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Child-friendly Community Indicators –
A Literature Review

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Preface

This report was commissioned by the NSW Commission for Children and Young People in 2007 from the Urban Research Program at Griffith University. It is a part of the Commission's work in developing an indicator framework for child-friendly communities and it focuses on the nature and attributes of the physical environment.

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1. Introduction – why develop a child friendly communities indicator framework?

1.1 Background and context

Creating child friendly communities is a core part of building strong and vital Australian cities and regions. As understanding of the critical importance of this concept has grown, there has been a wealth of research into the development of child friendly communities. Much of this research has focused on identifying the problems that exist within communities, and on exploring the ways of enabling children to participate within those communities. What has not been covered adequately by either international or national research is the development of tools for assessing and improving practices related to child friendly communities.

One of the most striking outcomes of the National Conference on Child Friendly Cities in Sydney (2006) was the direct call for improved assessment of child friendly communities. The recommendation in the Conference's *Outcomes and Directions Statement* stated:

> The key dimensions and measures for child friendly communities need to be documented. Responsibility for assessing and improving practices can only be sharpened when there is greater clarity on objectives and measures.

This recommendation complements recommendation 3(e) of the 2006 NSW Parliamentary Committee on Children and Young People's report on its *Inquiry into Children, Young People and the Built Environment* which stated that the Commission should:

> explore opportunities to develop indicators of a 'child friendly' community, which could be incorporated into the Department of Planning's tools for assessing land use plans.

In Australia, there is a lack of practical tools that can be used by local government authorities and others to develop and encourage the child-friendliness of their communities. This report seeks to address this gap with a particular focus on child friendly communities and the physical environment.

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1.2   Aims and objectives – focusing on the physical environment

The aim of this report is to respond to the lack of practical tools for assessing and improving practices related to child friendly communities. The report will also advance the NSW Commission for Children and Young People's agenda of improving children's wellbeing by promoting positive standards for children.

The report will focus on the development of an indicator framework that highlights the nature and attributes of the physical environment in relation to children. In particular it will explore the physical dimensions of public space and common areas within community environments.

The key objectives of the report are to:

1. Provide an overview of the conceptual framework offered in the Commission's report *Ask the Children: Overview of Children's Understanding of Wellbeing* as a basis for exploring child friendliness in the physical environment within communities

2. Compile a detailed review of the literature in order to identify the relevant key concepts in relation to child friendly communities and the physical environment, and to consider the dimensions within those concepts

3. Recommend further work which would lead to the development of an indicator framework suitable for practical application by local government

The report has reviewed traditional peer-reviewed academic articles that are related both to the child friendliness of communities and to some aspects of the physical environment. Over 200 articles were assessed from journals as diverse as *The Journal of Youth Care, Journal of Environmental Psychology*, *International Play Journal*, *Children's Environments, Medical Journal of Australia, Journal of Urban Design, Youth Studies Australia*, *Journal of Planning Literature*, *Urban Geography,* and *Social Indicators Research and Landscape Research.* Other sources including books, reports, submissions, websites and relevant newspaper articles were also referred to for this report. The driving themes and dimensions around child friendliness in communities and the physical environment will be outlined in the following sections. Indicative and key references within each area will be cited.

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Ultimately this report is grounded in the belief that the physical environment both reflects and conditions the wellbeing of children and gives children a very clear message about how they are valued (or not) within their community. A basic premise and a recurring theme within the literature is that child friendly communities are sustainable communities – and that one cannot be separated from the other. And there is widespread agreement that fundamental change is needed to address the serious environmental problems confronting humankind (Baber & Bartlett 2005).

Sustainability does not simply involve limiting development or the consumption of resources, or reducing the dumping of waste (Liddle & Moavenzadeh 2002). What is also needed is a focus on inter-generational and intra-generational equity as outlined in the Brundtland Report (1987) and an emphasis on the principles of environmental justice (Eckersley 2004). But despite the growing recognition of the importance of the connection between child friendliness and the environmental sustainability of communities, indicator frameworks that integrate the two are only just beginning to emerge.

1.3   Articulating boundaries – scope and scale

As outlined above, this report is focusing on the 'physical environment'. But the 'physical environment' covers a wide spectrum. It refers to urban form and shape as well as to buildings, roads, broadband access, advertising billboards, toilets and graffiti. And it includes the debates around climate change and peak oil (see Tranter & Sharpe 2007). For the purpose of this report therefore, clarifications around the scope and scale of the 'physical environment' are required.

Firstly, the difficulties of separating the 'physical' environment from its 'social', 'institutional' and 'political' contexts have been recurring themes within contemporary debates around place and space (Healey 2007). These debates have highlighted the complex nature of community environments; environments that are increasingly being seen as dynamic and fluid and lived spaces (Gleeson & Sipe 2006). The 'physical environment' is not easily divided into measurable dimensions particularly within the broader agenda of sustainability.

However, it is necessary to break down this complexity in order to practically address the challenges. For this reason, there is still strong support within the child friendliness literature

for a focus on 'physical environments' as a separate entity, which is still connected within a broader framework. For example, work by Sampson *et al* (2002) has identified the following categories that can be investigated at the community level. These include: 1) physical/natural environment; 2) social mechanisms; 3) economic environment; 4) provision and availability of services; 5) governance/leadership; and 6) cultural factors. This report assesses the physical environment as a separate dimension of child friendly communities while keeping in mind the multi-dimensional nature of environment and community.

Secondly, the focus of this report is on child friendliness at the community scale as opposed to city, region, state or nation scale. This draws attention to actions that can be taken at the micro-level by local authorities and community groups, rather than those which are addressed by government agencies at the city, state and national levels.

A *third* area relates to the private/ public components of the physical environment. This report addresses the physical dimensions of *public space and common areas* within community environments. While housing issues such as lack of secure tenure, and access and affordability, are fundamental to more comprehensive understandings of child friendly communities and the physical environment, they are themes that lie outside the scope of this report.

Fourthly, the report acknowledges that the different age groups - early childhood, middle childhood and adolescence - have different requirements from their physical surroundings. Currently the distinctions between these age groups vary widely within the literature and more work is needed in this field. But the research has begun. It will however require further research development and contextual grounding within specific communities.

Finally, the findings in this report represent the first stage of a project to develop an assessment tool for child friendliness that can be used anywhere, and that contains a fairly universal set of characteristics or indicators that are applicable to most communities.

1.4   Organisation of the report

This report is organised into six main sections as follows:

Section 1 *Introduction* which includes the background, the aims and the scope of this report.

Section 2 *Looking out* focuses on the conceptual framework for child friendliness that provides the basis for the indicator framework outlined in this report. It includes a summary of the key themes around children's wellbeing as outlined in *Ask the Children: Overview of Children's Understanding of Wellbeing*. This is followed by a review of the emerging institutional agenda around children's wellbeing and child friendliness and the key themes surfacing from international organisations such as the United Nations as well as Australian organisations such as the National Association for Prevention of Child Abuse and Neglect (NAPCAN) and the Australian Research Alliance for Children and Youth (ARACY).

Section 3 *Looking in* provides an overview of the interdisciplinary research and literature that specifically addresses the key dimensions of child friendly communities. The key dimensions outlined in this section include: 1) concerns about child safety leading to restricted mobility; 2) the lack of prioritisation and availability of space for children within the broader community setting; and 3) the reduction of opportunities for exploratory play within natural surroundings.

