Where Have All the Children Gone?
Community, Nature and the Child Friendly City

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Most parents aspire to raise children who are independent, healthy and productive members of society. In this pursuit, parents struggle to balance freedom and safety. Current theory and research suggests that North American society has gone too far in the quest for safety and control, shielding children from necessary experiences. While confined in backyards and schools and spending increasing amounts of time in front of televisions and computers, children fail to build connections with the natural world and the wider community.

In 1991, Canada ratified the United Nations' *Convention on the Rights of the Child*. This convention grants children specific rights, ranging from the right to clean water to the right to be heard on issues that affect them. While Canadian children fare well on many of the requirements, they are rarely consulted on decisions that affect their well-being. Public spaces, beyond schools and playgrounds, are not designed for or with children. Children's free time is restricted, and outdoor play takes place within confined areas. Children have limited access to natural areas, and are trained to fear and avoid these spaces. These trends are disturbing from physical, social and mental health perspectives, as well as that of long-term environmental sustainability. The UNICEF (United Nations Children's Fund) program, Child Friendly Cities, offers guidelines for improving the way children are addressed at the municipal level.

This research uses the City of Waterloo, Ontario, as a case study to document these issues and offer possible solutions. The research was designed to answer the following questions: "How do urban children perceive and interact with their communities?" "What is the relationship between children and the natural environment within urban settings?" "To what extent are children consulted or considered in community planning and decision-making?" and "Can the Child Friendly City model be used to re-connect children with the natural environment?" Fifty-four elementary school students were interviewed, asked to draw pictures of their neighbourhoods and to rate a series of local images. Results were combined with teacher and city official interviews, as well as analyses of strategy and policy documents. This study identifies ways in which Waterloo can help children connect with the natural world and become more active members of their communities.

Overall, the research indicated that there are three main areas of concern: the child-nature interaction, the nature-community interaction and the child-community interaction. First, the child-nature interaction could be nurtured through improved access to nature. Children's access to and use of nature in Waterloo is limited. Only 58.53% of students included a green element in neighbourhood drawings. Many children fear or are banned from natural green spaces. Outdoor education is decreasing, with some teachers avoiding field trips entirely. According to government procedures, children are not considered stakeholders of natural green spaces. Second, the nature-community interaction would improve with more consistent conservation and restoration efforts. While some city policies promote the acquisition and conservation or restoration of urban natural areas, others conflict with their intentions. Rapid development has led to a loss of opportunities for green space development. Third, the child-community interaction can be promoted by involving children in decision-making processes. There are no venues for children to participate in government. While older youth may participate in the Youth Recreation Council, there are no opportunities for younger children. Outreach is limited.

Attention to these three main interactions would help the City of Waterloo become more child-, nature- and community- friendly. The UNICEF Child Friendly City program describes a set of goals and a framework that would support these interactions.

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Dedication

My son, Benjamin, has helped me to see the world through fresh eyes and rediscover the magic in rainbows, moss and earthworms. Benjamin, may you always find happiness in the natural world and never stop asking questions.

I dedicate this work to you.

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Chapter 1: Introduction

"Don't give up! I believe in you all.
A person's a person, no matter how small!"

- Dr. Seuss (Horton Hears a Who) (1954/2004 p. 108)

At no time in our lives are we more malleable than when we are children. A child's early environment guides the formation of his or her values, choices and aspirations as well as long-term physical, social and psychological health. As such, it is clearly important to provide children with environments that nurture positive choices and healthy lifestyles, and also provide the opportunities for children to learn how to become contributing members of society.

Canadian children today have many advantages, such as access to education and health care and protection from many kinds of harm. Unfortunately, researchers have also noticed some negative trends in children's health and activity levels. For example, there has been a startling increase in the number of Canadian children who are overweight or obese (Shields, 2008). Children's lifestyles are increasingly sedentary, and unstructured outdoor play is decreasing (Burdette & Whitaker, 2005). The general consensus is that today's children are failing to form connections with the natural world and with their communities in general. Until relatively recently, in most places, community planning and decision making were conducted largely without the consideration of children's needs, aside from the requisite schools and occasional playground. In addition, children were rarely, if ever, consulted on their feelings towards their environments and patterns of use.

However, in the past few decades, a movement to involve children in planning has been gaining momentum (Bridgman, 2004a). In 1989, the United Nations (UN) adopted the *Convention on the Rights of the Child* which recognizes that children have specific needs that are quite different from the needs of adults. It grants children a number of political rights, such as non-discrimination, freedom of expression, protection from harm and respect for their views. Notably, for the purposes of this study, this convention gives children the right to a voice in decisions that will affect their lives (Driskell, Bannerjee, & Chawla, 2001; Matthews & Limb, 1999; Office of the United Nations High Commissioner for Human Rights, 1989; Riggio, 2002). Following this, the UN initiated some programs in order to help communities implement the convention. The United Nations Educational Scientific and Cultural Organization (UNESCO) program Growing Up In Cities (GUIC) was an international effort to research children's views on their communities, and get them involved in

decisions. This program has been discontinued in Canada, but paved the way for another similar program called YouthScape.

YouthScape is a "Canada-wide initiative to engage young people in creating long term change. [It] is based on the idea that all young people can make important contributions to their communities that result in more inclusive, adaptable and healthy, diverse, protective, collaborative spaces and places for all members of society. [YouthScape] is creating the environment for young people to safely participate and contribute to decision making and planning in partnership with adults and key decision makers." This program has community partners across the country, but is based out of the International Institute for Child Rights and Development (YouthScape, 2008).

The United Nations Children's Fund (UNICEF) program Child Friendly Cities (CFC) is an international program working to improve conditions for children, and to give them the opportunity to influence decisions. The Child Friendly Cities Secretariat is building a network of communities which embody the principles laid out in the *Convention*. Child Friendly Cities (CFCs) give children the opportunity to express their opinions, influence local decisions and participate fully in the community. They provide children with basic services such as safe water, health care, education and protection from exploitation and violence. CFCs work to provide green spaces, reduce pollution and grant children the right to be equal citizens with equal access to services regardless of ethnic origin, religion, income, gender or disability (UNICEF, No Date-a). This thesis largely focuses on the Child Friendly City model, as it is broadly based, includes children of all ages, and consists of detailed frameworks and models which cities can apply directly.

A Child Friendly City would fight the childhood decrease in outdoor activity in many ways. Children who are more involved in the community are likely to venture outside more and take responsibility for the areas they use. One criterion for the Child Friendly City is the requirement of sufficient green spaces. A CFC directly addresses the need for "green spaces for plants and animals," and the need for an "unpolluted environment." Urban nature can be even more important than untouched wilderness areas, as children come into contact with these areas in daily life in a familiar environment (Jansson, 1984; Meyer, 2005; Wells, 2000). Daily environments establish for children the "normal" state of the world. Repeated exposure to nature will help children to develop a sense of environmental responsibility, and a respect for their environment. As it stands, children appear to be losing their connection with nature. Richard Louv calls this "Nature Deficit Disorder" in his book which explores the ways in which children are being disconnected from nature, the potential repercussions, and how to solve this problem (Louv, 2005). Natural areas are often considered unsafe

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for children to venture into without adult supervision. Using the Child Friendly City model, a community should be able to provide natural spaces that are both accessible to and appreciated by children. This cannot be achieved without the involvement of children.

There are two ways to approach the inclusion of children in planning: planning *for* children and planning *with* children. Both of these necessarily involve consultation with children. To effectively plan *for* children, we need sufficient knowledge about the ways children relate to their environments. Only direct communication with and observation of children can give us this information. In addition, planning *with* children is one key to the creation of an equitable society. Why not involve children directly in the decisions that will affect them the most? As well as being simply a good idea, it is also a legal obligation laid out in the *Convention on the Rights of the Child*. Planning *with* and planning *for* children take a great deal of commitment, time, patience and creativity. However, children can have valuable and insightful opinions about their neighbourhoods. They are the ones who know what they need the best. By creating Child Friendly Cities, we can help re-connect children with the natural environment, fulfill our obligations laid out in the *Convention on the Rights of the Child*, and ultimately create more inclusive and equitable communities.

1.1 Research Questions

Using the City of Waterloo as a case study, this research will primarily examine the following questions: "How do urban children perceive and interact with their communities?" "What is the relationship between children and the natural environment within urban settings?" "To what extent are children consulted or considered in community planning and decision-making?" and finally "Can the Child Friendly City model be used to re-connect children with the natural environment?" Ultimately, this thesis will provide some of the research that is a necessary starting point for the creation of a Child Friendly City, as well as important clues about how to re-connect children with the natural environment.

1.2 Target Audience

This research has a wide target audience. Primarily, the research should be of interest to local planners and city officials. In particular, it would be highly relevant to people who are interested in creating a Child Friendly City in Waterloo, Ontario. In addition, local school board members, teachers and parents may be interested in this research as it relates to children. Also, the results of this study may, in some form, be of interest to children and youth who are interested in finding out how to

become more involved in their communities. In this case, an adaptation of language and presentation of the material to appeal to a younger audience may be helpful.

The project could also be of interest to researchers of Child Friendly Cities, as well as planning and geography researchers. On a broader scale, those interested in children's health and children's environments may find this a useful study.

1.3 Research Context

1.3.1 Convention on the Rights of the Child

Since the *Convention on the Rights of the Child* was ratified by Canada in 1991 (Canadian Children's Rights Council, No Date), nearly 20 years ago, it is time that all Canadian communities paid attention to the details of this document. The requirement that children's views be considered has been severely neglected in many places in Canada. Article 12 of the convention states that: " 1. States Parties shall assure to the child who is capable of forming his or her own views the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child. 2. For this purpose, the child shall in particular be provided the opportunity to be heard in any judicial and administrative proceedings affecting the child, either directly, or through a representative or an appropriate body, in a manner consistent with the procedural rules of national law" (Office of the United Nations High Commissioner for Human Rights, 1989).

Since then, Agenda 21 from the 1992 United Nations Conference on Environment and Development and the Habitat Agenda from the 1996 Second United Nations Conference on Human Settlements have both indicated that children and youth have insights that are critical to the creation of sustainable communities (Driskell, Bannerjee, & Chawla, 2001).

1.3.2 Child Friendly Cities

The UNICEF Child Friendly Cities program has a list of criteria for a Child Friendly City. A Child Friendly City is defined as "a local system of good governance committed to fulfilling children's rights" (UNICEF, No Date-a). The website contains a network of programs, projects and communities that have made distinct efforts to ensure children's rights are considered. In 2008, the list of "Child Friendly Cities" was removed from the website in recognition of the fact that they did not have a consistent procedure for granting this designation and that the data were outdated. However, some countries, such as Brazil (UNICEF, No Date-d) and Switzerland (UNICEF, No Date-

e) have introduced individual certification programs for Child Friendly Cities. The CFC Secretariat still maintains lists of international projects and initiatives that aspire to create more child friendly communities. While no international certification process currently exists, the goals set by the CFC Secretariat are clearly worth pursuing by any community. According to the website: "A Child Friendly City is actively engaged in fulfilling the right of every young citizen 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 health care 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
- Be an equal citizen of their city with access to every service, regardless of ethnic origin, religion, income, gender or disability" (UNICEF, No Date-a).

In a developed country such as Canada, we like to believe that Children already have most of these rights fulfilled. Unfortunately, many Canadian communities have much to do before they would qualify as Child Friendly Cities. Indeed, in developed countries, some of these issues are far from resolved, and in some cases are even worse than in developing nations. For example, pollution and access to natural spaces can be worse in large, dense cities. Each community has its own set of unique challenges to overcome, and must be addressed individually.

On top of these general principles, the building of a Child Friendly City can be initiated by including nine elements (according to the UNICEF Framework for Action). These are: 1. Children's participation; 2. A child friendly legal framework; 3. A city-wide Children's Rights Strategy; 4. A Children's Rights Unit or coordinating mechanism; 5. Child impact assessment and evaluation; 6. A children's budget; 7. A regular State of the City's Children Report; 8. Making children's rights known; and 9. Independent advocacy for children (UNICEF: Innocenti Research Centre, 2004).

This research will focus on the City of Waterloo, a city which has the potential to attain Child Friendly goals, and could benefit from implementing the UNICEF framework to create a Child Friendly City.

1.4 Key Terms

Table 1: Key terms and definitions

Term	Definition
Green space	The definition for "green space" varies widely between different municipalities (Lindsay, 2004). According to the City of Waterloo's website, it includes "sports fields, major parks, neighbourhood parks, environmental lands, trails and much more" (City of Waterloo, 2010b). This thesis will use this broad definition.
Natural environment Natural areas Natural green spaces	This study examines the natural environment within urban settings. Natural elements of urban settings can range from dense, wild woodlots, to the trees that line a boulevard. This thesis will mostly use the term *natural areas* or *natural green spaces* to refer to areas such as woodlots, swamps or meadows that are relatively unchanged by human intervention. The term is used in opposition to the "*built environment*" or *"built areas."* Mowed turf areas such as sports fields are not included in this definition.
Child Friendly City	UNICEF defines a Child Friendly City as one with "a local system of good governance committed to fulfilling children's rights" (UNICEF, No Date-a).
Children	The United Nations' *Convention on the Rights of the Child* defines a child as any person under the age of 18 (Office of the United Nations High Commissioner for Human Rights, 1989). In this study, the children consulted were approximately 9 to 11 years old.
Community	According to the Oxford Dictionary, *community* is: "A group of people living together in one place" (Hawkins, 1979). Here, it may be used to describe a whole city, and sometimes a smaller neighbourhood.

Health	According to the World Health Organization, "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 2007a).
Urban Setting	Children living within the boundaries of the City of Waterloo, Ontario will be considered to be living in an "urban setting."
Cognitive map	"Cognitive mapping involves the description of the way individuals store and process geographic information" (Kitchin & Fotheringham, 1997). A cognitive map does not have to be a visual representation, but visual aids may be used to describe the stored information.
Surrogate Image	Images of scenery have been found sufficient in representing actual scenes when used for preference ratings (Shuttleworth, 1980). These images serve as the "surrogates" for actual places.
Access	According to the Oxford Dictionary, *access* is: "1. A way in, a means of entering or approaching. 2. The right or opportunity of reaching or using" (Hawkins, 1979).
Integration	According to the Oxford Dictionary, *to integrate* is: "1. To combine or form (a part or parts) into a whole. 2. To bring or come into equal membership of a community" (Hawkins, 1979). (Integration is the act of integrating).

