourne swelling from the famous St Kilda Road Boulevard to carry traffic to southern metropolitan destinations. This 50 metre monster is uncrossable unless you're prepared to risk your life midblock or use the pedestrian operated signal crossings. Either you just miss the 'green man' or flashing red just starts up as you step bravely onto the crossing tarmac. Either way these organized crossing points are intimidating and hostile for walking trips.

Figure 1: Crossing Brighton Road (Nepean Hwy) at St Kilda Primary



Pedestrian operated signals create gaps in the traffic flow, allowing pedestrians to cross the road. They should allow adequate crossing time for a safe and comfortable journey but often leave people 'stranded' mid-road on a traffic island waiting for the next opportunity to cross. Latent pedestrian demand is what we refer to where a destination is either not currently accessible or access is unsafe and uncomfortable. It's the 'journey not taken' and in this case that journey is Walking.

Real and perceived dangers of the streets, and smaller families afflicted with 'the precious bundle' syndrome that we pack into shiny family SUVs, have been identified as factors for falling physical activity levels. This is relevant in the context of children and parking rage at the school drop-off, obesity levels and historically low levels of walking and cycling to school. This situation is mirrored across the western world with decline in walking and cycling levels.

Traffic engineers respond to evidence. They want to see the numbers, and if people are simply choosing *not* to walk because it feels unsafe and uncomfortable well then, for a traffic engineer, it's simply 'no demand,

therefore we won't provide'. Crossing busy roads especially for the young, elderly or mobility-impaired can be very daunting. Signal crossings on major roads often demand pedestrians run or complete their crossings in two cycles to complete the road crossing safely and comfortably. This sends a clear signal to walkers that their trip is less important

than keeping motor vehicles flowing.

This inspired us at Port Phillip to take the next step to have a look at what was happening; the *Greenlight Project* – a jointly funded study with VicHealth into the cross-ability of intersections of major roads – including those used by children on Walking School Buses – in the Cities of Port Phillip, Geelong and Bayside was undertaken in late 2004 ([http://www.portphillip.vic.gov.au/walking\\_well.html#L6](http://www.portphillip.vic.gov.au/walking_well.html#L6)).

The key purpose of the study was to look at and understand how the operation of traffic signals at intersections affected people's decision to walk, particularly to and from primary schools.

It was thought this aspect of the built environment might be a key factor influencing the parent's decision not to allow their children to Walk or Cycle to school, let alone be part of the *Walking School Bus*. Two types of data were obtained; quantitative data and qualitative data.

The quantitative data was collected by observing the walking school buses that used the identified crossings and by videotaping the journeys. Several measurements were taken including the road distance kerb to kerb of the crossing sites, the time allocated for crossing which included the green man time (walk) and the flashing red time (clearance) and the time it took for a walking school bus to walk to or from school on a regular journey.

The qualitative data was extracted using a survey and focus groups and designed to find out what pedestrians' perceptions of the crossings were. The survey was distributed to adults who accompanied their children to school at six different sites. The focus groups targeted people who didn't use the crossings or who had doubts about using the crossings.

The data showed that major roads are indeed a disincentive for children and parents to walk to school. Over a third (34%) of respondents said that the time allocated to complete the crossing was too short for them to feel safe using the crossing.

"More time needed to cross is essential but it does nothing to alleviate the huge volume of traffic". (Survey respondent)

"Drivers do tend to zip around in front of pedestrians if they feel they can turn in time....children are less aware of the potential danger as they see the green man with a bit of tunnel vision". (Survey respondent)

The study also revealed that the Walking School Buses at the 6 sites were unable to complete the crossings in the Walk (green) and Clearance (flashing red) times. At one intersection in St Kilda the allocated crossing time was 21.28 seconds (1.32 m/sec), with the walking school bus taking 31.93 seconds (0.88 m/sec) to complete the crossing. This left a timing shortfall of over ten seconds at just one crossing. This means that the children would be crossing against a red light for ten seconds, a very dangerous act especially during the congestion of peak hour traffic.