Section 4 *Looking out, Looking in* explores the connection between the work on child friendly communities and the themes and dimensions of children's wellbeing. It points out that the themes raised in the literature on child friendly communities mirror to a large extent those identified by the children in *Ask the Children: Overview of Children's Understanding of Wellbeing* as affecting their wellbeing. Within this context the section also explores the role of the physical environment and offers a conceptual framework that points to a set of indicators.

Section 5 *Implementing child friendly communities* discusses the application of indicator frameworks within the local government context. It presents future directions and recommendations that have emerged during the development of this report. And it highlights the opportunities that the physical environment provides for planners and policy makers to engage with children and young people in shaping their community environment in ways that contribute to their wellbeing (Freeman 2006, p 83).

Section 6 *Conclusion* is a brief summary of the report findings.

2. Looking out – exploring the conceptual framework of child friendliness

The findings from the Commission's research work into children's wellbeing in *Ask the Children: Overview of Children's Understanding of Wellbeing* forms the basis for the development of an indicator framework for child friendliness in communities as outlined in this report.

2.1 *Ask the Children: Overview of Children's Understanding of Wellbeing –* understanding the dimensions of children's wellbeing

The *Ask the Children: Overview of Children's Understanding of Wellbeing* report was commissioned in the belief that if policies and services are to be successful in supporting children, there needs to be a better understanding of what wellbeing means to children themselves. This is particularly important if the intention is to "measure and monitor children's wellbeing in a way that captures what is important in their lives" (p 1). This approach seeks to move beyond a problem-focused model of child friendliness and the physical environment, towards one that promotes a positive approach to initiatives and standards that is grounded in children's own experiences. The research was guided by the following broad questions:

- *What does wellbeing mean for the child or young person?*
- *How is wellbeing experienced in everyday life?*
- *What are the factors that contribute to a sense of wellbeing for children and young people?*

The key themes or concepts that emerged from the research as being important to children included: 1) children's agency; 2) safety and feeling secure; and 3) a positive sense of self. Other themes included a focus on activities, adversity in children's lives, material and economic resources, physical environments, and physical health. A short summary of the key themes and the implications for the physical environment is outlined below.

2.1.1 Key concept 1 – agency

The ability of children to demonstrate agency or take independent action emerged as one of the key themes in the *Ask the Children: Overview of Children's Understanding of Wellbeing* research. Children spoke of wanting to make choices and have some control over their own lives within age-appropriate boundaries. In particular, they expressed a desire to be involved in decisions about their lives and to be able to negotiate those boundaries when appropriate. This sense of control was seen as important for developing the skills to solve problems but also to achieve personal goals and outcomes.

2.1.2 Key concept 2 – safety and feeling secure

A recurring theme for children's wellbeing was the need to feel both safe and secure. Children spoke of feeling safe with others around and expressed feelings of vulnerability when left alone. They spoke of wanting to feel part of their communities and neighbourhoods and craved 'safe spaces' that allowed them to participate in activities with some independence. Traffic and the design qualities of the built environment were highlighted as factors that limit the potential of children to feel secure within their communities.

2.1.3 Key concept 3 – positive sense of self

A third theme that was perceived by children to be important to their wellbeing was having a positive sense of self and of being valued and respected for who they are. A sense of recognition and belonging was described by the children in the study as "feeling recognised" and "feeling competent" (p 7). This also involved the ability of children to take time out to relax and reflect, whether within the confines of their own home or within the wider community environment.

2.1.4 Other concepts

A number of other concepts and themes emerged from the *Ask the Children: Overview of Children's Understanding of Wellbeing* research. These included a focus on: activities for fun; freedom and competence; spaces for children to connect with people or simply exert independence in times of adversity; the importance of access to activities that do not discriminate against children as a result of uneven access to material and economic resources; the need for child friendly environments that facilitate fun, a sense of community, and interaction with others; the need for natural places in which to explore and experience free play; and a desire to exercise and keep fit and healthy.

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2.1.5   Implications for the physical environment

In *Ask the Children: Overview of Children's Understanding of Wellbeing*, the authors conclude that for the children they interviewed, wellbeing is predominantly about emotional life. At its heart, wellbeing is about the needs of children to act independently, feel safe and secure, and feel positive about themselves. It is "complex and multi-faceted, covering both negative and positive dimensions, and is understood in a holistic way" (p 16). What then are the implications of this for the physical environment?

Whilst the scope and aim of *Ask the Children: Overview of Children's Understanding of Wellbeing* extends far beyond the physical environment, a number of dimensions that relate specifically to the physical environment have been distilled from the report. These dimensions form the basis for the indicator framework and are outlined below in Table 1.

Table 1: Key dimensions of children's wellbeing and the physical environment

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Source: Adapted from *Ask the Children: Overview of Children's Understanding of Wellbeing*, NSW

1. Increase the ability of children to make choices and independently access a diverse range of community services and activities

2. Enhance the capacity for children to engage in play and develop competence in their local community environment

3. Ensure the rights of children to be safe and healthy within community public places

4. Increase the ability of children to feel secure and connected within their physical and social environments

5. Create spaces that offer children a sense of welcome, belonging and support

6. Increase opportunities for children to access green, natural areas for play and relaxation

Commission for Children and Young People, 2007.

2.2 Children's wellbeing and child friendliness – an emerging institutional agenda

Child friendliness as a concept has been spreading over the last decade at the global, national, regional, community and neighbourhood levels. It is the central theme in the child friendliness movement which views the wellbeing of children as the ultimate indicator of a healthy sustainable community (UNICEF 1992, UNICEF 1997). The child friendliness movement is a response to growing concerns about "the health and wellbeing of young people in Western countries in the face of increasing urbanization" (Gleeson & Sipe 2006). There are no standard models of what a child friendly community looks like and while the emphasis around child friendliness differs between institutions "the common denominator is to make cities, communities and neighborhoods better places for children and youth" (SCYBC, 2004).

The concept of child friendliness is grounded in the United Nations Convention on the Rights of the Child, a Convention that mandates active participation of children in civic life and promotes local systems of good governance committed to children's rights (UNICEF 2004). The term 'child friendly cities' was coined as part of a UNICEF document entitled *Children's Rights and Habitat (1996)* which stated that:

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> The needs of children and youth, particularly with regards to their living environment have to be taken fully into account. Special attention needs to be paid to the participatory processes dealing with the shaping of cities, towns and neighbourhoods; this is in order to secure the living conditions of children and of youth and to make use of their insight, creativity and thoughts on the environment (UNCHS 1996)

Internationally, the United Nations has been the key driver behind strategies that promote the integration of children's needs into planning, design and governance. This is clearly outlined as part of the sustainability agenda which seeks to "maintain the integrity of the social, economic and environment fabric of global and local environments through processes that are participatory and equitable" (Malone 2006, p 14). Specifically this includes building opportunities for every young person to:

- Influence decisions about their city
- Express their opinion on the city they want
- Participate in family, community and social life
- Receive basic services such as healthcare and education
- Drink safe water and have access to proper sanitation
- Be protected from exploitation, violence and abuse
- Walk safely in the streets on their own
- Meet friends and play
- Have green spaces for plants and animals
- Live in an unpolluted environment
- Participate in cultural and social events   (UNICEF 2004)

Through other international projects such as the UNICEF Child Friendly Cities Initiative (1996), and the UNESCO Growing Up in Cities Project (1996), practical methods for improving the built environment have been promoted that recognise and reflect the needs of children and young people. In the same spirit as *Ask the Children: Overview of Children's Understanding of Wellbeing*, the focus of these projects was on the involvement of children in evaluating the quality of their city environments. This resulted in the development of a set of qualitative indicators designed to influence policymakers and support local governments to assess the child friendliness of their communities and to establish baseline data (Malone 2006, p 16). Based on work with children aged 10-15 years, examples of these broad indicators

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include the desire for social integration, freedom from threats, cohesive community identity and secure tenure. Physical needs such as for green areas, the provision of basic services, a variety of activity settings, freedom from physical dangers, freedom of movement and peer gathering places were also regarded by children as very important. A summary of this work is outlined below in Table 2.

