

From Battery-Reared to Free Range Children:

Institutional Barriers and Enablers to
Children's Independent Mobility
in Victoria, Australia

A report on the first phase of research

Published by the
Australasian Centre for Governance and Management of Urban
Transportation (GAMUT)
Funded by the
Volvo Research and Education Foundation

Written by Dr. Carolyn Whitzman, Senior Lecturer in Urban Planning
and Lucy Pike, Research Assistant
Faculty of Architecture, Building, and Planning
University of Melbourne

December 2007

Table of Contents

Executive Summary		3
Acknowledgements		4
1. Introduction		5
a. The purpose of this report and some definitions	5	
b. Methodology	6	
2. The Costs of Adult Dependent Mobility		8
a. Trends and Disparities in CIM	8	
b. Physical Health and safety costs of ADM	9	
c. Mental and Social Wellbeing costs	13	
d. Economic costs	15	
e. Environmental costs	15	
f. Citizenship costs	16	
3. International Research on CIM: what might work?		17
a. Frameworks for Evaluating Policies	17	
b. Transportation planning and traffic calming	19	
c. Physical Planning and Design Interventions	22	
d. Social Planning Interventions	24	
e. A Rights-Based Approach: Child-Friendly Cities	26	
f. Conclusion to chapter: evaluation and research gaps	27	
4. The Policy Context in Victoria 1999-2007		28
a. Overall policies and indicators:		
i. Growing Victoria Together	28	
ii. A Fairer Victoria	29	
iii. Go For Your Life	29	
iv. Community Indicators Victoria	30	
v. Children’s Report Card	30	
b. Physical Planning and Design Interventions:		
i. Environments for Health	31	
ii. Planning for Health and Wellbeing Project	31	
iii. Melbourne 2030	32	
iv. Sustainable Neighbourhood Provisions	32	
v. Safer Design Guidelines/ Healthy by Design	33	
c. Social Planning and Community Development Interventions		
i. Walking School Bus	33	
ii. Neighbourhood Renewal	34	
iii. TravelSmart	35	
iv. Travel On/ Public Transport Challenge	35	
v. Cycling into a Sustainable Future	36	
d. Citizenship and Rights-Based Interventions		
i. Child-Friendly Cities	36	
5. Interviews with Key Stakeholders: what is the institutional will to make this an issue?		39
6. Conclusions and Directions for Further Research		46
7. References		48
Appendix A. List of Key Stakeholders Interviewed		55

Executive Summary

Internationally and within Australia, radically declining levels of children's independent mobility (CIM) have been associated with increased parental use of cars to taxi children to school and play, decreasing everyday physical activity of both children and adults, burgeoning child obesity rates, reduced use of public spaces like parks and streets, and augmented fears of the strangers that surround us in cities. This report, summarizing the first phase of research on Institutional Enablers to Children's Independent Mobility seeks to: (1) develop the rationale for supporting institutional efforts to increase children's independent mobility; (2) do a first scan of research on what works and what might work in an Australian context to enable children's independent mobility; (3) identify key stakeholders, policies and programs within Victoria, Australia, in terms of potential enablers to children's independent mobility.

The report summarizes international research on trends and disparities related to CIM. In English-speaking developed countries, rates of children aged 8-12 walking independently to and from schools, friends, local parks, and shopping, has decreased by as much as a factor of nine in the past 30-40 years. In Australia, this rapid decrease in CIM has been associated with a five fold increase in overweight and obesity amongst children, along with a doubling or tripling of car traffic, particularly in residential neighbourhoods during the 'school run'. Reasons for this loss of children's freedom in streets and public places includes concerns about traffic safety (which is a vicious circle: streets become less safe as more people drive, and less people walk), fears of stranger danger which are completely out of proportion with risk, and increasing distances from basic services like schools and shops.

We have summarized the international literature regarding four kinds of policies and programs which have been hypothesized to affect CIM either directly or indirectly

- Traffic calming: Reducing volume and speed of cars appears to be promising in terms of increasing CIM;
- Planning for walkability and transit-oriented development: Increasing amenities in streets and public spaces, increasing land use mix, and making spaces more 'child friendly' in terms of land use and design is promising, but has not been adequately evaluated in terms of impact on CIM;
- Walking School Bus/ School Travel Plans: There is some limited evidence that Walking School Bus can work to create some pre-conditions of CIM, through decreasing local car traffic, and increasing children and parents' confidence. However, the link between Walking School Bus (or School Travel Plans) and CIM has not been evaluated.
- Child-Friendly Cities: Child-Friendly Cities, or participatory planning and local governance to enforce children's rights such as the right to enjoy public spaces, is perhaps the policy which most explicitly addresses CIM. However, the impact of Child-Friendly Cities on the physical and social environment in general, let alone CIM, has not been adequately evaluated.

The report then examines the Victorian policy framework to see the extent to which CIM is addressed. With the exception of some local governments' Child-Friendly Cities policies, there is no explicit consideration of CIM. There are, however, several policies that are promising in terms of indirectly affecting CIM. These include the whole of government approach of Go For Your Life, the new Children's Report Card, Neighbourhood Renewal, Walking School Bus, Travel Smart Schools, Travel On, and Cycling for Sustainable Transport. Interviews with key stakeholders in state and local government; advocacy organizations such as the Victorian Health Promotion Foundation and Environment Victoria; and key national researchers suggest strong potential for a research agenda on institutional enablers for CIM.

The report concludes with a research and advocacy agenda for further action within the state of Victoria on CIM.

Acknowledgements

This research has been funded by Volvo Research and Education Foundation through the Australian Centre for the Governance and Management of Urban Transportation (GAMUT). The establishment of GAMUT has produced a collegial environment conducive to the development of this research program. PhD candidate Julie Rudner provided some of the original literature review and Victorian policy information. While there is no formal advisory committee as yet (part of the purpose of the initial research phase was to scope out potential members), the authors have received helpful advice and inspiration from Rachel Carlisle of the Heart Foundation of Australia Victorian Chapter; Lee Choon Siau, Kelly-Anne Jolly, Ali Barr, and Ben Rossiter from the Victorian Health Promotion Foundation (VicHealth); Sue West and Marnie Badham from the McCaughey Centre for Mental Health and Social Wellbeing, University of Melbourne; Stephanie Knox, Stuart Worn, and Trevor Budge from the Victorian Division of the Planning Institute of Australia; Dr. Paul Tranter from the University of New South Wales/ Australian Defence Academy; Dr. Karen Malone from the University of Wollongong; and PhD candidate Vivien Romero from the University of New South Wales.

1. Introduction

a. The purpose of this report and some definitions

Internationally and within Australia, radically declining levels of children's independent mobility have been associated with increased parental use of cars to taxi children to school and play, decreasing everyday physical activity of both children and adults, burgeoning child obesity rates, reduced use of public spaces such as parks and streets, and augmented fears of the strangers that surround us in cities. The term "children's independent mobility" (which will be referred to by the acronym CIM throughout this report), means the freedom of those under 18 to move around in public space without adult accompaniment. This term gained popularity after the 1990 publication of the UK report *One False Move... a study of children's independent mobility* (Hillman et al 1990, Kingham and Ussher 2007: 504). The lead author of that report, Mayer Hillman, has also used the phrases "battery reared" and "free range" to refer to two diametrically opposed approaches to children's upbringing (Hillman 2002). 'Free range' children have traditionally been allowed, and indeed expected, to walk, bicycle, or take public transport on their own for everyday trips between home, school, parks, shops, and friends' houses. They have also been allowed, in previous generations, to independently explore their immediate neighbourhood and the broader city with increasing confidence from a young age. However, a radical set of changes has occurred over the past 30 to 40 years, which has resulted in 'battery reared' children being increasingly confined in their ability to autonomously travel and explore outside the confines of their homes and back yards. This cultural shift has more to do with changing social norms than it does with changes in the physical environment, although increased car traffic has assisted the transition. It is certainly a social issue that needs to be addressed collectively, rather than an issue of inappropriate parenting.

In this report, we will be focusing primarily on children between the ages of eight and 12, corresponding to the senior grades of primary school (grades four to six), since research indicates that this is the age group where independent mobility has been curtailed most severely (see section 2).

This report is the culmination of the first phase of a research program, **Institutional Enablers to Children's Independent Mobility**, which is supported by the Volvo Research and Education Foundation through the Australasian Centre for Governance and Management of Urban Transportation. The overall aims of the research program are to identify interventions that facilitate children's independent mobility within urban environments, and to determine whether there are principles across interventions that can be replicated in different settings. The theoretical focus will be on determining the role of both physical and social planning in achieving higher levels of children's 'right to the city'. The geographic focus is the state of Victoria, Australia, whose capital and main city is Melbourne, and whose population is a little over five million people. The expected audience for the research findings includes academic researchers, policy developers and practitioners, advocates, and members of the general public.

By the end of 2010, the research program will: (1) summarize current Australian and international evidence of the role of enhanced children's independent mobility in improving social, health, economic, and environmental outcomes through promoting sustainable transportation for both children and adults; (2) identify research on Australian and international 'good practice' in the development and evaluation of

interventions with children and parents to increase children's independent mobility; and (3) investigate several programs operating in Victoria to find evidence as to impacts on rates of children's independent mobility. It is intended that final research results will include recommendations related to urban design, planning policy, and community development, and will be informed by an advisory committee consisting of key stakeholders in government, non-profit organizations, and the private sector.

The research program began in July 2006. The aims of the first phase of research were to: (1) develop the rationale for supporting institutional efforts to increase children's independent mobility; (2) do a first scan of research on what works and what might work in an Australian context to enable children's independent mobility; (3) identify key stakeholders, policies and programs within Victoria, Australia, in terms of potential enablers to children's independent mobility. This report is the culmination of the first phase of research.

By 'institutions', we follow on Mark Considine's recent book on *Making Public Policy* (2005) by including all levels of government (from local to international) and associated agencies, as well as non-profit and for-profit service organizations which carry out policies and programs, and advocacy organizations and individuals who influence these policies and programs. According to the Merriam Webster Dictionary Online (2005), a policy is a "high-level overall plan embracing the general goals and acceptable procedures, especially of a governmental body", while a program is a more limited "plan or system under which action may be taken toward a goal". Both policies and programs can be reactive - undertaken to respond to pressing problems - or proactive - attempts to produce benefits or seize opportunities to assist citizens (Considine 2005: 21). Policies and programs can have positive impacts, negative impacts, mixed impacts, or not be effective; with a further complication that some interventions are 'promising' but not proven in their impacts (Sherman et al 1997).

b. Methodology

In this preliminary phase of research, we have employed three main methods to answer our research questions. First, we have undertaken a review of Australian and international academic and policy literature related to children's independent mobility, to determine the scope of the problem, and identify the most important factors that appear to have an impact on children's independent mobility. We have also searched for literature that describes successful interventions on CIM, in order to determine 'success indicators', in terms of enhanced independent mobility, strengthened sense of control over (rather than fear within) public space, and improved physical and mental health of children and parents as a result of increased CIM.

Second, we have undertaken a content analysis of 20 key Victorian policies and programs, in order to determine how, and to what extent, they directly or indirectly address CIM, and to what extent they appear to be effective in influencing increased rates of CIM. We determined key policies and programs in Victoria, beginning with policies suggested by our growing understanding of the literature (eg., Walking School Bus). We then gathered possible policies and programs through 'snowballing', with people from one governmental or non-governmental organization suggesting other people to contact about other key people, and one policy referring to another key policy. Contacts with key stakeholders and experts occurred informally throughout the latter half of 2006 and 2007, as well as at a number of formal events: a conference in Melbourne on Creating Child Friendly Cities in November 2005, when

this research proposal was first being developed; regular advisory committee meetings of the Planning for Health and Wellbeing Project, which Carolyn Whitzman chaired from 2004 to 2006 (see section 5); a national forum on Childhood Obesity in Canberra in October 2006; the international Walk21 conference held in Melbourne during that same month; and the inaugural GAMUT research conference in November 2006. Carolyn Whitzman presented or co-presented papers on CIM at the latter three conferences, and received helpful comments, including links to academic and policy literature, from colleagues.

In several cases, the policies are several years old, have indicators or clear aims attached, and have been independently evaluated for effectiveness. In other cases, the evidence that these policies ‘work’, let alone influence CIM, is limited.

Third, in addition to the informal discussions with dozens of researchers and policy makers described above, Lucy Pike has formally interviewed 14 key individuals who have been identified as experts or key decision-makers in relation to CIM. The initial list of contacts came from the Planning for Health and Wellbeing reference committee and our policy literature review, but there was a certain amount of snowballing from the initial surveys (our final question was : “Is there anyone else you would recommend speaking to about CIM?”). Most have been interviewed face to face, although two respondents living outside Melbourne have been interviewed via phone or email. These individuals include three Australian researchers, all with long research careers in relation to CIM; three senior policy people working with Victorian government departments or agencies; five people working for key advocacy organizations; and local government health and social policy workers at three local governments that have specifically taken on CIM as an issue. In each case, we have asked them how much of a priority CIM is and why; what policies they directly deliver, or are aware of, that influence CIM; and whether they know of evidence that any policies have a positive impact on CIM.

2. The Problem: The Costs of Adult Dependent Mobility

In the next two sections, we will be drawing upon a relatively small and recent interdisciplinary literature on CIM, primarily reflecting the disciplines of transportation planning, social geography, environmental psychology, and education. We will also be using evidence drawn from larger bodies of research on promoting children's physical activity in order to prevent child obesity, mostly derived from public health promotion, and on promoting sustainable transportation (walking, cycling, and public transport), mostly derived from urban design and transportation planning literature. We will be introducing the term Adult Dependent Mobility (or ADM) as the opposite to CIM. Several researchers, following on from Hillman et al (1990), talk about "licences" as one way of measuring the shift from ADM to CIM. Licenses are the age at which parents allow children to do the following (often in order): travel to school alone; play in the street or a nearby park without adult supervision; cross main roads alone; travel to places other than school; take public transport alone; cycle on main roads; and go out after dark alone or with friends. As discussed previously, children aged 8 to 12 are at a key age where 'graduated licenses' may or may not be granted by parents (Tranter and Pawson 2001: 31), and where attitudes towards sustainable transport may be set (Gilbert and O'Brien 2005: 21). The "territorial range", or distance from children's homes to where they are allowed to wander independently, is also measured in some studies (Kytta 2004: 180).

a. Trends and Disparities in CIM

Most research on levels of CIM focuses on the journey to school, similar to the literature on sustainable transport for adults focusing on the journey to work. Studies in most English-speaking developed countries show that there has been a radical shift from children walking to school on their own in the 1970s, to children being driven, mostly by parents, in the 2000s. For instance, Hillman et al (1990: 42) found that in 1971, 80% of 7-8 year olds in the UK were allowed to travel to school on their own, but in 1990, this had fallen to only 9%. In the US in 1969, approximately half of children walked or bicycled to and from primary or secondary school, and 87% of those living within 1 mile of school walked or bicycled. In 2005, fewer than 15% of children and adolescents in the US used active modes of transportation to get to or from school (Martin and Carlson 2005: 2161). One longitudinal study in a primary school in the Melbourne suburb of Essendon found that 65% of children walked to school and 25% were driven in 1974. At the same school in 2005, only 8% walked and 89% were driven (Department of Infrastructure Victoria 2005). Another Australian study, in Perth, found that 42% of children who lived within a 10 minute walk of their school, were driven to primary school (Timperio et al 2004a: 40).

However, UK evidence suggests that the journey to school accounts for only one fifth of children's car journeys (Mackett 2001: 1), with the remainder including trips to shops, families, friends, and recreation/ sports. Successive UK National Travel Surveys show that car trips taken by children aged 5-16 has increased 37% from 1985/86 to 1997/99, even though total number of children's trips has declined by 10% during that period. There has been a corresponding decrease of 31% in the number of trips walked by children. The modal shift from walking to cars in that period has been greater for children than for adults (Mackett 2001: 2-3). The total distance walked by UK children has also declined 20% in the seven year period between 1985 and 1991 (Kingham and Ussher 2007: 504). There have been similar findings in a Canadian study of children's travel in the Toronto region, where 11-15 year old per capita

increase in car trips was 83% between 1986 and 2001, as compared to an 11% increase in car use by adults (Gilbert and O'Brien 2005: 10). A 1999 Australian study found that 81% of all trips made by children aged 5-9 years, and 62% of trips made by children aged 10 to 14 were by car (Timperio et al 2004a: 40). An international study of six to nine year olds found that children in Australia and New Zealand had lower levels of walking and cycling, and higher levels of car travel, than children in Canada and Sweden, despite having a more amenable climate for active transportation (Timperio et al 2004a: 40). While 80% of German 10 year olds were allowed to travel alone to places other than school in 1990, only 38% of 10 year olds in the UK, and 34% of 10 year olds in Sydney, were allowed the same freedom (Tranter and Pawson 2001: 41). In Melbourne, one third of primary school aged children walk less than five minutes a day (VicHealth 2002).