Chapter 2: Children, Community and Nature: A Literature Review

"Little if anything is known [...] of the ultimate effect on man of
such drastic elimination of the natural stimuli under which he has
evolved as a biological being."

-René Dubos (So Human an Animal) (1968, p. 160)

Urban planners face the constant challenge of reconciling the needs and desires of people from a full range of ages, cultures and abilities. This is not a job to be taken lightly, as the environment that people are exposed to every day can shape the way they see the world and relate to it. In this process, certain groups may be neglected, especially if they lack the power and knowledge to make their needs and desires known. The official recognition of these groups is the first step in creating a society where every individual feels welcome and included. This thesis will focus on one group that has received little attention in urban planning: children. There is a great deal of research and literature on children's environments and children's participation, but less in the way of practice. When children are discussed in planning, it is typically with reference only to playgrounds and schools. Despite the wealth of knowledge, many of the problems relating to children and planning are getting consistently worse in urban communities, while recommendations from the research that deals with these issues have often gone unheeded.

This study uses an interdisciplinary approach in order to address the issues from a variety of perspectives. The intent is to create a picture that is as comprehensive as possible, as well as accessible and useful to a wide audience. The topics of children, nature, and community are woven into many fields of research, each taking a slightly different focus. This study has drawn from such diverse fields as planning, geography, landscape architecture, psychology, health, politics, sociology, and even touches on anthropology. A variety of sources were consulted, including journals, books, policy documents and websites (particularly for current information on government and programs for children). The Child Friendly City program (UNICEF, No Date-a) provides an excellent starting point and framework for this research.

The Child Friendly City goals can be broadly grouped into four categories: health and safety, access, natural green spaces and integration. These categories are based on the Child Friendly City goals and the themes most commonly addressed in the literature on children's environments. For a community to be truly child friendly, it must both feel and actually be safe and healthy, it must

promote accessibility, it must provide adequate natural green spaces and it must integrate all members of society. These are not the only challenges faced by urban planners when designing for children, but they encompass many of the main concerns. The goals are clearly not discrete; they are tightly related. They also have the potential to conflict with each other significantly, so it is a planner's job to find ways to balance these goals.

In today's North American society, parents are afraid to send their children outside. A focus on cars in urban design has led to heavy traffic and unpleasant and dangerous conditions for pedestrians. Perceptions of crime, traffic and other dangers have increasingly led parents to find ways to insulate their children from harm. The parks and woodlots where children used to play are often under-used or forbidden. Children, who will be the future caretakers of natural areas, are being excluded from them, and excluded from the decision-making processes that design and govern them. In the design process, adults make assumptions about the needs and desires of children that fail to recognize the differences in the way that children see and interact with the world (Matthews & Limb, 1999).

On the other hand, since the invention and proliferation of the automobile, planners have struggled to design safer communities. For example, in the 1920s, Clarence Perry introduced the idea of the "neighbourhood unit," building neighbourhood blocks around elementary schools, and directing traffic to outer arteries (Perry, 1929). Around the same time, Clarence Stein, a student of "Garden City" principles, designed neighbourhoods that helped to further separate pedestrians from automobile traffic, through the use of separate car and pedestrian networks, and by putting the focus on gardens and yards. The most well-known example was in Radburn, New Jersey (Stein, 1957). Principles from these designs are still used in suburban planning today.

Most North American communities are concerned with pedestrian safety, and continue to attempt to correct existing problems. Currently, there are places working to improve walkability (Osborne, 2005), to get children back into natural green spaces (Fjortoft & Sageie, 2000), to incorporate children into their communities and to involve them in decisions (City of Edmonton Community Services, 2008). These communities have the potential to provide valuable information about how to improve spaces for children. There is a great deal to be gained from this information, much of which is documented in the literature. However, many communities have not made planning for children a priority. This is possibly due to factors such as limited resources or the urgency of other issues. The Child Friendly Cities Secretariat was designed to network places that turn these ideas into

reality and ultimately help implement the rights laid out in the *Convention on the Rights of the Child* (UNICEF, No Date-a).

The academic literature concerning childhood, while offering valuable information about children and their environment, has been greatly under-used in planning practice. Research should focus on connecting theories and ideas found in the literature to practical solutions.

2.1 The Bare Necessities: What do Children Need in a Community?

Research concerning children's needs comes from a vast array of sources. Fields such as developmental psychology, cognitive psychology, education and sociology all offer unique perspectives on the issue. By drawing this type of literature together, it is possible to gain a well-rounded, interdisciplinary view of how children perceive and interact with their environments.

The spatial organization of a community sends important messages (Blakely, 1994). It implicitly tells people how to behave, where to go, what to focus on and what to value. Indeed, as Marshall McLuhan once said: "Environments are not just containers, but are processes that change the content totally" *(1995/1967 p. 275).* Therefore, in urban design, it is important to ensure that the desired messages are sent and received. Environments that encourage positive behaviours and discourage negative ones will benefit both children and adults. An example of a positive behaviour would be an increase in walking, thus reducing car use and improving public health. An example of a negative behaviour would be vandalism. Environments can be designed to minimize opportunities for vandalism.

There has been a great deal of research on environmental preference (Balling & Falk, 1982; Herzog, Kaplan, & Kaplan, 1976; Kaplan & Kaplan, 1995). The knowledge that is gained from this research allows us to design areas which will alter people's behaviours, promote understanding and encourage exploration (Kaplan & Kaplan, 1995). For example, if we want to promote pedestrian activity, which is a current trend in urban design strategies, areas need to be pleasant and accessible. Kaplan, Kaplan and Ryan wrote a book called *With people in mind: Design and management of everyday nature* (Kaplan, Kaplan, & Ryan, 1998), which lays out general principles on how to make natural areas pleasant and accessible. The authors use a set of themes that are important to creating people-friendly environments, including: preferences and fears, way-finding and providing restorative experiences. They list specific recommendations for making areas appealing and inviting. For example, posted maps and signs create a feeling of security and understanding, and improved visual access reduces fear (Kaplan et al., 1998). Many of their suggestions would be applicable to both

children and adults. On the other hand, children perceive the world differently than adults do (Kosslyn, Pick, & Fariello, 1974), so it is important not to assume they will interpret environments in the same way. Prezza et al. (2001) summarize the factors that make outdoor spaces favourable for use by children. These include low traffic density, low urbanization, green areas, and sufficient play areas. Dealing with issues such as these will help to send the desired messages to children and will encourage them to explore and interact with their surroundings.

Providing favourable messages about the environment is not only the role of parents and educators, but also of planners, politicians and architects (Kahn, 1999). As mentioned previously, four main challenges found in the literature on planning for child friendly urban design are: health and safety, natural green spaces, access and integration. When given due consideration, each of these domains can contribute to an overall positive message. These are also four areas which are mainly within the domain of a city's control.

2.1.1 When the Bough Breaks: Health and Safety

Child Friendly Cities must make children's health and safety a priority. There are five criteria on the Child Friendly City list that concern health, safety, or both. These include the right to: "Receive basic services such as health care 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" and "Live in an unpolluted environment" (UNICEF, No Date-a).

Health, as defined by the World Health Organization (World Health Organization, 2007a), involves the entire physical, social and mental health of individuals. This is a broad term that really applies to the ultimate goals of the entire child friendly program, which aim to promote children's overall health. This would include things like physical well-being, social interactions, and emotional states. For this section only, the term "health" refers to physical health. Health issues such as skin cancer and obesity may be at least partially addressed by good design.

Safety is the most commonly cited issue when it comes to design and children. A repeating theme through much of the literature concerning neighbourhood design is that parents do not find that there are many places they feel safe letting their children play unsupervised (Blakely, 1994; Veitch, Bagley, Ball, & Salmon, 2006). In addition, parents influence the level of fear in their children (Matthews & Limb, 1999), so children may not feel safe exploring on their own, whether or not they are permitted to do so. Increased sprawl has increased the amount of traffic on the roads. People in some places perceive crime rates as very high (possibly due to media exposure) (Blakely, 1994).

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Neighbourhood qualities and demographics play a part in these issues. Children's level of freedom in exploring spaces is subject to a complex series of negotiations with parents (Veitch et al., 2006), who make the ultimate decisions about children's range of freedom. Concerns about traffic, crime and "stranger danger" create a climate of fear for both parents and children (Blakely, 1994; Spencer & Woolley, 2000). Parental influence and the perception of safety in neighbourhoods can affect children's levels of outdoor physical activity (Thompson, Rehman, & Humbert, 2005). Urban planners and city managers can attempt to curb these problems in a variety of ways, such as increasing the number of signs and regulations or trying new design strategies.

Walkability, the provision of shade and crime prevention are three frequently discussed factors when it comes to creating healthy and safe communities for children.

2.1.1.1 Walkability

The proliferation of the automobile has led to increased traffic, and, as a result, decreased safety for pedestrians (especially children). This trend has forced planners to incorporate ways to make vehicular travel safer and more convenient. Unfortunately, these goals are sometimes accomplished at the expense of pedestrians.

Communities should be designed to facilitate walking. Incorporating mixed-use design into neighbourhoods encourages walking, as does the promotion of pedestrian and bicycle use of streets. Walking and cycling are usually the only two means that children have for exploring free of parental supervision. Public transit is also an option for older children. In areas that promote pedestrian safety, children can be given more freedom to explore independently. In addition, walkability has the added benefit of promoting healthy lifestyles, as it has been inversely correlated with levels of obesity in a number of studies (For examples see: Brown, Werner, Amburgey, & Szalay, 2007; Fisk, 2007). Obesity is a major concern, especially among North American children, as it has been on a sharp increase over the last 25 years (Newberger & Butcher, 2005).

As mentioned previously, a concern for pedestrian safety in neighbourhood design is not new. Clarence Perry's self-contained, school-oriented, neighbourhood unit, and Clarence Stein's further separation of automobiles and pedestrians were conceived in the 1920s. Both of these designs are directly related to children's safety. In his book, Clarence Stein says "Radburn is above all a town for children. The safety features, the free safe life in the open, is what drew young parents to it in the beginning" (Stein, 1957, p. 51). These designs continue to be applied in many suburbs, and according to at least one study conducted in Edmonton, Alberta, still make a statistically significant difference

in pedestrian safety (Wang & Smith, 1997). In this study, older, grid patterned neighbourhoods were compared with those that applied the neighbourhood unit and comprehensive suburban planning. Generally, subdivisions that were planned holistically are safer than those designed individually, and particularly safer than older neighbourhoods still on a grid system (Wang & Smith, 1997). Safety for children on streets can also be influenced by other factors than traffic control, such as an increase in supervision created by increased "eyes on the street" as suggested by Jane Jacobs in *The Death and Life of Great American Cities* (Jacobs, 1961).

While many people are trying different ways to improve these things, there is still disagreement on what makes for a safe and convenient pedestrian environment. For example, concerns about public safety on isolated pathways have caused a few communities to switch to meandering sidewalks generally following street alignments (Wang & Smith, 1997). Originally, suburban planning was intended to counteract the problem of urban crowding and a lack of pedestrian safety. This was done by directing traffic to external streets and by providing limited entrances to neighbourhoods. As a result, this creation of insulated and inaccessible communities may have led to an increased reliance on cars and, as a result, increased traffic (van den Berg, Hartig, & Staats, 2007).

New Urbanism is a design trend for communities initiated as a reaction to current suburban design. This trend emphasizes pedestrian convenience with improved walkability, public transit, and a mixed-use design (Fulton, 1996). It also aims to put more "eyes on the street" through individual unit design, and enhance neighbour relationships. While these goals are commendable, and would improve convenience for walkers, there is some concern that its return to grid patterned neighbourhoods could prove hazardous to pedestrians (Wang & Smith, 1997). At least one study found that New Urbanism does have the potential to improve walkability and neighbour relationships, but there are many confounding factors at play, such as the demographics of people who choose to live in these types of neighbourhoods (Lund, 2003).

Concern for pedestrian safety has led many communities to work towards improving walkability in a variety of ways, while specifically addressing the routes that children use on the way to school. There are some good examples of walkable communities, and initiatives to improve this feature. For example, Denmark invested heavily in the creation of safe routes for children and substantially reduced child mortality rates (Osborne, 2005). In other places, there are initiatives such as the *Pedestrian Charter* in Waterloo (City of Waterloo, 2008a), that officially put priority on pedestrian safety and comfort. The likelihood of children walking to school in one study was influenced by the proximity to the school, the gender of the child, mixed land use and the presence of

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street trees (Larsen et al., 2009). Most of these features can be controlled by good planning and design. Other initiatives take a more social approach. The concept of the 'Walking School Bus' is a growing trend, which has been formalized in some places (such as Auckland, New Zealand). The Walking School Bus consists of parent volunteers taking turns walking groups of children to school. Potential benefits include improved safety, reduction in car use and improved neighbourhood relationships. Additionally, these initiatives have the potential to help normalize walking, and reinforce the need for walkable neighbourhoods on a political level (Collins & Kearns, 2010; Kearns & Collins, 2003).

The Ontario Professional Planners Institute recently published a *Plan for the needs of children and youth: A call for action.* The document focuses on twenty-one *Child and Youth Friendly Land-Use and Transportation Guidelines*. Eighteen of these directly address children's transportation and safety as pedestrians, cyclists or transit users. The other three are broad recommendations for considering children in planning and including them in decisions (Ontario Professional Planners Institute, 2009). The focus on children's transportation is obvious, and important. It was strange, however, that children's other land-use planning needs (aside from transportation) were not considered in this call to action.

2.1.1.2 Shade

One important way to improve the walkability of neighbourhoods, and encourage outside activity is to provide adequate shade. The availability of shade has become an important point of focus, as the research community and public have become more aware and concerned about the long term effects of sun exposure. Skin cancer is the most common cancer in Ontario, and exposure to UVR rays early in life can increase risk factors (McKeown, 2007). As such, the provision of shade, especially in places where children play, is particularly important. The presence of street trees can improve walkability, as mentioned above (Larsen et al., 2009) by improving the appearance and feel of spaces, but also by providing shade on hot days. Street trees can also "reduce greenhouse gas and air pollutant emissions, mitigate the urban heat island effect, and reduce energy costs" (McKeown, 2007 p. 2). The City of Toronto has a *Shade Policy and Guidelines* which establish the provision of shade as an essential element in park and public space planning (McKeown, 2007). Shade is an important component of healthy communities and places for children to play.