After analysing the data, Port Phillip came up with a series of recommendations that they presented to the Regional Office of VicRoads. These included;

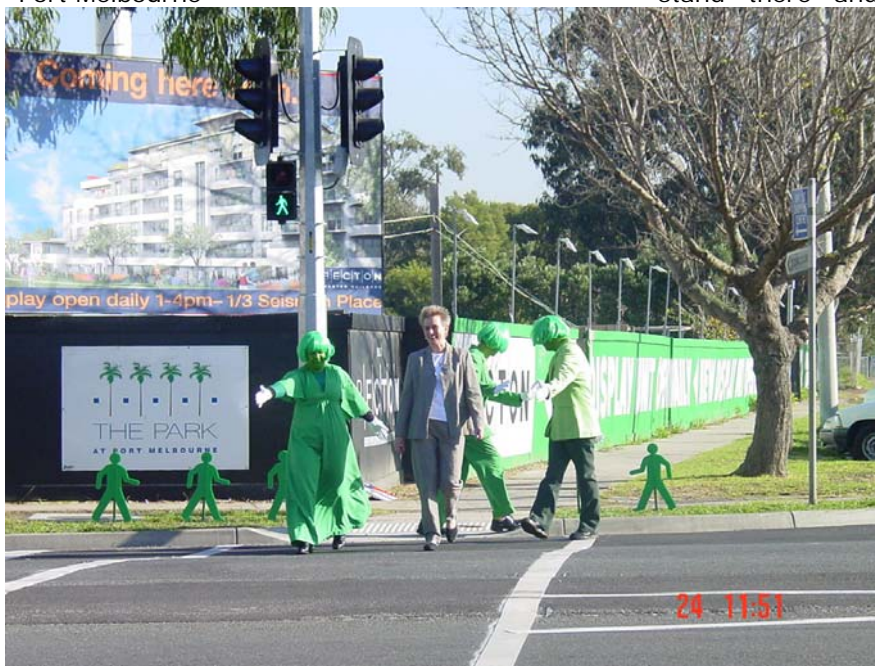
- That a pedestrian crossing speed of 0.7 metres per second be adopted at the crossings;
- That there is an automatic call-up at the pedestrian phase as part of the signal cycle operation. Where automatic call-up is not appropriate, the introduction of a 2 second 'early green' advance for pedestrians over vehicles performing turns so that pedestrians have crossing priority.
- Continuation of the use of crossing supervisors at school crossings on

major roads for all signalised crossings on Walking School Bus routes.

VicRoads accepted the findings and agreed to make signal changes to 14 identified intersections that were seen by the locals as being too dangerous to use.

An intersection at Pickles Street, Port Melbourne was designated as a “demonstration” site. Recognising that crossing Pickles street was a safety and service problem for pedestrians and residents, the intersection was converted to a signalised crossing (see Figure 2)

Figure 2: ‘Greenlighted’ at intersection in Port Melbourne



The crossing was then further improved by timing and phasing changes which provided pedestrians with changes to the green man timing which led to almost double the standard crossing time; automatic call up of pedestrian phase on the minor road, which meant pedestrians no longer had to push the button; advance starts (2- 3 seconds) for pedestrians over right-turning traffic and

minimum wait times (10 – 30 seconds) for pedestrians to cross the major road.

The changes at this crossing have had a significant effect on the mobility of the local community.

Local parent, Raelene Hunt explains:

“Since the crossing has been installed at Pickles Street the whole journey has become less stressful, less dangerous and a lot faster. Before the crossing, I was really uncomfortable about letting my Grade 6 daughter cross on her own. It was so dangerous – you would have to cross in two goes – you would get to the middle and then you would have to stand there and wait. I had two children and myself on bikes and it was really difficult getting across. Sometimes we would make a detour that was about 600 – 800 metres further out of the way to avoid that intersection, then we would have to back track”.