Table 2: Indicators of local environmental quality (based on the evaluations of 10–15 year olds at 'Growing Up In Cities' sites)

Source: Chawla 2002

	Social Qualities	**Physical Qualities**
Positive	Social integration Freedom from social threats Cohesive community identity Secure tenure Tradition of community self-help	Green areas Provision of basic services Variety of activity settings Freedom from physical dangers Freedom of movement Peer gathering places
Negative	Sense of political powerlessness Insecure tenure Racial tensions Fear of harassment and crime Boredom Social exclusion and stigma	Lack of gathering places Lack of activity settings Lack of basic services Heavy traffic Trash/Litter Geographic isolation

In Australia, the agenda of child friendliness is also gathering momentum. In response to this interest, the second Creating Child Friendly Cities Conference (CCFC) was held in Sydney in

2006. Delegates at the conference agreed that there was "a need to initiate a more concentrated focus on the importance and wellbeing of children and young people in urban areas" and that there had been "too little attention on children's needs in urban policy and too little work on understanding how the built environment shapes children's wellbeing" (p 1). The delegates concluded that creating child friendly cities involved "a complex set of challenges and issues that cross sectoral and policy boundaries" (2006, p 1). The conference raised a number of key research challenges that included the need for:

1. Agreed objectives and measures for child friendly communities across a range of issues, and data collected on relevant indicators

2. Integration of such indicators into the growing body of population-level and community-level data on wellbeing that is being driven by the ABS and various state governments

3. Greater understanding of how issues and concerns related to children are played out in actual locations and local contexts (p 3)

The agenda put forward in the CCFC has been further supported by the release of *Urban 45 – New ideas for Australia's Cities* (Atkinson *et al*., 2007). This report highlights 45 challenging ideas for action in Australia's cities. One of these is the need for child friendly cities. In particular the report argues that Australia's cities have become less child friendly as they become more crowded and densely packed. They are adversely affected also by the increasing privatisation of children's places and spaces through master-planned estates and gated communities (Gleeson *et al.* 2007, p 31).

Much of this work studies urban living and follows in the footsteps of the United Nations with a focus on child friendliness in cities within both developing and industrialized countries. In Australia however, particularly at the institutional level, the focus has been on child friendliness at the community, neighbourhood and family level. And there has been a particular emphasis on child development, health and wellbeing.

For example the work by the National Association for Prevention of Child Abuse and Neglect (NAPCAN) seeks to promote factors that foster resilience and that move communities, families and children towards greater wellbeing while reducing the risks that lead to maltreatment and dysfunction. NAPCAN defines a child friendly community as one where

children's wellbeing is everyone's responsibility and where abuse and neglect of children has no place. Child friendliness within this context has been defined as places and spaces where children are able to:

- *Play a part* – are included in decisions, are free to take part and express themselves and to receive information
- *Reach their potential* – receive the education and opportunities required to fully develop socially, emotionally, culturally, physically and spiritually
- *Live well* - receive all the basic needs of food, clothing, shelter and health
- *Be free from harm* – are protected from all forms of abuse and neglect (p 3)

The work by NAPCAN recommends a number of qualitative indicators around these themes that include the need for built and natural environments that support children's wellbeing. These include: safe neighbourhoods; green spaces and facilities that encourage active play; family activities; learning; and access to key resources such as libraries, affordable transport and essential services. Similarly, recent work by the Australian Research Alliance for Children and Youth (ARACY) entitled *What Constitutes Child Friendly Communities and How are they Built* (2006) identifies nine broad indicators for encouraging child-friendliness within communities. These include:

1. *Welcome and Connection* - learning how to listen, plan and take action with local children
2. *Value* – recognising that local children and their families are valuable contributors to community life
3. *Safety* – providing safe places to play close to home and connecting communities with the care of children
4. *Meaningful Action and Self-Determination* – developing a joint community vision and imagining together what a child friendly community will look like locally
5. *Space* - designing creative spaces for and with children and providing people with a reason to come into those spaces and use them
6. *Learning and Development* – recognising that learning and development happens in everyday places and in many different ways and that it is important to utilise these places, and to document the processes and outcomes for children as they learn and grow in everyday spaces

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7. *Support* - establishing practical and friendly pathways for families to get services they need

8. *Time* - taking time and making time when working with children to counter the idea that consultation with children is a one-off event (Howard 2006)

The work by ARACY (2006) highlights a number of criteria that relate specifically to the physical environment. These include the need for the design of facilities and infrastructure to be welcoming and engaging – particularly those that children come in contact with. Such designs should consider issues such as providing good visibility with appropriate lighting, adequate rubbish collection, and parks with enough barbecues and shelters. Facilities should also reduce barriers to children and their families by providing for nappy changing and breast feeding, toilets with sufficient space for children and parents, and well-maintained play equipment.

The importance to the community of high quality – and highly visible - child friendly spaces was also identified in the report. These spaces included those designed specifically for children, as well as formal public spaces such as parks, and informal spaces such as streets and neighbourhoods. The importance of providing play spaces for children that were challenging and imaginative was a recurring theme. According to the report findings, play spaces should provide a range of activities and opportunities for children to interact with other children and family members and should include equipment, plants and (if appropriate) space for animals. Finally the report highlighted the need for children to be recognised as the experts on their own environments and emphasised that their voices should to be listened to and acted upon in the design and planning of community facilities and spaces (Howard 2006).

At the institutional level both within Australia and internationally, the concept of child friendliness is typically represented as "the physical and social environment that allows children to feel a sense of belonging, to be respected and valued, and to have opportunities to become increasingly independent" (Malone 2006, p24). The work undertaken by institutions such as the United Nations, NAPCAN and ARACY indicate that children's wellbeing, located within a broader framework of sustainability, lies at the very heart of what constitutes child friendliness. With respect to the physical environment, this includes a focus on enabling children to participate within the spaces and places they grow up in. In particular a number of

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key dimensions were highlighted including the need for independent mobility, access to safe places, spaces for play, facilities and design that welcome and support children, opportunities for contact with nature and the ability to provide input into the decisions about their own environments.

3. Looking in – what does the literature tell us about child friendly communities?

3.1 Child friendliness in cities and communities – a growing research agenda

This section provides an overview of the key themes that have emerged within the academic literature related to child friendly cities and communities. Both internationally and in Australia this literature is growing, and it is characterised by increasingly multi-disciplinary research that fuses insights from fields as diverse as geography, sociology, psychology, urban studies, architecture, social work, child development studies and medicine. While the scope and scale of the ambitions for child friendly communities varies within the literature, the need to raise the profile and agenda of children's health and wellbeing within a sustainable community framework is a recurring theme.