2.1.1.3 Crime Prevention

A major challenge regarding community safety is the attempt to curb criminal activity. This can occur in many ways. For example, providing well-lit areas and improving neighbourhood visibility can help to reduce or at least re-direct criminal activity. Unfortunately, this can conflict with the provision of natural green spaces, as well as freedom for children. Natural spaces sometimes provide good places for crime to occur, as they are not well-lit and limit visibility. Media hype over incidents of crime can cause excessive concern in parents, as can word-of-mouth (Blakely, 1994). The characteristics of the neighbourhood can play a role in the decisions parents make for the safety of their children (Blakely, 1994). Children also tend to be aware of the more dangerous areas of their neighbourhoods (Spencer & Woolley, 2000).

Concerns with safety in parks sometimes forces park planners and managers to remove trees and shrubs that would create potential hazards and hiding areas for criminal activity. Green spaces lose their natural qualities as trails and parks require more lighting and visibility. The same kinds of concerns cause planners to design parks that are fenced in and isolated, and that limit children's access to and integration with the community. When danger is an issue, visibility and ease of movement are priorities for many people. "As regards the use and arrangement of natural elements, this would imply smooth, well-maintained ground surfaces; limbed-up trees; and the careful placement of shrubs and other vegetation so as not to impede visibility or movement" (Herzog & Kutzli, 2002 p. 834).

CPTED (Crime Prevention Through Environmental Design) is a strategy used by planners, architects and police to help prevent crime. This program employs four main principles: natural surveillance, natural access control, territorial reinforcement and maintenance. CPTED Ontario addresses community safety through the identification of crime issues and promotion of CPTED solutions (CPTED, 2002). Programs such as this highlight the importance of positive design in preventing crime, and promoting safety and feelings of security in neighbourhoods. On the other hand, some of these techniques can have unfortunate consequences, such as a loss of natural qualities, or environments that reduce social interaction and that are uninviting or hostile for certain groups of people, such as teenagers (Owens, 2002).

2.1.1.4 Other Safety Factors and Liability

Excessive fear of danger and fear of liability have led planners to design spaces that constrain children rather than provide them with access. Planning seems to focus on what adults feel is safest

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and best for children, rather than on how to integrate them into society. Pressure comes from a variety of sources. Many parents, bombarded with media images, desire safe places for their children, and are quick to place blame on poor design or planning. Concerns often center on traffic, dark places and strangers. Parental fears can lead to over-regulation of childhood activity (Blakely, 1994). Where children used to climb trees and build forts in woodlots, in many places there are regulations against this sort of behaviour (Louv, 2005). Signs and fences are erected in order to prevent dangerous activities. Unfortunately, the fences erected to help prevent crime and destruction, also limit freedom of movement and natural exploration.

While parents desperately try to keep their children safe, children's senses of adventure and desire for freedom can take them further away from the watchful eye of parents and other adults. When children or youth gather in spaces that are not designed for them, such as roads, shops, natural green spaces or marginal areas, they frequently collide with adults, who may be concerned with safety or other factors (Bell, Thompson, & Travlou, 2003; Matthews & Limb, 1999). Indeed, it appears common that adolescents are intentionally excluded from public spaces (Owens, 2002). Parents may also limit their children's activities to keep them safe from potential trouble with the law. Older children and youth sometimes use more hidden spaces for recreation and association. These marginal spaces can include areas such as railway tracks, the backs of malls, abandoned sites, and pits and quarries.

So, crime can be a major problem in many ways. It can put children at risk, but can also involve children. We need to reconsider the ways that we deal with crime, and how to prevent children from being victims, as well as how to prevent them from becoming involved, without limiting opportunities to explore.

The demographics and physical attributes of a neighbourhood greatly influence parental assessments. Many parents see the worst threats to their children stemming from the social qualities of the neighbourhood (Blakely, 1994). According to one study, the factors that influence freedom for children include sex, age, the presence of courtyards, proximity of parks, age of the neighbourhood and the network of relationships between neighbours (Prezza et al., 2001). In another study, parents of children living in areas of low socioeconomic status showed particular concern with neighbourhood safety. They identified teenage loitering as a major problem (Veitch et al., 2006).

Some recent research indicates that naturalization projects on school grounds may actually promote inclusiveness and reduce bullying. Students with different interests each have their own areas, and there are fewer territorial disputes (Dyment & Bell, 2008).

It is critical that children have safe places to explore and communities that promote safe access. It is easy to sympathize with parents and teachers, who see constant sources of danger in the outside world. Among other responsibilities, it should be the job of planners to create urban spaces where adults feel positive about the attributes of their neighbourhood, and secure enough to allow their children to explore. Clearly, many other issues must be addressed in order to promote physical health and safety in children's environments. These are just some major topics that are widely studied and addressed in the planning literature.

Although safety is an important concern in maintaining spaces for children to play, too much attention to particular aspects of safety has served to further limit children's opportunities. For example, when the Canadian Standards Association started assessing children's play spaces, concern for safety began to trump opportunities for play and growth (Herrington & Nicholls, 2007). The safety factor tends to take precedence over the other three issues: natural green spaces, access and integration. Natural green spaces pose potential safety hazards; increased access means exposing children to a wider variety of dangers; and integrating children into decisions means giving up some control over their lifestyles.

2.1.2 This Land is Your Land: Access

A Child Friendly City provides all children with access to a wide variety of amenities and opportunities. It ensures that children have the right to: "Participate in family, community and social life," "Receive basic services such as health care and education," "Meet friends and play," and "Be an equal citizen of their city with access to every service, regardless of ethnic origin, religion, income, gender or disability" (UNICEF, No Date-a). From the time children are in cribs and playpens, parents search for ways to insulate them and limit their access to trouble and danger. However, a challenge to planners lies in finding ways to grant children appropriate access to a variety of experiences in which they can play, learn and interact with other people within the urban environment.

Indicators of the quality of life, such as the "Human Development index" do not account for all the needs of children. They focus on very basic concepts, such as literacy and life expectancy (United Nations Development Programme, 2009). Access to parks or green space isn't considered (Bartlett, 2005; Christensen & O'Brien, 2003). However, the opportunities available for children are important indicators of community well-being (Chawla & Heft, 2002).

Spencer et al. (2000) noted in the literature a consistent pattern of decline in terms of children's access to public spaces. Parklands are based on minimum values, and except for token

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areas such as playgrounds, public places are rarely made to the scale of children (Tuan, 1977). Because of safety concerns, risk of damage, and liability, people are less likely to permit children (or others) to roam freely on their land (Ministry of Health Promotion, 2005). In addition, access to services, parks and shopping may also be limited by factors such as socioeconomic status or age discrimination.

2.1.2.1 Access to Places to Play

Article 31 of the *Convention on the Rights of the Child* states: "That every child has the right to rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts" (Office of the United Nations High Commissioner for Human Rights, 1989). Play is essential to development (Noschis, 1992) and children need to be able to explore (Malone & Tranter, 2003) their world in this process. Play activities are used to explore the environment, to interact with various components and to develop cognitive maps about the way the world works (Fjortoft & Sageie, 2000; Freeman, 1995). Children need opportunities to develop their capacity to exercise control, demonstrate confidence, improve self-esteem and demonstrate efficacy (Chawla & Heft, 2002). However, some studies suggest that opportunities for active free play by children are limited (Veitch et al., 2006). Local planners are responsible for creating spaces that give children the opportunity to be physically active and explore in a safe, but varied, environment (Thompson, Rehman et al., 2005).

The proximity of parks was correlated with physical activity in adolescent girls in one study (Cohen et al., 2006). In another, the proximity of park playgrounds was strongly associated with healthy weight in children (Potwarka, Kaczynski, & Flack, 2008). In a London, Ontario study, researchers found a correlation between proximity to recreational opportunities and actual physical activity in youth (Tucker et al., 2009). A woodland's proximity also plays an important role in the frequency of its use (Thompson, Aspinall, Bell, & Findlay, 2005).

Playgrounds are designed by adults to keep children safe, and rarely do they take children's desire or need for exploration into account (Matthews & Limb, 1999). The adoption of safety standards as policy has decreased attention to aspects of play and experimentation in Canadian playground designs (Herrington & Nicholls, 2007). In addition, playgrounds are often designed with very small children in mind, and are rarely deemed appropriate by older children. There are a variety of types of possible playgrounds, but standard fixed equipment which limits creativity in children, still appears to be the norm.

2.1.2.2 Access to Community

As children and youth are marginalized and forbidden from so many activities and locations, they will sometimes find informal or marginal spaces, which are governed by fewer rules than planned playgrounds or the open streets (Freeman, 1995). This can take the form of both positive and negative use. Illegal activities by children reinforce negative stereotypes and bring them into conflict with land owners and managers. These places can become overrun with litter, graffiti, and other forms of vandalism. Vandalism can be difficult to address, as what some consider vandalism, may simply be innocent child's play. In some cases, the building of forts or dams in woodlots has been considered vandalism (Louv, 2005) or "encroachment." On the other hand, some cases (such as the deliberate destruction of property) are more obvious. Trespassing can also be a major issue, involving individuals entering premises without permission or engaging in prohibited activities there (Government of Ontario, 1990c).

Certain teenage behaviours, such as smoking or drinking in green spaces can deter other people from using these areas (Bell et al., 2003; Thompson, Aspinall et al., 2005). Teenagers sometimes use fringe areas to develop a sense of personal identity and test boundaries (Bell et al., 2003). In addition, issues of liability make land owners nervous and hesitant to allow individuals access to their land (Ministry of Health Promotion, 2005). According to the Occupier's Liability Act, the occupier of a site is responsible for ensuring the reasonable safety of individuals entering the premises (Government of Ontario, 1990a), and this means that land owners must be careful about who is using their property.

However, the perception of crime can also create issues, such as unjust accusations placed upon teenagers, who may just be using public spaces as places to relax, but are seen as "potential troublemakers" and excluded, whether or not they are engaged in illegal activity (Bell et al., 2003).

As a result of these issues, access to certain areas, such as fringe areas and green spaces, becomes a constant battle between children, parents and property owners. Children and adolescents clash with adults when simply using undesignated areas. Their presence in public spaces, malls and plazas is frequently treated as problem (Spencer & Woolley, 2000). In some places, a device designed as a "youth repellent" by emitting a high pitched irritating noise that only youth can hear, has received a fair amount of attention. This device, the "Mosquito ™" has become popular in Britain, and has just recently shown up in Canada (Perreaux, 2008). The use of measures such as this intentionally minimizes youth access to public spaces, uses uncontrollable biological factors to discriminate against them and sends young people signals of unwelcome in the community. These are

not the sort of messages we should be sending, and the use of such devices may even violate basic human rights (Walsh, 2008).

Adults are not necessarily aware of what children and teenagers want or need in terms of places to explore and socialize. One study indicated that teenagers had very different (though creative) ideas about how space should be managed. For example, they identified unusual areas for potential "greening" such as local tunnels and alleys (Gearin & Kahle, 2006). The balance of providing a decent amount of access to space for everyone, as well as protecting everyone's safety and comfort is a worthy but difficult goal.

2.1.2.3 Environmental Discrimination

The problem with access is not only limited to children. In some cases, entire neighbourhoods struggle with unequal access to resources. This can be caused by environmental discrimination (Pickett et al., 2001). Some researchers found correlations between social stratification and the level of green space (Grove et al., 2006). In this study, low income areas and those with larger numbers of minorities are more likely to be next to polluted areas, and near fewer resources. Wealthy residents have the capacity to be selective about the places they live and also have more political influence over their neighbourhood conditions (Grove et al., 2006). In another study, children in low-income areas were shown to improve in cognitive functioning when they were moved to greener neighbourhoods (Wells, 2000). Children will suffer in the long run from being confined to their homes where they are not able to interact with the community on a variety of levels.

2.1.2.4 Possible Solutions

Solutions to access problems come in many forms, from improving the proximity of various amenities and increasing walkability, to thinking about creative ways to address children's needs, to making amenities more accessible for everyone.

Certain community designs (such as those endorsed by New Urbanism (Fulton, 1996)) encourage concepts of proximity and discourage sprawl. These designs favour neighbourhood proximity to natural areas, playgrounds, services, shops and other amenities. Improved walkability and a mixed-use style of neighbourhood improve access for children, reduce environmental discrimination and promote physical activity.

Transportation is a major constraint on access for children, and particularly teenagers (Berg & Medrich, 1980). The concept of walkability is a complex one, and can be a very subjective

experience. However, by combining research and knowledge about what makes for a pleasant walking experience, planners have the capacity to create a pedestrian- and cyclist-friendly environment (Brown et al., 2007) thereby improving overall accessibility, especially for children.

Sometimes it is necessary to think outside the box when designing play spaces for children. One good example of a creative style of playground is the "adventure playground" that allows children to construct their own surroundings with available building materials (Noschis, 1992). These types of playgrounds generally offer less in the way of safety and require more supervision. However, "adventure playgrounds are a specific type of outdoor play environments that have the potential to offer an abundance of developmental opportunities for children to grow emotionally, socially, and physically" (Staempfli, 2009 p. 268). Alternative forms of playgrounds have been introduced, that take into account the needs of older children and teens. For example, the company Kompan®, offers unique playground equipment appropriate for all ages of children, including computerized play equipment, unique climbing structures, and creative gathering areas. These were all designed through consultations with youth (Kompan Inc., No Date; Owens, 2002). Natural playgrounds are creative and attractive solutions to play design which incorporate natural elements, and make use of naturally occurring features to enhance play. Bienenstock Natural Playgrounds is one company that offers these solutions (Gardens for Living Inc., 2008).

The issue of access must also consider special needs, such as those of the elderly, disabled, and the young. Luckily, many of these needs overlap, and can accommodate everyone at the same time (Churchman, 2002). Ware and Cavanagh (1992) provide a document on the various ways to make public areas more accessible to children and those with special needs. These include issues such as: the dimensions of public facilities (such as width of entrances and the height of handrails), comprehensive safety measures (such as non-slip surfaces), and clearly marked signs using images rather than just words (Ware & Cavanagh, 1992). These measures would improve accessibility to a broad range of people, including children.

Accessible means many things, but most people only think of the disabled and elderly when they hear the term. While there are a great many measures which improve accessibility for the young and old alike, such as improved walkability, the provision of shade, lower rails, non-slip surfaces and easy-to-navigate spaces, there are still a number of areas where children should be addressed uniquely. For example, access to places to play, run and cycle are critical for children, and somewhat less important for the elderly. Good accessibility means spaces are welcoming and permit easy use by all members of society.