Raelene believes the pedestrian priority crossing has reinvigorated the community:

“I know 3 or 4 children who regularly ride from Port Melbourne to Middle Park on their own. I quite often see 3 or 4 girls riding together. More families are walking to Albert Park Primary School from Port Melbourne. Some families are now pushing prams

with kids on bikes, coming from the opposite direction to a kindergarten in Port Melbourne”.

Meanwhile recent data shows Albert Park Primary has consistently high levels of Active Transport with walking, cycling, scooting and skipping coming in over 65% and some measures over 80% 'green travel'. Terrifically encouraging and an example of how infrastructure and sustained behaviour change programs play out on the streets.

VicRoads has committed to applying modifications to 13 other intersections in the municipality. Resource issues within VicRoads seem to have delayed the implementation of these changes. Priority works often mean providing for pedestrians slips down the agenda. Competing with freight movement and perceived economic priority for trucks over pedestrians for instance is still a huge argument to compete with. There is a real gap in the Active Transport advocacy arena for pedestrian priority as primary mode for a sustainable future (Da Silva, 2005).

Western countries' affluence, the real and perceived dangers of the streets and the smaller family we pack into the SUV have, as mentioned above, been identified as part of the story of falling

physical activity levels. The decline in walking and cycling levels in the western world is well recognised. Daily we hear reference to this challenge. The public health cost reported by Access Economics for example puts a figure of Aus \$21 billion in 2005 for the 'burden of disease' cost.<sup>6</sup>

So for all sorts of good reasons we all need to get more active

We need to create the environment where children and the whole community can move about safely and comfortably to live active lives. One of the major reasons parents are less likely to let their children walk or cycle to school or for recreation is their concern over road safety. Despite sustained effort by Council and the school community, levels of cycling at many inner city schools have remained low. This is especially the case if the school site is surrounded by busy, uncrossable roads (see Figure 3)

Figure 3: Cycle parking facility at inner Melbourne primary school



<sup>6</sup> Access Economics Oct 2006 p. iii

With interest in the *Greenlight* project now well established, an award from the Transport Accident Commission for Pedestrian Safety initiatives helped recognition of the project. However, still no actual promised changes to sites had been achieved. By June 2006 VicRoads still had not acted on requests for changes submitted at the end of 2005. Meanwhile the chorus of calls grew from health advocates, urban planners and the environmentally concerned for dramatic change to the way we move about our urban spaces. A recent radio program is one example:

'Both inner city high density and outer suburban sprawl are unhealthy if they're not well designed and planned. What's needed is ...a move towards medium density in existing suburbs – it reduces transport time, improves social contact amongst inhabitants, and the infrastructure is already there so it's cheaper.

But it needs to be balanced by facilities that compensate for higher density; green areas like parks and activity centres – recreational and sporting facilities and clubs. ...

And there should be more footpaths and cycleways, and more mass transit – trains, trams, trolleys, and people movers, as an alternative to cars.

To counter the preference for cars, there should be public health campaigns encouraging people to walk and cycle or use mass transit rather than cars' <sup>7</sup>

Victorian State Government meanwhile was slowly acting on the growing

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<sup>7</sup> Lavelle, 2006

enormity of global change and in October 2005, the release of the policy document 'Meeting Melbourne's Transport Challenges'<sup>8</sup>, formation of 'Walking & Cycling Branch and the *Local Area Access Program* were launched to showcase innovative changes to build Walking and Cycling levels.

So the next iteration of *Greenlight*, the *Inner Melbourne Action Plan* (IMAP) Regional Greenlight was begun. People love great urban places and rarely recognise municipal boundaries. In response to this, the *Inner Melbourne Action Plan (IMAP)*<sup>9</sup> is a collaborative project between the Cities of Melbourne, Port Phillip, Yarra, Stonnington and Vic Urban, seeing the inner region as a whole rather than a patchwork of municipalities. The *Greenlight IMAP* project group has worked together on what needs to be done in the Region as a whole to improve pedestrian networks through prioritising pedestrians over cars at certain intersections (See Figure 4).