Whether an individual child uses active transport or takes a car driven by an adult is of course related to a number of factors, including gender, age, and socio-economic status (SES). Prezza et al (2005: 438), summarizing this research, concludes that independent mobility increases with age, and is differentiated by gender, with boys having more freedom than girls. Gill (2005: 4) found huge differences in cycling distances amongst youth aged 11 to 15, with boys averaging 138 miles, and girls 24 miles, per year. Similarly, Tranter and Pawson (2001: 32) found a 43% difference between boys and girls aged 9-11 in terms of their ability to independently catch a bus or visit places other than school.

In general, children from lower SES areas are less likely to be physically active than children from higher SES areas (Timpario et al 2004b: 21), even though low SES households are less likely to own vehicles. Morrow (2000) in her recent work with young people in the UK aged 12-15, found that young people in low SES areas were deterred from use of their local environment by dog muck, broken bottle, drug paraphernalia and other garbage/filth, as well as fear of physical or sexual attack. Furthermore, visible minority youth were subject to harassment by authority figures such as store owners and police, and were largely excluded from decision-making at schools. Hewson (2002: 10-11) argues that urban planners, responding to differential pressures from neighbourhood groups, have tended to redirect vast numbers of drivers through relatively low SES areas, where major arterial routes are located. This, in turn, lessens the amenity and threatens the safety of children in low SES areas, resulting in reduced access to public space.

b. Why the Decline in CIM?

The most commonly cited reason for declining CIM is child and parental fears of traffic safety (children getting hit by a car) and stranger danger (children getting abducted). For instance, a recent survey of 1200 parents and children in a range of neighbourhoods in Melbourne found that 80% of children aged 10 to 12 (in grades 5-6) and 84% of children aged 5-6 (in 'prep') said they were concerned about road safety, with even higher self-reported fears about stranger danger (Timperio et al 2004a: 42). Fear of cars and strangers were also the two most common reasons given for limiting children's independent mobility in a large scale study of parents in Italy (Prezza et al 2005), and in the UK (Hillman et al 1990).

A more complex set of both physical design and social factors is found within a three year study on reducing children's car dependency in the UK (Mackett 2001). Mackett's team, in their initial literature review, identified increasing car ownership and lessened public transport services in some areas; greater complexity in lifestyles, with more parents working; increasing sprawl, with workplaces, shops, schools, and

leisure activities only accessible by car; the rationalization of services such as schools and shops; in combination with increasing parental concerns about safety as factors in modal shift to cars. A survey of why parents drove their children to school rather than allowed them to walk found that 38% of parents said driving was quicker or more convenient, and 21% said that the school was on the way to their workplace. Qualitative research has also suggested that with decreasing local services (eg., no shops down the road), stay at home parents also have fewer reasons to walk their children to school on the way to doing something else (Mackett 2001: 5).

A US study on why there were low rates of walking to and from school found that the most common barrier mentioned by parents was distance to the school, particularly amongst parents of high school students (61%), followed by traffic related danger (30%), weather (19%), crime (12%), and school policy (6%). The survey did not ask about use of public transport by secondary students (Martin and Carlson 2005). In Melbourne, Timperio et al (2004a: 44-45) also found that owning more than one car, and perceptions of levels of public transport, affected parental decisions about children walking and cycling, as did perceptions of having lots of dangerous streets to cross to get to destinations. McMillan (2005: 448) talks about cascading mediators in explaining why some parents allow children to walk and others don't: parents may be less likely to have one or two cars because they are less likely to need one in some neighbourhoods, and of course, they are less likely to depend on cars for their children's transport when they don't own a car.

A further social factor is the growing tendency to heavily schedule children's and adult lives, a phenomenon that has been termed 'turbo-childhood'. Coupled with social messages about the dangers of allowing children to engage in outdoor and unstructured outdoor play has been middle class pressures to place children in private schools, organize private sports and arts lessons, and organize expensive and exotic 'play dates' and birthday parties. A 2005 Australian study found that children were only spending one tenth of their time in play, with one in 20 children saying they never left the inside of their homes to play (Malone 2007: 516).

Studies that have looked at the environmental attributes of particular areas in relation to children's mobility choices have found that key factors include the age, density, and proximity of the neighbourhood to the central city (with older, denser neighbourhoods tending to encourage CIM, as well as more suburban-seeming neighbourhoods); a set of traffic danger signifiers including amount of traffic, width of roadway, presence or absence of footpaths, dangerous crossings and lots of cars parked on the street; a set of stranger danger signifiers including visible signs of incivilities and alcohol/drug use (dog mess, broken bottles, used drug paraphernalia); and local air and noise pollution (Prezza et al 2005: 438). Tranter and Pawson (2001) found that traffic levels were greater determinants of CIM than SES, in their study of four New Zealand neighbourhoods. Several researchers have drawn attention to a negative spiral of fear leading to fewer people on the street, which in turn leads to increased potential of traffic accidents and crimes (Prezza et al 2005). This is illustrated in one of the four areas studied by Tranter and Pawson (2001: 37), where concerns about traffic safety have led to more children being transported by cars, a situation seen as a vicious circle by at least some parents.

In terms of social factors, Hillman (2002) blames fears provoked by media coverage of relatively rare incidents, and Prezza et al's study (2005) also shows a disconnect between fears and reduced risks over time. Australian data indicates that the risk of being children being a victim of either traffic or stranger harm is minimal, and has decreased over the past 30 years. Only 24 children were killed in

pedestrian/car accidents in 2004, less than a quarter of those who were killed in 1972. Five children were murdered in 2002, all by family members in their homes, as compared to 10 children in 1972 (Cadzow 2004: 21). The decrease in child pedestrian injuries over the past 30 years appears to be a function of much fewer children as pedestrians (Gill 2007a: 62; Kingham and Ussher 2007: 504). Hewson (2005: 9) also suggests underreporting to police of less severe accidents and near-accidents, and suggests victimization surveys be undertaken, similar to the annual British Crime Surveys.

Mothers tend to be more concerned about safety than fathers, with mothers not working full time most concerned (Prezza et al 2005: 439). Maternal fears may also be provoked by women's own diminishing use of public space, despite their greater risk of being a victim within their own families and in the private sphere of the home (Whitzman 2007a), a fact which is also true for children and older people (Krug et al 2002). The gender difference in free access to public space begins at an early age and continues throughout the life course (Koskela 1997: 306; Tranter and Pawson 2001: 33). It is also true that there are powerful social messages of guilt and reproach for "neglectful" parents, particularly mothers, who allow their children to roam freely (Valentine 1997). A particularly overt case of victim-blaming in the UK in 2001 involved a car insurance company suing the parents and caregiver of child cyclist severely injured by a car driver for not ensuring that she was wearing her bike helmet at the time of the accident (Gill 2005: 40).

A critical analysis of recent UK policy to improve child pedestrian fatality rates indicates that "road safety education conspires with increasing traffic levels in forcing unacceptable lifestyle patterns on children", including ADM. This approach is particularly counterproductive for the mainly low income households without a car (Hewson 2002: 4). Focusing on 'zero tolerance' messages such as an adult always holding the hand of a child under 11 because of limited peripheral vision (as suggested by the Pedestrian Council of Australia 2002, along with many other child safety organizations), may frighten parents into limiting their children's time on the street, rather than improving children's ability to recognize and deal responsibly with risk (Hewson 2002: 4).

Malone, taking an international perspective to children's right to walk and play freely in the city, points out that in many countries, poverty, violent neighbourhood conflicts, and brutality from authority figures such as police lead to increased urban risks for children. In reaction, there has been a retreat to homes (including homes where there is violence) and regulated space such as enclosed shopping malls and gated residential communities, around the globe. 'Zero tolerance' policies towards young people, such as curfews and anti-congregation laws, have also served as barriers to children's independent use of public space (Malone 2001: 6; see also Bartlett et al 1999). Some countries such as Germany and Japan have an ethos of collective responsibility for looking out for children, and also have large numbers of people of all ages using outdoor public space. This can be opposed with more individualistic societies such as the US, UK, Australia and New Zealand, which could be a reason why the former countries have much higher levels of CIM (Hillman et al 1990, Tranter and Pawson 2001, Malone 2007). Recent books on the loss of CIM point out increasing institutional barriers to children's right to explore and play freely in public space, including no cycling, skateboarding, or ball playing signs in parks, public squares, and streets; water features and popular pieces of equipment being planned out of playgrounds because of false fears of liability; running or playing tag

(tiggy) on school grounds banned in many UK and US schools; and local government fines or even arrests for chalk 'graffiti' or tree climbing (Louv 2006, Gill 2007a).

A number of studies have shown that children would prefer active transport over driving to destinations. For instance, a UK survey of 800 children aged 7 to 11 found that 38% of children who are presently driven to school would prefer to walk or bike. Negatives of being driven by their parents include "getting stuck in traffic", "cars causing pollution", "not getting exercise", "not meeting classmates", and "being boring". Conversely, children say walking would allow them to "talk to friends", "get fresh air", "get exercise", "stop at the sweet shop", and (if supervised) "spend time with mum, dad, or gran" (Mackett 2001: 8). In Melbourne, where 72% of children are driven to school, 61% of these children say that they would prefer to walk, given the choice (VicHealth 2002). Children would also prefer independent over dependent travel. A recent study of Sydney primary school students found that while 70% of inner city students and 80% of outer suburb students traveled with a parent or guardian to school, 33% of inner city students and 44% of outer suburb students would prefer to walk to school with a friend or sibling, with 24% of inner city students and 14% of outer suburb students preferring to walk alone (Romero 2007: 1001).

c. Physical health and safety costs of ADM

As of 2004, one quarter of Australian children were overweight or obese, as compared to 5% of Australian children in 1960. The rate of childhood obesity is increasing at a rate of 1% a year, which suggests that if unchecked, half of Australian children will be overweight or obese by 2025 (Australian Institute for the Study of Obesity 2004). Simply put, obesity is a product of "a chronic energy imbalance": people not exercising enough on a daily basis to work off the energy in the food they are eating. The current recommended minimum physical activity guideline for children, and for adults who wish to lose weight, is 60 minutes per day, at least five days a week (Baur 2007).

Walking and cycling are both examples of the kinds of moderate physical activity that needs to be undertaken on a daily basis. Mackett et al (2004) studied almost 200 UK children in years six (11/12) and eight (13/14), using portable motion sensors, along with activity and travel diaries. While Physical Education and formal games instruction in schools, at an average of 70 hours a week, was the most intense activity in terms of calories expended, unstructured ball games and walking were also significant sources of energy outgo. The researchers found that walking to and from school regularly expended more calories than school organized physical education per week. Fewer than half the sample participated in organized sports outside school, and the majority reached these activities by car rather than walking. The researchers' conclusions were that walking and playing outside provided more children with more physical activity on a regular basis than organized sports in and out of school. Furthermore, the generational shift from unstructured to structured play has encouraged car use and lessened levels of physical activity. Kingham and Ussher (2007: 503-504) cite research in Russia, where most children walk or cycle to school, to show that the journey to and from school can account for half a child's daily physical activity.

As many as 30% of Australian children have low fitness levels and 60% have moderate to poor fundamental motor skills, with children with low SES areas performing worse than children from high SES areas (Timpario et al 2004b: 21). Low levels of physical activity are associated with increased risk of heart disease, high

blood pressure, type two diabetes, and colon cancer, through overweight and obesity, among children as young as 12 years of age (Timperio et al 2004b, Martin and Carlson 2005). Levels of physical activity, obesity, and atherosclerosis (an early stage form of heart disease) also track from childhood to young adulthood. There appears to be an association between low physical activity in adolescents and a range of health risk behaviours such as smoking and alcohol intake (Timperio et al 2004b).

Although car/child pedestrian injuries and deaths have declined over the past 30 years, the child safety costs of a car dependent society should not be underestimated. In many countries where car ownership is high, pedestrian injuries are the leading cause of childhood mortality. In New Zealand, for instance, amongst children 11-14, motor vehicle accidents cause twice the deaths of childhood leukemia, four times the deaths from asthma, and time the deaths of all infectious diseases combined (Kingham and Ussher 2007: 504). In the UK, child pedestrian fatalities per 100,000 are the second highest in Europe, after Ireland, and are approximately double the rates of countries such as Sweden, the Netherlands, Italy, and Germany, where CIM is much higher (Hewson 2002: 1-2). Approximately two thirds of pedestrian accidents in Victoria involving children occurred before and after school while being picked up and dropped off by parents (Malone 2007: 518).

It has been stated unequivocally by many statisticians studying the reduction in child accident rates that the decrease in recent years has been 'bought' at the price of children's independent mobility and car dependence (Roberts 1995). Simply put, the proportion of pedestrians on the street has declined at roughly the same rate as pedestrian accidents. As discussed by Tranter and Pawson (2001: 42-43), driving is a "social trap": both the response to, and the cause of, concerns about traffic safety that lead to ADM. It is a classic "prisoner's dilemma", wherein no parent wants to be the first to let their child roam freely, and thus suggests the need for collective rather than individual responses.

c. Social/mental wellbeing costs of ADM

There is a substantial and growing literature on the importance of autonomous exploration of local environments for the social and mental development of children (Ward 1977, Short 1989, Hillman et al 1990, Engwicht 1992, Tranter and Pawson 2001, Louv 2006, Malone 2007). Engwicht (1992: 39) talks about how

"changing streets from places to 'movement corridors' robs children of the opportunity to explore their neighbourhood in ever increasing circles as they mature. 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 the 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."

Children want to play everywhere, and in previous generations have done so: "streets, alleyways, vacant lots, wasteland, and such natural or 'wild' environments as creeks, swamps, and woodland" (Tranter and Pawson 2001: 28). As will be discussed in the next chapter, the UN Charter of Children's Rights and the Child Friendly Cities movement asserts children's "right to play", not only in acceptably set aside and supervised 'ghettoes' such as playgrounds, but in all public spaces. Children should have access to social spaces, where children can interact with friends and neighbours; personal places, providing a sense of ownership, belonging and identity; and solitary

places, where, children can go to be alone and discover themselves (Matthews and Limb 1999). Children also need natural places where they can manipulate the environment: build playhouses and forts, dig up the ground, watch insects and animals (Tranter and Pawson 2001, Louv 2006). Children have been gradually excluded from these spaces, partly by institutional barriers such as ‘no ball game’ signs on streets or planning restrictions on tree houses, but also by more subtle social changes associated with a liability obsessed culture (Louv 2006, Gill 2007a). In the theoretically admirable quest to protect children, parents have limited exposure to challenges and decisions that allow children to negotiate risk and improve confidence and resilience that will allow them to negotiate public space as adults (Malone 2007: 523-524). A study of adult women in Finland found that women who were “allowed to play out with friends in the evening, both in playgrounds and in dark forests, and to use buses alone to reach their hobbies” were less likely to be fearful using public space as adults (Koskela 1997: 306).

There is considerable evidence of social and wellbeing impacts of ADM. Prezza et al (2005: 437) discuss the impacts of reduced autonomous walking and cycling in neighbourhoods, including lessened environmental knowledge, retarded development of spatial, motor and analytic skills, and reduced number of local friends and acquaintances. In terms of the journey to school, UK research has shown that children who walked to school were more alert and ready to learn than children who made the journey by car, and that in general, children who are physically active perform better academically (Mackett et al 2003b). Kingham and Ussher (2007: 503-504) cite evidence regular exercise can enhance children’s psychological wellbeing by improving moods and reducing anxiety. Furthermore, the kind of ‘active exploration’ associated with CIM is a form of learning that simply cannot happen within the confines of a car (Tranter and Pawson 2001: 29-30). When Malone (2007: 516-517) asked 50 children aged 4 to 8 in the regional Victorian city of Bendigo to take photographs of their typical week, over half included a picture of the back seat of the family car. A recent large scale study of 40,000 Australian children aged between 7 and 14 found that 87% of the children participated in an organized sport activity on a regular basis, yet it was eighth on their list of priorities, with “play and hanging out” rated fourth, “spending time with friends” second, and “spending time with family” - presumably, not in the backseat of a car - first (Malone 2007: 519).

The equivalent of the fear-inducing messages about CIM leading to traffic and stranger danger is the moral panic about children’s increasing indoor recreation activities. Television, popular music, and video games are castigated as overly violent (although children’s outdoor play can often be violent in both imagination and actuality), and the internet is sometimes portrayed as a haven for pedophiles (as are public spaces). In contrast, a number of recent reports on digital culture point out that children’s use of digital culture allows similar “learning through play” opportunities as autonomous outdoor exploration exercise, minus the physical activity benefits (Jenkins et al 2006, Green and Hannon 2007). In both cases, children interact with their surroundings; experiment, complete tasks, and problem-solve, individually and collectively; form friendships and memberships; express themselves creatively; and shape their environments (Jenkins et al 2006). In both cases, adults find their children’s independent actions difficult to understand or control (Green and Hannon 2007). The challenge, in both cases, is to balance encouraging autonomous participation, learning, choice-making, and risk-taking, with a perfectly natural parental desire to protect their children in an increasingly complex world.

d. Economic Costs

Although there is limited research in this area, increased use of cars to ferry children to schools and other activities does have an economic cost. Hillman et al (1990), using transportation models developed by the UK Department of Transport, estimated that the annual costs of parents transporting children by car as between £10 and 20 billion, excluding the opportunity costs of parents excluding other activities because of a perceived need to escort children. A recent UK study shows that the time spent directly supervising children has increased fourfold from 1975 to 2005 (Gill 2007a: 13). In the US, mothers make the majority of trips escorting children (McMillan 2005), and the argument has been made in a number of developed countries that increased demand for chauffeuring children limits work schedules and job opportunities for mothers (Mattsson 2002: 443, McMillan 2005: 441).