Woolcock *et al* (2007) suggest that the contemporary debates on children's wellbeing in Western countries have two defining qualities: 1) they mark a resurgence of concern for children in professional, political and popular quarters; and 2) there is an increasing multidisciplinary approach to the debates on children that reflect new understandings about the interdependencies between the different dimensions of children's health and wellbeing (p 1). In particular they suggest that there is "increasing recognition of, and interest in, the ways in which the built environment both reflect and condition the key environmental and behavioural dynamics that shape the wellbeing of children" (p 1). This section of the report explores the key themes that have emerged from this body of literature, including a discussion of the historical context of these debates.

3.2 The wellbeing of Western children – the canary in the mine

The last decade has seen a growth of interest in and concern for children in our societies, and their links to the built and physical environment - but children have not always been given such consideration. During the middle ages, for example, children were missing from

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medieval icons (Aries 1962) and according to Valentine *et al.* (1998, p 3) it was "not until the 15th century that 'children' began to be represented in icons as having a distinct nature and needs, and as separate from the adult world".

When children did emerge as a distinctive popular and public agenda in the mid nineteenth century, the focus was on the concerns about the squalid conditions of slum dwelling children, which was driven by a moral panic over their propensity for criminal behaviour. The fear of the adverse affects to society if such urban conditions were left to deteriorate unchecked was a driving focus of policy and action (Sipe *et al.* 2006). This contrasted strongly with the onset of the relative affluence of the 1950s and the discovery of a new market niche - children. Yet while this era saw children increasingly redefined as consumers of a wide range of leisure goods and services such as magazines, clothes, and records, they were still very much positioned on the margins of adult society. The particular needs and desires of children themselves have tended to be largely unrecognised and therefore largely unmet within the modern industrial project (Valentine *et al*. 1998).

Within the recent literature, there is a suggestion that children have become increasingly vulnerable as a result of this cumulative neglect. Indeed some argue we are witnessing renewed calls for "child rescue" within communities and cities that is reminiscent of the reform agenda that arose in response to impoverished child welfare during the industrial revolution (Gleeson & Sipe 2006, p 6). In the 21st century there is a growing recognition of the serious impact on children of the changes associated with rapid urban growth and the changing nature of communities. Urban areas in particular are typically portrayed as "overcrowded, unsafe and polluted environments which provide little room for learning, play and recreation" (Malone 2001, p 2).

The picture of today's child, trapped in a hostile urban environment, is being likened to the image of 'the canary in the mine' – with its suggestion that all is not well within our communities. The re-design of industrialized communities over the last fifty years has significantly affected the lives and overall wellbeing of children (Chawla 2002; Stanley *et al.* 2005). For example a post industrial revolution emphasis on zoning has led to the separation of home, work, services and recreation (Freeman 2006). Green and natural spaces have been divided into small disconnected pockets within urban areas through the processes of

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compaction and densification (Woolcock 2007, p 7) while the dominance of the 'car-culture' has resulted in further fracture to both the real and imagined sense of community relationships and connectivity (Tranter 2006).

In Australia, accumulating scientific evidence suggests that our children are getting "fatter, sicker and sadder" (Gleeson 2006). According to the Australian Institute of Health and Welfare (2005), despite the rising affluence of our society, our children are experiencing unprecedented levels of physical and mental health problems including obesity, asthma, type 2 diabetes, depression, anxiety and behavioural problems. Whilst there are no conclusive links between the physical environment and children's health and wellbeing (Sipe *et al* 2006), a trend towards chronic child physical inactivity and passive, indoor play has been identified (Allen & Hammond 2005, Cunningham *et al* 1996, Freeman 1995, Kearns & Collins 2003, Tranter & Pawson 2001).

The literature argues these trends are primarily the result of restricted mobility for children, increased adult surveillance and reduced opportunities for unstructured play (particularly within green or natural areas) in community settings (Carbonara-Moscatti 1985, Spencer & Woolley 2000, Freeman 2006, Frumkin *et al* 2004, Jackson *et al* 2003, Malone & Hasluck 2002). Within the literature four key themes have emerged within these trends: 1) concerns about child safety; 2) reduced independence and restricted mobility; 3) the lack of prioritisation and availability of spaces for children within the broader community setting; and 4) the reduction of opportunities for exploratory play in natural surroundings. Each theme and the research that supports it will be discussed in more detail in the sections that follow.

3.3 Child safety and security

The safety of children has emerged as one of the dominant concerns within communities (Harden 2000; Leonard 2007). Increasing fears about the risks to children within their communities are often cited as a reason for the need for children to be highly supervised (Collins & Kearns 2001, Jenkins 2006, Tandy 1999, Valentine & Roe 2006). These concerns include fear of child exposure to: traffic and congestion (Bjorklid 1994, Freeman 2006, Macpherson et al. 1998), violence and criminal acts (Malone & Hasluck 2002), stranger danger (Valentine 1996), and pollution and toxins (Cummins & Jackson 2001, Spencer & Woolley 2000).

For example, recent research by Leonard (2007) entitled *Trapped in space? Children's accounts of risky environments* highlights that the "once innocent spaces of childhood such as streets, parks and other public places have become redefined as areas where children are in potential danger" (p 2). The study involved 65 children aged 14 who were asked to describe their perceptions and experiences of risk, and to map areas where they felt safe or less safe. Three types of risk were identified including risks emanating from within the community, risks encountered at the periphery of the community and risks emerging in shared social spaces. The research suggests "children's geographies cannot be divorced from the societies in which they live their daily lives" (p 13). Leonard (2007, p 2) points out that "the empirical evidence to demonstrate the frequency of public and private risks confronting children falls far short of the moral panic surrounding notions of risk and safety, the upshot has been to locate childhood in increasingly risky environments".

Other research with children on the same theme by Davis and Jones (2004) found that due to both real and perceived concerns about safety, children experienced considerable constraints on their activities. Their study highlighted that many children (particularly girls) were not allowed to play outdoors, use local parks, or cycle to school— or that they did not feel comfortable doing so. From the children's own perspective, traffic danger and 'stranger danger' were the greatest barriers to keeping healthy and active. Their research stressed the importance of understanding of children's own perceptions of risk and including their ideas for addressing this in community planning and design in order to tackle such issues as decreasing mobility.

3.4   Children's independence and mobility

The theme of children's lack of independence and restricted mobility has also emerged as a key concern in the literature. The pressures on parents to keep their children are safe have resulted in restricted freedom of movement for the children. (Freeman 2006; Kyatta 2004; Malone 2007; Valentine 1997). Public spaces are shrinking too and this also affects children's access to the outdoors. (Biel 1982; Heurlin-Norinder 1996; Karsten 2005; Pooley *et al* 2005). Both of these issues have implications for children's social and physical development (Arez & Neto 1999; Armstrong 1993; Kegerreis 1993; Prezza *et al*. 2001).

For example, recent research by Malone (2007) suggests that restricted independent mobility for children results in a decreased ability to find their way around and it also detrimentally affects their sense of purpose and self worth, their social competence and their resilience. Cadzow (2004, p 18) has described Generation X children as the 'Bubble Wrap Generation' whose parents are "so reluctant to let offspring out of their sight that they drive them to the playground and everywhere else rather than allow them to walk or ride their bikes".