The group recognises that there is greater potential for success in creating safer and more comfortable pedestrian networks than would otherwise be possible by individual Council officers. Local government project contributions such as this can be a strong voice for change. This investigation will provide the guide to changes at these 20 sites across inner Melbourne and will get a serious look at people using busy intersections to walk their way to work and shop and live. The results will undoubtedly lead on to further work on

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<sup>8</sup> Department of Infrastructure, 'Meeting Melbourne's Transport Challenges'

<sup>9</sup> [http://www.portphillip.vic.gov.au/inner\\_melbourne\\_action\\_plan.html](http://www.portphillip.vic.gov.au/inner_melbourne_action_plan.html)

retrofitting signal crossings and be a catalyst for providing for the walking journey. My hope is that it will result in a 'design guide' for pedestrian friendly signal crossings. This way, 'Greenlighting' will become 'matter of course' for signal crossings and could be used across the country to contribute to increased walkability of our built environment.

Walking is the most efficient and sustainable form of transport. In a more highly populated urban environment it is also increasingly popular as destinations become closer. The IMAP Action Plan also responds to the demands of Melbourne 2030. Inner Melbourne municipalities have a particular challenge to create

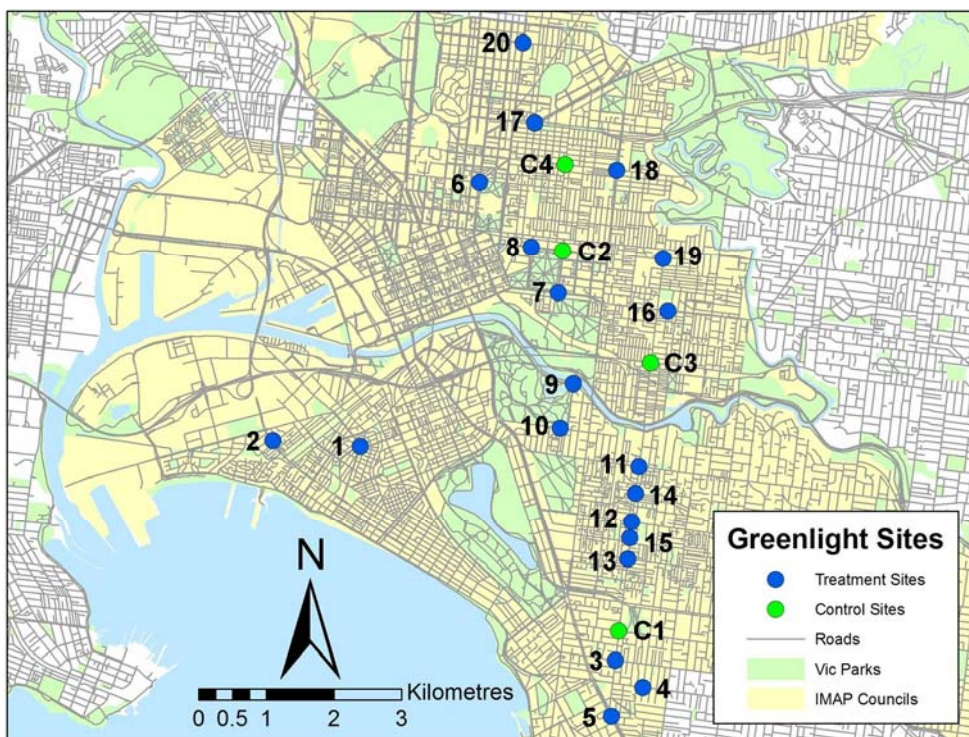


Figure 4: IMAP Regional Greenlight sites, Inner Melbourne

better walking environments for a steadily growing population through retro-fitting established infrastructure.