The school run also significantly contributes to traffic congestion. In the UK in 2005, up to one in five cars at peak time were doing the school run, four times the level of 1975 (Tranter and Pawson 2001: 30). This is similar to the Melbourne figure of 17% of early morning car traffic being associated with the school run (Department of Infrastructure Victoria 2005). Peak hour traffic on major routes in Australian capital cities have averages as low as 18 km/h, with minor roads in Sydney having average speeds as low as 3 km/h (Tranter 2004: 6).

Tranter (2004: 5) discusses the concept of 'effective speed', distance traveled divided by time, including time spent at work to earn the money to pay for the cost of owning and running a private vehicle. A US calculation of net effective speeds found an average of 16 km/h, and if one were to include external costs such as highways or accident-related health care, the speed would be reduced to 9 km/h, as compared to walking speeds of 7 km/h. As Tranter points out, a true calculation of 'social speed' would include taxes spent on highways and roads, parking facilities, and health care costs related to accidents, increases in obesity, and pollution-related health costs such as asthma.

Aside from congestion costs, spillover effects of ADM include increased obesity and decreased use of local shops. According to a recent Access Economics report (2006), the cost of obesity in over three million Australians is \$3.7 billion. While children's direct expenditures does not account for a large proportion of the local economy, Engwicht (1992) does cite the vicious circle of fewer people shopping locally, which in turn leads to closure of local shops and services, a particularly detrimental development for children, older people, and people with disabilities.

e. Environmental costs

There are both local and long term environmental impacts to ADM. Kingham and Ussher (2007: 504) cite a UK study that found the quality of air near schools can be worse than surrounding streets, partly because short car journeys associated with the school run are the most polluting. They also point out that the health effects of air pollution, which include respiratory and heart diseases, can be much greater for children, and that the air inside cars includes higher levels of pollutants than does the air in public space. Tranter (2004: 11) also cites the International Centre for Technology Assessment in saying that "in car air pollution may pose one of the greatest modern threats to human health", and the World Health Organization, who have found that the number of deaths caused by transport related pollution are greater than the number of deaths from vehicle accidents.

As well, ADM reinforces "unsustainable transport habits in children, which are likely to lead to car dependent social values in adulthood" (Tranter and Pawson

2001: 45, see also Mackett 2001 and McMillan 2005). If children grow up without significant and autonomous exploration of natural and wild spaces, they may be less likely to know and care about the destruction of the local or global environment.

f. Citizenship costs

Last but certainly not least, there are the impacts of ADM in terms of children's real and symbolic citizenship. As Short (1989: 63), puts it: "children are locked out of much of urban life" by adult decisions that they cannot use public streets and spaces alone. This mirrors, and is reinforced by, children's lack of involvement in family, community, and societal decision-making. ADM both keeps autonomous children out of the public realm, and gives the strong message that children's desires in relation to the public realm are of little worth.

Studies of transportation decision makers indicate that children's needs are rarely taken into consideration. Children are widely seen as as irrational and unreliable, and thus not only 'victims' but 'problems'. There is a consistent underestimation of their experiences, problem-solving abilities, and rights of children. Yet children often have extensive knowledge of their local areas, including safe and unsafe places (Davis and Jones 1996). Children are "the future contributors, decision makers, and citizens of the world" (Malone 2001: 7), and an increasing global commitment to democracy and the extension of human rights should include the gradually expanding right of children to play, explore, and transform their local environments.

g. Conclusion

Whether looking at environmentally sustainable transportation or physical activity, the costs of the societal shift from CIM to ADM are severe. Most explanations of this shift focus on parental perceptions of traffic safety and stranger danger, but there appears to be a much more complex picture at work. Fewer local services within easy cycling and walking distance have led to a vicious circle where cars appear necessary for daily life, and car traffic and speeds have accordingly increased. Equally important, at least within Anglo-American society, is an increasing equation of 'good parenting' with constant adult supervision and over-scheduling of children's time, along a general societal discomfort (reinforced through 'safety messages') in regards to children having 'the right to the city'. These problems require a combination of physical design and community development interventions to be adequately addressed.

3. What Might Work to Expand CIM?

a. Frameworks for Evaluating Policies

As seen in the previous chapter, there are considerable physical, social, psychological, economic, and environmental costs to the transformation, in little more than a generation, of societies where children were relatively independent and free to travel and play in public space, into car dependent societies. It is therefore somewhat shocking to discover that there are surprisingly few policies or programs in the six English-speaking developed countries most affected – Canada, the US, the UK, Australia, Ireland, and New Zealand - to address CIM. The majority of research and policy on child obesity focuses on food intake rather than physical activity (Cunningham 2003). The physical activity research and programs that exist tend to focus on formal sport and physical education in and out of schools, rather than everyday physical activity (Mackett 2004). Research and policy on reducing car dependence and promoting active transportation tends to focus on adult perspectives and needs, and even when addressing children, tends not to look at the social and mental wellbeing or citizenship issues related to CIM (Engwicht 2003).

Even when there are policies that might indirectly promote CIM, through for instance, lessening the speed and intensity of traffic, there tends to be a ‘silo’ effect that separates physical from social interventions. As the previous chapter has illustrated, research on CIM has tended to stress the inter-relationships between changes in the physical and social environments. Urban planners and transportation engineers might stress the material causes of ADM, such as increasing traffic numbers and speeds, increasing sprawl, ‘rationalization’ of neighbourhood shops and schools, and other aspects of urban form. Public health researchers and sociologists might stress the social or psychological causes of ADM, such as cultures of risk and fear, increasing individualism and isolation of nuclear families, and resultant abandonment of public space. However, both aspects operate in a symbiotic manner, as illustrated by McMillan:

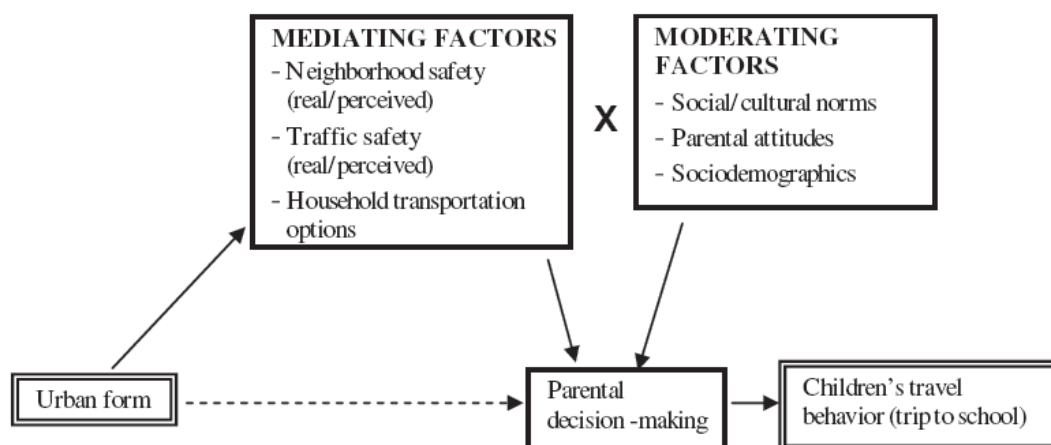


Figure 1. Conceptual framework of a primary school child's travel behavior (McMillan 2005: 449)

Some of the factors influencing parental choices are intrinsic to the particular community, while others are related to changes in the broader society. Simply focusing on the urban form or on social/cultural norms will not be enough to reverse the trend towards ADM.

When discussing policies in this chapter, there are two further models to keep in mind. One is the set of nested scales discussed by the World Health Organization in terms of interventions and risk factors:

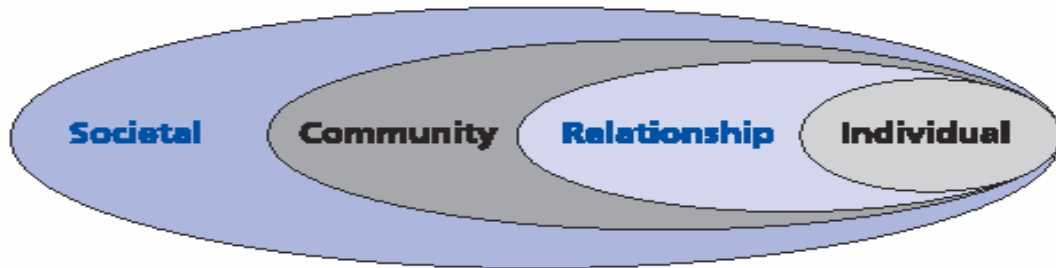


Figure 2. Ecological model (Krug et al 2002: 8).

Social marketing to support people using active transport instead of their cars would be an example of an individual scale intervention, while a School Travel Plan that focuses on both physical design and social supports to reduce car trips to school is an example of a community scale intervention.

The last model is a causation model for evaluating the impact of policies (based on Butterworth and Breton 2006)

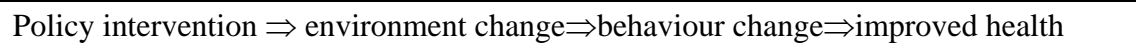


Figure 3. Causation model

To give the example of the Walking School Bus, a program to provide adult supervision for children walking to school, as an example, the program is intended to make for a safer traffic and personal safety environment on the route to school, which is supposed to lead to more children walking to school, which in turn is intended to improve their health through increased physical activity.

There are several problems with evaluating the policies which will be described in this chapter. First and foremost is the issue already highlighted: there are virtually no policies or programs that explicitly and primarily exist to support CIM. The only partial exception is the Child Friendly Cities movement, which has a number of goals, including promoting children’s right to play and travel autonomously. The second issue is that even those interventions that might indirectly promote CIM, through addressing a mediating factor such as car traffic, are rarely evaluated in a convincing manner. According to a number of social scientists concerned about evaluation quality (Petrosino et al 2001, Farrington et al 2002), evaluations of interventions rarely compare intervention sites to a control site where similar interventions have not taken place, over-depend on before/after evaluations in the same site without controlling for external factors that might affect results, conflate correlation (two things happening together) with causation (one thing leading to another), and rarely question whether an intervention failure was due to flaws in the design or in the implementation. An international desktop review of literature on the health impacts of legislative interventions for healthy built environments found only six studies that had any scientific validity, most of which used an intervention site-control site model that did not test before and after the intervention (Butterworth and Breton 2006: 9).

There is also conflation of individual and aggregate level determinants. For instance, Hewson points out that the UK Transportation Department's model for child accident rates is "Time on street, multiplied by the degree of hazard presented by environment, divided by the ability to deal with risk". In this model, degree of hazard is an aggregate level determinant, while other two are individual level determinants. As Hewson says, given a diverse population, good policy would assume a wide range of ability to deal with risk and develop complementary solutions that would benefit all children (and adults), while at the same time trying to enhance children's ability to deal with risk. However, it is far easier to work on the individual level determinants, to frighten parents into reducing their children's time on the street rather than decrease the aggregate hazards presented by the environment. There is also the ethical issue: all mechanisms would, in theory, reduce child casualties, but minimizing exposure (time spent on street) is "detrimental to both the children's social development and the communities in which they live" (Hewson 2002: 9). In general, traditional traffic modeling, using a four-step model of trip generation, trip distribution, mode choice, and route choice, is poorly suited to research on CIM. This is because it does not consider children's trips as separate from adult, rarely considers walking or cycling as viable modes in their own right (as opposed to private cars or public transport), and assumes that trips are utilitarian and direct, not 'for fun' and rambling (as many children's journeys are) (McMillan 2005: 444).

b. Transportation planning and engineering: traffic calming

A recent UK survey of 800 primary school aged children indicated that the street is still most important outdoor space for play, and 85% of UK citizens agree that it is important that children should be able to play on streets (Gill 2007b: 6, 20). As previously discussed, streets are natural meeting spaces, a destination in themselves as well as a springboard for movement through a child's 'home territory' (Gill 2007b: 7).

Since the pioneering work of Appleyard (1981), the self-evident relationship between traffic volume and speed, traffic safety, and use and enjoyment of streets, and social interaction has been quantified. For instance, a New Zealand study suggested that children living in high traffic areas run 13 times the risk of being hit by a car as children in low traffic areas (Roberts et al 1995). A number of studies have shown a clear relationship between vehicle speed and severe injury or death. A commonly used model, based on accident statistics, indicates that only 5% of pedestrians would die if struck by vehicle traveling 30 km/h; but 40% would die at 45 km/h, 80% at 60 km/h, and close to 100% above 75 km/h (cited in McMillan 2005: 442).

Other studies have shown that the width of roads (for instance, arterial roads v. local roads) and the amount of on-street parking can be risk factors as well as amount and speed of traffic (Hewson 2002: 13-14); with increased block lengths and decreased footpaths/sidewalks also hypothesized as problems (McMillan 2005: 440).

For this reason, planning and design writers since Appleyard have reiterated his call for 'traffic calming' measures such as reduced speeds and road widths, and in some cases, closing streets off to through traffic, particularly in residential areas (Engwicht 1992, Bartlett et al 1999, Hewson 2002, Prezza et al 2005, Gill 2007b). These have been shown to be successful in a number of countries. For instance, up to 1970s, Denmark had the highest rate of child road deaths in Western Europe. In 1976, the Danish national government passed legislation requiring local authorities to reduce the speed of roads to a norm of 30 km/h and to invest in greater walking and cycling infrastructure. Today, Denmark has much higher levels of walking and

cycling than the UK and much lower casualty rates (Gill 2007a: 81). In the UK, where introduction of 30 km/h zones has met with much more limited acceptance by local traffic engineers, they have been proven successful in terms of speed reduction, accident rates and increased resident perceptions of safety, although traffic calming and enforcement are still necessary in these areas (Hewson 2002: 12-13).

Gill (2007b) and Clayden et al(2006) have recently published evaluations of UK Home Zone projects. Home Zones were introduced by the new Labour government with 14 pilot projects in 1999, and were later expanded into a £30 million program funding the establishment of 61 more projects in 2001 (Clayden et al2006: 55). It was based on successful Dutch campaigns since the 1970s to reclaim most residential streets as 'woonerfs', which roughly translates to 'expanded living rooms' (Gill 2007b: 8). According to Clayden et al (2006: 55): "Home zones are intended to achieve a safer environment through physical measures that ensure low vehicle speeds, in order to allow 'soft' modes of travel equal status with motorized users". Common design aspects of Home Zones are a shared surface for cars and pedestrians (no grade or other separation of roadway and footpath), 'chicanes' or curves in the roadway created by alternating parking bays on opposite sides of the street, tree planting, improved lighting, use of coloured and textured surface treatments, and sometimes other design aspects such as a symbolic 'gateway' entrance to the street (Clayden et al 2006: 59). Possible benefits of Home Zones, apart from reducing road traffic accidents, include engendering greater social interaction and sense of symbolic ownership, reducing fear of crime, reversing decline in low-demand housing areas, and providing places for children's informal recreation close to home. They are the opposite of the more traditional 'Radburn' approach to transportation planning, which stressed complete separation of vehicle and pedestrian access, since the isolated subways and footbridges that resulted from the Radburn approach were widely perceived as unsafe, and remained unpopular for walking (Clayden et al2006: 55).

The Gill evaluation indicated the development of stronger and more integrated local communities in all sites as a result of the establishment of Home Zones, with adult residents reporting knowing more neighbours afterwards, and increased ability to resolve neighbourhood disputes through discussion rather than bringing in the authorities (Gill 2007b: 15). Lower speeds and amounts of traffic occurred at all sites, and in five of seven sites there were measurable increases in CIM. However, implementation has been slow, due to resistance by some residents and local government decision-makers (Gill 2007b: 10), and some researchers contend that traffic speeds may need to be as low as 12 km/h to encourage greater child pedestrian use (Gill 2007b: 26). The Borough where the scheme has been most successful, Brent, is where a strong citizen action group was able to close off 11 streets for parties in 2005, suggesting that areas with pre-existing social capital and cohesion are more likely to implement Home Zones (Gill 2007b: 10). The Clayden et al evaluation is more intriguing, with contrasting results in low SES Manchester and Nottingham sites. In Manchester, 65% of adults said more children were walking and cycling on street after the Home Zone was introduced, and a separate evaluation with children found that they said that they were walking, cycling, hanging out, and talking with friends more. Street observations showed older children congregating on the concrete 'ceremonial entry,' while younger children were using the knee rails at end of parking bays as play equipment. There was some concern expressed by parents in a focus groups about children playing ball games near cars, but general satisfaction with the changes (Clayden et al 2006: 63). In contrast, the Nottingham parents said they didn't allow younger children out because of fear of crime, which they felt had actually

increased due the changes. Increased use by older youth led to complaints about vandalism to trees and bollards as well as bullying of younger children (Clayden et al 2006: 63-64). Similar concerns arose in consultations with residents in two sites in Sheffield. One group wanted a young children's play space with a seating edge for parents on the street, which could be clear of cars during the day, but open for parking in the evening. This concept has worked in Norway. However, the other site's discussions were dominated by concerns about streets being taken over by youths, as opposed to Dutch woonerfs where all people, regardless of age, are assumed to have equal rights to public space (Clayden et al 2006: 66-68).