In keeping with these observations, O'Brien *et al* (2000, p 264) argue that a key dimension in children's mobility is their independence from adults. This has been described in the literature as 'negotiated geography' (Moore 1996; Valentine 1997). Their research examined children's spatial mobility in urban settings and focused particularly on travel to and from school and access to local parks and facilities (Hume 2005). This work was consistent with other empirical studies which have shown that there are considerable differences between the mobility levels of children at different ages. As children grow older they have a greater need to access public spaces further afield in their communities (Holloway & Valentine 2000; Matthews 1992; Moore 1986). This is supported in research by Chawla (2002) that highlights that for children themselves, the opportunity to move freely within their own communities is something they really value.

Achieving this independence becomes particularly difficult when there is a lack of adequate walking and cycling paths that connect children's homes to community activities and services within a reasonable distance (Hume 2007; Timperio *et al.* 2004). As a result, many children do not have opportunities to access the diversity of experiences a community has to offer. For example, case-study research on children's independent access to local environments in New Zealand by Tranter and Pawson (2001) highlighted the variability in children's access to their local environments. Tranter and Pawson's (2001) research found that the presence of a culture of cycling, walking and public transport are all particularly meaningful indicators of children's independent access to community activities and spaces (p 42). In later work, Tranter (2006, p 121) argues that for child friendly communities " children's freedom of movement, along with having a diversity of environmental resources to facilitate play, has long been recognised as being of fundamental importance".

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3.5   Prioritising children in community places

The decreasing use of public space by children as traditional children's spaces are turned into adult space is a third key theme within the literature (Chawla 2002; Matthews 2002; Valentine 1996). Children have been framed as intruders, outsiders, illegitimate users of public space and a threat to public order (Cahill 1990; Collins & Kearns 2001; Iveson 2006; Malone & Hasluck 1998; White 1996). Karsten (2005) argues that the public space of the street is now adult space, whilst home space has become the dominant child space. For many planners, architects and other government officials, children barely register on the radar. Thus when conflicts of interest occur around public space, the needs and desires of children are rarely given priority (Francis 1988; Harden 2000; Karsten & Pel 2000; Karsten 2005; Matthews 1995; Sibley 1995).

Earlier work by Berg & Medrich (1980) found that community environments affect the daily lives of children in a number of important ways. Based on research conducted with children in California combined with the results of a survey comparing children's play patterns across a number of communities, they found that few communities are designed with the needs of young people in mind. In particular, they concluded that by examining how children's play patterns are affected by the availability of "managed" and "unmanaged" play space and how play problems are associated with questions of safety and mobility, it is possible to see how planning and land-use decisions affect the everyday experience of the young.

More recent research by Elsley (2004) entitled *Children's Experience of Public Space* agrees that there has been "inadequate attention paid to the needs of children and young people for high quality public space" (p 162). The study drew on direct evidence from children and young people between 10-14 years old. Three areas in particular were highlighted for consideration: 1) the involvement of children in community strategies and structures by local governments, and incorporating children's participation into their everyday structures; 2) the prioritisation of child friendly public space in policy making; and 3) the responsiveness of policy to children's views and experiences (p 163). The study recommended that more account should be taken of how children use public space and of their changing spatial needs as they get older so that "resources and initiatives meet the real, and not simply the perceived, needs of children" (p 163).

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In her work on planning for child friendly communities, Freeman (2006) draws the analogy between the plight of children in our adult-dominated society and that of cyclists on our car-dominated streets. She argues that in the case of both cyclists and children, their needs, rights and interests are secondary to those that dominate, and in the event of a clash of interests both children and cyclists inevitably lose out (p 83). Similarly Mathews (1995, p 456) argues:

> Despite a burgeoning body of research which highlights the singular environmental needs of children, most environments are designed to reflect only adult values and usages. The visions of environmental planners and landscape architects implicitly reflect the dominant perceptions of a society, such that groups already on the edge become further marginalized by policy making.

3.6   Creating opportunities for children to engage in outdoor play

The final dominant theme to emerge from the literature was the importance for children to develop a sense of place through sensory-rich experiences in outdoor and natural environments. Several authors provide strong evidence that these experiences are a critical means of building confidence and autonomy and developing relationships (Blades 1989; Korpela *et al*. 2002; Moore 1996; Orr 1992). Woolley (2007) outlines the range of outdoor places that children seek to play in. These include domestic open spaces such as community gardens, and neighborhood open spaces such as parks, playgrounds, playing fields, sports' grounds, streets, city farms and natural green spaces. The provision of seating areas, vegetation or creative and imaginative design in these spaces can provide opportunities for more social contact and unstructured play (p 91).

A recent study by Tucker *et al* (2007) involved eighty-two interviews with parents and guardians watching their children at neighbourhood parks. Parents and guardians were asked questions about how often they frequented the park, whether it was the closest to their residence, and what they liked or disliked about the park. The study found that neighbourhood parks were particularly important for promoting physical activity among children, which in turn could help to reduce obesity. Park location and proximity was not rated as highly by the participants as the need for amenities such as water attractions, shade, swings, and cleanliness.

Yet opportunities for children themselves to undertake exploratory, unstructured play are diminishing, particularly within natural surroundings (Cunningham *et al* 1996; Karsten 2005;

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Kearns & Collins 2003; Tranter & Pawson 2006; Woolley 2007). Research demonstrates that for children, a reduction in spontaneous play and physical contact with their environment can restrict their development of motor ability, social play skills and emotional resilience (Fjortoft & Sageie 2000; Kegerreis 1993; Roemmich *et al.* 2006; Tranter & Doyle 1996; Ward 1977). Bartlett (2005, p 11) notes that:

> Through their playful interaction with the world around them, children acquire the physical, social and mental skills they need for life. Play is essentially an expression of children's drive for competence and understanding.

A systematic review of the effect of the built and physical environment on children's mental health was undertaken by Clark *et al* (2007) and one of their key findings was that children need access to green and open space. They cited cross-sectional studies that examined the effects of access to gardens or natural areas on mental health (e.g. Wells & Evans, 2003). They concluded that access to green or open spaces, such as gardens or natural areas, was associated with better mental health.

In Australia, work by Gleeson *et al* (2007) and Sherry (2007, p 1) has pointed out that the trend towards high density living has implications for children and leads to the "obvious space constraints, particularly (on) outdoor space, associated with apartment life". Woolcock (2007) outlines that to compensate for these changes developers are increasingly placing more emphasis on facilities in new apartments such as landscaped open space, swimming pools and barbecue facilities. He cautions however, that just how well these developments function or translate to low income neighbourhoods is less clear (p 9).

Similarly, an earlier Australian study by Tandy (1999) entitled *Diminishing play spaces: a study of inter-generational change in children's use of their neighbourhoods* surveyed 412 children from three primary schools in NSW. When asked what they would like to do on a sunny day, the majority of children chose outdoor activities which could take place in bushland settings, parks and beaches. Popular activities included picnics and beach visits, as well as skateboarding, fishing and rock climbing (p 159-160). Tandy (1999) concludes that for Australian children:

> Home appears to be the consigned place of play when they have no real choice. Inevitably therefore, children are less active. This may not only affect their health and weight as described in the news media but

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       may well limit their developing an identity with place and community
       (p 162).