Figure 5: Streets for Living Mural - City of Port Phillip

Walking in our cities and towns will continue to be controlled in many instances by signal crossings for the foreseeable future. Until brave and necessary

decisions are made to reduce speed and volume of motor vehicles, signal crossings will control walking journeys. As discussed above, pedestrian operated signals create gaps in the traffic flow, allowing pedestrians to cross the road. They should allow adequate crossing time for a safe and comfortable journey but often people are left 'stranded' mid-road on a traffic island waiting for the next opportunity to cross. Crossing busy roads especially for the young, elderly or mobility-impaired continues to be very daunting.

Signal crossings on major roads often demand pedestrians run or complete their crossings in two cycles. This *still* sends a clear signal to the walker that their trip is less important than keeping traffic flowing. *We need to turn that around.* We need to draw attention to walking as the best mode to progress to a sustainable future and provide walkers with a safe, comfortable and convenient journey. An artist's impression of the streets for living that this would create is depicted in Figure 5.

*Postscript:* As at Dec 2007, changes have been implemented by VicRoads at 7 of the original 14 sites requested. This includes the crossing on Nepean Highway outside the primary school my children went to until 2004.

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# How to save time and money: Using the walking school bus to increase your “effective speed”

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## Introduction

*“The empirical evidence on the reasons why so many children are taken to school by car suggests that it is to do with the complexity of modern life and the resulting shortage of time” (Mackett, 2002, 32).*

Have you ever thought about why you don't seem to have any spare time? Perhaps you should be thinking about your car, and questioning the belief that your car saves you time. Many car owners assume that their cars save them time, but in reality cars are “stealing our time and our money” (Tranter & May, 2006). In contrast, what we would normally regard as the ‘slowest’ modes of transport – walking, cycling and public transport – may in fact be effectively used to save us time and money. This particularly applies to walking when it is used in the walking school bus. This apparent paradox makes sense when we start to think about saving time in a more holistic sense, rather than simply assuming that cars provide us with an advantage in terms of time. This paper explains how the concept of effective speed can be used to demonstrate the ineffectiveness of cars as a means of saving time, and how walking school buses can be seen as a good investment in terms of effective use of time.

Why do we think that cars save us time?

Perhaps it is because we've been conditioned through repeated sophisticated advertising to associate cars with speed. Cars are marketed using the successive increases in speed and power with each model. Yet, there is a large amount of cognitive dissonance associated with our choices of transport modes in cities: we filter information that conflicts with what we believe. We believe that the car provides us with speed, and hence saves us time and money. But in fact, we have a distorted perception of the time and costs associated with cars: the average motorist grossly underestimates the costs of cars and overestimates the speeds that cars provide in urban areas.

“The perceived speed of car travel greatly exceeds the actual performance, even in the simple sense of operating speed – car drivers think they travel faster than they really do over a whole trip” (Tranter & Ker, 2007). This is shown for drivers in Germany and Perth in Figure 1. A UK study found that drivers grossly undervalue the costs of motoring, estimating their expenditure at a level of less than 40% of the real average cost calculated by the RAC, very similar to the German cities in Figure 1.