An innovative program in Portland US, Street Repair, uses public art projects such as painting road surfaces and wall murals, and setting up information kiosks and tea urns at street corners to calm traffic at particular intersections. An evaluation of one such intersection, Sunnyside Plaza, two years after the intervention found that 65% of neighbours found the neighbourhood "an excellent place to live", as opposed to 35% at a control site with no intervention, and 86% of respondents reported "excellent or very good general health", as compared to 70% in the control site. However, there was no statistically significant difference in parents believing that the "neighbourhood was a good place for children to grow up" (Semenza 2003: 1440).

Gill (2007b: 28) argues that low SES "regeneration areas" (or neighbourhood renewal areas, as they are known in Victoria) should be priorities for traffic calming, along with new developments and those areas already showing strong citizen action. Prezza et al (2005: 439) cites studies that traffic calming measures as well as improved street furniture such as benches can lead to increased supportive interactions and children's outdoor play. Gill (2007b: 27) suggests that amenities such as children's mosaics and other public art may increase symbolic control of streets, while Prezza et al (2005: 439) suggest that greenery in road dividers and along streets may mitigate immediate air pollution, reduce traffic noise, and create a degree of amenity.

Traffic calming schemes operate at the micro-scale of a street to improve conditions. At a regional scale, the European Commission, in their 2002 publication *Kids on the Move*, listed a number of transportation planning measures that should be put in place to encourage child friendly cities. In order of priority, these included:

- reducing speed on most roads to a norm of 30 km/h
- reducing volumes of traffic on most roads, not only 'residential roads'
- improving the attractiveness of public transport through reduced or free fares for children
- improving pedestrian crossings and walkways, including increasing crossing times and preventing parking several metres ahead of crossings
- encouraging the use of roller skates and blades, skateboards and scooters on streets as an efficient mode of children's transport over both short and medium distances
- planning footpaths to allow younger children to cycle on them
- increasing bicycle training in schools
- encouraging temporary street closures for weekend and holiday play
- developing 'home zones' or traffic-calmed residential streets (European Commission 2002: 25-31)

While most of these measures rest at the local government level, the European Commission (2002: 29) also urges national governments to follow the example of Belgium, where the legal onus is on motorists to be responsible for any injuries or deaths of a cyclist or pedestrians.

c. Planning and Design for Walkability and Amenity

The expanding land use divisions of the 20th century, with residential areas separated from employment and shopping districts, has been posited as both a result of car dependence, and a cause of sprawl through the amount of land given to roadways and car parking facilities (Newman and Kenworthy 1999). Mattson (2002: 44) also calls attention to the separation of land uses by age, with large recreation centres or sporting grounds set aside for children (which usually include car parks) adding to sprawl. Therefore, most studies on sustainable transportation including CIM, stress the importance of reversing this land use trend, and developing attractive and accessible destinations close to residences. For instance, Engwicht (1992: 125-131) argues in order to attain sustainable transport, cities must be based on relatively densely occupied neighbourhoods with hubs, a range of local goods and services, a mix of housing and job opportunities, and a strong sense of local identity and street life. Similarly, Gehl (1987: 33) discusses the importance of low, closely spaced buildings, land uses that might attract a large amount of foot traffic, and good facilities for outdoor lingering such as benches and cafes, in developing “living cities” as opposed to “dead, impersonal” spaces. Both Engwicht and Gehl stress the importance of low intensity activities, the possibility of casually seeing and hearing neighbours and acquaintances on streets and having undemanding conversations. For instance, Gehl (1987: 118) contends that playgrounds are primarily meeting spaces, and no matter how attractive the equipment is, if other children are not around, children will not linger.

There is strong evidence that ‘risk averse’ planning and design makes for less interesting and inviting public spaces, which in turn reduces use by both adults and children. A recent study, *Living with Risk*, on promoting better public space design was commissioned by the Commission on Architecture and the Built Environment and funded in part by insurance companies. It makes a strong case for introducing water features, less formal playing spaces, and as mentioned in the previous section on home zones, reducing separation of cars and pedestrians via mechanisms such as guardrails (Commission on Architecture and the Built Environment 2007).

McMillan (2005: 445-446), summarizing the literature on micro-scale elements that tend to encourage adults’ decision to walk or cycle instead of drive, mentions the importance of destinations such as shops, parks, and transit stops in close proximity to homes; route directness, in turn associated with block length and a grid pattern of streets; the presence of footpaths/ sidewalks; amenities such as shade, architectural or natural features of interest, and front porches; and sloping terrain or hilliness. All of these elements, other than the last, are associated with traditional neighbourhood design and new urbanist design rather than post-World War Two. There are also micro-scale elements that discourage walking and cycling, such as expansive car parks, which not only add distance to routes but are perceived as intimidating and dangerous to pedestrians.

While some studies (eg., Hillman et al 1990) suggest that children who live in rural or lower-density environments enjoy more CIM, other studies on territorial range and amounts of CIM have not corroborated the superior capabilities of rural children over higher-density urban environments (Kytta 2004: 179-198). A comparative study of mobility patterns in a medium-sized town and a rural area in Sweden found that children living in the town walk or cycle independently to a greater range of friends more than rural children, who have fewer visits and are much more likely to be driven by parents. Furthermore, children living in town are more likely to cycle or walk to leisure activities than rural children, and mothers in rural

areas are more likely to drive longer distances for their children's purposes (egs., swimming or organized sports) than for their own leisure activities (Mattsson 2002). Prezza et al (2005) found that the most independently mobile Italian children were those living in central city apartments with courtyards and near local parks. While there were high levels of fear associated with poorly lit or deserted parks, children also expressed a combination of attraction to and concern about natural landscapes such as wooded areas. Even the view of a green space from an apartment might help to develop play and creativity amongst children.

A study of approximately 150 children aged 10 in three Melbourne schools asked them to map and photograph neighbourhood attractions that they could walk or cycle to. Common destinations included playgrounds and sports fields as well as less elaborate recreational possibilities such as a target painted on a wall for ball playing. Interestingly, food as a neighbourhood destination came up in 70% of responses, including fast food outlets and corner shops. Schools, shopping centres, and friends' houses were also drawn by significant numbers of children (Hume et al 2005). A similar study of 83 students in both inner city and outer suburban locations of Sydney who were asked about "neighbourhoods good to walk in" found a strong preference for natural elements (such as trees and flowers), playgrounds and recreational areas, food-related and other retail areas, elements that could promote both traffic safety (footpaths and good pedestrian crossings) and safety from strangers (other people) (Romero 2007).

Gill (2007b: 70, 81) is a strong promoter of Danish, German, and Dutch planning policies that encourage accessible and exciting play spaces close to medium density housing. He cites an interview with the project leader for an adventure playground in Copenhagen who describes their benefits:

"[adventure playgrounds] give children a space where they can be after school in a more free way, to be with their friends and to build up good friendships. A place where they can enjoy things and life... If I look deeper, it is my job to get children out from here with a feeling of taking responsibility for other people and themselves... to give them skills in how to be with other people and their friends... not to be nervous when they meet other people."

Kytta (2004) provides a list of what environmental psychologists call "affordances", or positive environmental factors, that children might use in independent outdoor exploration. Kytta, like Gehl and Engwicht, stress that children see 'transportation' as much more than getting from point A to point B. As Gehl once said to Engwicht, it took eight minutes for him to walk to school as a child, and two hours to return home; with the former journey being the trip and the latter journey being the "stuff of life" (Engwicht 2003: 1). Kytta's (2004: 185) list of environmental factors that encourage children's exploration include:

- flat surfaces for cycling, skating, running, and skipping, and that can also allow role plays, sports and rule games, and following adults around
- smooth slopes, that allow sliding and skateboarding
- detachable objects like fallen leaves or dirt, that allow digging and building
- attached objects like tree limbs or poles, that can allow hanging or swinging
- climbable objects like trees, that can allow climbing
- natural shelters, that can allow peace and quiet or playing 'home'

Gehl (1987: 66 onwards) talks about "smellscapes" and "soundscapes" as well as visual and tactile stimuli as essential elements of social spaces: spaces where people, especially children, can stop, talk, eat, play, sit and watch other people.

McMillan (2005), Kytta (2004) and Prezda et al (2005) remind us that a place designed for walkability and exploration may still be a place where children are not allowed independent mobility. Prezda et al (2005: 439) cite an evaluation of the US showcase community of Seaside, which indicated 'new urbanist' design had a positive impact on traffic calming, on neighbourhood relations, and sense of community, but not on CIM. Similarly, Kytta (2004: 181) provides a matrix, with CIM on one axis and affordances on the other. Areas with high CIM may be a 'wasteland' with few positive attractions as well as a 'noisy village' with many positive attractions. Similarly, areas with low CIM may be a 'cell' with few positive attractions, as well as that most ironic of local environments, a 'glass house' with many potential attractions, but few children allowed to discover or to use them.

Unlike the evaluation literature on traffic calming, no studies have been located that either prove or disprove that policies aimed at increasing the amenity of streetscapes and public spaces, reducing distances to shops, and making spaces more 'child-friendly' increase CIM.

d. Social Planning and Marketing: School Travel Plans and the Walking School Bus

As Tracy McMillan (2005: 440-441) discusses in relation to the journey to school, proponents of sustainable transportation planning, 'smart growth', 'new urbanism', 'healthy communities' and other newly popular concepts "have developed a persuasive hypothesis attributing the change in travel behaviour... to the urban form of our communities." In the US and other developed countries, policies and programs are being created at all levels of government to respond to this hypothesized link, despite a relative lack of evidence on the relationship between urban form and (in particular) children's journey to school.

In contrast, the public health literature began with hypothesizing individual-level social determinants of children's modal choice, such as self-confidence of one's abilities (known as 'self-efficacy'), time, interest, perceived health, and encouraging parents as key factors (McMillan 2005: 447). More recently, public health researchers have begun to address the interaction between environmental, interpersonal and social barriers and enablers. For instance, Timperio et al (2004a) studied 235 children aged 5 to 6 years and 677 children aged 10 to 12 years, and found that parental perceptions of few other children walking in the neighbourhood and no safe road crossings were negatively correlated with walking or cycling to school, while for children, distance and (for younger children) steep inclines were negatively correlated with wanting to walk or cycle to school. Creating child-friendly environments thus requires overcoming both social and design barriers at the neighbourhood level.

A number of policies and programs that combine design changes with social marketing have been implemented, particularly in relation to the journey to school. Safe Routes to School programs were pioneered in Denmark in the 1980s as part of the national road safety initiative described above (McMillan 2005: 443). It has been adopted in several different countries, including the US (McMillan 2005), the UK (Mackett et al 2003a), and Australia (Taylor and Ampt 2003). According to McMillan (2005: 443), Safe Routes to School involve 3Es:

- (1) education of both children and drivers on road safety
- (2) enforcement of traffic laws around schools
- (3) engineering of the street environment along the routes to school in an attempt to control traffic and enhance pedestrian and cycling facilities

Unfortunately, evaluations of School Travel Plans have found mixed results. Timperio et al (2004b: 24) report that evaluations of School Travel Plans in the UK show that schools were successful in producing plans, but unsuccessful in changing travel behavior, generally due to the long-term commitment necessary from both the school and parents. Staunton et al (2003) discuss an intensive US School Travel Plan initiative in Marin County California that included walk/bike to school days, a 'frequent rider miles' competition, class room education, walking school buses and bike trains. After two years, there was a 64% increase in walking, a 114% increase in biking, and a 91% increase in carpooling to the school, along with a 29% reduction in driving alone. However, there was no comparison with a control group, changes in independent mobility were not tested, and a limited number of the same students were tested both before and after the changes. An evaluation of the California US Safe Routes to Schools legislation (which has been a model for several other US states) found that parents reported an increase of 15% in children's walking and cycling to school where improvements had been made, as opposed to 4% where routes had not been improved. However, as the authors note, there is a possible bias amongst parents who noticed or had a favorable opinion of the improvements to footpaths, intersections, and traffic control, and who adjusted their memories accordingly (Boarnet et al 2005: 137-138). A more general critique is leveled by Hewson (2002: 14): while school travel plans that involve extensive activities over years can be successful, children's needs go well beyond the need to travel the same way to a fixed destination, and attempts to restrict children to 'safe' routes and designated play areas may be both socially undesirable and impractical.

There is a similar controversy related to another school-based program, the Walking School Bus (WSB). The idea originated with Engwicht, as one of several "modest proposals" near the end of his book *Towards an Eco-city* (1992: 143-144). The idea was to advertise, through local papers and other media, for volunteers such as senior citizens to become Walking Bus Drivers, who would "walk a set route, much like a school bus, collecting children along the route and delivering them safely to school." The idea rapidly diffused through at least six countries - Canada, the UK, the US, Denmark, Australia, and New Zealand - to the point where thousands of local initiatives have been established in the past 10 years (Kingham and Ussher 2007: 503; Mackett et al 2004: 2; Kearns et al 2003: 285). Along the way, the informal basis of the idea has been lost. Engwicht, who in 2003 unequivocally stated that "in many cases, WSB has outlived its usefulness and in some circumstances has become counterproductive", gives an example of over 100 volunteers showing interest in one program in his home town of Brisbane, but by the time compulsory training and exhaustive background checks had been completed, only three potential volunteers were left (Engwicht 2003: 1-2).

Most writers on the WSB, including Engwicht, argue that WSB is at best only an intermediate step towards CIM. The question is whether it works to create the preconditions of CIM, including decreasing car traffic in school-adjacent areas to the point where it is safer for children to walk or cycle alone, improving children's physical fitness and self-efficacy, improving parental perceptions of children's safety and capabilities, and supporting collective responsibility for and interest in sustainable transport. Engwicht (2003: 2) does see positive examples of WSB being an intermediate step in Brisbane, reducing car traffic and leading to design improvements, adding that it would be a retrograde step in places where children already have independent mobility. He proposes alternative "Red Sneaker Routes" where adults wait at checkpoints of common routes used by children, particularly if

seats and/or public art could be added to routes. Mackett et al (2003b: 6), in the UK, has found out that children are twice as likely to report positive social aspects of WSB than parents, although both report greater knowledge of and friendships with neighbours as a result of WSB implementation. Although they are cheap, easy to set up quickly, and visible sign that the local authority is taking action, evaluations indicate no decrease in local car traffic. Parents may walk their children to school and then return to drive their car (Mackett et al 2003a: 180). School masters report mixed results in lessening car congestion near school entrances as a result of WSB, and also a loss of parent volunteers over time, particularly since child interest in WSB declines in senior primary grades (Mackett et al 2004: 7-8).

Kearns et al (2003), in an evaluation of WSB schemes in New Zealand, suggests that WSB may result in increased physical activity, but actually reinforces ADM since it relies on adult supervision and adult-imposed rules on group travel inimical to independent exploration. However, children and adults are both highly articulate on the benefits, reporting enjoying talking as they walk, meeting neighbours, and enjoying the daily exercise (Kearns et al 2003: 289). Another New Zealand study (Kingham and Ussher 2007) agreed that parents report new and better friendships and acquaintances, leading to other get-togethers on the street. Children say that they want to walk to other places as a result of improved fitness and knowing their neighbourhood better, and as also reported by Mackett et al, children do 'graduate' from WSB, presumably to independent walking, at age 9 or 10 (Kingham and Ussher 2007: 507-509). A Canadian evaluation of WSB concluded that "in some schools it has become 'cool' to walk and is a sign of freedom from parental authority", and that the WSB works in "creating communities within neighbourhoods of strangers" (Informa 2001: 4). Unfortunately, most of these evaluations are based on interviews with parent volunteers, school administrators, and WSB officials, not the children themselves.

e. A rights-based approach: Child-Friendly Cities and Participatory Planning

Child-Friendly Cities (CFC) s is a UNICEF-sponsored program that aims to improve local governance capacity to support children's rights, amongst them the right to "participate freely and fully in city life", including walking safely on the street (Malone 2001: 5, Child Friendly Cities 2007a). The UN Convention on the Rights of the Child, adopted by all member states in 2000, includes "the child's right to live in a safe, clear, and healthy environment and to engage in free play, leisure and recreation in the environment" (Malone 2001: 7). It sees children "the future contributors, decision makers, and citizens of the world", and children's wellbeing and quality of life as prime indicators of a healthy environment, good governance, and sustainable development. Furthermore, the movement stresses what the 1992 Earth Summit called the "creativity, ideals and courage of the youth of the world" which "should be mobilized to... ensure a better future for all" (Malone 2001: 9).

As we have already seen, children's needs are rarely taken into consideration in planning decision-making. Children are often painted by road safety educators as irrational and unreliable, both 'victims' and 'problems'. Both sustainable transportation and 'new public health' talk about the importance of policy change and people's active responsibility within their environments, but tend to ignore children's rights. Children often have extensive knowledge of their local environments, including safe and unsafe places. Their experiences, problem-solving abilities, and

rights need to be included in planning decision-making (Davis and Jones 1996: 107-108).