2.1.3 The People in your Neighbourhood: Integration

One of the key tenets of a Child Friendly City is integrating children fully into community life. A Child Friendly City gives children the right to "Influence decisions about their city," "Express their opinion on the city they want," "Participate in family, community and social life," "Participate in cultural and social events," and "Be an equal citizen of their city with access to every service, regardless of ethnic origin, religion, income, gender or disability" (UNICEF, No Date-a).

Integration can take different forms. For this paper, physical and political integration of children will both be considered. Children can become more integrated in society through the promotion of access, and the realization that children should not be kept away from the adult world. They can also be better integrated through participatory and inclusive decision making practices. Unfortunately, many communities operate under an exclusive rather than inclusive approach. Children do not have the power or the know-how to become involved in community decisions. For children to be integrated into political processes, there must be adults who are willing to promote this approach (Matthews & Limb, 1999). Fundamentally, the integration of children into communities will increase awareness of children's needs, create communities and play spaces that are safe, useful and welcoming, and help empower children to become contributing members of society.

2.1.3.1 Physical Integration

Noschis (1992) states that children should be interacting with adults and the local community on a regular basis, and that the typical, fenced and segregated playgrounds do not help children develop or learn about the world. Integrated spaces allow children to imitate the actions of adults, thereby helping them learn how to be members of society. Children are contained within playgrounds, which are generally frequented by young children accompanied by adults. This does not encourage autonomous behaviour (Matthews & Limb, 1999). Proper integration of children into society would require that we drop many of our assumptions about children's needs, and work to figure out what they really need, by researching them, and by asking. This would serve to enhance what we already know about children, and eliminate discrimination.

Public areas are rarely made with the consideration of scale (Nabhan & Trimble, 1994). Children often feel the need to seek out places to hide from adult worlds. They hide under tables in their houses and create forts and dens. This may be due to their desire to find places that conform to their difference in size (Tuan, 1977). Children see spaces in a very different way than adults do. The affordances that a place provides will change with age. For example, a tree trunk that would provide a

suitable resting spot for a child may be the wrong size for an adult (Gibson, 1979). As mentioned before, older children tend to use isolated places that are not designed for their use, such as roads, parking lots, stores and marginal spaces. This frequently creates clashes between adolescents and adults (Matthews & Limb, 1999). Marginal spaces are governed by fewer rules and are often less supervised than planned playgrounds (Freeman, 1995). As it stands, children and adolescents are forced to find ways of fitting in to the community, rather than the community making provisions for them and providing a safe variety of environments for them to use and explore (Berg & Medrich, 1980). Marginal spaces are not given much (if any) thought in urban planning.

2.1.3.2 Political Integration

Children could clearly be physically integrated better into the design of communities. This can occur through research into children's needs. One way to accomplish this is to integrate children into the design and decision-making process directly, through both consultation and direct involvement. This is a field that has been given much thought, but has seen less in the way of successful action. Giving children a voice in their communities is an important step in creating an integrated society. Children not only have the right to contribute to the decisions that affect their lives, but they can also offer valuable insight and suggestions from a different perspective.

Children are experts on their own needs and desires. They understand some of the finer details of community life, and certain studies have made the effort to include children in research about their communities (Burke, 2005). Data generated by children can provide information for policy and decision makers. Their energy, creativity and insights should not be undervalued (Driskell et al., 2001). In designing communities effectively for children, incorporating consultations with children adds a perspective only they can provide. In addition, recruiting children and youth to actually conduct research can be a useful tool for accessing information otherwise unavailable to adults. For example, in one study, researchers were able to team up with youth to uncover information about drinking and drugs among other youth. This was information unlikely to be shared with adults (Smith 2002).

When teenagers were given the opportunity to speak out about their spaces in another example, they indicated they wanted more green spaces and areas to socialize and relax. They suggested creative ways of enhancing marginal spaces, while adults thought the adolescents needed more planned activity space (Gearin & Kahle, 2006). If adults build areas for certain activities based on assumptions, they may not send desirable messages. Areas may come across as exclusive or

undesirable. Although it is true that natural green spaces may provide unsupervised areas for illegal behaviours in teenagers, often it is the case that they are just looking for a place to feel comfortable and to "let off steam" (Bell et al., 2003). Adolescent use of areas should be integrated into urban design and planning. Some suggestions for adolescent-friendly design are offered by Owens (2002). Suggestions are aimed at finding ways to make adolescents comfortable and accepted in public spaces, such as incorporating the type of seating they typically prefer to use to socialize (Owens, 2002).

Child and adolescent use of public spaces, malls and plazas is treated as a problem (Spencer & Woolley, 2000). However, it cannot be ignored that defiant or illegal behaviour in adolescents can reinforce negative stereotypes. In an equitable society, the solution cannot lie in driving teenagers away from public areas. Methods for creating harmonious relationships between adolescents and adults are beyond the scope of this paper. However, one possible way to get children and adolescents to take responsibility for their actions, and to take ownership over the appearance, sustainability and nature of their communities is to get them actively participating in the design and maintenance of these areas.

Despite the widespread ratification of the *Convention on the Rights of the Child*, the inclusion of children in political decisions in most places is tokenistic or decorative at best. Many of the programs initiated to fulfill the requirements of the convention prove to be merely "showcase" activities and lack long term monitoring or sustainability (Bartlett, 2005). These are not true forms of participation, and can be considered manipulative or deceptive (Chawla et al., 2005; Driskell, 2002). According to two separate literature reviews on the topic, the field is missing examples of real political integration in actual municipal planning processes (Frank, 2006; Knowles-Yánez, 2005). Most projects are conducted by independent researchers, non-governmental organizations or independent advocates. As such, few of them are long-term, or tested in a real situation. There is a "dearth of systematic, longitudinal studies that demonstrate best practices in involving children in land use planning" (Knowles-Yánez, 2005, p. 11).

However, best practices for involving youth in communities have been discussed by a number of people (Bridgman, 2004b; Chawla & Heft, 2002; Driskell et al., 2001; Matthews & Limb, 1999). These practices emphasize participation, empowerment, a holistic approach, accessibility, safety, sustainability and innovative approaches to development (Bridgman, 2004b).

Roger Hart's ladder of children's participation model has been adopted by a number of researchers as it clearly illustrates potential levels of participation. The rungs on Hart's ladder are named as follows: 1. Manipulation; 2. Decoration; 3. Tokenism; 4. Assigned but informed; 5.Consulted and informed; 6. Adult-initiated, shared decisions with children; 7. Child-initiated and directed; 8. Child-initiated, shared decisions with adults. The first three rungs are not true participation, but often take its place. These should be avoided. On the other hand, rungs 4 through 8 are all various degrees of real participation. The situation will govern which level of participation is the most appropriate. Clearly, some initiatives will require adult supervision or direction, while others can be mostly run by children (Hart, 1997). This model is useful when involving children in planning and decision-making.

Giving children a voice is not a simple process, and involves more than just listening to them. They need to be provided with information, and given the opportunity to take responsibility for their ideas (Matthews & Limb, 1999). Children who are well integrated into the process of planning can develop a sense of competence and of responsibility and ownership over their communities. The development of competence leads to psychological well-being (Chawla & Heft, 2002), while a sense of responsibility and ownership can promote environmental moral development and community sustainability. Participation should be "local, transparent, inclusive, interactive, responsive, relevant, educational, reflective, transformative, sustainable, personal and voluntary" (Driskell, 2002).

The Canadian Institute of Planners advocates children's participation in "grown up" decisions in their *Kid's Guide to Building Great Communities*. They provide the following reasons:

1. Children have a right to participate
2. Participation promotes resiliency
3. Participation reduces risks
4. Participation is central to positive youth development
5. Participation enhances youth health
6. Participation improves youth programs and services
7. Participation promotes commitment

   (Miller & Bishop, No Date, p. 37)

The benefits of inclusion are clear. However, it can be difficult to determine when it is appropriate to involve children in decisions. For example, when making decisions about road

maintenance or sewage treatment, children are less likely to be able to (or want to) contribute. Unfortunately, topics such as the condition of natural green spaces are often considered outside of the domain of children's interests too.

2.1.4 And the Green Grass Grew All Around: Natural Green Spaces

One criterion for a Child Friendly City directly indicates that children have the right to: "Have green spaces for plants and animals" (UNICEF, No Date-a). Urban natural areas are incredibly valuable assets that must be recognized for the sake of all community residents. They offer many benefits to the preservation of the natural environment, as well as to the sustainability of cities, and to the health and well-being of citizens. Natural green spaces can serve to clean the air and water and to tame the heat island effect (Spronken-Smith & Oke, 1998). Green areas can serve as wildlife corridors (Hess & Fischer, 2001; Lindenmayer & Nix, 1993), and provide important habitat for resident wildlife, as well as protect natural and/or rare features. Urban parks can even raise property values (Chiesura, 2004).

Urban nature can be incorporated in many ways into a community as a design element to promote sustainability, in the form of parks, greenbelts, gardens, or even things like green roofs (van den Berg et al., 2007). In some ways, natural green spaces are even more important for children, as they are forming their early relationships with their surroundings. Organizations such as the Canadian Child and Nature Alliance are working to build partnerships, and gather research and information than can help promote this important relationship (Passion for Action, No Date).

2.1.4.1 Preference and Values

Children and adults alike often find natural spaces pleasant areas that provide restorative experiences (Spencer & Woolley, 2000; van den Berg et al., 2007). As people spend time in natural spaces, they are more likely to develop a sense of place in, and a preference for these areas. People seem to prefer familiar landscapes (Balling & Falk, 1982) and the frequency of exposure to a certain environment can lead to an increased preference for that space (Tesser & Martin, 1996). In one study, researchers suggested that children were more likely to use what is known and familiar as their "ideal" (Machemer, Bruch, & Kuipers, 2008). Place attachment can be closely connected to personal identity (Spencer & Woolley, 2000). When a place is important to a person's identity, they are more likely to care about its long term survival, resulting in an undeniable link between sense of place and environmental sustainability (Uzzell, 2002). "In particular, affective bonds to places can help inspire

action because people are motivated to seek, stay in, protect, and improve places that are meaningful to them" (Manzo & Perkins, 2006, p. 347).

Childhood experiences are particularly important in the process of learning about respectful interaction (Bott, Cantrill, & Myers, 2003), as well as in promoting preferences for natural areas (Balling & Falk, 1982). Preferences for natural areas appear to be related to positive early childhood experiences with nature (Bixler, Floyd, & Hammitt, 2002; Wilson, 1996). A child's access to green space can lead to enhanced attachment and loyalty to nature (Ryan, 2005). As well, the development of environmental moral reasoning and environmental cognitive awareness relies on childhood experiences in nature (Kahn, 1999; Littledyke, 2004). Eventually, this can have a great deal of bearing on public opinion and land-use decisions (Balling & Falk, 1982).

2.1.4.2 Health and Natural Green Spaces

In addition to promoting environmental sustainability and the development of environmental moral reasoning in children, access to natural areas in urban spaces can impact the physical, social and psychological health of residents, thus improving their overall quality of life (Chiesura, 2004). Planners can use these health-related benefits to promote the acquisition and maintenance of natural green spaces within urban limits.

Natural areas form excellent playgrounds, offering opportunities for exploration and interaction which can never be substituted with built structures. In one study of a natural play space, there was a strong relationship between landscape structure and play function. The natural landscape's diverse features encouraged versatile play (Fjortoft & Sageie, 2000). Indeed, the quality and design of the neighbourhood environment can be strongly correlated with levels of physical activity, and subsequently the prevalence of obesity (Frank, Andresen, & Schmid, 2004; Saelens, Sallis, Black, & Chen, 2003). The inclusion of natural elements is a key factor in healthy design. As mentioned previously, even the presence of street trees can influence the chance that children will walk to school (Larsen et al., 2009).

The extent of the benefits of exposure to natural areas is not even fully understood, and research continues to explore the possibilities. There has even been some very recent research suggesting that a soil bacteria present in natural green spaces (*Mycobacterium vaccae*), when inhaled, reduces anxiety and promotes learning (American Society for Microbiology, 2010).

Providing green areas within urban limits can clearly have an influence on physical health. This concept is an easy one for planners to use to justify natural areas in urban areas.

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Other strong evidence has indicated that natural areas have positive social and psychological effects on residents. Natural areas can help children develop appropriate independent social skills, and some research has indicated that freedom of movement leads to increased socialization (Prezza et al., 2001). Another study indicated that green space is a place where children strengthen interactions with peers (Meyer, 2005), and that it helps to promote a healthy sense of community.

The positive effects of natural areas on the reduction of stress have been well documented (Kaplan, 1995; van den Berg et al., 2007; Wells & Evans, 2003). Wells (2000) found that children who were relocated to greener areas showed improved levels of cognitive functioning and attention as compared to children who moved to areas with fewer green spaces. There is also some convincing research to demonstrate how access to nature can counteract the effects of Attention Deficit Disorder (ADD) (Taylor, Kuo, & Sullivan, 2001a). Contact with nature appears to support attentional functioning. Studies also indicate that exposure to natural views can improve self-discipline in troubled youth (Taylor, Kuo, & Sullivan, 2001b). Natural green spaces can serve overall as important places for self-regulation in children (Spencer & Woolley, 2000).

2.1.4.3 Child Development

Given these positive effects, it is easy to see also how access to natural green spaces can have an important influence on childhood development. Children learn through play, so it naturally follows that they must have access to natural areas to learn about them (Freeman, 1995). Play is an essential component of development (Noschis, 1992). Early theories, such as those by Piaget (Piaget & Inhelder, 1967), focus on the idea that people are born with no spatial abilities and develop them through stages of interaction with the physical world. Newer "interactionist" or "constructivist" theories encompass components of this idea. They stress the importance of innate starting points, but also allow for significant changes developed through interactions with the environment and with the influence of social and cultural factors (Newcombe & Huttenlocher, 2000).

In addition, there is evidence to show that the exploration of natural areas leads to improved spatial abilities (Matthews, 1987). In some research, children who had permission to explore and interact with the environment independently did better on tests of spatial ability than those who were more restricted (Matthews, 1992).The diversity of materials and landscape elements available in natural spaces provides children with limitless creative opportunities and a stimulating environment as well as an irreplaceable contact with the natural world (Fjortoft & Sageie, 2000; Freeman, 1995).