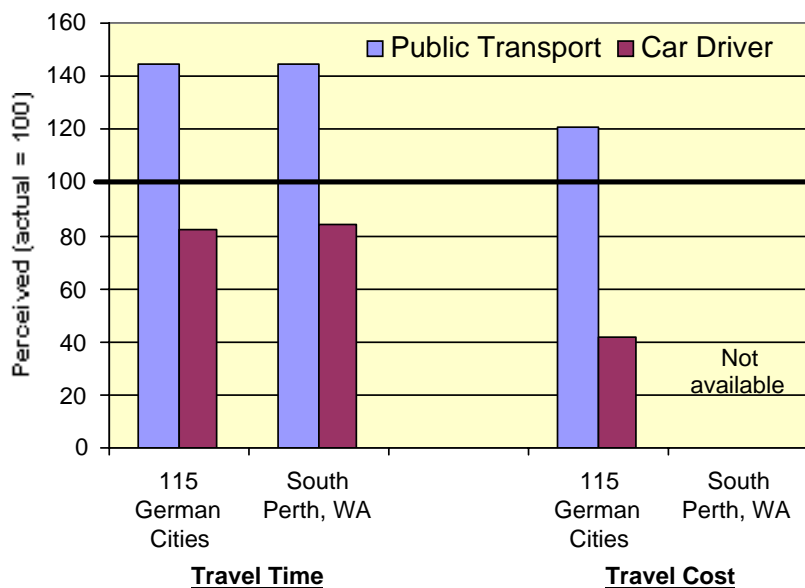


Figure 1: Perception of Travel Time and Cost for public transport and car drivers. Source: Tranter and Ker (2007).

This distortion of the supposed benefits of cars in terms of time savings leads to irrational behaviour. A common reaction to the increased time pressures identified by Mackett in the opening quote is to believe that a 'solution' to a shortage of time is to purchase a 'faster' car. Imagine yourself in the following scenario:

You've got a hectic life. You have to get up early, drive your children to school, drive to work, drive your children home from school, drive the children to sport, drive the children to visit their friends, and ... drive to yoga. You can never get things done fast enough, and you can never get to places quickly enough. Being conditioned by the car lobby to believe that cars save you time, you think that the solution to your time pressures is to buy yourself a new car. Not just any new car, but a fast car. In fact you want to buy yourself the fastest new car in Australia.

If we use the concept of effective speed, we discover that the 'fastest' new car in Australia is in fact a small, four cylinder car – something like a Hyundai Getz. And if we compare the "effective speed" of the fastest new car in Australia with a bus, train or a cyclist, we may find that each of these are "faster" than even the fastest new car (Tranter & Ker, 2007).

### The concept of Effective Speed

Readers may well be confused at this time, so let's look more closely at the concept of "effective speed". I have found the following story a useful way of demonstrating the importance of the concept of effective speed:

Imagine that you live in the year 1800, in a village where it is your job each day to walk to the river and bring back a bucket of water. This takes you an hour each day. To 'save time' you design a machine to collect the water for you. This machine consists of cogs, pulleys, cables and springs. All you need to do each day to collect your water is to pull a lever. Your time-saving 'machine' then takes the bucket to the river, fills it and brings it back to you. Your machine saves you an hour every day. Of course, the only catch is that to make the machine work, you must devote an hour each day to the task of winding up the spring.

In the above story, you would need to consider the time devoted to winding up the spring before you could decide whether or not the machine was worth

having. The concept of effective speed includes consideration of the time that we devote to making our machines work for us. Though we rarely need to wind up springs, we do need to spend time at work to earn the money to pay for our machines (and to pay for the various costs created by the use of these machines). Most car drivers and most policy makers pay little attention to the time devoted to 'winding up the springs'. But just as it would be delusional to believe that your water-fetching machine had saved you time, the supposed time savings provided by cars (and other fast modes of transport) may also be illusory.

Effective speed can be calculated using the formula:

"Speed = distance divided by time", where

- distance is the total kilometres travelled, and
- time is the total time devoted to the mode of transport (including the time spent at work to earn the money to pay all the costs created by the particular mode of transport).

Effective speed, or social speed as it has also been referred to (Whitelegg, 1993a, 1993b), is a holistic concept of speed that takes into account all of the time costs associated with a particular mode of transport. It uses the same formula for speed: speed equals distance divided by time. But it considers all the time needed to allow a person to achieve a trip speed using a particular mode. Thus as well as considering the time spent during each trip, it is also necessary to consider the time associated with every other activity necessitated by that mode. For car drivers, the most time consuming task associated with their car is the time spent at work to earn the money to pay

for all the costs associated with the car (depreciation, fuel, insurance, registration, parking, tolls etc). Note that these costs are simply the direct costs associated with car driving, but there are also indirect or external costs that are shared amongst the whole society (both now and in the future). These include the health and environmental costs associated with car driving, some of which have been explored by Tranter and Ker (2007). When these external costs are considered, we can refer to "social effective speed".