There are a plethora of child assemblies, consultation processes with children and youth, and child-empowering activities taking place, including many that are directly related to CIM. Dozens of European and Latin America cities have child assemblies where children regularly co-plan developments (Bartlett 2006: 4; European Commission 2002: 39). Norway has a Commissioner for Children since 1981 (O'Brien 2004: 9), Johannesburg South Africa has a Child Policy Coordinating Team, and Frankston, outside Melbourne, has a Youth Safety Management Team (Bartlett 2006: 4-6). In the US, there is a Community-Based Education Resource (CUBE) manual on child-oriented communities, the Dutch Institute of Design has published design guidelines for children, and the Canadian Institute of Planners has a *Kids guide to building great communities* (O'Brien 2004). The problem is that the CFC commitment from local governments is often limited to vision rather than implementation, and a meta-survey of the CFC database has found very limited information on outcomes arising from CFC projects (Bartlett 2006: 16-17).

Having said that, the Italian projects, in particular, have led to substantial changes in both the physical and the social environment, according to the Child-Friendly Cities database. In Fano, the Children's City project combines letting children plan urban renewal through creative laboratories, children's councils that entrench participatory planning practices, and initiatives to encourage CIM. Certain streets have been closed to traffic, access to sports installations and equipment has been improved, and there has been increased redevelopment of public squares and semi-public areas within condominium areas as play spaces. In Pistoia, the project 'Safe Routes round the school C. Collodi' has led to increases in children walking to the school by themselves since its inception in 2000, although exact figures are not provided, and children have also 'reclaimed' a square near the school that was previously used as a car park (UNICEF 2007b).

In Australia, Child-Friendly Cities appears to be used in a generic way to denote interdisciplinary research and action on children and urban planning issues, whether or not they have formally applied for CFC status at UNICEF (Gleeson and Sipe 2006, Woolcock and Gleeson 2007). As the authors of this article point out, this emphasis on child welfare is in some senses a return to the origins of urban planning, "with a strong emphasis on fundamental health conditions and their basis in urban conditions" (Woolcock and Gleeson 2007: 1012). A critical mass of researchers are beginning to explore wellbeing issues of children and young people, with a particular focus on Australia's new and outer suburban communities, and with an emphasis on participatory planning practices.

g. Conclusion

The evidence base on what might work to increase CIM is still poor, partly because it is still not recognized as a policy priority, and partly because the mechanisms to include children in evaluating and changing their urban environments are so poor. Traffic calming is promising at the very local level of the individual street, but does not appear to address underlying parental concerns about CIM, nor to expand children's home territory much beyond the immediate vicinity of the home. The evidence base on School Travel Plans and Walking School Bus is mixed in terms of success, and again, focus on a set of specific routes to one place (the school) rather than CIM in the entire community. A more holistic emphasis on children's

participation in planning, encompassing both physical design and social change, is evident in Child-Friendly Cities, but there is at present limited evidence that a CFC approach works to change environments, let alone change CIM and lead to resultant improvements in health and wellbeing. It is also true that most studies focus on central cities and inner suburbs, rather than the middle and outer suburbs lived in by the majority of Australians, as well as regional and rural settings where ADM may be the norm.

4. The Policy Context in Victoria 1999-2007

The second section of this report laid out a substantial justification for policy attention to CIM, in terms of the cost to physical health and emotional development of children, as well as the impacts of ADM on sustainable transport. The third section described existing policies that may affect CIM indirectly, although there is limited evidence that these policies work to improve CIM. The next section will demonstrate considerable interest from key stakeholders - in local and state government, advocacy organizations, and research - in policy that can promote CIM. The purpose of this chapter is to lay out the existing policy framework in Victoria within which change can happen. Specifically, we are seeking to answer three research questions in the next two sections:

- (1) To what extent is children's independent mobility seen as a problem or a priority within the current Victorian policy framework?;
- (2) What policies and programs exist in Victoria that might directly or indirectly have a positive impact on children's independent mobility?; and
- (3) Is there any evidence that these policies and programs have had a positive impact on children's mobility?

The 20 policies examined have been organized into four categories, with five to seven policies examined in each category, with the exception of citizenship/ Child-Friendly Cities:

1. Comprehensive Policies and Indicators: Growing Victoria Together (2001), A Fairer Victoria (2004), Go For Your Life (2002), Community Indicators Victoria (2006), Children's Report Card (2006)
2. Physical Planning and Design: Environments for Health (2001), Planning for Health and Wellbeing Project (2002-2007), Melbourne 2030 (2002), Sustainable Neighbourhoods Policy (2005), Healthy by Design (2005), Safer Design Guidelines (2005)
3. Social Planning and Community Development: Walking School Bus (2001), Neighbourhood Renewal (2002), TravelSmart (2002), Travel On/Public Transport Challenge (2002/2006), Bike Education/Cycling for a Sustainable Future (2005)
4. Citizenship: Child-Friendly Cities (2004)

a. Comprehensive Policies and Indicators: Growing Victoria Together (2001)

The current Labour state government was elected in 1999, and *Growing Victoria Together* is intended to set out the "Government priorities for Victoria for the next decade... for making Victoria a stronger, more caring and innovative State" (Department of Premier and Cabinet [DPC] 2001: 2). The 11 key goals within the document have been used to inform budget and policy decision making, and annual progress reports on these goals, using state-wide indicators, have been published.

The first key goal specifically addresses children: "valuing and investing in lifelong education... [as] the key to our children's future" (DPC 2001: 8). Another goal, "protecting the environment for future generations", implicitly addresses children. This goal explicitly promises a commitment to sustainable transportation through promoting investment in "regional and suburban rail, tram, bus, and bicycle infrastructure" (DPC 2001: 24), and also sets the progress indicator of "travel taken on public transport will increase from 9 per cent to 20 per cent by the year 2020"

(DPC 2001: 16). A third goal, “building cohesive communities and reducing inequalities” talks about “cohesive, caring communities” as “places which support families”, and promises to “support new community building initiatives and develop partnerships with local government around local communities’ needs” (DPC 2001: 22). However, none of the goals explicitly address children’s rights or CIM.

In broad terms, this policy framework has the capacity to indirectly promote CIM. But due to the broad scope of the framework and lack of specific evaluation around CIM in the annual reports, its direct relevance is limited.

b. Comprehensive Policies and Indicators: A Fairer Victoria (2004)

A Fairer Victoria is another overarching policy that specifically addresses “social sustainability... [and] sets out actions the Government will take to improve access to vital services, reduce barriers to opportunity, strengthen assistance for disadvantaged groups and places and ensure that people get the help they need at critical times in their lives.” (DPC 2004: 1). Given the life cycle approach described in the final clause of the previous sentence, it is not surprising that the first strategy is “Giving children the best start in life”. The \$101.8 million pledged to this strategy includes establishing an Office for Children (see below), but is focused on direct service provision for disadvantaged families and communities rather than broader societal issues such as CIM (DPC 2004: 9). Strategy 12 outlines “place-based approaches” for disadvantaged communities, including redeveloped infrastructure and action at a whole of government level, particularly in areas with high social disadvantage, those experiencing rapid growth, and those areas facing population decline (DPC 2004: 12). The policy provides strong indirect support for CIM, though pledging \$788 million towards new initiatives, including increased funding for ‘Community Indicators’ and ‘Go for Your Life’ (see below).

c. Comprehensive Policies and Indicators: Go For Your Life (2002)

Go for Your Life is a whole of State government initiative that seeks to improve levels of physical activity and promote healthy eating across Victoria. While the first phase (2002-2005) was relatively modest in scope and cost, it is currently spending \$132 million over 4 years (2006- 2010) (DHS 2007). Unlike the two comprehensive policies mentioned above, children are a major target group for the Go for Your Life program. This is based on the premise that behaviours or lifestyle habits that occur in youth carry into adulthood. There is a high emphasis on healthy eating and organized sport, and no direct discussion of CIM. For instance, in the community-friendly website associated with the project there are 23 recommendations made for “getting your family going”. While there is a range of ideas around ball games, bushwalks and other organized recreation, there is no mention of simply walking to school, the shop, or the local park together, let alone supporting children in becoming more independently mobile. However, Go for Your Life supports a range of active transport initiatives that are targeted at children. This includes Ride2School, Walking School Bus, Bike Day and others (see below). This involvement, and the fact that Go For Your Life has a high level Ministerial Steering Committee, suggests that it has high potential to become an enabler for CIM.

In a recent evaluation conducted by the Victorian Auditor General’s Office (VAGO 2007), one key criticism that was raised of the ‘Go for Your Life’ program was the short term funding cycles, which has direct consequences for enabling CIM. For some schools, this meant that they were unlikely to be able to continue WSB into

the future. The CEO of Macedon Shire Council suggests that ‘funding locally based programs via a regional or sub-regional model dissipates both the resources and the outcomes’. He goes on to point out that for a project like ‘Go for Your Life’ funds become diluted very quickly, and this has consequences for rural and regional councils (VAGO 2007: 6).

d. Comprehensive Policies and Indicators: Community Indicators Victoria (2006)

Community Indicators Victoria aims to establish a sustainable Victorian approach to the development and use of local community wellbeing indicators, with the purpose of improving citizen engagement, community planning and policy making (Wiseman et al 2006). The project comes out of a partnership between a number of universities (Melbourne, Victoria, Swinburne), the Victorian Health Promotion Foundation (VicHealth), the Victorian Local Governance Association (VLGA), the municipal association of Victoria (MAV), and the State of Victoria’s Department of Human Services. There is no indicator related to CIM in the list of 73 indicators, nor is there an indicator directly related to children’s wellbeing (although there are three directly related to a best start for infants: breastfeeding, immunizations, and child health assessments). The indicators themselves are based on surveys with adults only. Despite this, the community indicators include several related to the preconditions for CIM, including adequate physical exercise for adults, feeling part of the community, access to services and public open space, percentage of community who say lack of transport significantly limits capacity to achieve key work and/or life goals, dedicated walking and cycling trails, percentage of community who perceive that they have practical non-car transport opportunities, rating for local roads and footpaths, opportunities to participate in cultural, sporting, and recreational activities, and perceptions of safety.

e. Comprehensive Policies and Indicators: Children’s Report Card (2006)

As part of A Fairer Victoria, an Office of Children was created within the Department of Human Services, and one of its first ‘products’ was the Children’s Report Card. *The State of Victoria’s Children Report* is complementary to the Community Indicators Victoria report, in that it seeks to measure and improve the wellbeing of children. It develops a vision where Victorian “communities recognize and respect children and young people, value their diversity and culture, and build connectedness and resilience among them and their families”, and where “there is the right mix of places, professionals and high quality programs to meet the changing needs of children, young people and families, provide opportunities, promote positive outcomes, intervene early, and prevent harm” (DHS 2006: 3).

Of all the documents described thus far, this document is most likely to fit into a CIM agenda. Not surprisingly, given its origin in a health ministry, it has a strong focus on healthy lifestyles, seeking to improve outcomes in healthy weight and adequate exercise and physical activity (DHS 2006: 48), including a mention of the proportion of Victorian children who live within two kilometers of school who are driven there some or all of the time (DHS 2006: 49). The section on the community as a setting is strong, with an outcome area of “communities that enable parents, children, and young people to build connections and draw on informal assistance” (DHS 2006: 113). The outcome area of “accessible local recreation spaces, activities

and community facilities” is associated with indicators such as “access to transport, good facilities and services, and ease of access to parks and recreational spaces” (DHS 2006: 115). Thus, while there is no explicit consideration of CIM, there is strong support from a health promotion standpoint to indicators measuring progress in active and sustainable transport. With slight modifications to questions asked, the Children’s Report Card could be a strong mechanism to measure changes in CIM.

f. Physical Planning and Design: Environments for Health (2001)

Environments for Health (DHS 2001) represents a shift in government thinking about health and wellbeing. It emphasizes a social model of health explicitly linking participation, sense of community and empowerment to individual and community wellbeing, and provides practice tools to link public health to municipal planning structures. Not only has this policy mandated local governments to develop municipal public health plans (MPHPs), it sets out a framework for integrating MPHPs with the other two mandated local government policy documents: Corporate Plans and Municipal Strategic Statements (the document guiding physical planning at the local government area). In other words, the document sets out how transportation planning and traffic management, land use planning and zoning, the provision of social infrastructure like libraries, schools, and neighbourhood houses, and the provision of parks and recreation opportunities, might be linked together at the local level to promote positive health and wellbeing outcomes. This emphasis on the linkages between the physical and social environments (along with the economic and natural environments) supports capacity for promoting CIM, although this again is currently in theory rather than in practice. An evaluation of the *Environments for Health* Framework and associated education and training for local and state government staff done by Deakin and Melbourne Universities in 2006 indicates that the document provides a strong theoretical basis and practical planning tools, and there has been a strong take up of training opportunities by local staff. But the policy had only a moderate influence, at best, on local area physical and strategic planning outside health (de Leeuw et al 2006).

g. Physical Planning and Design: Planning for Health and Wellbeing Project (2002-2007)

The Planning for Health and Wellbeing Project was developed and delivered by the Victorian Division of the Planning Institute of Australia, funded by VicHealth, and supported by an advisory council from five key State ministries (Human Services, Education, Infrastructure, Environments, Victorian Communities), the Victorian Local Governance Association and the Municipal Association of Victoria (Planning Institute of Australia 2007). It was intended to support *Environments for Health* (above) as well as other policies that sought to integrate planning with positive health outcomes. The emphasis has been on education and training opportunities for planners, disseminating relevant literature and ‘success story’ case studies in a monthly column in *Planning News*, advocacy on behalf of PIA in changing planning policy to promote health and wellbeing outcomes, and some independent research (eg., Butterworth and Breton 2006). Unlike many other initiatives described in this chapter, the Planning for Health and Wellbeing Project has been relatively inexpensive, relying on VicHealth grants of approximately \$30-40,000 per year. Because of this low level of funding, the project has been highly dependent on a series of part-time project officers, along with volunteer commitment (in the interests of disclosure, it should be mentioned that one of the authors of this report, Carolyn

Whitzman, was the volunteer chair of the project from 2004-2006). There was a roundtable on children's issues in 2003, but little follow up from organizations involved.

An independently conducted survey of planners before the project commenced in 2002 was followed by a survey two years into the project, in 2005. It showed that while there was considerably expanded interest and understanding amongst planners as a result of the publications and training component, the proportion of planners who were able to include health considerations in their day to day work had not been affected by the project (see Whitzman 2007b). The funding for the project is now expended; however, the National Office of PIA has commenced on its own Planning for Health and Wellbeing project.

h. Physical Planning and Design: Melbourne 2030 (2002)

Melbourne 2030 is a 30 year plan for managing sustainable growth across metropolitan Melbourne, which contains the majority of the population of the State of Victoria. Its goals and mechanisms echo the priorities of *Growing Victoria Together*: “protect and enhance living conditions in our suburbs – both existing and new... improve public transport and roads... care for the environment” (DSE 2002: 3). Like all preceding documents, there is no explicit consideration of CIM, and like all preceding documents with the exception of the Children's Report Card, there is little explicit consideration of the needs or opinions of children. At least three of the nine key directions of M2030 could indirectly support CIM. These include “a more compact city”, achieved through a policy of improving services around activity centres and improving pedestrian, cycling, and transport links to and between these centres; “a great place to be”, delivering better urban design, promoting personal and traffic safety, and a greater sense of place and community; and “a fairer city”, intended to support neighbourhood social, cultural and creative services, particularly in areas of social disadvantage.

An audit of the first five years of Melbourne 2030 is presently underway, with over 200 submissions from organizations and members of the public (Department of Planning and Community Development [DPCD] 2007), and a report analyzing progress in the light of the 2006 census has been published. Many of the submissions criticize the state government for failing to put sufficient money into sustainable transport infrastructure, walkability, and better urban design (eg., Heart Foundation 2007, VicHealth 2007a), and the 2006 census figures indicate that urban sprawl, with associated car dependency, has not yet been affected by Melbourne 2030.

i. Physical Planning and Design: Sustainable Neighbourhoods Provisions (2005)

Amendments to Clause 56 of the Victorian Planning Provisions introduced in 2005 were intended to promote more sustainable residential subdivisions. In the consultation and the resultant amendments, better design for walking and cycling emerged as a strong theme, although CIM was not explicitly considered. There were concerns by some of the organizations consulted, including VicHealth and PIA, that the amendments to the policy, and accompanying practice notes, would not be explicit enough, for instance, about an appropriate level of priority for cyclists and pedestrians. However, the policy does mandate a better consideration of the needs of pedestrians and cyclists, including children, and also is intended to promote compact and well-designed new residential development.

j. Physical Planning and Design: Healthy by Design (2005) and Safer Design Guidelines (2005)

Healthy by Design (Heart Foundation 2005) and *Safer Design Guidelines* (DSE 2005) are both voluntary guidelines intended to inform Victorian statutory and strategic planners and developers. They are linked through a matrix of similar design considerations for safe and healthy communities (Heart Foundation 2005). While both sets of guidelines are supportive of the range of planning and design preconditions for CIM – car traffic calming, promoting better design for walking and cycling, promoting design that makes people feel safer, improving the activity levels and amenities of local streets and public spaces – neither explicitly addresses CIM. For example, Safer Design suggestion 1.2.1 *Ensure all parts of a neighbourhood are within a five minute walk of the neighbourhood centre* would promote the preconditions of CIM. There are thus strong links with physical planning and design oriented documents like *Melbourne 2030* and *Environments for Health* and training programs associated with the Planning for Health and Wellbeing Project, as well as additional training programs provided by the Heart Foundation as part of its Supportive Environments for Physical Activity.

k. Social Planning and Community Development: Walking School Bus (2001)

As described in the previous section, the Walking School Bus (WSB) is a program that organizes adult supervision for children walking to school. In Victoria, it is coordinated by VicHealth and is considered part of the Go for Your Life suite of policies. Along with a direct funding commitment of \$4.5 million, mostly to local government coordination, VicHealth has been strongly committed to research and educational support for WSB since its inception in 2001 (VicHealth, 2007b). In many ways, Walking School Bus is an extension of constant adult supervision- as children are ‘put on the bus’ by the parents and then escorted to school. Despite this, Walking School Bus is considered to have considerable capacity for influencing CIM, through creating and reinforcing norms of walking to local destinations, and has sometimes led to positive changes in the built and social environment.