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2.1.4.4 Aesthetics

In order to make natural areas appealing, it is often necessary to incorporate a variety of perspectives into natural area management to make them accessible, understandable and appealing to a wide variety of people (Ryan, 2005). For example, while wild, untamed natural spaces may appeal to some, they may look like a tangled unkempt mass to others. The evaluations of aesthetic values in landscape planning used to be performed by experts rather than by actual citizens, but this trend is changing (Dakin, 2003). Alternative ways of examining aesthetic preferences will be discussed later in the methodology chapter (Page 58).

2.1.4.5 Planning and Natural Green Spaces

As outlined in the previous section, natural elements in urban areas are invaluable resources to children. However, a great deal of effort is often placed on preserving large expanses of untouched wilderness, and the preservation of smaller green spaces in cities is sometimes forgotten (Chiesura, 2004). Urban wild areas are notoriously difficult to manage. They are often fragmented, and host to an abundance of invasive species (Grese, 1999). Despite this fact, greenbelts have been an important component of urban planning in Canada for at least 40 years (Taylor, Paine, & FitzGibbon, 1995). Unfortunately, we are watching natural green spaces continually developed over, cut across and diminished. Planners and decision makers are pushed from many sides when it comes to land-use decisions, and although there are undeniable benefits of natural green space, they still face the difficult challenge of finding the money, land and opportunities to maintain these areas, particularly within urban boundaries, where land is more expensive.

In green space planning, often forgotten are the additional places in cities that can play a role. For example, individually owned yards, when naturalized, can help connect fragmented landscapes (Rudd, Vala, & Schaefer, 2002). Other components, such as wastelands, creeksides, areas behind buildings and hydro and rail corridors can provide copious amounts of green space. However, these are poorly studied, and there is little information on the value of these areas. These areas deserve more attention, as they may hold a great deal of potential. In addition, marginal areas are frequently used by older children and youth.

Maintaining safe and accessible natural areas for people to use requires a number of sacrifices on the part of nature. Recreational use, particularly by children, could potentially damage natural green spaces (Pickett et al., 2001). As such, children are constantly reminded to stay on the paths, not to pick wildflowers, not to feed the animals and not to climb trees. The "safe" use of community trails

limits the possibilities for exploration by children. Some trail organizations are even considering minimum age requirements in the use of their trails (Ministry of Health Promotion, 2005). It is difficult to find a balance between providing access and limiting damage.

Planners must try to balance urban development with the preservation and creation of natural green spaces. The evidence clearly points to the necessity of these areas for a host of reasons. They are particularly valuable to children, a group that is seeing reduced access to them. One major point of difficulty for planners involves balancing safety and access with the naturalness of green space. These goals can conflict, particularly when considering children. As such, planners and decision makers are frequently sending the message that natural areas are not for exploration or play. Children are not particularly welcome and access is increasingly limited. On the other hand, organizations such as Evergreen and the Natural Learning Initiative are working to connect children to nature, often through school ground greening projects (Evergreen, No Date; Natural Learning Initiative, No Date).

It appears that a great deal is known about the needs of children, how to best provide for them, and how to incorporate them into the community effectively. At the very least, it seems clear that much of this type of information should come directly from children, and we should limit the number of assumptions that go into this process. Despite this wealth of knowledge about children and their environments, and the available programs and examples to seek for help, most communities have a long way to go in terms of incorporating these four aspects (safety, natural green space, access and integration) into urban design and management.

2.2 Ring Around the Rosie: Linking it All Together

Although each of the components of a Child Friendly City have been discussed separately, it should be clear by now that they are all closely interconnected and interdependent. However, these types of issues are often addressed separately by researchers and by planners. "Psychologists who study place attachment do not usually discuss community development, nor do planners often incorporate environmental psychology concepts such as place attachment in their research and practice" (Manzo & Perkins, 2006, p. 336). The issues of health and safety, access, green space and integration can simply not be addressed effectively in isolation.

The World Health Organization states that "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization,

2007a). In order to promote complete physical, mental and social well-being in our communities, we need to look at all possible contributing factors.

In an attempt to integrate key concepts, the idea of a "healthy community" has become a common focus and goal for many cities. There is a great deal of research in this area (Tucs & Dempster, 2007). A frequently cited model for a "healthy community" was created by Hancock (1993). This model puts community "health" at the centre of a Venn diagram connecting community, economy and environment. At the intersection of community and environment is a "liveable" place; at the intersection of community and economy is an "equitable" place; and at the intersection of environment and economy is a "sustainable" place.

In 2007, The Ontario Professional Planners Institute (OPPI) published a document entitled "Healthy communities: Sustainable communities" (Ontario Professional Planners Institute, 2007) and subsequently "Planning by design: A healthy communities handbook" with the Ministry of Municipal Affairs and Housing (Ministry of Municipal Affairs and Housing & Ontario Professional Planners Institute, 2009). These documents highlight the importance of things like urban design and transportation choices for human health and community sustainability.

As mentioned previously, the relationship between children and access to the natural environment can have a profound effect on physical and mental health. Researchers have demonstrated the mental health benefits of access to natural spaces including reduced stress (Kaplan & Kaplan, 1995), attentional improvement, and relief from symptoms of ADD (Taylor et al., 2001a). Physical health benefits range from opportunities for walking and exercising to improved healing shown by patients in hospitals with natural views (Schweitzer, Gilpin, & Frampton, 2004) to relief from urban heat islands (Spronken-Smith & Oke, 1998). The connection between health and natural green spaces is undeniable. Literature on this topic is abundant. Safety (or more importantly, lack of safety) in natural green spaces has been a key factor that limits access for children. When these become places to fear, due to the perceived potential for crime or injury, parents are more reluctant to allow their children into them. While playground equipment is carefully tested and maintained for safety standards, the trees in the forest undoubtedly pose a number of risks.

Access to natural green spaces is far from equal. Some communities have lovely green spaces, with publicly accessible trails which are well-maintained and safe. On the other hand, many low-income urban areas do not have this sort of access. Low-income families may have difficulty finding housing in healthy neighbourhoods (Ontario Professional Planners Institute, 2007). In

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addition, children have limited access to natural green spaces (due to parents, landowners, fences and bylaws) and are often forbidden from them.

Integrating children into society will necessitate the consideration of their play spaces and socialization opportunities. Adolescents often choose wild areas to congregate away from the watchful eyes of adults. However, these "marginal" areas have rarely been considered in planning. Giving children and youth the opportunity to participate in decision making will help us to identify all potentially useful areas, including those that may be below adult radar. Also, the integration of children into decision making improves self-efficacy. Numerous psychology studies have shown that people who have control over aspects of their life are healthier socially, mentally and physically (Myers & Spencer, 2001).

There are a number of bridges and barriers between children and the natural world in North America today. Part of the goal of this research is to identify these factors locally within the City of Waterloo, and figure out how to build more bridges and tear down barriers. The three main domains which children interact with are: home, community and school. Each of these domains and their associated individuals has a major impact on whether children experience bridges or barriers in terms of access to nature.

Clearly, natural green spaces are fundamental components of a healthy, safe, accessible and integrated community. Some have said that a network of green spaces running through a city is just as important as a sewer system (Daniels & Lapping, 2005). The selection, care and maintenance of natural spaces should be considered both when planning for children (children need appropriate access to them) and when planning with children (children should be involved in the process).

2.3 Sign, Sign, Everywhere a Sign: Planning *for* Children

Creating a Child Friendly City requires us to consider children in two ways: planning *for* children, and planning *with* children. This field of research really started in the late 1970s, when Colin Ward's *The Child in the City* (Ward, 1978) and Roger Hart's *Children's Experience of Place* (Hart, 1979) first discussed children's views of their environments. Since then, there have been countless books and articles on how to plan cities for children (for examples, see: Bartlett, Hart, Satterthwaite, De La Barra, & Missair, 1999; Gleeson & Sipe, 2006; Ware & Cavanagh, 1992). In literature on planning *for* children, repeated priorities are, as mentioned before, health and safety, access, integration and natural green spaces.

In terms of health and safety, we are responsible for designing safe and healthy communities and play spaces for children. Research has examined children's environments in terms of topics such as walkability (Osborne, 2005), alternative forms of transportation (Gilbert & O'Brien, 2005), crime and other social dangers (Blakely, 1994) and the safety of playgrounds and play spaces (Veitch et al., 2006).

When it comes to access in planning for children, all children should have equal access to things like services, playgrounds and natural green spaces. Certain rights of children (such as education and health care) are less of a problem in developed countries such as Canada, but important resources such as access to natural green spaces are not given as much attention. Berg and Medrich (1980) examined how children's physical environments and access to certain opportunities can change their play patterns. Freeman (Freeman, 1995) discusses the importance of access to natural areas in children's environments.

Integrating children into the community can be greatly improved by planning *with* children, but can also be addressed when planning *for* children. Playgrounds are often hidden away, and children are viewed as problems to be solved, rather than active participants in society. Noschis states that "to fulfill its role, a playground should not be "an island" isolated from the rest of neighborhood, but one of the places that children have access to in the neighborhood" (Noschis, 1992, p. 1). Communities should be designed for the use of all people. Improved accessibility in community design helps to better integrate all community members alike.

Finally, in planning *for* children, research suggests that natural green spaces should be designed that are accessible and integrated into the community. Urban natural green spaces play an important role in childhood development and environmental preferences (Bixler et al., 2002). Urban green spaces could be made more accessible to children, as potential places for play (Fjortoft & Sageie, 2000; Jansson, 1984). There are many ways to improve visibility, navigability and safety in urban natural green spaces so that they are more useful and appealing to children.

2.4 The More We Get Together: Planning *with* Children

The topic of planning *with* children has become very popular in the literature over the last fifteen years. Literature has addressed the aforementioned issues in terms of planning *with* children as well as *for* children. Children and youth have key insights into the topics of health and safety, access, integration and natural green spaces, and many researchers have acknowledged these insights and incorporated them into their research.

Health and safety issues are typically addressed when planning *for* children. However, children can have unique and valuable insights about what makes for safe communities (Osborne, 2005). Adults do not always see the same potential dangers that children see. In addition, giving children responsibility over their own living and play spaces can help keep them cleaner and safer anyway. Participatory photo-mapping was used by Dennis et al. in a neighbourhood study of health and safety for young people (Dennis, Gaulocher, Carpiano, & Brown, 2009).

In addition, planning *with* children would be absolutely necessary to examine a community from an accessibility perspective. Children are the only ones who can test certain areas to see if they are able to use them as intended. Burke's 2005 study used photo-elicitation methods to get children to document and describe their preferred play spaces (Burke, 2005). They may also have ideas for improving accessibility, as well as how to create areas that are inviting.

Integration is the key to planning *with* children. By integrating children into decision making processes, we help to create a more equitable society. In addition, giving children a voice in decisions that affect them helps fulfil the obligations laid out in the *Convention on the Rights of the Child* (Office of the United Nations High Commissioner for Human Rights, 1989).

City officials sometimes claim there is nothing stopping children from making presentations to council or attending community forums. However, it seems clear that these venues are neither welcoming nor appropriate for children. Creative and thoughtful methods must be used in order to elicit children's views. A number of books and guidelines have been designed to help communities involve children in planning, offering creative suggestions to engage children (Driskell, 2002; Freeman, Henderson, & Kettle, 1999; Miller & Bishop, No Date). Many individuals have incorporated these kinds of techniques into their research (for examples see: Halseth & Doddridge, 2000; Horelli, 1998). It is also important to consider the age of children, as young children and teenagers communicate on very different levels, and may be more comfortable participating in different ways (Travlou, Owens, Thompson, & Maxwell, 2008).

If children become involved in selecting, planning and maintaining natural green spaces, not only do we help improve their relationships with urban green spaces, we also encourage them to be stewards of nature. Mostly, when children are included in planning processes, the topics are limited to playgrounds. As natural green spaces are often not considered within children's domain, they are not involved in their planning. Even in the literature, there was little to make this connection. This is an apparent gap in the research that this thesis will address. With child and youth input and assistance,

we can design and maintain natural urban green spaces that are more useful and inviting to children. The integration of young people into these decisions could have vast beneficial results.

Working with children, and involving them in decision-making poses some very obvious challenges. Driskell, in his book, *Creating better cities with children and youth,* outlines some of the most commonly cited problems. These include things like the additional time needed and children's lack of experience and foresight (Driskell, 2002, p. 38). For each of these, he also offers reasons why these issues must be overlooked, and ways to get around them. For example, taking the time to consult with children at the beginning can save time and money in the long run by avoiding potential problems. Using a variety of creative methods can help children contribute, even with limited experience and maturity. It is also an opportunity for children to gain valuable experiences. Smith's paper *Involving Young People as Co-Researchers: Facing up to the Methodological Issues* also addresses in detail the practical, ethical, validity and value issues of involving youth in research, but concludes "We believe that careful thought and preparation and a thoroughgoing commitment to participatory principles can deliver real dividends" (Smith, Monaghan, & Broad, 2002, p. 206). This issue will be addressed again in the discussion.

2.4.1 Programs for Planning with Children

Since the *Convention on the Rights of the Child* was conceived, a number of programs have taken aim to implement its goals. For example, the International United Nations Children's Fund program, Child Friendly Cities (UNICEF, No Date-a), and Canadian programs such as YouthScape (through the International Institute for Child Rights and Development) (YouthScape, 2008), are working in various ways toward the goals mentioned above. While these initiatives are not in place everywhere, they are a positive force. Action research involving young people has been highly successful in many cases, and valuable lessons were learned in others (Chawla et al., 2005).

The UNICEF program, Child Friendly Cities (CFC), provides a framework that communities can use to become more child friendly. This framework outlines strategies for getting children involved in planning processes (UNICEF: Innocenti Research Centre, 2004). The program maintains a database of initiatives and communities around the world that have employed various strategies to defend children's rights and improve conditions. The Child Friendly Cities Database only mentions five Canadian cities with child friendly projects: Abbotsford, Calgary, Edmonton, West Vancouver (district) and Sudbury. There are 19 records that show up on a search for Canada (UNICEF, No Date-c). These records include articles or books written on the topic as well. Canada pales in comparison to

many other countries, such as Brazil, with 46 records (UNICEF, No Date-b). Granted, Canada's population is much smaller, and there are likely plenty of programs that just have not linked themselves to the CFC program. As such, UNICEF Canada could work towards improving these links. As mentioned earlier, the UNICEF programs in some countries, such as Switzerland (UNICEF, No Date-e) and Brazil (UNICEF, No Date-d), have adopted a certification process to award communities that have initiated Child Friendly programs. UNICEF Canada has not adopted this type of approach.