I will not attempt to describe in detail here the calculations of effective speed for different modes of transport and for different types of costs (direct and indirect). This is covered in previous papers (Tranter & May, 2006; Tranter, 2004; Tranter & Ker, 2007; Tranter & May, 2005a, 2005b). To summarise the main findings of these papers, when a holistic assessment is taken of the time devoted to transport, the effective speed (or the social effective speed) of a car driver is in most cases lower than a cyclist, or a bus or train passenger. The exceptions to this would be for individuals on very high incomes, who would not need to spend much time at work to earn the money to pay the costs of their cars. Note, however, that if fuel cost continue to rise, and if a global financial system collapse leads to lower wages and increased health and environmental costs, as many observers believe to be inevitable (Deffeyes, 2005; DiPeso, 2005; Heinberg, 2005; Hirsch, Bezdek, & Wendling, 2006; Tranter & Sharpe, 2007) the social effective speed of car drivers is likely to get closer and closer to zero, making walking and cycling more competitive.

Another important aspect of the effective speed concept is the way in which increases in trip speed increase effective speeds for different modes. For car drivers, because the time travelling is usually only a minor component of the total time costs of their travel, any increase in trip speed is likely to have only minimal impact on effective speed. This is a crucial point, because it shows the futility of a transport planning system that tries to save time by building bigger roads to increase vehicle speeds. In contrast, any increase in trip speeds for public transport users, cyclists or pedestrians will result in substantial increases in effective speed. This applies almost perfectly to walking, which has virtually nil time costs apart from the time spent walking. Thus, any planning initiative that increased the speed of walking (e.g by 2 km/h), would lead to an increase of effective speed by the same amount. In contrast, an increase in trip speed of 10km/h for some car drivers would lead to an increase in effective speed of only 1 km/h. Fast cars may not save us time, but faster buses, trains, cyclists and pedestrians will save us time.

When the concept of effective speed is understood, it should be clear that our cars do NOT save us the time we think they do. If we combine the concept of effective speed with other effects of mass car usage, we see that cars consume more time and distance than they save. For example, widespread car ownership has led to the increased spread of cities, the closure of local schools, shops and services, and hence the need to travel greater distances and travel times to access goods, services and even social contacts that were previously available within walking or cycling distance.

Hence, even if the car did give us an advantage in terms of speed (which it does not), then the extra distances travelled negate this advantage.

The concept of effective speed can be applied to the journey to school as well as to any trip made within urban areas. The journey to school in many western countries is now much more likely to be made by car than by active modes of transport, particularly walking. There are complex reasons for this (Tranter, 2006), but one reason relates to the time pressures on parents, who believe that driving their children to school will save them time. However, using the concept of effective speed, and thinking about time more holistically, allows us to see that the collective and long-term impact of driving children to school will lead to parents having LESS time than if they allowed their children to use the walking school bus (or simply let them walk to school).

### **Can Walking School Buses "Save us Time"**

The paper by Kingham and Ussher earlier in this issue has already indicated the time-saving benefits of walking school buses. If we apply the thinking behind the concept of effective speed to the analysis of the time implications of widespread use of walking school buses (in comparison to widespread use of cars for the journey to school) we can see more clearly the futility of trying to save time with greater use of cars. Parents who use their cars (particularly the "second car") to drive their children to school contribute in complex ways to an environment in which time is increasingly occupied by the various demands of the car. This can only be understood when the feedback effects of parents using

their cars are considered. Some of these feedback effects are local and immediate, while others are more large-scale and long-term in their effect. Let us now explore how walking school buses can 'save time', both for parents and for the whole community.

To understand the way in which walking to school could save parents time and money, we can consider two scenarios:

- Scenario A, a city in which every household with children "saves time" by driving their children to school and to other activities (e.g. sport), and where every household has two or more cars, and
- Scenario B, a city in which children walk to school, in Walking School Buses or with other children, and where most households have no car or only one car.