What has emerged from this review is that increasingly the literature on child friendliness is linking the importance of children's ability to play and have independent access to their outdoor physical environment to broader implications for health and wellbeing. According to work by Davis and Jones (1996, p 108), "healthy children are those who are able to access and use city streets for work and play, move about their local area with a reasonable degree of independence and safety, play some part in local decision-making and have some sense of ownership or entitlement to be heard". Conversely, a lack of agency can lead to an inability of children to function competently and contributes to reduced feelings of self worth and efficacy that ultimately play out negatively within the community (Hart 1997; Lang & Deitz 1990).

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4. Looking out, looking in - exploring the nexus between children's wellbeing, child friendly communities and the physical environment

4.1   Making the links – children's wellbeing and child friendly communities

This section seeks to merge the insights gained from the previous two sections. While the broader 'adult' literature provides an interdisciplinary understanding of what constitutes a child friendly community, the work from *Ask the Children: Overview of Children's Understanding of Wellbeing* provides an insight into what children themselves feel is meaningful to them. Combining the perspective of children 'looking out' with the 'looking in' findings of the wider literature provides a rich understanding of the key dimensions of child friendly communities.

A review of the key themes to emerge from the *Ask the Children: Overview of Children's Understanding of Wellbeing* research on children's wellbeing and the institutional and academic literature on child friendly communities reveals that there is considerable common ground between the two. Children's wellbeing in terms of 'agency', 'freedom of movement' and 'self determination' underpins the concept of child friendly communities.

The following ten themes emerged consistently across the broad range of literature.

1) Children's sense of agency

2) Child safety and security

3) Children feeling respected and valued

4) Child health

5) Independent mobility

6) Access to diverse services and activities

7) A sense of belonging and connection to community

8) Authentic participation and self determination

9) Opportunities for exploratory play

10) Contact with nature and green spaces

The review of the broader literature found that there are high levels of synergy between both the child friendly communities' literature and other institutional work on children's wellbeing.

Consistently the agenda emerges as one that seeks to: 1) Re-connect children with the landscapes of their lives; 2) Re-value children within our community environments; and 3) Re-instate children in civic democratic processes. So where exactly does the physical environment fit in?

4.2 The role of the physical environment in child friendly communities

This section seeks to articulate the specific dimensions of the physical environment that have been raised within the literature on child friendly communities within the broader context of children's wellbeing. The role of the physical environment in child friendly communities permeates almost every aspect of the literature in some way - from the need for walking and cycling facilities to the preservation of green space to community urban design that is inclusive of children and their families (Jackson 2003).

However as a focus in and of itself, the physical environment has not received the same attention as other issues around child friendly communities such as children's participation, governance, agency, social capital and community capacity building. In a practical sense the physical (both built and natural) environment is a difficult concept to disentangle from other social and political factors within a community setting. The all-pervasiveness of the physical environment poses significant challenges for those seeking to measure or monitor its characteristics.

The imperative of climate change for example poses one such obvious dilemma. It is an area that clearly relates to the wellbeing of children, the sustainability of neighbourhoods, cities and regions, and therefore is of crucial importance when considering the child-friendliness of communities and the physical environment. Climate change and other urgent contemporary dilemmas such as peak oil will require a considered, inter-disciplinary response. Within the child friendly literature however, this is still in a fledgling state of research.

Despite the challenges, however, the physical environment has been recognised within the literature as having a significant effect on the wellbeing and future prospects of children. The impacts of traffic and pollution, the qualities of play space, the connectivity and proximity of community activities and services, and the availability of natural areas to children are all important to their wellbeing. An important starting point is the research by Chawla (2002) and

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Bartlett (2005) who have identified what children themselves believe is important with regard to their physical environments. Chawla (2002) highlights the following priorities:

1. Green areas
2. Provision of basic services
3. Variety of activity settings
4. Freedom from physical dangers
5. Freedom of movement
6. Peer gathering places
7. Reductions in traffic
8. Minimal litter or trash
9. Geographic accessibility and connectivity

A more detailed list is offered by Bartlett (2005) who summarises the recommendations and priorities of children themselves for improving the physical environment of their communities. These findings are presented below in Table 3.

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Table 3: Children's recommendations and priorities for the improvement of the physical environment of their community

Places and spaces for children	Identify areas where there is not enough recreation space relative to population Places and resources for both boys and girls Public space More squares, parks and nature areas More places to meet and socialise Tree planting. Don't separate space for children from the life of their community All-weather surface for sports
Children's mobility	Provide frequent and safe crossings to children's amenities such as parks and schools. Make pedestrian areas Repair faulty traffic signals rapidly. Install speed bumps, and reduce speed limits Create cycle tracks Make sidewalks wider Make it easier for those who are disabled to move around Offer free or reduced fares on public transport for children
Facilities and infrastructure	Install adequate street lighting and prune trees that obscure lights Repairs of sewers and drains Toilets that don't smell Get rid of bad smelling garbage Cover the open drains Prioritise places where children play for clearing litter and waste
Children's participation	Consult with children about the location and development of community infrastructure such as pedestrian crossings Work with children to identify spaces that can be upgraded and secured for play

Source: Bartlett 2005

In Australia, the role of the physical environment in relation to children's wellbeing has been the focus of work by Walsh (2006) and Sarkissian *et al* (2002). Wendy Sarkissian and

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colleagues prepared an illustrated manual for planning residential environments for children entitled *Kidscape* for the Urban and Regional Land Corporation of Victoria. The manual stresses the need for design and planning strategies that are based on principles of sustainability and eco-design. This includes: the prioritisation of integrated and reliable public transport; the utilisation of water sensitive urban design principles; the use of environmentally-friendly building materials and principles for physical structures associated with children; the adoption of alternatives to toxic pesticides and weed control agents; and the embracing of plants native to the bioregion and ones that encourage native birds and other wildlife.

A key area identified by Sarkissian *et al* (2002) is the need to maintain urban bushland to encourage ecological learning. Key ways of achieving this within a community setting include prioritising open green space when planning, regenerating and rehabilitating neglected bushland spaces and developing habitat links and wildlife corridors. The *Kidscape* manual also highlights the importance of providing space for community gardens, children's farms and nurseries, and of improving local parks to provide both running and still water and other features that create the ingredients of a natural adventure playground (pp 3-5).

A report produced in the United Kingdom entitled, *A Child's Place: Why Environment Matters to Children,* argues that children are losing their connection with the natural environment and that their wellbeing and environmental quality are inextricably linked. They go further to suggest that there is a big gap in the "equality of children's access to high quality natural environments" and that children gain "powerful understandings through exploration of their own natural environment" (Thomas & Thompson 2004, p 3). Based on in-depth interviews with children aged 10 and 11, the report makes the following recommendations:

- Better consideration must be given to children's needs in decision-making on the design of public space; and
- The link between children's wellbeing and the environment should be embedded within policy (p 3)

Children's design work based in Australia by Walsh (2006) raises a number of practical planning and design issues, and presents recommendations that relate to the physical environment of communities. Her focus however is contemporary play spaces for children

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(whether formal or informal). She suggests that there needs to be a focus on the following dimensions:

- *Dedicated space* so that play is not just to be 'fitted in' as an afterthought
- *Access* to opportunity for outside venues
- *Variety* so that children can actively seek a variety of play options; for example, street cricket today, sandpit tomorrow, computers or TV another day
- *Invitation* which refers to consideration related to the degree of sensory-rich stimulation achieved by different approaches to community play space designs
- *Ambience* or the need to take the climate into account to include shelter from rain and sun, or exposure to wind, or boggy or dusty places (p 142-143)

Walsh (2006) argues that the design and support of child friendly play spaces rests on a number of key values such as giving priority to safe, accessible and user-friendly environments. This includes an emphasis on spaces and physical environments that are: accessible to people with strollers and to the elderly; and accessible by public transport and by car (p 143). Her recommendations support children's independent access to facilities in a number of ways. Firstly, she recommends reducing the need for children to cross heavily-used streets by providing safe pedestrian access. Secondly, she advocates the engineering of residential streets to convey, both symbolically and practically, that 'every road is a bicycle road', as is the case in many European cities; and thirdly, that neighbourhoods should have clear focal points (schools, pocket parks, sports fields, shops) connected by child friendly streets and/or linear parks with cycleways (p 145).