The internationally known researcher on Child Friendly Cities, Karen Malone, who was interviewed as part of this project, describes the Walking School Bus as “scaffolding” or a pathway to CIM. The child’s knowledge of the local area improves (and if parents are bus drivers, so too does parental knowledge), and the program also may build confidence and awareness around traffic. VicHealth’s evaluation of the WSB indicates that they have been successful in traffic calming around the immediate vicinity of schools (VicHealth 2006). This evaluation also described social benefits that resulted from WSB in local areas. Not only do children (and parents) improve their knowledge of the local environment, they also meet more people in the local neighbourhood, thus fostering community spirit and collective responsibility for children. There are anecdotes of elderly people saying hello to the children on the bus, and drivers and children waving at new acquaintances. In some areas, many WSB drivers are retired elderly people, thus promoting intergenerational linkages.

In Victoria, there is also anecdotal evidence that WSB has functioned as a catalyst for improving walking infrastructure for the broader community. One of the requirements in establishing a WSB is that schools conduct an audit of the WSB route, so, as schools implemented WSB, they identified shortcomings in local

walking infrastructure. According to a recent VicHealth report, a conservative estimate of the physical infrastructure improvements in 18 local government areas with WSB between 2004 and 2007 was \$1.5 million worth of upgrades. The cost per local government area has varied significantly, and may be related to overall commitment to Child Friendly Cities. For example, in the City of Port Phillip, a high traffic inner suburban area with a strong commitment to including the needs of children in planning, \$500,000 has been spend on infrastructure to support WSB in 7 schools, whereas in Werribee, no new infrastructure was provided to support the WSB (VicHealth, 2007b).

One of the key challenges that exists with WSB is the significant input required on behalf of the school as well as commitment and support from local government (VicHealth 2006, VicHealth 2007b). In schools that were committed to WSB and saw their role extending beyond the school gate, WSB was far more likely to be successful. While actual numbers on the number of children graduating from WSB to CIM is lacking, WSB appears to be a promising practice in Victoria, with the proviso that further research should expand upon and quantify the impact on CIM.

l. Social Planning and Community Development: Neighbourhood Renewal (2002)

Delivered by the Department of Human Services through its Office of Housing, Neighbourhood Renewal's stated aim is to "narrow the gap between the most disadvantaged neighbourhoods in Victoria and the rest of the State by working with local communities, businesses and those providing services" (DHS 2002). Once again, there is no explicit consideration of CIM or planning for child-friendly cities. There are, however, three key ways in which Neighbourhood Renewal could indirectly affect CIM:

1. *increasing people's pride and participation in local community* – this may enable a shift in parental attitudes to CIM as well as enable a shift in the communities social and cultural norms.
2. *improving personal safety and reducing crime* – a safer local area is more conducive to CIM
3. *Enhancing housing and the physical environment* – modifying the local area to improve walkability supports improved rates of CIM.

Between 2007 and 2011, the state government has allocated \$29.8 million across Victoria to Neighbourhood Renewal (DPC 2005). Due to Neighbourhood Renewal's well-funded, intergovernmental, and participatory approach, preliminary evaluations have been positive on the grounds of adults feeling safer in their communities, and increasing their participation in outdoor activities and community participation (DHS 2005). Neighbourhood Renewal can thus be considered a promising practice in Victoria, with future research required on the impacts of physical and social changes on CIM.

m. Social Planning and Community Development: TravelSmart (2001)

TravelSmart is a joint state and federal government initiative delivered locally through the Walking and Cycling Branch of the Victorian Department of Infrastructure (DOI 2007). It seeks to reduce people's dependency on cars across Victoria by social marketing with individuals and families, encouraging the adoption of more sustainable transport options. The focus of TravelSmart is primarily on the reduction of green house gas emissions. However, it also seeks to create stronger

local economies, improved community safety and more accessible and active communities. It targets schools, workplaces and the wider community. Travelsmart Schools engages parents and children in analyzing their current travel behaviour through modal share counts, as well as integrating ideas about Travelsmart into the teaching curriculum. They are thus analogous to School Travel Plans in the UK and US.

There is certainly anecdotal evidence that particular schools have embraced travel plans. The School Buddies program in Albert Park School groups families who live near one another. It is a less formal approach than WSB and aims to increase the number of parents and children walking together (Peddie and Somerville, 2005). However, many schools find travel plans under-supported by both local councils and parents. According to the interview with TravelSmart coordinator Brian Peddie (see next chapter), some schools who were invited to do Travelsmart planning were offered up to \$30 000 to facilitate the process. Despite this, many schools perceived that there would not be support from the parent community and that it simply was not feasible due to the location of the school in relation to road traffic.

In a recent evaluation of Travelsmart Schools, modal share changes in trips to schools were modestly impressive (di Pietro and Hughes 2003). A survey was used to assess the impact of the program by recording travel behaviour one week before Travelsmart was implemented in a school and one week after Travelsmart across four schools. There were 8% increases in both walking and cycling, accompanied by a 13% decrease in car trips. The relatively small number of students who took public transport more than doubled, probably because the Travel On Program (see below) was integrated in the training (di Pietri and Hughes 2003: 13)..

It is difficult to assess whether TravelSmart produces long term change however, as there may be an initial enthusiasm for change which wanes over time due to a lack of ongoing support. An unexpected finding in the same evaluation of Travelsmart was that the change in families' walking habits was significant, with 21.8% of parents stating that it had impacted on the way their family traveled. (Di Pietro and Highes 2003). Travel Smart can therefore be considered a promising practice, with more research on long term impacts to CIM suggested by the evidence.

m. Social Planning and Community Development: TravelOn/ Public Transport Challenge (2004/2006)

Travel On is a public transport education program for families and schools delivered by Metlink, the marketing arm for the public transportation network of trains, trams, and busses. The teaching component of Travel On is largely classroom based, with supplementary materials to take home to parents. However, the program also promotes school excursions using public transport. Activities are for all year levels in both primary and secondary schools, and include the expectation of increasing levels of independence. Travel On is one of the few programs in this section that actually promotes CIM as an intentional outcome. For instance, Metlink describes 'Moving On Up' activities to prepare Grade 4 students for independent travel' (Metlink 2007). For this reason, Travel On is a direct enabler of CIM, and has the capacity to be an effective mechanism for promoting CIM.

Public Transport Challenge was delivered last year by Metlink and Environment Victoria, and will be repeated this year. It is targeted at high school students (who are not the focus of this report) between years 7 and 10. Groups of four students, accompanied by one adult, use public transport to travel around Melbourne, finding various destinations. It is effectively an orienteering challenge which is

located in the city, and requires extensive use of different modes of public transport. This sort of fun orienteering exercise could easily be modified for local communities and younger children.

n. Social Planning and Community Development: Cycling into a Sustainable Future (2005)

Bike Education is a stand alone program that is delivered by VicRoads in conjunction with the Victorian Police, and is funded by both state and federal governments. It looks specifically at teaching children how to ride safely, and also touches on responsible behavior and decision making skills (VicRoads 2007). It emphasizes road laws and traffic safety, and a teacher (or in some cases a parent volunteer) to deliver it in schools, after undergoing an accredited training course. The BikeEd website specifically notes that children under the age of 10 should not be allowed to ride alone. For this reason, Bike Ed as a stand alone policy is not an effective mechanism for promoting CIM.

In contrast, Cycling into a Sustainable Future was a pilot project developed and delivered by Environment Victoria in 2005. It represents a ‘next step’ to Bike Ed, as it specifically sought to promote children cycling to and from school by focusing on the barriers that prevented cycling travel behavior. It directly confronted perceptions of cycling as a dangerous activity for children, particularly among schools who prohibit bike riding to school. It was developed in recognition of the critical role schools play in enabling bike –riding amongst its students. As well as basic bike safety skills, it included Bike Adventure (stunts and tricks), Cycling for Transport and Pleasure and Bike Days. Like Travelsmart Schools, Cycling into a Sustainable Future undertook an approach that was tailored to the needs of specific schools. In a set of case studies provided by Environment Victoria, in all schools confidence and enjoyment with cycling was noted, and in some flow on effects occurred, including the construction of bike route signage (Environment Victoria 2005). Although the pilot project appeared to be successful, Environment Victoria was unable to sustain funding for an expansion. This program clearly supports CIM, and if ever re-funded, would benefit from further evaluation.

o. Citizenship and Participatory Planning Practice: Child-Friendly Cities

The last policy we examine is very different from all the preceding ones, as it focuses on the local level of governance, and takes a citizenship approach to children, physical planning and design, and social planning and community development. As described in the previous section, Child Friendly Cities (CFC) is an international initiative that explicitly identifies CIM as a goal. Bendigo, a regional Victorian city 150 km northwest of Melbourne, with 86,000 inhabitants, became the first city in Australia to formally declare its intention to become a CFC in 2004. The table below is a direct extract from an interview with one of the council staff involved in delivering CFC to Bendigo. It illustrates the broad range of programs implemented and indicates the high level of commitment from the City of Greater Bendigo:

<i>Recognition of the City of Greater Bendigo by UNICEF and UNESCO as a child friendly city has included the following activities in 2007:</i>
--

- *Consultations in progress with a planned 500 children across the municipality on what makes their community a good place for them and what would make it a better place for them*
- *Invitation to businesses and organisations to participate in a facility audit to become more child friendly including advice and support to those wanting to attract more children and families to their business or organization*
- *Development of a street party 'trailer' to provide the community with the knowledge and equipment to hold street parties within their communities*
- *Implementation of a Walking School Bus program in collaboration with VicHealth, schools, traders and community groups. The program assists children with traffic safety, perceptions of danger, to exercise and reduce the rising level of childhood obesity and to create child friendly streets. To date four local communities operate a walking bus with another four preparing to commence this activity*
- *The development of four community advertisements demonstrating child friendly concepts to encourage attitudinal changes in the community in the way they interact with children. The development of a 'Child Friendly City' sticker to identify facilities that meet specified child friendly criteria. The sticker has been designed to appeal to children and utilises a branding that is familiar to children in our municipality. Venues receiving a sticker will be supported to maintain a heightened awareness of the needs of children and families.*
- *A children's art competition which invited children to tell us through their artwork what makes their street child friendly. 86 entries were received with the children identifying a child friendly street to be one that allowed children to go outside their houses and play, ride a bike or scooter, kick a ball or play cricket; to feel safe in their street; to have friendly neighbours who wave and talk to them; and to have cars that go slow in their street. The winning prize is a street party for the most child friendly street*
- *Regular education forums for council management and staff, businesses, organisations and community members to promote the concept of seeking and seriously considering the views and opinions of children in strategic planning processes.*
- *The development of a regional accessible play space through Council's Community Access and Inclusion Plan to enable children with disabilities to have the same outdoor play opportunities as other children. A Liberty Swing has been installed in one of the parks which allow wheelchair-bound children the opportunity to experience the joy of having a swing in the park. Council now requires that any new playground to be accessible for children of all abilities.*

Figure 4. Summary of City of Greater Bendigo's commitment to Child-Friendly Cities

The Cities of Port Philip, Melbourne, and Brimbank, all within Metropolitan Melbourne, are also engaged in CFC programs. Obviously, as the policy that most directly addresses CIM, these policies would benefit from evaluation that details the changes to the physical and social environment as well as CIM outcomes deriving from the policies.

p. Conclusion

This comprehensive overview of Victorian state-level policies (at least one, TravelSmart, with national support, and another, CFC, with a local governance emphasis) suggests a number of promising practices. While there is no state-wide commitment to lowering the speed limit within developed areas, as there is in Denmark, or comprehensive senior government commitment to traffic calming as there is in the UK, there are some traffic calming initiatives aimed at the immediate vicinity of schools. There are a large number of physical planning and design policies and guidelines, with limited applicability to CIM. There appears to be no commitment to developing exciting and challenging spaces for children such as adventure playgrounds or clubhouses, or to improving access by children to public spaces in general.

Much more promising is the whole of community approach embodied in Neighbourhood Renewal, including both design changes and participatory planning practices like leadership development. It would be potentially powerful to integrate the CFC approach to involving children into several Neighbourhood Renewal sites, and see if there are CIM outcomes, particularly since the evidence suggests considerable social and economic inequalities in CIM.

Go For Your Life offers promise in terms of coordinating a potential CIM strategy, and the Children's Report Card offers the possibility of regular reporting of progress towards a goal of improved CIM. There are a number of promising policies that should be investigated for CIM outcomes, including Walking School Bus, Travel Smart, Travel On, and if re-funded, Cycling for a Sustainable Future.

5. Interviews with Key Stakeholders: what is the institutional will to make this an issue?

The previous section outlined a set of Victorian policies, several of which are promising in terms of ability to promote CIM, but none of which have been comprehensively and externally evaluated in terms of CIM impacts. The most promising policies are those addressing social planning and community development – Walking School Bus, TravelOn, Neighbourhood Renewal, and the unfortunately discontinued Cycling into a Sustainable Future – as well as Go For Your Life in terms of overarching support, the Children’s Report Card in terms of reporting mechanisms, and Child Friendly Cities in terms of local government policy.

As part of this first phase of research, 20 key stakeholders were approached, and 14 interviewed, by Lucy Pike, to identify good practices in relation to CIM. These key stakeholders were identified through the literature review and policy documents, as well as through snowballing (one interviewee suggesting another). The complete list of interview subjects and the questions asked are included as Appendix A.

1. State Government: Department of Human Services (responsible for Environments for Health, Go For Your Life, Neighbourhood Renewal, Children’s Report Card), Department of Infrastructure (responsible for TravelSmart), Department of Planning and Community Development (responsible for Melbourne 2030, Safer Design Guidelines, Sustainable Neighbourhood Provisions)
2. Local Government: Cities of Bendigo and Melbourne, (both doing CFC work), Dandenong (strong WSB program)
3. Advocacy Organizations: VicHealth (WSB), Heart Foundation (Supportive Environments for Physical Activity/ Healthy by Design Guidelines), Victorian Council of Social Services (involved in Neighbourhood Renewal), Victorian Local Governance Association (involved in Environments for Health and Planning for Health and Wellbeing), Municipal Association of Victoria (similar involvement to VLGA)
4. Researchers: Claire Hume, Deakin University (supportive environments for physical activity); Karen Malone (CFC); John Grant (walkability)

Rather than summarizing and comparing individual responses, this section will focus on common themes in responses to the questions.

a. Why are levels of CIM so low?

Every interviewee directly referred to *fear* in their response to why children’s independent mobility had increased over the last 30-40 years. Interviewees talked about fear in a number of different ways, including:

- parental fear of both traffic safety and stranger danger, as well as fear of being bad parents by letting their children roam free;
- Societal climate of distrust of ‘others’,
- an ongoing promotion of fear in media
- fear of traffic

Several interviewees used the specific example of the recent abduction in Portugal of a 4 year old girl from the UK, and how the media’s portrayal of risk and

fear served to reinforce ideas around parenting and supervision as well as to heighten levels of fear of abduction. One said:

'There is a modern myth being propogated about danger that is totally wrong. Danger is in the home.'

In relation to the disconnection between actual levels of child abduction by strangers in relation to fear around child safety, one state government official argued:

'It is a very very touchy subject. It is difficult for our organization to make a public statement or implement policies around addressing this, because it is something the media is likely to pick up on. The headlines would be disastrous- can you imagine the spin from 'A Current Affair' [tabloid 'journalism' television show]?'

Closely related and often entwined with the concept of fear is the idea that there is a **declining sense of community**. All interviewees described a reduced sense of community that led to reduced levels of CIM:.

'It is now considered strange for people (who don't know each other) to say hello on the street'

The reduced sense of community was tied directly and indirectly to a range of factors, including changing modern lifestyle and shifts in urban planning towards more spatially dispersed communities.

The lack of community was also connected by interviewees to **people not knowing their local environment**. Many children didn't know how to get to local destinations, and lack environmental literacy. Participants felt that this was a vicious circle, deriving from as well as reinforced by parents' beliefs about children being safe only when supervised.

A number of interviewees described how **family lifestyles** had changed when they described both the reduction in pedestrian travel and the loss of a sense of community. They pointed out that it is more likely that both parents work, and both parents have cars. This increase in paid employment and access to vehicles supports a perception that there is less time available to walk around, or walk children to school. The flow on effects of less walking in the local neighbourhood is an increasingly sedentary lifestyle across the community.