Generally, the CFC program is not directly affiliated with city planning departments, but provides resources to help communities become more child friendly. While cities or independent non-government organizations generally choose how to implement child friendly programs on their own, the CFC program does create worthwhile goals for planners to consider. Many cities in Canada could benefit from more emphasis on involving children in the community. While many basic needs are met, most Canadian children live in communities that are missing key elements of the Child Friendly City.

The Growing Up In Cities program, which ended recently in Canada, had similar principles which revolved around participation, the rights of children, and took an assets-based approach. The program also emphasized how assumptions were made in the past about children's needs, and that this should stop (Chawla et al., 2005). This program paved the way in Canada for a national program called YouthScape, a program dedicated to the same goals. According to their website, YouthScape "is creating the environment for young people to safely participate and contribute to decision making and planning in partnership with adults and key decision makers" (YouthScape, 2008).

These are just a few of the programs available which are promoting child friendly goals. There are many others, such as Ontario's Youth Friendly Communities, with 37 participating Ontario communities (Play Works Partnership, No Date), and countless programs in individual communities individually taking the same types of steps.

2.5 It's a Small World After All: Examples of Other Communities:

There are many different ways that communities can become more inclusive. Cities throughout Canada and the world have taken a variety of routes to become more child friendly and to get children more involved in decisions about their communities. Whether or not they choose to affiliate themselves with a program such as YouthScape or Child Friendly Cities, these programs have many of the same goals, and even many of the same strategies for achieving them.

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2.5.1 Canadian YouthScape and Child Friendly Cities Affiliations

Canadian cities involved in the YouthScape program include Halifax Regional Municipality, Rivière des Prairies, Thunder Bay, Calgary, Victoria, Hamilton and Saskatoon (YouthScape, 2008). Canadian cities mentioned on the UNICEF Child Friendly Cities database include Abbotsford, Calgary, Edmonton, Langley, West Vancouver and Sudbury. In 2009, "UNICEF and the Carrefour Action Municipale et Famille (CAMF) launched the initiative of Municipalité Amie des Enfants (Child Friendly Towns) in Quebec." This initiative involves accreditation and awards participating municipalities for meeting pre-set criteria (UNICEF, No Date-f).

Each of the above-mentioned communities has some sort of program that focuses on children or youth, by improving child friendliness and promoting participation. The following are some more specific examples.

2.5.2 Edmonton

Edmonton is probably the best example of a Canadian community that has made strong efforts to include children. The city of Edmonton was evaluated from a child's perspective through the use of a *Child Impact Assessment Tool* (Yates, 2005). This was initiated to address the goals of the Child Friendly City. The City, with extensive community participation, examined UNICEF's guidelines for a Child Friendly City, and found the values to coincide with those of the community.

> "Through a Council Special Initiative, the City of Edmonton is taking action to make Edmonton a more child friendly place that recognizes and reflects the needs of children, young people and their families. The process of building a Child Friendly City demands political commitment and a local system of good governance devoted to fulfilling children's rights. City Council is leading this initiative with the goal of improving the future of Edmonton's children, youth and their families" (City of Edmonton Community Services, 2008, p. 6).

The City then created a *Child Friendly Edmonton Strategy* that outlines the steps that Edmonton has taken and will take to improve conditions for children in the city. The *Strategy* consists of a number of building blocks, which include:

- "State of Edmonton's Children's Report: The City of Edmonton will fund a Children's Report every two years that ensures sufficient monitoring and data collection on the state of Edmonton's children.

- A voice for Edmonton's Children: The City of Edmonton will promote a systematic child participation process that will seek to engage children in design, planning and delivery of municipal programs and services through the Corporate Involve Edmonton Initiative.

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- Building Awareness: The City of Edmonton and its partners will commit to keeping Edmonton's children and the successes and challenges faced by them in the public forefront.

- Addressing Barriers: The City of Edmonton and its partners will review their programs, services and facilities that involve children to identify barriers and take a systematic approach to address them.

- Pilot Projects: The City and its partners will develop and implement pilot projects where the focus is innovative, child and youth led, and in the community.

- Child Friendly Lens: The City of Edmonton will implement the use of a decision-making filter that assesses the child friendliness of corporate programs, services, facilities, bylaws and policies.

- Training and Development: The City of Edmonton will provide training to staff across the corporation on Child Friendly concepts as well as the specific Strategy and how to apply elements of the strategy in their work" (City of Edmonton Community Services, 2008).

There is also an Edmonton Youth Council which actually provides feedback to city council on youth-related issues, and also undertakes its own committee-based projects (City of Edmonton Community Services, 2008).

Edmonton is also one of the most innovative Canadian communities in terms of creating play spaces for children that are accessible, green, safe and diverse. Edmonton's Community Services department has a Research and Innovations Section that put together the Play for All guidelines, which have been implemented in Edmonton parks and playgrounds. They have made connections with the International Play Association, and other organizations around the world in order to share new and creative solutions and designs (Research and Innovations Section, 2007).

Clearly Edmonton has made a firm commitment to creating a Child Friendly City, and fully integrating children into city life. It serves as an excellent example of what could happen in many Canadian communities.

2.5.3 Vancouver

The City Council of Vancouver approved a *Civic Youth Strategy* in 1995 to ensure that children's needs are met, to make a more youth-friendly community and to engage young people and give them a voice in the community (City of Vancouver Youth Outreach Team, No Date). Similarly,

the *West Vancouver Youth Strategy*, created in 2002, won an award of Excellence for Innovation from the Canadian Parks and Recreation Association (Powers, 2007).

2.5.4 Ottawa

Ottawa has a program that has taken a slightly different approach to including children. The charitable organization CAYFO (Child and Youth Friendly Ottawa) is "dedicated to the promotion and advancement of children and youth in [its] community." CAYFO is a grassroots organization which creates opportunities for children to speak up and become engaged in the Ottawa community using a variety of means and at a variety of levels. They seek to "Engage, Inspire, Act, Support, Celebrate and Collaborate" (Child and Youth Friendly Ottawa, 2007).

There are numerous other Canadian examples of children's involvement. Halifax has a Regional Youth Advisory Committee (Halifax Regional Municipality, 2010), Toronto has a Youth Cabinet and a *Children's Charter* (Children and Youth Action Committee, 1999) and Sudbury held a Children First Roundtable (City of Greater Sudbury, 2002). These Canadian examples are excellent resources to draw from to help create more child friendly communities.

2.5.5 Around the World

A number of other initiatives around the world also provide good examples of child participation. Involvement can be active (such as in construction), or not active (such as in brainstorming or providing consultations) (Varney & van Vliet-, 2005). In 1995, the city of Christchurch, New Zealand, initiated a public consultation involving 900 primary aged children, 100 parents and 100 service providers. The research focused on topics such as city design, leisure opportunities, safety and the environment. The resulting report led to key changes, the appointment of a children's advocate and the adoption of a Children's Policy in 1998 (Christchurch City Council, 2009).

Rosario, Argentina, was named The City of Children in 1996. This project involved "Children [*sic*] Advisory Councils" and "Planner Children" taking part in the planning and design of public projects, such as the "Childhood Farm" and the "Children Garden [*sic*]." The advisory council was elected by peers (Varney & van Vliet-, 2005). In Barra Mansa, Brazil, youth 16 and older can participate in a municipal budget in the Children and Young People's Participatory Budget Council. Approximately $84 000 US per year is designated for their use (Varney & van Vliet-, 2005).

2.6 Summary

In order to build a child friendly city, the literature points to some key factors for consideration. Health and safety, access, integration and natural green spaces are all critical elements in creating a city that is good for children. These factors are all closely linked, and require creativity and dedication in order to make them work together effectively, rather than contradict each other. For example, promoting safe play spaces for children should not mean eliminating natural features. The concept of a "healthy community" is well-addressed in the literature, and is increasingly important for planners in North America.

The creation of a child friendly city requires both planning *for* and planning *with* children. These two approaches, when combined, means that planners have the best possible information in order to create safe, accessible and green places, while at the same time, actually involving children in the process and empowering them to make a difference. A number of programs and communities in Canada and around the world are working to promote the involvement of children in decision-making.

The vast expanse of academic literature on children's environments and children's rights, and the countless individuals, organizations and communities involved in related projects is indicative of the importance of these issues. In addition, the fact that the United Nations' *Convention on the Rights of the Child* is the most widely ratified human rights treaty in history (193 countries) (Canadian Children's Rights Council, No Date) tells us that people care about children.

Chapter 3: Nature and Child Friendliness in the City of Waterloo, Ontario, Canada: Case Study

> *"The City of Waterloo is a community that is growing*
> *and changing like never before."*

> *- Strategic Plan 2007-2010 (City of Waterloo, 2007c, p. 2)*

3.1 Profile of Waterloo

The City of Waterloo lies in Southern Ontario, and is one of three cities (with Kitchener and Cambridge) that comprise the Regional Municipality of Waterloo. The City itself lies on 64 square kilometres of land, and has a population of 120 800 (as of 2009). This includes a non-resident student population of 24 580 (City of Waterloo, 2010g), as Waterloo is home to two universities and one college.

The Region of Waterloo controls those services which are of common concern across the cities. This includes things like policing, public health and public transit (City of Waterloo, 2010f). The City of Waterloo provides more localized services, including things like Recreation Services, Development Services and Community Relations.

The median age in the City of Waterloo is 35.4, and 18.3% of the population is under 15 years old. The median (before-tax) income for all census families is $84,545. The unemployment rate is at 5.5%, slightly lower than the Ontario average of 6.4% (Adapted from Statistics Canada, 2010).

The City of Waterloo is one of the fastest growing areas in the country (Region of Waterloo, 2003). In fact, between 2001 and 2006, the percentage population change was 12.6%, almost double the Ontario population change of 6.6% (Adapted from Statistics Canada, 2010). Ontario's *Places to Grow Act (Government of Ontario, 2005)* identifies the Region of Waterloo as an urban growth centre and assigns minimum gross density targets of 200 residents and jobs combined per hectare for Uptown Waterloo by 2031. Waterloo resides in the Greater Golden Horseshoe, "one of the fastest growing regions in North America" As such, the Region put together a *Regional Growth Management Strategy* (Region of Waterloo, 2003).

Waterloo has been recognized as an "Environment First" community and a leader in environmental initiatives (Pim & Ornoy, 1996). The city's website claims that "Environmental Services is at the forefront of this movement. The dynamic approach we have taken to address

concerns for the environment has won us the respect and praise of the industry, as well as the public's confidence." (City of Waterloo, 2010c)

Waterloo has won a number of awards and distinctions. It was named the world's most Intelligent Community for 2007 by the Intelligent Communities Forum (City of Waterloo, 2007a). As well, "The City of Waterloo has been recognized nationally and internationally for its high quality of life and commitment to sustainability. The City received the gold award (2003) and the silver award (2004) at the International Awards for Livable Communities" (City of Waterloo, 2010a). In 2006, Waterloo received the "Community Sustainability Award" from the International City/County Management Association, and in 2008, the City received the "Service to the Environment" award from the Ontario Association of Landscape Architects, in recognition of Waterloo's *Environmental Strategic Plan* (City of Waterloo, 2010a).

3.2 Document Analysis

Government documents pertaining to planning, the environment, and children are particularly relevant to this study. These are the ones addressed below.

Table 2: Levels of government and associated documents reviewed in this study

Level of Government	Documents
Province of Ontario	• *Planning Act (Government of Ontario, 1990b)*
	• *Municipal Act (Government of Ontario, 2001)*
	• *Provincial Policy Statement (Ontario Ministry of Municipal Affairs and Housing, 2005)*
	• *Places to Grow Plan (Ontario Ministry of Public Infrastructure Renewal, 2006)*
	• *Places to Grow Act (Government of Ontario, 2005)*
	• *Ontario Building Code (Government of Ontario, 1992)*
	• *Planning by Design: A Healthy Communities Handbook (Ministry of Municipal Affairs and Housing & Ontario Professional Planners Institute, 2009)*
	• *Ontario Trails Strategy (Ministry of Health Promotion, 2005)*
Region of Waterloo	• *Regional Official Plan (Region of Waterloo, 2009)*
	• *Region of Waterloo Strategic Plan (Region of Waterloo, 2007)*
	• *Regional Growth Management Strategy (Region of Waterloo, 2003)*

City of Waterloo	• *Official Plan (City of Waterloo, 2004)*
	• *Final Draft of Objectives (City of Waterloo, 2007b)*
	• *Strategic Plan (City of Waterloo, 2007c)*
	• *Recreation and Leisure Master Plan (City of Waterloo, 2008b)*
	• *Environmental Strategy (City of Waterloo, 2009b)*
	• *Pedestrian Charter (City of Waterloo, 2008a)*
	• *Imagine Waterloo (City of Waterloo, 2001)*
	• *Public involvement: Guidelines, tools and worksheets for successful community engagement (City of Waterloo, 2010e)*
	• *City of Waterloo Urban Design Manual (City of Waterloo, 2009a)*

3.2.1 Province of Ontario

In Ontario, the Ministry of Municipal Affairs and Housing is responsible for the *Planning Act* (Government of Ontario, 1990b), a piece of legislation designed to guide overarching planning principles for the whole of the province. It also guides each municipality in creating their own more specific plans. *Provincial Policy Statements* (Ontario Ministry of Municipal Affairs and Housing, 2005) are periodically released to provide clearer updated policies and set the "policy foundation for regulating the development and use of land" (Ontario Ministry of Municipal Affairs and Housing, 2005, p. 1). The *Places to Grow Plan* (Ontario Ministry of Public Infrastructure Renewal, 2006), and the legislative framework: the *Places to Grow Act* (Government of Ontario, 2005), were designed to manage growth and development in Ontario. The *Municipal Act* (Government of Ontario, 2001) guides the creation and government of municipalities. The Ministry of Municipal Affairs and Housing also maintains the *Ontario Building Code* (Government of Ontario, 1992). This is another set of guidelines that shape the way our communities are designed and built. One other document that was examined was the *Ontario Trails Strategy* (Ministry of Health Promotion, 2005).

The Ontario Professional Planners Institute is not a government organization, but provides planning guidance for communities. They have recently published a document in partnership with the Ontario Ministry of Municipal Affairs entitled *Planning by Design: a Healthy Communities Handbook* (Ministry of Municipal Affairs and Housing & Ontario Professional Planners Institute, 2009) and are working with Ontario's municipalities to try to implement the principles in this handbook.