To understand the total time (and money) costs associated with the two scenarios described, we need to consider the likely outcomes.

First, in scenario A, where households "save time" with their cars, we can identify the following points:

- parents spend a considerable amount of time at work earning the money to pay for a second car that 'might' save them 30 minutes a day on the journey to school (compared with walking). If they had car with high operating costs (such as a sports car or a large 4WD) they might be spending more than 2½ hours per day to earn the money just to pay for the direct costs of their second car. If we stopped this argument here, we can see that instead of saving time, parents are in

fact wasting time. Yet, the argument is far more complex than this, as will be explained below.

- because their children don't get exercise walking to school, parents must drive them to organised sport, spending several more hours in their cars (Tranter, 2006);
- because local streets are too dangerous (partly because of the traffic generated by parents driving their children around), parents must drive their children to the local playground;
- because their children don't know other children in the local area, they have to be driven to their friends houses;
- parents expose their children to higher levels of pollution, including in-car pollution (International Center for Technology Assessment, 2000);
- drawing a longer bow, when their children are older they may have to drive them more often to the doctor or to the psychologist, as their children are more likely to be "fatter, sicker and sadder" because of the time spent in cars and the loss of opportunities for spontaneous play in their local neighbourhoods (Gleeson, 2005; Tranter, 2006).

What is the collective impact of "saving time" with their cars? Not only do parents who adopt the strategy of "saving time" by driving their children to school find themselves spending increasing amounts of time driving their

children to other locations, but they also have to spend more time at work, simply to earn the money to keep the second car on the road. Even if a household was to purchase a new car with the highest possible effective speed in Australia, a person on an average income would be spending about 1¼ hours per day simply earning the money to pay the range of direct costs associated with this car. Note that this figure does not include the external costs of cars (e.g. environmental impacts such as their impact on global warming).

In the alternative scenario, Scenario B, Walking School Buses have led to a culture where most children walk to school. In Scenario B, children:

- get to know local friends, both on the journey to school, and in play activities at their friends houses, which they are more likely to know about and be able to visit independently;
- feel a part of the local community, which is also likely to have health benefits, both for adults and children (O'Brien, 2003);
- are fitter, happier and healthier (O'Brien & Tranter, 2006);
- don't have as much need to be driven to sport, as they can play independently in their local neighbourhoods, or can walk or cycle to sporting activities;
- are more likely to be able to cope with life's challenges when they get older (Marano, 2004).

In Scenario B, parents:

- get to work by public transport or cycling (which have effective speeds higher than many cars);
- use their cars only rarely;
- save time by not having to work as long to support the second car;
- don't need to drive their children to other places (sport, their friends) as often.

By thinking about the journey to school in a more holistic sense, we can see that those parents and children in Scenario A have "less time" and "less money" available, because of the way that their cars have stolen their time and money. The parents and children in Scenario B have not only saved time and money, but they are more likely to be happier, fitter and healthier as well.

### Conclusion

It has been argued elsewhere (Tranter & Ker, 2007) that by ignoring the huge time demands created by cars, particularly in cities, planners are effectively squandering our resources on urban transport systems. It is futile to attempt to make our cities more efficient by increasing the speed of car travel, because the time spent in cars is only a small component of the total time devoted to cars. But not only can planners create better cities through the application of the principles of effective speed, but parents can make their lives easier if they abandon the delusion that driving their children to school will "save them time". This applies not only to individual families, but the collective impact of the majority of parents allowing their children to walk to school

would have benefits for the whole society.

It is important to point out that this paper is written on the assumption that "saving time" by increasing the speeds of urban transport is a worthwhile goal. Yet it may be valuable to recognise that we should be wary of being too concerned with time or with speed. Especially when we consider our children, the best journeys may be the slowest ones.

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# World Transport Policy & Practice

Volume 14, Number 1