In keeping with this notion of unlimited mobility coupled with reduced knowledge and trust of the local environment, interviewees pointed out increasing rates of attendance at **private schools**. Private schools generally have a city wide catchment area, and it is frequently impossible for children to walk or ride to school. Further, public schools are consolidating, and can no longer be considered 'local' in their catchment, necessitating alternative transport options for the trip to school. This placelessness is not even seen as a problem by people, said one interviewee:

'We live in an age where we can go from anywhere to anywhere'.

The cost of this **hypermobility**, according to interviewees, is dependence on car ownership, increased number of cars and speed of cars on roads, prioritization of cars in planning, and declining quality of public transport. One interviewee specifically mentioned the lack of staff at train stations and on trams as a cause for parents being more concerned for their children's safety.

Many interviewees specified **poor physical planning and design** as a cause of ADM. There is frequently inadequate provision for walkability and natural open

spaces in new housing developments built in the last 15 years. Further, despite the range of progressive design and planning guidelines that have been developed in response to these troubling landscapes, these were considered to be ineffectively applied (or ignored) in the majority of new growth corridor developments. The rise of ‘cul de sac’ neighbourhoods and dormitory suburbs means that it can actually be extremely difficult to get to a destination in outer suburbs, as distances are great and connectivity (direct routes) low.

In *disadvantaged areas*, low rates of CIM represent a major equity issue, according to some interviewees. Parents may not have cars (although there is considerable through traffic), footpaths are frequently of poor quality if existing at all, and amenities lacking. This substantially reduces the opportunities for play on the street, socializing and general physical activity, which can compound inequity and disadvantage.

Many interviewees who operated at a senior strategic level at either state or local government felt that *how we construct childhood* is a significant part of the problem, and as a consequence, *how we construct parenting*. It was suggested that two problematic ideas have arisen over the last 30 to 40 years. They are that childhood is a time to prepare children for their adulthood, and, that children are essentially incompetent and unable to fend for themselves. This construction of childhood and parenting critically changes how children interact and are allowed to interact with their world. A researcher Karen Malone said:

‘We (as a society) often underestimate childrens’ capacity to be competent.

She further argued that there is a general belief that unstructured play is a waste of time:

‘At the end of the day, you can build the grandest playground in the world, but you won’t get kids there unless parents see that it is important and value it.’

Several other interviewees used the terms ‘bubble wrap generation’ and ‘mollycoddling’ to describe a change in standards from when they were young, and related these societal values to a significant increase in organized activities for children. These range from organized sports such as soccer teams to extra curricular activities such as music and drama. Many children now have a range of organized activities which significantly reduce the amount of time available for unstructured free play. Further, parents often believe that organized activity is a superior substitute to unstructured free play.

These opinions from key stakeholders do not differ markedly from the literature on CIM, with the exception of some issues that are particular to Australia (the high rates of attendance at private schools) and Victoria (the loss of tram conductors).

b. Is CIM a priority for your organization (asked of local and state government stakeholders, and advocacy organizations)?

Most interviewees agreed that there is *widespread recognition of the importance of CIM, but this does not necessarily translate to it being a high priority* for their organization. One senior state government interviewee described the state government context:

‘yes it is a high priority, but not in a co-ordinated manner... [policies and programs] are not synchronized and there is a lack of overall co-ordination’.

Both advocacy and government interviewees felt that tools like Healthy Design guidelines were not being implemented in a comprehensive fashion.

Many interviewees talked about CIM in the context of current levels of overweight and obesity in adults and children, and some felt that CIM was a less important response to these problems than good eating habits or organized sport and recreation. One interviewee gave this context for CIM:

It '*sets the stage for health - sets the stage for active and healthy habits*'
and '*outdoor kids are healthy kids*'

But the independence component of physical activity policies was seen as a lesser priority for some government interviewees, particularly in an atmosphere of crisis around child obesity levels. In other words, ***increasing physical activity was seen as the priority, not CIM.***

There is widespread recognition of the future problems that will occur when this generation reaches adult age, both in terms of physical and mental health. One participant was concerned that ADM would make people even more fearful of others in the future due to a general lack of socialization.

'Independent mobility as a child is a transition to independence as a young adult'

Other interviewees, particularly from advocacy organizations and researchers, strongly indicated that ***CIM needs to be explicitly addressed as a policy priority and an outcome:***

'it should be a far far higher priority'

'The number one objective should be children's independent mobility, it is not an optional extra'

'just talking about CIM starts to change CIM'

Some interviewees saw CIM as:

'where some bigger picture issues overlap'.

CIM was seen as an issue related to climate change and carbon emissions (strongly associated with increased car use), obesity resulting from reductions in levels of physical activity across society, and as a way to challenge current societal norms about parenting. While these issues are deeply embedded and difficult to address at the local level alone, ***CIM offers the potential for a new and child-centred look at 'big picture' issues.***

In short, there were two, not necessarily conflicting, senses of how CIM might be best addressed. The first approach would be to make CIM an explicit policy priority, and develop programs towards this goal. The second approach would be to integrate CIM more effectively as an outcome in existing and future policies.

c. How can your organization address CIM?

Most interviewees agreed that ***local governments are ideally situated to address CIM, and a neighbourhood-based approach might be best.*** This is because each locality is different, with different demographics, landscapes, resources, needs, cultures, and shared histories.

Local government interviewees recognized the suitability of local governments as deliverers of policies around children's independent mobility, but several were concerned about lack of skills and participatory planning practices in councils:

'Different local governments need different solutions that reflect the local community and the local landscape'

'CIM needs local solutions that include local communities.'

Interviewees were most enthusiastic about **Child Friendly Cities** as it takes a whole of government approach, and is both a long term policy that can be integrated in local governance. It appears to be the only project which really seeks to incorporate perspective of children, and values children's rights explicitly. One interviewee said:

'Education is a really big part of this program- which gives it great potential. It recognizes the need to educate parents, community and children about children's rights, and capabilities.'

Another pointed out:

'The important thing about independent mobility is about children having the choice themselves'

Several interviewees felt that we have all the programs and policies that we need to positively change CIM, but governments need enabling legislation to make environments safer and more amenable. In CFC, legislative change is one of the defining features of the framework.

Interviewees expressed more mixed feelings about **Walking School Bus**. Some local government interviewees mentioned issues with police checks, with some individuals and communities reluctant to undergo this hurdle due to concerns about paperwork and privacy (this came up particularly in the Dandenong interview, with a number of new migrants and non-English speakers uncomfortable about the privacy intrusion issues of police checks). In terms of 'follow on' there was general agreement that younger children really enjoyed the WSB, but older children needed something else to move them towards independent mobility.

However, WSB was considered promising because of opportunities for both children and adults to develop local social networks, which would increase confidence in parents and children alike, and because it might lead to improvements in the connectivity of bike trails/ paths and parks and local neighbourhoods. There was further anecdotal support that WSB had a positive impression on levels of CIM. For example:

'WSB provided an impetus to look at walkability in general'

For these reasons, many interviewees described WSB in similar ways: as 'a platform', as 'scaffolding', as 'a bridge' and as 'a pathway'. One interviewee argued that although trips to school comprised only a small proportion of total journals, the trip to school is both a good measure of CIM, and a good basis for further mobility.

There was actually a high level of imaginative responses that went beyond existing programs. Some interviewees, for instance, talked about **public education programs** that could address fear:

Teaching children to be safe in traffic is more important than teaching them to be worried about strangers

Several interviewees suggested social marketing campaigns around ‘what does it mean to be a good parent’ and also ‘who is a friendly stranger?’

d. What are your organization’s key barriers in addressing CIM?

Local government interviewees argued that ***council officers lack training and support, despite general consensus that CIM is a problem that requires local solutions.***

‘There is a lack of understanding and knowledge around the issue by staff who are indirectly involved in CIM projects.’ (Local government interviewee)

‘WE are in a good position to collect good information about it , and know what our local situation is, but beyond that, I don’t think we have the capacity.(another local government interviewee)

Several participants also commented that there was inaccurate knowledge around children’s independent mobility amongst council employees, consistent with the broader community. According to these interviewees, there is still a general belief in ‘stranger danger’, which is based on inaccurate knowledge.

There was agreement between local government staff and advocacy organizations that coordinated support, in the form of training and grants, for CIM at the state-level would be useful, as there is in the case of Walking School Bus.

Interviewees talked about a ***general lack of co-ordination*** in strategies that indirectly affect CIM. In some councils, there is promotion of Walking School Bus activities and support for events such as ‘Walk to School Day’. At the same time, there is council support for new housing developments that have few local destinations, and where distances to facilities such as schools are basically unwalkable, especially for children. Institutional barriers to whole of government approach were brought up again and again:

‘Each department thinks in its own way’

It will require a whole of government approach- even at the local government level, it is the responsibility of many different areas- and this requires co-ordination’

‘We need a whole of government approach’

There are also ***conflicting messages*** being sent out by governments and advocacy organizations. One interviewee who works in an advocacy organization was extremely concerned about the message delivered in the ‘Walktober’ Walk to School Campaign. The campaign endorsed / recommended holding the hand of any child under the age of 11 at all times while walking in to school. Conflicting expectations and/or priorities were described between different agencies with shared responsibilities around children, pedestrians and traffic safety. For some staff who were strong advocates for CIM, they felt that they were fighting an up hill battle . For example, organizations such as VicRoads were seen as continuing to prioritize cars, despite the presence of rhetoric around walkability. Lobby organizations such as the

Royal Auto Club were felt to be more powerful than the Heart Foundation or Environment Victoria.

e. Conclusion

The interviews with key stakeholders suggest good knowledge of issues surrounding CIM (or at least perspectives that mesh well with the literature review), as well as potential interest in further developing policies and programs that promote CIM. The broad set of causative factors behind ADM suggests to respondents the need for a holistic approach, preferably at the local government or even neighbourhood level, integrating CFC principles and participatory research by and for children.

6. Conclusions and Further Research Directions

According to Mark Considine, "policy intervention is always a story with a central question: What can governments usefully do?" (Considine 2005: 15). This report has summarized the rationale for focusing on CIM as a policy priority, and developing a strong evaluation framework for measuring interventions to increase CIM. ADM is a major contributor to both car dependence and child obesity. Equally importantly, ADM comprises a threat to children's right to the city, with considerable negative impacts on emotional development, mental wellbeing, local environmental knowledge, and citizenship of the next generation of decision-makers.

Despite this strong rationale for consideration, *the primary conclusion of this research is that the State Government of Victoria, most of the 79 local governments within the State, and other key stakeholders such as VicHealth and the Heart Foundation (Victoria), have not thus far made CIM a policy priority.* However, the literature suggests that promoting CIM as a priority goal would feed into a number of existing policy priorities in Victoria. These include: promoting sustainable transportation (public transport, cycling, walking) as a mechanism for combating climate change; promoting physical activity as a mechanism for obesity reduction and associated healthcare risks and costs; and improving both the physical and social environment to promote social inclusion, cohesion, and the reduction of socio-spatial inequities.

Some Victorian local governments, such as Bendigo, Melbourne, Port Phillip and Brimbank, are making CIM an implicit priority through pursuing Child-Friendly Cities accreditation, which includes consulting with children as citizens with rights and expertise, including the right to walk in the city, and providing child-supportive changes to the physical and social environments. However, the impact of Child Friendly Cities in CIM (or more generally, on environmental changes) has not been adequately evaluated. Other programs that might have an indirect impact on CIM, such as Walking School Bus, Neighbourhood Renewal, Travel Smart Schools, and Travel On, have not been evaluated for CIM impacts. One promising program to promote CIM, Cycling for Sustainable Futures, has not been re-funded, and the Planning for Health and Wellbeing Project, which at least had the capacity to improve planners' awareness and integration of CIM, has also lost its funding.

The policy analysis and interviews suggest a strong interest in pursuing CIM as a policy priority. There are several next steps suggested by this research:

1. Advocacy with *Go For Your Life* to make CIM a state-wide policy priority, accompanied by a whole of government action plan. This action plan could incorporate training for local government officers as well as other stakeholders (local child-centred agencies, state government staff working at the local level, interested private parties), research, dissemination of best practices, and local grants tied to positive outcomes in CIM.
2. Work with the *Office for Children* to develop and test an indicator or indicators that can measure progress on this priority (eg., proportion of children aged 10 who regularly are allowed to go to school/ other local destination by themselves; proportion of children aged 12 who are allowed to use public transport by themselves).
3. Research on *Child-Friendly Cities* that are recently developed (Bendigo, Port Phillip) or are in the process of development (Melbourne, Brimbank) to track changes to local environments arising from CFC and also to track

changes to CIM. For instance, Bendigo is presently involved in improving walkability in its downtown, including consulting with children and parents. It would be useful to track whether this consultation leads to more children being independently mobile in the central city, and which environmental determinants appeared most important in this shift. This would entail before and after head counts, as well as surveys of children. The results could be compared to a similar regional city with no such program.

4. Similar research on *Neighbourhood Renewal* sites that have either led to environmental changes or are in the process of making changes, to see whether these changes have resulted in increased CIM, and if so, which environmental determinants appeared most important in this shift. As above, the research would entail head counts of how many people are using particular spaces at particular times, as well as surveys of children and parents. The results could be compared to similar control sites, in terms of SES and local environments.
5. Research on *Walking School Bus* to discover if WSB has led to CIM outcomes, as well as a stronger evidence base on changes to local environments that have resulted from WSB. This might involve interviewing ‘graduates’ of existing WSB programs as to their travel choices, in comparison to control sites that are similar in SES and local environments. There might be future work with WSB to integrate ‘Beyond Walking School Bus’ options, such as urban orienteering, cycling classes, or Travel On type public transport programs.
6. Similar research with *Travel Smart Schools* to discover whether some schools have been able to integrate longer term modal shifts from car dependent school travel to active and independent transport.

Over the next year, further advocacy and funding opportunities will be pursued, in order to develop a more detailed research plan for the next phase of the project. An advisory committee for the Institutional Enablers for Children’s Independent Mobility will also be formed, to ensure that research is policy-relevant.

In a broader sense, there appears to be a critical mass of researchers, in Australia and internationally, interested in CIM. There are also many researchers on physical activity and/or sustainable transportation, whose work might well overlap with CIM-focused researchers. This opens up possibilities of national and international comparative research on the issue. One important consideration is moving beyond an emphasis on central city and inner suburban living, to incorporate outer suburban, regional, and even rural settings where CIM is also on the decline.

Children’s Independent Mobility is a vital pre-condition for the shift from car dependence to a more environmentally and socially sustainable society. The problem requires much more explicit attention from researchers and policy-makers than has previously been the case. Fortunately, there are enough people with vision and a modicum of power in Victoria to potentially make a difference in the coming years.

7. References

- Access Economics Pty. Limited for Diabetes Australia (2006) The Economic Costs of Obesity. Canberra, Access Economics
- Appleyard, D. (1981) Liveable Streets. Berkeley, University of California Press.
- Australasian Society for the Study of Obesity (2004) "Obesity in Australian Children" fact sheet. Sydney: Australian Society for the Study of Obesity (The Obesity Society).
- Bartlett, S. (2006) Review of Child Friendly Cities Database: integrating children's environmental rights into municipal action. Stockholm, Save the Children.
- Bartlett, S., Hart, R., Satterthwaite, D., de la Barra, X. and Missair, A. (1999) Cities for Children: Children's Rights, Poverty, and Urban Management. London, Earthscan.
- Baur, L. (2007) 'The Millenium Disease', The Millenium Disease: responses to Australia's obesity epidemic. G. Barnett. Canberra, Australian Parliament House: 4-7.
- Boarnet, M., Anderson, C. Day, K., McMillan, T. and Alfonzo, M. (2005) "Evaluation of the California Safe Routes to School Legislation: urban form changes and children's active transportation to school." American Journal of Preventive Medicine **28** (2 (supplement 2)): 134-140.
- Butterworth, I. and Breton, E. (2006) A Systemic Review of the Health Impacts of Legislative Interventions for Healthy Built Environments. Melbourne, Deakin University.
- Cadzow, J.(2004) The Bubble-wrap Generation. Good Weekend: 18-22.
- Clayden, A., McKoy, K. and Wild, A.(2006) "Improving Residential Liveability in the UK: Home Zones and Alternative Approaches." Journal of Urban Design **11**(1): 55-71.
- Commission on Architecture and the Built Environment (CABE) (2007) Living with Risk: promoting better public space. London, CABE.
- Considine, M. (2005) Making Public Policy. Malden MA, Policy Press.
- Cunningham, C. (2003) "A Fruitful Direction for Research in Children's Geography: Fat Chance?" Children's Geographies **1**(1): 125-127.
- Davis, A. and Jones, L. (1996) "Children in the Urban Environment: an issue for the new public health agenda." Health and Place **2**(2): 107-113.
- de Leeuw, E., Garrard, J., Palermo, J., Godbold, T. and Tacticos, T. (2006) Evaluation of the Environments for Health Framework. Melbourne, Deakin University in Association with The University of Melbourne
- DHS [Department of Human Services Victoria] (2001) Environments for Health: Promoting Health and Wellbeing through Built, Social, Economic and Natural Environments - Municipal Public Health Planning Framework. State Government of Victoria. Melbourne
- DHS [Department of Human Services Victoria] (2002) Neighbourhood Renewal: Growing

Victoria together. Office of Housing, Department of Human Services, State Government of Victoria. Melbourne. url: <http://www.neighbourhoodrenewal.vic.gov.au/ooh/ne5ninte.nsf/LinkView/73BC1FC586F194C6CA25725E007CF06723F6CBAC43208454CA25712D00188BB4>

DHS [Department of Human Services Victoria] (2005) Evaluating Neighbourhood Renewal: Passing the first test. Office of Housing, Department of Human Services, State Government of Victoria, Melbourne. Accessed at <http://www.neighbourhoodrenewal.vic.gov.au/ooh/ne5ninte.nsf/LinkView/73BC1FC586F194C6CA25725E007CF06723F6CBAC43208454CA25712D00188BB4>

DHS [Department of Human Services Victoria] (2006) The State of Victoria's children report 2006 'every child every chance' State of Victoria. Melbourne. url: http://www.office-for-children.vic.gov.au/statewide-outcomes/report_2006

DHS [Department of Human Services Victoria] (2007) Go For Your Life website. Accessed at <http://www.goforyourlife.vic.gov.au/> on December 6, 2007.