3.2.2 Region of Waterloo

The *Regional Official Plan* (Region of Waterloo, 2009) is the guiding planning document for the Regional Municipality of Waterloo, including Waterloo, Kitchener and Cambridge, and is designed to cover the next 20 years. This was just updated in 2009. Its direction was helped by the *Region of Waterloo Strategic Plan* (Region of Waterloo, 2007), and it also implements the *Regional Growth Management Strategy* (Region of Waterloo, 2003), another relevant document that guides the way residential and employment growth will occur in the region.

3.2.3 City of Waterloo

The *Official Plan* for the City of Waterloo is in the process of being updated. The old *Official Plan* (City of Waterloo, 2004), originally completed in 1990, was outdated and needed renewing. There should be a new plan in place by the end of 2010. At the moment, there are discussion papers about many key features, as well as the *Final Draft of Objectives* (City of Waterloo, 2007b) for the plan. These should provide some clues as to what the final plan will look like. Waterloo's *Strategic Plan* (City of Waterloo, 2007c) was designed to help guide this process, and is similar in its objectives. At the same time as the *Official Plan* is being updated, other documents, such as the *Recreation and Leisure Master Plan* (City of Waterloo, 2008b) and the *Environmental Strategy* (City of Waterloo, 2009b) are undergoing modifications. The *Urban Design Manual* (City of Waterloo, 2009a) is a set of guidelines that implement the design guidelines in the Official Plan. The *Pedestrian Charter* (City of Waterloo, 2008a), recently adopted by Waterloo, indicates that the city is paying attention to the benefits of walkable communities. Other policies, in the form of bylaws, such as the parks bylaw, and the street tree bylaw, also play a role. The *Environmental Lands Acquisition Strategy* was designed "to guide the timing, priority of land types and methods of acquisition" (City of Waterloo, 1997, p.1).

The City of Waterloo recently enacted a series of guidelines for public involvement, to promote and guide public participation processes for all City departments (City of Waterloo, 2010e). Some publications, such as that created from the *Imagine Waterloo* initiative (City of Waterloo, 2001), are constructed from a series of forums, and collectively designed by citizens of Waterloo. This particular document helped guide the *Strategic and Official Plans*.

3.3 Document Analysis for Key Issues

The way that these policies and documents address the four key issues offers important clues about how children are treated in the community. They tell us about government priorities. In a community that is growing so rapidly, it is imperative that children are not left behind in the process. Waterloo's children have many of their basic needs met, and social services are in place to look after these needs. Waterloo's children are guaranteed education and health care, and are generally protected from harm. In these ways, Waterloo already meets many of the criteria for a Child Friendly City. On the other hand, there are also missing elements.

3.3.1 Health and Safety

One of the main purposes of establishing policy documents is to ensure the health and safety of all residents. In the *Ontario Planning Act*, "the Minister, the council of a municipality, a local board, a planning board and the Municipal Board, in carrying out their responsibilities under this Act, shall have regard to, among other matters, matters of provincial interest such as, "the orderly development of safe and healthy communities." They are also responsible for "the protection of public health and safety" (Government of Ontario, 1990b).

3.3.1.1 Health

The *Ontario Planning Act*, the *Provincial Policy Statement* and the *Ontario Places to Grow Act* all recognize the importance of pedestrian-friendly environments that promote walking and provide access to facilities, open space and trails. They recognize the importance of access to parks and conservation areas for improving community activity and health. Mixed land use patterns are also recommended to reduce vehicle use (Government of Ontario, 1990b, 2005; Ontario Ministry of Municipal Affairs and Housing, 2005).

The guide put together by the Ontario Professional Planners Institute (OPPI) and the Ministry of Municipal Affairs and Housing claims that we can design built environments that: "increase participation in physical and social activities, reduce the social risks and costs of preventable diseases, injuries and fatalities, decrease soaring direct and indirect public and private health-care spending, and shift health-related savings to other community priorities." It, too, promotes pedestrian-friendly designs (Ministry of Municipal Affairs and Housing & Ontario Professional Planners Institute, 2009, p. 3).

The Region of Waterloo deals with issues of public health. The Region's *Official Plan* advocates walking and cycling, and aims to facilitate alternative forms of travel. Ensuring the provision of developments that encourage walking and cycling is worded as mandatory. It also suggests information systems which encourage exploration, and promotes the creation and maintenance of urban green spaces which are pedestrian-friendly, safe and accessible (Region of Waterloo, 2009). In terms of public health, the Region also has rules regarding the provision of water, waste treatment, and air quality (Region of Waterloo, 2009). The *Regional Growth Management Strategy* is also concerned with creating a more pedestrian-friendly environment (Region of Waterloo, 2003).One of the main focus points of the Region of Waterloo's *Strategic Plan* is 'Healthy and Safe Communities' which aim to: "Support safe and caring communities that enhance all aspects of health" (Region of Waterloo, 2007, p. 5).

A study conducted by the health department at the Region of Waterloo compared urban and suburban neighbourhoods. The conclusion was that urban form can influence lifestyle choices. Urban residents, living in mixed-use neighbourhoods, were more likely to walk or cycle to work, and generally spend more time walking. Suburban residents spend more time driving each day (Fisher, 2005). Locally, some new suburbs were built with the intention of using principles from New Urban design, promoting mixed use and walkability, but residents were found to continue their dependence on cars (Cipriani, 2009).

The City of Waterloo's current *Official Plan* also promotes pedestrian activity, particularly through the establishment of a series of linear parks for pedestrian and cyclist use (City of Waterloo, 2004). The proposed *Official Plan* for the City of Waterloo states that "Neighbourhoods should provide a safe and healthy living environment and promote healthy lifestyles" (City of Waterloo, 2007b). It promotes alternative forms of transportation and focuses on safe and convenient pedestrian movement. A "pedestrian-friendly design" is the first objective mentioned in the *Urban Design Manual* (City of Waterloo, 2009a). It provides guidelines for traffic calming measures, and other ways to improve the ease of movement for pedestrians. It also explains how to effectively incorporate public transit and cycling into city design.

In 2008, the City of Waterloo adopted a *Pedestrian Charter* which recognizes the benefits of a walkable community, and sets a number of related goals (City of Waterloo, 2008a). "An urban environment that encourages and facilitates walking supports community health, vitality and safety. It decreases car dependence; reduces conflict between vehicles and pedestrians; leads to cleaner air; green public space; increases use of public transit; and supports green tourism. Such an environment

creates opportunities for the informal social interaction that is one of the main attributes of a vibrant, liveable urban community" (City of Waterloo, 2008a). The *Draft Environmental Strategy* for the City of Waterloo encourages compact urban form that spares natural resources (City of Waterloo, 2009b).

3.3.1.2 Safety

The *Provincial Policy Statement* directs development away from potential natural or human-made hazards to public health and safety (Ontario Ministry of Municipal Affairs and Housing, 2005). In addition, the *Ontario Building Code* was primarily designed to ensure the health and safety of the public, but also aims to improve accessibility, help preserve environmental integrity, conserve resources and protect personal property (Government of Ontario, 1992).

The Region of Waterloo promotes the use of "Crime Prevention Through Environmental Design" (CPTED) principles to reduce and prevent crime (Region of Waterloo, 2009). The CPTED program focuses on the effective planning of the built environment to prevent crime. It is based on four main principles: natural surveillance, natural access control, territorial reinforcement and maintenance (CPTED, 2002). The *Urban Design Manual* also endorses the use of CPTED principles (City of Waterloo, 2009a), such as improving visibility and lighting and promoting effective maintenance. The City of Waterloo's *Strategic Plan* aims to enhance safety through traffic calming initiatives (City of Waterloo, 2007c), and the *Official Plan* mandates that local streets in residential areas be designed to minimize speeds and through traffic (City of Waterloo, 2004).

3.3.2 Access

Accessibility in official documents appears to apply only to disabled and elderly individuals. However, accessibility has a wider definition, which includes providing easily reachable services and facilities to everyone in the community.

The *Planning Act* makes the minister, council and related boards responsible for "the accessibility for persons with disabilities to all facilities, services and matters to which this Act applies" and "the adequate provision and distribution of educational, health, social, cultural and recreational facilities" (Government of Ontario, 1990b). The *Provincial Policy Statement* emphasizes the importance of improving accessibility for persons with disabilities and the elderly (Ontario Ministry of Municipal Affairs and Housing, 2005).

The *Ontario Building Code* objectives include promoting accessibility for the disabled (Government of Ontario, 1992). The OPPI and MMAH also promote "neighbourhoods that are safe,

accessible, aesthetically pleasing, well-serviced and inclusive" in their handbook (Ministry of Municipal Affairs and Housing & Ontario Professional Planners Institute, 2009, p. 5)

The Region is concerned with accommodating all stages of life, providing access to all amenities and services. They recognize the need to plan for an older population (Region of Waterloo, 2009). The Region's *Strategic Plan* states the following: "The Region plans and provides programs and services with community partners to create opportunities and make a positive difference for people at all stages of life. Responding to the changing and diverse needs of the community we provide services that are supportive, caring, inclusive and accessible to citizens and communities" (Region of Waterloo, 2007, p. 9). They identify as a priority the introduction of more and improved youth and seniors programs (Region of Waterloo, 2007).

Accessibility can also be an issue in terms of the unequal distribution of resources across a city. For example, lower-income neighbourhoods may not be as well serviced as the wealthier ones. The City of Waterloo does appear to have some provisions for this in the *Official Plan*. It states that "where possible, housing geared to low-income and single parent families should be located within walking distance of schools, public transit, local commercial outlets, parks and recreational facilities" (City of Waterloo, 2004 p. 86). The *Official Plan* also aims to facilitate "accessibility to housing and community facilities by all age groups, including socially, physically, mentally or economically disadvantaged citizens" (City of Waterloo, 2004, p. 14).

The new *Official Plan* promotes mixed land use, which also improves accessibility for all, and its objectives make accessibility considerations part of all city planning and development decisions (City of Waterloo, 2007b). The *Strategic Plan* aims to further accessibility initiatives (City of Waterloo, 2007c). The *Urban Design Manual* provides guidelines for creating sites, buildings and public spaces that are barrier-free, including such things as flush curbs, ramps, and wide entrances (City of Waterloo, 2009a). The *Pedestrian Charter* is designed to promote overall accessibility (City of Waterloo, 2008a). The *Recreation and Leisure Master Plan* mandates "the provision of a balanced array of recreation and leisure opportunities, involving recreation, parks, sports, arts, culture and heritage linked through partnerships to social, health, education and related public and community services" (City of Waterloo, 2008b, p. 2-2). In the building of new subdivisions on the west side of the city, planners for the City of Waterloo made distinct efforts to include parkettes that were within only a few minutes from each house. However, some interviews with residents conducted by Cipriani (2009) indicated that these are not necessarily as popular or useful to families as was hoped. The new

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suburbs also have the problem of limited access to recreational facilities, which are more centralized in town (Cipriani, 2009).

Access to particular amenities has received some local attention. For example, access to trails has become an issue. The *Ontario Trails Strategy* promotes public trail access. On the other hand, some trail associations are considering a minimum age for trail use (Ministry of Health Promotion, 2005). Programs such as the traveling skate park (City of Kitchener, No Date), in the neighbouring City of Kitchener, the current approved plan to erect an Action Sports Park in 2011 in Waterloo (City of Waterloo, 2010d), and the provision of a temporary skate zone provide access to one type of recreational opportunity to local children. Again, however, the new facility will be centralized, and not accessible to children with limited means of transportation.

Access can also be examined in a different way. Certain (anonymous) stores in the City of Waterloo post signs indicating that a maximum number of three students will be permitted into the store at any time (personal observation, 2010). This reduction of access for certain groups to spaces sends a very clear message to students.

Although there are some positive steps in terms of the provision of amenities in the City of Waterloo, it is unclear whether these steps are effective at promoting accessibility in general or are helping to integrate children better into the community. There are clearly many issues of access that have not been adequately addressed, but would be improved with attention and the integration of children in the process.

3.3.3 Integration

Getting as many people as possible involved in government decision-making processes is a goal that many communities have in theory, and few have achieved in practice. There are official requirements for participatory approaches and public education. Involving all people in the community, and promoting active participation and an inclusive society is an aim of many government documents.

One stated purpose of the *Planning Act* is "to provide for planning processes that are fair by making them open, accessible, timely and efficient" (Government of Ontario, 1990b). The *Act* also requires that adequate information be available to the public, and public meetings be held for processes such as the preparation of an official plan (Government of Ontario, 1990b). The *Places to Grow Plan* also requires "ongoing consultation" with stakeholders and the public for plan implementation (Ontario Ministry of Public Infrastructure Renewal, 2006).

The OPPI and the MMAH encourage the use of integrated planning processes that involve a large stakeholder base and a participatory approach. (Ministry of Municipal Affairs and Housing & Ontario Professional Planners Institute, 2009). Their guide stresses the need to ensure that those who are usually not involved in community affairs (such as children or those with language barriers) be given a voice in planning processes (Ministry of Municipal Affairs and Housing & Ontario Professional Planners Institute, 2009).

The *Municipal Act* states that a responsibility of the Head of Council as chief executive officer is to: "participate in and foster activities that enhance the economic, social and environmental well-being of the municipality and its residents" (Government of Ontario, 2001).

The Region of Waterloo aims to engage the public in the planning process, by helping to educate members of the public, providing opportunities for input, looking for new ways to engage the public, and demonstrating how comments have been considered (Region of Waterloo, 2009). The Region's *Strategic Plan* was assembled with the help of many community members, in the form of surveys, forums, committees, and meetings (Region of Waterloo, 2007). One strategic objective mentioned by the Region of Waterloo is to "Strengthen and enhance partnerships with area municipalities, community stakeholders and other orders of government" (Region of Waterloo, 2007, p. 11). Under this objective, one action they are taking is to partner with school boards concerning municipal governance curriculum.

The *Strategic Plan* for the City of Waterloo aims to enhance public engagement by ensuring all stakeholders are involved. It also recommends using community assets by pursuing partnerships with all community sectors (City of Waterloo, 2007c). This past summer (2010), the City even adopted a set of guidelines for public engagement (City of Waterloo, 2010e), focusing on the identification of stakeholders and possible strategies for involving the public.