Finally, the practitioner insights offered by Walsh (2006) highlight differences between age groups in relation to the needs of children within play spaces. For example she argues that "play options that are inaccessible or too challenging to the developmental level of the individual child can become daunting and the child is unlikely to develop the competency in that skill area (social, physical, cognitive or emotional)" (p 149). Young children tend to require closer observation and support while they play, so there needs to be easy visual or physical access to the children, and a close proximity of facilities such as shade, nappy change areas and tables. Older children will need to have independent access to drinking

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water and toilets, whilst teenagers may need group meeting places and informal sports' areas for basketball or soccer (p 149).

5. Implementing child friendly communities in the physical environment

5.1   Why develop an indicator framework?

If child friendly communities need to be fundamentally "a practical not theoretical process" (Newell 2003, p 2) as recommended by the United Nations, then there is a need to translate the research literature into practical tools that can be applied within local government and community settings. As outlined in the national Conference on Child Friendly Cities in Sydney in 2006, "assessing and improving practices can only be sharpened when there is greater clarity on objectives and measures".

One way of achieving this clarity is through the use of an indicator framework. Indicators are a "set of rules for gathering and organising data so they can be assigned meaning" (Innes 1990, p 5). A detailed set of indicators can provide the means by which to evaluate policies, practices or services (Brennan-Ramirez *et al* 2006). They can act as signposts pointing to particular areas that require attention. Indicators perform a number of functions that include:

- description
- simplification
- measurement
- trend identification
- clarification
- communication
- action instigation (Hammond *et al*. 1995).

Indicator frameworks are increasingly being used by governments and non-profit organisations to establish empirically valid assessments or measures that can be used by decision-makers. Specific results include: developing baseline data around a particular topic; improving decision-making processes and current practices; and enabling changes within communities to be tracked over time (Ben-Arieh & Goerge 2006).

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Indicators vary in nature and type and there is no universal model of what constitutes a 'good' indicator (Coulton *et al* 1996). They evolve from different disciplines that tend to "approach the problems of measurement and tracking from different perspectives" (Hoernig & Seasons 2004, p 82). For example indicators could be strictly quantitative and based on measurable data sources. In the case of the physical environment and child friendliness, indicators could be developed by studying the size of parks through land-use records.

However they can also be qualitative and based on community perceptions of child friendliness in relation to the physical environment, considering subjective understandings of safety, aesthetics and levels of hygiene and cleanliness. Coulton & Korbin (2006, p 3) argue that irrespective of the type of indicator used they must be able to be calculated or assessed with reasonable accuracy, and the data must be easily available and cost effective. Importantly they suggest that indicators "have to be practical and should have implications for action – whether it is to drive change or preserve the status quo" (p 3).

5.2   Indicators at the community level – opportunities and challenges

In the past indicator frameworks to do with children's wellbeing have been used mainly at the national and state level. Yet there is a growing interest in both the international and national literature in community level indicators and children's wellbeing (e.g. ARACY 2006, Barnes *et al* 2006, Ben-Arieh & Goerge 2006, Brennan-Ramirez *et al* 2006, Coulton & Korbin 2006, van der Merwe 2007). There has also been growing recognition of the need to involve children themselves in community level indicator research and development (ARACY 2006, Ben-Arieh 2005). As Coulton & Korbin (2006, p 2) point out "child indicators have been used predominantly at a national level, but smaller area usage is becoming more important as it is increasingly recognized that communities are the immediate context in which children live".

An approach towards indicator frameworks that has been developed specifically for use by local groups at the community level is the SMART framework (Alexander *et al* 1998).

SMART stands for:
- *Simple* – easily interpreted, easily monitored, appropriate for community use and able to be mapped

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- *Measurable* – statistically verifiable and reproducible, able to be combined with other indices and able to show trends over time

- *Accessible* - regularly monitored, cost effective and consistent with other regions

- **R**elevant – indicative of fundamental functions, related to highly valued aspects, related to regional and state policies and management goals, relevant to international obligations

- *Timely* – provide an early warning of potential problems (cited in Thomas 2008, p 299).

Despite the widespread interest in indicator usage at the community level and approaches such as SMART, the literature related to the rigorous development, practical application and monitoring of indicator frameworks is scarce (Hoernig & Seasons 2004, p 81). For example there are significant challenges for developing indicators that are meaningful and useful. The danger is that in the pursuit of simplicity, the development of an indicator framework may reduce complex topics to more manageable but less representative sections. Thus to establish a clear definition of even what is meant by 'community' as a geographic unit is an inherently problematic task. The ability to recognise where one community ends and another starts can be difficult to determine in terms of space, physical structures, and governance, as well as accessibility and resources (Coulton & Korbin 2006, p 3).

The degree to which indicators can be "statistically verifiable and reproducible" (Thomas 2007, p 299) is also fraught with pitfalls. As Thomas (2007, p 297) points out, "measures come in all shapes and sizes" and may not always lend themselves to being easily quantifiable. There is a lack of agreement within the indicator literature on how best to integrate the subjective experience of a community with the objective measurement of the community environment. The work by Hoernig & Seasons (2004) highlights that all indicators must fit within a larger conceptual and disciplinary framework. Indicators are therefore not a stand-alone tool but work in conjunction with other tools related to data collection, management analysis, and evaluative practice (Seasons 2002). A mixed method approach is often recommended that includes social observation, and multiple sources of secondary data (Brennan-Ramirez *et al* 2006). Visual data sources such as GIS as well as

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audits and inventories of community resources have also been recommended (Ben-Arieh 2005, Hoernig & Seasons 2004).

However, despite the challenges associated with development, monitoring and evaluation, indicators can provide a powerful means of influencing policy, allocating resources and identifying facilities and services that lead to the improvement of child wellbeing. Indicators can also be used to raise public awareness about child friendly communities and to assist in the evaluation of policies, services and programs for children. As Ward *et al* (2007, p 3) describe:

> Rather like gauges on a car dashboard, child indicators tell us what we have to attend to in policy making and are used for tracking the outcomes and impacts of our services and programme interventions…We need instruments that tell us about the contexts within which children are living.

5.3   An integrated indicator framework for child friendly communities

Because of the complexity of addressing the physical environment in relation to child friendly communities, an integrated indicator framework is needed and a purpose of this report is to address this issue.