DOI [Department of Infrastructure Victoria] (2005) Travel Smart Education Project: schools congested precinct project, a preliminary analysis of school survey data. Melbourne, State Government of Victoria.

DOI [Department of Infrastructure Victoria] (2007) Travelsmart Schools Website url: <http://www.travelsmart.gov.au/schools/index.html> Accessed: 20/06/07, Last Update 09/02/07

DPCD [Department of Planning and Community Development Victoria] (2007) Melbourne 2030 Audit: analysis of progress and findings from the 2006 census. Melbourne, State Government of Victoria.

DPC [Department of Premier and Cabinet Victoria] (2004) Growing Victoria Together: Innovative State, Caring Communities, The State Government of Victoria, Melbourne, Australia

DPC [Department of Premier and Cabinet Victoria] (2005) Growing Victoria Together: A vision for 2010 and beyond. State Government of Victoria. Australia

DSE [Department of Sustainability and Environment Victoria] (2002) Melbourne 2030 - Planning for Growth October 2002. download url: <http://www.dse.vic.gov.au/melbourne2030online/>

DSE [Department of Sustainability and Environment Victoria] (2005) Safer Design Guidelines for Victoria, State Government of Victoria, Melbourne Australia

Di Pietro, G. and Hughes, I. (2003) TravelSMART Schools- there really is a better way to go! 26th Australasian Transport Research Forum, Wellington New Zealand, Dynamic Outcomes Pty Ltd.

Engwicht, D. (1992) Towards an Eco-City: calming the traffic. Sydney, Envirobook.

Engwicht, D. (2003) "Is the Walking School Bus Stalled in an evolutionary cul de sac?" Brisbane, Creative Communities International.

Environment Victoria (2005) Cycling into a Sustainable Future - Engaging Schools in Cycling : Learnings from a pilot project run by Environment Victoria in 2005, The Australian Government.

European Commission (2002) Kids on the Move. Luxembourg, European Commission.

Farrington, D., Gottfredson, D., Sherman, L. and Welsh, B. (2002) 'The Maryland Scientific Methods Scale' in Evidence-Based Crime Prevention, (ed)L. Sherman, D. Farrington, B. Welsh and D. Mackenzie. London, Routledge: 13-21.

Gehl, J. (1987) Life Between Buildings: using public space. New York, Van Nostrand Reinhold.

Gilbert, R. and O'Brien, C.(2005) Child and Youth-Friendly Land-Use and Transport Planning Guideines. Winnipeg, Centre for Sustainable Transportation.

Gill, T. (2005) Cycling and Children and Young People. London, National Children's Bureau.

Gill, T. (2007a) No Fear: Growing Up in a Risk-Averse Society. London, Calouste Gulbenkian Foundation.

Gill, T. (2007b) Can I Play Out...? Lessons from London Play's Home Zones Project. London, London Play.

Gleeson, B. and Sipe, N. (eds.) (2006) Creating Child Friendly Cities: reinstating kids in the city. London, Routledge.

Green, H. and Hannon, C. (2007) "Their Space: education for a digital generation". London, Demos

Heart Foundation of Australia (Victorian Division) (2005) Healthy by Design: a planners' guide to environments for active living, National Heart Foundation of Australia (Victorian Division) Melbourne. url: http://www.goforyourlife.vic.gov.au/hav/articles.nsf/pracpages/Healthy_by_Design?OpenDocument

Heart Foundation of Australia (Victorian Division)(2007) Submission on Melbourne 2030 Audit of Implementation Projects. Melbourne, Heart Foundation.

Hewson, P. (2002) Child Pedestrian Accidents in the UK: monitoring the UK government's road safety strategy. Radical Statistics, **79/80**, 1-27, accessed at <http://www.radstats.org.uk/no079/hewson.htm>, 12 November 2007

Hillman, M. (2002) Are we developing battery-reared or free-range children? Western Australia Pedestrian Advisory Council Seminar. Perth.

Hillman, M., Adams, J. and Whitelegg, J. (1990) One False Move... a study of children's independent mobility. London, Policy Studies Institute.

Hume, C., Salmon, J. and Ball, K. (2005) "Children's Perceptions of Their Home and Neighbourhood Environments, and their Association with Objectively Measured Physical Activity: a qualitative and quantitative study." Health Education Research **20**(1): 1-13.

- Informa Market Research (2001) Small Steps/Large Rewards: a community based social marketing research project., Greenest City, Toronto
- Jenkins, H., Clinton, C., Purushotma, R., Robison, A. and Weigel, M.(2006) Confronting the Challenges of Participatory Culture: media education for the 21st century. Chicago, MacArthur Foundation.
- Kearns, R., Collins, D. and Neuwelt, P. (2003) "The walking school bus: extending children's geographies?" Area **35**(3): 285-292.
- Kingham, S. and Ussher, S. (2007) "An assessment of the benefits of the walking school bus in Christchurch, New Zealand." Transportation Research Part A **41**: 502-510.
- Koskela, H. (1997). "'Bold Walk and Breakings': Women's spatial confidence versus fear of violence." Gender, Place and Culture **4**(3): 301–319.
- Krug, E. G., Dahlberg, L. L., Mercy, J.A., Zwi, A.B. and Lozano, R (eds) (2002) World Report on Violence and Health. Geneva, World Health Organization.
- Kytta, M. (2004) "The extent of children's independent mobility and the number of actualized affordances as criteria for child-friendly environments." Journal of Environmental Psychology **24**.
- Louv, R. (2006) Last Child in the Woods: saving our children from nature-deficit disorder. Chapel Hill, Algonquin Books.
- Mackett, R. (2001) Are We Making Our Children Car Dependent? Trinity College Dublin.
- Mackett, R. (2004) Making Children's Lives More Active. London, Centre for Transportation Studies, University College London.
- Mackett, R., Lucas, L., Paskins, J. and Turbin, J. (2003a) "A methodology for evaluating walking buses as an instrument of urban transport policy." Transport Policy **10**: 179-186.
- Mackett, R., Lucas, L., Paskins, J. and Turbin, J. (2003b) Te effectiveness of initiatives to reduce children's car use. European Transport Conference. Strasbourg, France.
- Mackett, R., Lucas, L., Paskins, J. and Turbin, J. (2004) Walking Buses in Hertfordshire: results from a postal survey. London, Centre for Transport Studies, University College London.
- Malone, K. (2001) "Children, Youth and Sustainable Cities." Local Environment **6**(1): 5-12.
- Malone, K. (2007) "The Bubble-wrap generation: children growing up in walled gardens." Environmental Education Research **13**(4): 513-527.
- Martin, S. and Carlson, S. (2005) "Barriers to Children Walking to or From School: United States, 2004." Journal of the American Medical Association **294**(17): 2160-2161.
- Matthews, H. and Limb, M. (1999) "Defining an Agenda for the geography of children: review and prospect", Progress in Human Geography **23**: 61-90.

Mattsson, K. (2002) "Children's (In)Dependent Mobility and Parents' Chauffering in the Town and the Countryside." Tijdschrift voor Economische en Sociale Geografie **93**(4): 443-453.

McMillan, T. (2005) "Urban Form and a Child's Trip to School: the current literature and a framework for future research." Journal of Planning Literature **19**(4): 440-456.

Merriam Webster Dictionary Online. (2005) "Definition of program." Retrieved 31 October 2007, from <http://www.m-w.com/dictionary/program>.

Merriam Webster Dictionary Online. (2005) "Definition of policy." Retrieved 31 October 2007, from <http://www.m-w.com/dictionary/policy>.

Metlink (2007) "Travel On". Accessed at http://www.metlinkmelbourne.com.au/about_metlink/metlink_education/travel_on on November 18, 2007

Morrow, V. (2000) "'Dirty looks' and 'trampy places' in young people's accounts of community and neighbourhood: implications for health inequalities." Critical Public Health **10**(2): 141-152.

Newman, P. and Kenworthy, J. (1999) Sustainability and Cities: overcoming automobile dependence. Washington Island Press

O'Brien, C. (2004) Child-Friendly Transport Planning. Winnipeg, Centre for Sustainable Transportation.

Peddie, B and Somerville, D. (2005) Travel Behaviour Change through School Travel Planning: Mode Shift and Community Engagment - Results from 33 Schools in Victoria. 28th Australasian Transport Research Forum, Perth, Australia.

Pedestrian Council of Australia.(2002) "Media Release: Hold Hands and Walk Safely to School." Retrieved 7 November 2007 from <http://www.walk.com.au/WSTSD01/Page.asp?PageID=291>.

Petrosino, A., Boruch, R., Soydon, H., Duggan, L. and Sanchez-Meca, J. (2001) "Meeting the Challenges of Evidence-Based Policy: the Campbell Collaboration." Annals of the American Association of Polical and Social Sciences **578**: 14-34.

Planning Institute of Australia (2007) Planning for Health and Wellbeing- Project Summary accessed at <http://www.planning.org.au/vic/index.php?option=content&task=view&id=54&Itemid=68> 6 June 2007

Prezza, M., Alparone, F., Cristallo, C. and Luigi, S. (2005) "Parental perception of social risk and of positive potentiality of outdoor autonomy for children: the development of two instruments." Journal of Environmental Psychology **25**: 437-453.

Roberts, I. (1995) "Editorial: Injuries to Child Pedestrians." British Medical Journal **310**: 413-414.

Roberts, I., Norton, R., Jackson, R., Dunn, R. and Hassall, I. (1995) "Effect of environmental factors on risk of injury of child pedestrians by motor vehicles: a case control study." British Medical Journal **310**: 91-94.

Romero, V. (2007) "I will not be a nerd: children's development, the built environment, and school travel," 3rd State of Australian Cities Conference, Adelaide, November 2007.

Semenza, J. (2003) "The Intersection of Urban Planning, Art, and Public Health: the Sunnyside Plaza." American Journal of Public Health **93**(9): 1439-1441.

Sherman, L., et al. (1997). Preventing Crime: What Works, What Doesn't, What is Promising. Washington, National Institute of Justice.

Short, J. (1989) The Humane City: Cities as if people matter. Oxford, Basil Blackwell.

Staunton, C., Hubsmith, D. and Kallins, W. (2003) "Promoting Safe Walking and Biking to School: the Marin County Success Story." American Journal of Public Health **93**(9): 1431-1434.

Sturm, R. (2005) "Childhood Obesity: what we can learn from existing data on societal trends part 2." Preventing Chronic Disease **2**(2): 1-9.

Taylor, M. and Ampt, E. (2003) "Travelling Smarter Down Under: policies for voluntary travel change in Australia." Transport Policy **10**(3): 165-177.

Timperio, A., Crawford, D. Telford, A. and Salmon, J. (2004a) "Perceptions about the local neighbourhood and walking and cycling among children." Preventive Medicine **38**: 39-47.

Timperio, A., Salmon, J and Ball, K. (2004b) "Evidence-based strategies to promote physical activity among children, adolescents, and young adults: review and update." Journal of Science and Medicine in Sport **7**(1 (supplement)): 20-29.

Tranter, P. (2004) Effective Speeds: car costs are slowing us down. Canberra, Australian Greenhouse Office.

Tranter, P. and Pawson, E. (2001) "Children's Access to Local Environments: a case study of Christchurch, New Zealand." Local Environment **6**: 27-48.

UNICEF (United Nations Children's Foundation) Innocenti Research Centre (2004) Building Child Friendly Cities: A Framework for Action. Florence, Italy Retrieved on 20 June 07 from http://www.childfriendlycities.org/resources/index_conceptual_framework.html

UNICEF (United Nations Children's Foundation). (2007a) "Child-Friendly Cities." from <http://www.childfriendlycities.org/>.

UNICEF (United Nations Children's Foundation) (2007b) "Child-Friendly Cities Partnerships and Networking-Italy." from <http://www.childfriendlycities.org/networking/italy.html>.

Valentine, G. (1997) "'Oh Yes I Can' 'Oh No You Can't': Children and Parents' Understandings of Kids' Competence to Negotiate Public Space Safely." Antipode **29**(1): 65-89.

VicHealth [Victorian Health Promotion Foundation] (2002) "The Walking School Bus 2001-2002: key learnings." (Melbourne: VicHealth)

VicHealth [Victorian Health Promotion Foundation] (2006) Lively Neighbourhoods - Inspirational stories from Victoria's Walking School Buses. National Heart Foundation of Australia (Victorian Division) August 2006

VicHealth [Victorian Health Promotion Foundation] (2007a) It's more than just walking! The value-adding impact of the Walking School Bus program on local environments and communities. J.A Grant and Associates for Victorian Health Promotion Foundation (Victorian Division) Australia, August 2007.

VicHealth [Victorian Health Promotion Foundation] (2007b) Melbourne 2030 Implementation Audit VicHealth Submission. Melbourne, VicHealth (Victorian Health Promotion Foundation).

VicRoads (2007) "Primary School Road Safety Education", Accessed at <http://www.vicroads.vic.gov.au/Home/BicyclesPedestrians/CyclingSafety/PrimarySchoolRoadSafetyEducation.htm> on November 18, 2007.

VAGO [Victorian Auditor General's Office] (2007) Promoting Better Health Through Healthy Eating and Physical Activity, Melbourne Australia

Ward, Colin (1977) The Child in the City. London: Architectural Press.

Whitzman, C.(2007a) "Gender, Fear of Crime and the Challenge of Creating Safer Space." Environment and Planning A **39**: 2715-2732.

Whitzman, C. (2007b) "Barriers to Planning Healthier Cities in Victoria, Australia." International Journal of Environmental, Cultural, Economic, and Social Sustainability **3**(1): 146-153.

Wiseman, J. et al (2006) Measuring Wellbeing/Engaging Communities: the final report of the Victorian Community Indicators Project. Melbourne: Institute of Community Engagement and Policy Alternatives, Victoria University.

Woolcock, G. and Gleeson, B. (2007) Child-Friendly Cities: Critically Exploring the Evidence Base of a Resurgent Agenda. Third State of Australian Cities Conference, Adelaide.

Appendix A. Detailed List of Interview Participants

Name	Position	Organisation
Ben Rossiter	Senior Program Advisor	VicHealth
Rachel Carlisle	Manager Physical Activity	Heart Foundation
Jess Fritze	Transport and Disadvantage officer	Victorian Council of Social Service
Linda Bennett	Women's Policy Officer	Victorian Local Government Association
Liz Johnstone	Senior Planning Advisor	Municipal Association of Victoria
John Manton	Manager, Planning Legislation	Department of Planning and Community Development
Brian Peddie	Assistant Director, Walking and Cycling Branch	Dept of Infrastructure
Leonie Middleton	Manager CSIF & 'Go for your life'	Department of Human Services
Clare Hume	Researcher	Deakin University
Karen Malone	Researcher / Asia Pacific Advisor	Growing up in Cities Project, UNESCO
John Grant	Research Consultant	Grant Consulting
Leah Galvin	Food for Everybody and WSB co-ordinator	City of Greater Dandenong
Jan McCaffrey		City of Greater Dandenong
Maureen Tessier	Family and Wellbeing Co-ordinator	City of Greater Bendigo
Susan Heywood	Acting Senior Policy Officer Family & Children	City of Melbourne

Questions Asked

1. What do you think are the contributing factors to the current low rates of CIM?
2. What strategies are required?
3. In comparison to other urban health issues, how important is it to tackle low levels of CIM? Is it a high priority?
4. Does your organization deliver any policies that are intended to affect levels of CIM?
 - a. If so, what are they?
 - b. How are they delivered?
 - c. If not, why not? (money/budget, lack of priority/not identified as an issue)
5. Are there any other programs that your organization is involved in that might indirectly affect levels of CIM?
 - a. How might they affect CIM?
 - b. Is this indirect impact a goal?
6. Can you think of any examples of where a policy or program intervention has had a really positive impact on CIM?
 - a. Which intervention?
 - b. How did it happen?
 - c. Any indicators or anecdotal success stories?
7. What sort of policy or program do you think would be the most effective at improving CIM? What would this program look like?
8. How do you think your organization is positioned to address CIM in the future?
9. Is there anyone else who you would recommend speaking to about CIM?