Traditionally indicators have been divided into three quite different types: economic, environmental and social. Economic indicators have been the most dominant and have typically addressed national elements such as employment, production, growth and inflation (Grant 1999). Environmental indicators refer predominantly to elements that relate to ecosystem processes and functions such as water, energy and the assessment of environmental impacts (Muller *et al* 2000). Social indicators have emerged more recently to assess social conditions and changes as well as shifts in urban conditions. Social indicators are often tied to notions of wellbeing for both individuals and society (Carley 1981) and these indicators have proven to be more difficult to develop and measure (Innes 1990).

Because of the difficulties in measuring wellbeing directly, social indicators have emerged as 'surrogate' measures that "translate or operationalise abstract concepts (e.g. health, safety) into measurable terms" (Hoernig & Seasons 2004, p 84). This process of operationalisation is highly subjective. Due to their very nature, socially-orientated indicators raise ideological and

ethical issues around their role and usage, as well as their relationship to the real world (Hoernig & Seasons 2004). Their development thus requires a transparent understanding of the conceptual models and underlying theories that have guided the translation of the abstract into something more concrete.

In response to these challenges a further category has emerged in the form of integrated indicators. This category refers to those indicators that do not fall neatly into the conventional economic, social or environmental categories. Thus work around contemporary themes such as 'sustainability', 'healthy cities' and 'quality of life' have evolved as integrated indicators. These indicators embrace a more holistic multi-disciplinary style in an attempt to address the complex nature of their subject matter (Hoernig & Seasons 2004, p 88). The differences between the conventional and the integrated indicators are illustrated below in Table 4.

Table 4: Summary of indicator sets and types

Indicator sets	Characteristics of indicators	Indicator types	Focus of indicator measurement	Main features
Conventional	Discrete, single-sector, often single disciplined approaches	Economic	Economy	Monitors changes in market-value activities
		Environmental	Environment	Monitors structural and functional feature of ecosystems
		Social	Social Wellbeing	Monitors social wellbeing
Integrative	Holistic, multi-sectoral, multi and inter-disciplinary approaches	Sustainability	Sustainability	Monitors sustainability though the integrated accounting of environmental, social and economic factor and phenomena
		Healthy cities	Health	Monitors health through holistic and positive models of health
		Quality of Life	Quality of life	Monitors quality of life by examining social, health, economic and environmental conditions

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Source: Hoernig & Seasons 2004, p 90

Much of the work on children's indicators that has emerged from the academic literature (and relates most closely to the themes in this report), focuses on children's wellbeing at the neighbourhood level. These indicators are most commonly identified as integrated indicators located under the broader umbrella of sustainability, health and quality of life. One example can be seen in the work by Save the Children and the Human Sciences Research Council on *Core Indicators for Monitoring Child Wellbein*g (2007). This work provides a series of 14 core indicator sets for monitoring children's wellbeing. It offers a "rights-based approach to child wellbeing indicators that establish what children need to survive; to be healthy and protected; to develop their potential; to be economically secure; and to participate in society" (van der Merwe 2007, p 3). References to the physical environment revolve around access to services necessary to meet children's health, education, recreation and safety needs.

A similar indicator set on children's wellbeing can be found in the work of Coulton and Korbin (2006) titled *Indicators of Child Wellbeing through a Neighbourhood Len*s. The authors propose both direct and indirect measures of environmental conditions at the neighbourhood level that could be expected to affect wellbeing (p 2). Examples of indicators related to the physical environment using administrative data include: housing conditions (e.g. the number of family housing units in poor condition); green space (e.g. the number of square miles in parks); and access to health services (e.g. weighted average travel time from centre of the neighbourhood). Indicators based on neighbourhood perceptions include: facility availability, usage and quality; neighbourhood quality, change and disorder; and neighbourhood identity.

In Australia, indicators on children's wellbeing also conform to the integrated model with a particular focus on health and quality of life. At the national level, the Australian Institute of Health and Welfare has developed a key indicator framework of children's health, development and wellbeing that seeks to respond to the following questions:

- How healthy are Australia's children?
- How well are we promoting healthy child development?
- What factors can affect children adversely?
- How safe and secure are Australia's children?

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- How well are Australia's children learning and developing?

- What kind of families and communities do Australian children live in?

At the community level these themes are reflected in the work by the Australian Early Development Index (AEDI) titled *Building Better Communities for Children*. AEDI is based on a teacher-completed checklist of children's development and it is envisaged the results will provide communities with a basis for reviewing the services, supports and environments that influence the lives of children in their first five years. Yet within both these indicator frameworks, references to the physical environment are few and relate predominantly to issues associated with neighbourhood safety, play and physical activity, parks and community programs.

What the review of the literature undertaken for this report has demonstrated is that an integrated indicator framework that takes into consideration children's wellbeing in relation to the physical environment and children friendly communities is lacking within Australia. This type of framework has received little attention within a literature that has instead tended to focus predominantly on children's health and emotional wellbeing. The challenge is to develop a framework that focuses specifically on child friendly communities and the physical environment, whilst also acknowledging the holistic, multi-sectoral, multi and inter-disciplinary nature of this endeavour. Such a framework would provide a useful and practical tool that could be used by local government and communities.

5.4   Implementing the indicator framework within the local government context

An indicator framework for child friendly communities in relation to the physical environment has particular application for local government authorities. Local governments in Australia play an important role in shaping the physical environment, and thus directly and materially affect children's lives and experiences. There is a clear potential for local government authorities to integrate the indicator framework into their assessment tools and to develop policies and designs to manipulate and shape the environment in which children live. But despite this potential, as Freeman (2006, p 78) notes, the challenge of creating child friendly communities is still largely "waiting to be taken up".

There is evidence however that local governments are taking a more active interest in developing more rigorous performance indicators (DOTARS 2007). There is also an increasing demand for these assessment tools to incorporate more progressive indicators of progress in local communities, and not simply to monitor the performance of local government itself (DVC 2006). The most prominent example of the development of local government-aligned community indicators is underway in Victoria (www.communityindicators.net.au) where there is ample potential to embed child friendly indicators. In the short-term a realistic possibility is for local governments to address child friendly indicators as an integral part of their strategic and operational planning mechanisms.

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6. Conclusion

This report has reviewed promising indicator frameworks for assessing the child friendliness of communities in terms of the physical environment. In particular, the report explores the physical dimensions of public space and common areas within community environments. The development of an indicator framework provides decision-makers within the community with user friendly tools for raising awareness as well as for gathering and presenting empirically based data. It can thus be used as a practical tool to influence policy development, resource allocation and services for the improvement of child wellbeing in relation to the physical environment within local communities.

However an indicator framework is not an end in itself, but a way of flagging issues of concern to the wellbeing of children in relation to the physical environment within communities. To be meaningful, these indicators must be applied and grounded within community settings and every effort must be made to understand the specific context of the community. Indicators must also be regularly reviewed and updated to ensure that they reflect the work around contemporary and emerging issues such as climate change.

In order to realise the potential offered by such indicator frameworks, it is strongly recommended that they be refined through practical application and implementation in local settings. As mentioned in the preface to this report, the next phase of this work is to join together with local government to develop child friendly community indicators and implementation documentation that would enable easy use by local government. It will be important to work with councils in a range of situations, urban, suburban and rural, and with both new developments and redevelopments. This work has already begun and the public release of the indicators is planned for early 2009. Above all, the participation of the families and children living in our local communities must be encouraged and supported throughout the process.

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