The City of Waterloo's *Official Plan* encourages citizen involvement (City of Waterloo, 2004). It has made previous efforts to include the community in priority-setting and decision-making, such as with the "Imagine! Waterloo" initiative (City of Waterloo, 2001). However, this effort appears to be limited to and directed only at adults, and was performed nearly ten years ago. The City of Waterloo held open houses for the preparation of the *Official Plan*, and encourages the public to express opinions on planning matters (City of Waterloo, 2004). The new plan for the City of Waterloo holds as an objective that "Neighbourhoods should facilitate interaction and social connections between residents and foster a sense of community and belonging" (City of Waterloo, 2007b). The new plan also supports "participation in decision-making processes in which individuals

are treated fairly and without bias in an open, orderly and impartial manner" (City of Waterloo, 2007b). In addition, it aims to foster communication and education about issues for all (City of Waterloo, 2007b). The recently adopted *Pedestrian Charter* also recognizes that improved pedestrian conditions will facilitate social interaction (City of Waterloo, 2008a).

The *Recreation and Leisure Master Plan* aims to create inclusive opportunities that facilitate participation by everyone (City of Waterloo, 2008b). It also recommends that the city create regular cultural community forums, and encourage as many people to come as possible, with a focus on youth. They indicate particular measures, such as the use of the internet and offering refreshments and prizes, that may entice young people to join (City of Waterloo, 2008b).

The physical integration of children better into Waterloo society could include measures such as improving the visibility of parks and play spaces to the general community (as recommended by the City of Waterloo's *Official Plan* (City of Waterloo, 2004)), and creating public facilities that can operate at the scale of children.

Nowhere in any of the planning documents for the Province of Ontario or the City or Region of Waterloo are children required to be given consideration or an opportunity to speak. The City of Waterloo does run a Youth Recreation Council. The Youth Recreation Council was started 8 to 10 years ago when a gap in programming was noticed. In 2009, it had roughly 53 members, consisting of high school students typically aged 14 to 18 (Personal Communication, City Official 3). The council consists of four committees, each specializing in a different area. The committees are: Arts & Culture; Community Issues; Sports & Recreation and Environment (City of Waterloo, No Date). The City of Waterloo's Youth Recreation Council focuses on recreational activities and charity fundraisers and does not really provide official opportunities to be involved in government.

3.3.4 Natural Green Space

Green space preservation has become a popular political issue, and it appears to be a priority in many policy documents in Canada.

A priority in the *Planning Act* for Ontario (Government of Ontario, 1990b) revolves around the protection of the natural environment. The first stated purpose of the *Act* is to "promote sustainable economic development in a healthy natural environment within the policy and by the means provided under this Act" (Government of Ontario, 1990b). The first listed responsibility of "the Minister, the council of a municipality, a local board, a planning board and the Municipal Board"

is to have regard to "the protection of ecological systems, including natural areas, features and functions" (Government of Ontario, 1990b).

The *Provincial Policy Statement* (Ontario Ministry of Municipal Affairs and Housing, 2005) provides more details on matters of specific interest. On the first page, the first goal is "to enhance the quality of life for the citizens of Ontario" One of the first priorities is protecting the quality of the natural environment (Ontario Ministry of Municipal Affairs and Housing, 2005, p. 1). The *Places to Grow Growth Plan* aims to protect the natural environment. In part, it does this by helping to protect significant natural features such as the Oak Ridges Moraine (Ontario Ministry of Public Infrastructure Renewal, 2006).

The OPPI and MMAH handbook recommends supporting green infrastructure. This would include the promotion of things like renewable energy, green roofs and natural (non-fragmented) wilderness areas. This handbook aims to ensure that communities have natural environments that are resilient, provide ecosystem services, support wildlife and their habitat and are better connected to where people live (Ministry of Municipal Affairs and Housing & Ontario Professional Planners Institute, 2009).

The Region of Waterloo's *Official Plan* protects woodlands and other natural areas, and intends them to help "maintain a balance between the built and natural environment in urban areas" (Region of Waterloo, 2009, p. 28). The ROP requires that area municipalities construct urban greenlands strategies in their official plans which identify natural areas, protect them from development and facilitate public access. In addition, they must promote green roofs, community gardens and tree planting (Region of Waterloo, 2009). The first stated focus area of the Region of Waterloo's *Strategic Plan* is Environmental Sustainability to "Protect and enhance the environment" (Region of Waterloo, 2007, p. 5). The first stated goal of the *Regional Growth Management Strategy* is "Enhancing our natural environment" (Region of Waterloo, 2003, p. 4). It encourages the addition of new Environmentally Sensitive Policy Areas, Provincially Significant Wetlands, Environmental Protection Areas and aims to identify other Environmentally Sensitive Landscapes.

The Region also has levels of protection for various types of green spaces, with various levels of sensitivity. This is the level of government which maintains the Greenlands Network, defined as "environmental features and the linkages among them." The *Regional Official Plan (ROP)* stresses the importance of this network in maintaining the health of the region and watershed, counteracting fragmentation and the loss of biodiversity. This responsibility is shared between all levels of government, as well as private landowners (Region of Waterloo, 2009). The *ROP* also recommends

looking for opportunities to increase tree canopy cover, aiming for a goal of 30% cover (Region of Waterloo, 2009). As such, it also states as mandatory the continuous acquisition of woodlands and other natural features. The plan also encourages municipalities to find, maintain, enhance or restore other environmental features (Region of Waterloo, 2009).

The City of Waterloo has been recognized by some as a leader in environmental planning (Pim & Ornoy, 1996). The City operates under an "Environment First" philosophy, and there are rules and guidelines concerning green spaces included in the *Official Plan* (City of Waterloo, 2004), the *Environmental Lands Acquisition Strategy* (City of Waterloo, 1997) and the *Environmental Strategy* (City of Waterloo, 2009b). However, economic issues can set limits on what a city is able to do in terms of purchasing, developing and maintaining green spaces (Bradley, 1995).

The main goal of the *Official Plan* of the City of Waterloo is to "enhance the natural and human environment and improve the quality of life for current and future residents" (City of Waterloo, 2004, p. 10). The *Plan* aims to "green" or soften the urban landscape, and also includes this statement: "It shall be the policy of Council to preserve and protect tree stands and forested areas" (City of Waterloo, 2004, p. 49). "Reforestation and improvement of existing natural woodland areas shall be encouraged and where possible undertaken jointly by the appropriate agencies, and the owners" (City of Waterloo, 2004, p. 50). The City's plan also discusses how "Environmental constraint areas" are for preserving natural functions, and minimizing impacts on the natural environment during development (City of Waterloo, 2004). It states that wherever possible, parks should be developed adjacent to institutional open space areas in co-operation with the appropriate agencies. The city also puts a focus on creating natural buffers around streams (City of Waterloo, 2004). In building new subdivisions, the city should aim to achieve communities that are sensitive to and compatible with the natural environment (City of Waterloo, 2004). The new subdivisions on the west side of the city were designed with this goal in mind.

In the City of Waterloo, parkland areas are provided based on calculated amounts given the size and density of the population (City of Waterloo, 2004). Although there are minimum standards for parks and green spaces in new developments, developers are permitted to pay cash in lieu of meeting these standards (City of Waterloo, 2004). This "parkland dedication fund" has been used to acquire significant portions of land along the western boundary of the City (City of Waterloo, 2008b). Certain areas in the core of the city were established before this requirement, and do not contain sufficient parkland according to current standards (City of Waterloo, 2008b). Underserviced areas of

the city (in terms of parkland) may be able to benefit from possible school closings through the purchasing of surplus lands (City of Waterloo, 2008b).

The City's new *Strategic Plan* contains no new suggestions for protecting green spaces. It only suggests continuing current plans (City of Waterloo, 2007c).

The new *Official Plan* aims to "retain significant elements of natural built and cultural heritage," and to "create more and alternative forms of open spaces/green spaces/parks for locating multi-use/multi-seasonal recreation and leisure opportunities," as well as create a comprehensive trail system (City of Waterloo, 2007b). The new plan will most likely have instructions to protect natural areas thereby preserving intended environmental function, to enhance existing green spaces and promote rehabilitation (City of Waterloo, 2007b). The *Urban Design Manual* promotes the use of landscape buffers around buildings, parking and utility areas (City of Waterloo, 2009a). It also recommends the incorporation of existing vegetation into developments, and creating networks of parks and trails.

The *Recreation and Leisure Master Plan* claims to be devoted to "ensuring that the City's parks, open spaces and trails continue being valued by the community, conserve key environmental resources, are accessible to the public for both programmed and non-programmed activities where feasible and contribute significantly to a positive urban form within Waterloo" (City of Waterloo, 2008b, p. 2-3).

On the other hand, this *Plan* also recommends that: "Significant expansion and / or the developing of naturalized areas, especially in neighbourhood areas, should not be considered unless it is clearly identified as an important extension of existing natural features and there is general community support" (City of Waterloo, 2008b, p. 6-3). This is clearly at odds with all other policy mentioned previously. This decision was apparently based on complaints from some people at workshops who were concerned with maintenance, available open space and encroachment of weeds. A workshop was held to examine a number of proposals for expanding naturalized areas in public parks. A lack of general knowledge about wild plants (such as confusing goldenrod and ragweed), a dislike for encroaching wild plants, and a fear of things like West Nile disease have led some residents to complain about naturalized areas (Cipriani, 2009).

"As this issue was discussed at the workshops, participants generally determined that the level of naturalized areas in the City of Waterloo was sufficient. The balance of maintained lawns in comparison to naturalized areas was seen as sufficient. Furthermore, participants felt it was important to retain unstructured play spaces for non-programmed activities which increased naturalization could

restrict" (City of Waterloo, 2008b, p. 6-2). Yet, this same report states that "Neighbourhood parks are the foundation of an open space system and satisfy the basic open space and recreational needs of the City's residents" (City of Waterloo, 2008b, p. 6-12).

Furthermore, there are no "basic facility requirements" in any of the neighbourhood, sub-neighbourhood or community parks to contain trees. Even shade requirements are permitted to be filled by a "shade structure" (City of Waterloo, 2008b). At the neighbourhood park level, trees or natural areas are not even listed as "optional facilities" as they are in community-level parks (City of Waterloo, 2008b).

The newly approved *Environmental Strategy* offers possible models in order to be effectively implemented. These include the possible creation of a steering committee or an office of environmental sustainability. The *Strategy* also sets the goal: to "Protect, maintain and restore greenspaces" (City of Waterloo, 2009b). Indicators for success would include things like amounts of city-owned green space, amounts of green space acquired and percentage of forest cover. The *Strategy* suggests the expansion of naturalization on city-owned lands (City of Waterloo, 2009b). This is in conflict with the suggestions in the *Recreation and Leisure Master Plan*.

While these guidelines clearly do not relate directly to children, they can have profound impacts on their living environments. One interesting component of the *Official Plan* of the City of Waterloo is the inclusion of a clause that requires where possible that parks be highly visible, accessible and be located near schools (City of Waterloo, 2004). This is the only real reference to children or schools in the current *Official Plan*, and terms like "where possible" may serve to limit the actual implementation of such clauses.

It does appear that green space planning is receiving a fair amount of attention. The definition of green space, as given by the city, includes areas like sports fields and golf courses (City of Waterloo, 2010b), and treats all "green spaces" as equal in calculations. The question remains: Are these areas appropriate, accessible, useful, and beneficial for children?

3.4 Ontario Public School Curriculum

Another piece of Provincial Literature pertaining to this thesis is the *Ontario School Curriculum*. For the purposes of this study, the grade five curriculum is the most relevant, as this was the level selected for interviews. This document guides the way children are taught in public schools. If the relevance of this document is not evident yet, it will become clear in the subsequent chapters.

3.4.1 Grade Five Curriculum: Social Studies

The grade five social studies curriculum discusses early civilizations, as well as aspects of citizenship and government in Canada. Students are required to examine how early civilizations may have changed the environment to meet their needs. They also look in detail at the levels and structure of government in Canada. By the end of the year, students are to have a better understanding of their rights and responsibilities as Canadian citizens (Government of Ontario, 2004).

3.4.2 Grade Five Curriculum: Science and Technology

The grade five science and technology curriculum contains a number of environmental education aspects. It focuses on matter, energy, sustainability and stewardship. By the end of the year, students are expected to have an understanding of social and environmental impacts of the processes used to make products. They are also expected to have an understanding of the conservation of energy and resources (Government of Ontario, 2007).

3.4.3 Grade Five Curriculum: Environmental Education

The grade five environmental education curriculum is aimed at integrating environmental issues into every subject area. The science and technology connection is clear, but the curriculum also creates the connection with social studies using a historical comparison approach, and provides suggestions for making environmental connections in the arts, physical education, mathematics and languages. No specific requirements are outlined for these areas (Government of Ontario, 2008).

For the purposes of this study, these are three particularly relevant aspects of the grade five curriculum. For grade five children, this is the way they will be exposed to environmental and citizenship issues in the public school system.

3.5 Summary

The City of Waterloo's strategies and policies, as well as those created by the Region, the Province, and other governing bodies, all help identify the approach this community takes when it comes to planning for children. Each of the documents was examined, with particular attention to the areas identified in the literature as key to planning healthy communities for children. While there are many positive initiatives and goals in place, some policies contain problematic sections, contradict each other, or fail to address key issues. In general, children are rarely addressed specifically. Most

importantly, there is no local policy, strategy or program to include children in decisions that directly involve their welfare.

Using these policy documents and guidelines as a base, primary research proceeded with interviews of a series of children, teachers and key individuals from the City of Waterloo. The methodology used to collect data for this primary research will be discussed in the next chapter.

Chapter 4: Methodology for a Case Study of Waterloo's Children

"Sometimes, if you stand on the bottom rail of a bridge and lean over to watch the river slipping slowly away beneath you, you will suddenly know everything there is to be known."

- Pooh's Little Instruction Book: Inspired by A.A. Milne (Powers, 1995)

4.1 Introduction to Methods

This research uses an interdisciplinary approach to examine how the City of Waterloo's children view and interact with their neighbourhoods, as well as how children and their role in society are viewed from an adult perspective. The goal was to develop a greater understanding of children's perceptions of community that can be tied closely to planning approaches and participatory initiatives.

Both qualitative and quantitative participatory methods were included, as each offers a unique perspective for social evaluative research. Neither method alone can provide a thorough understanding of children's lives in cities (Christensen & O'Brien, 2003). Qualitative and quantitative research can be complementary by offering both soft and hard data, and by providing triangulated results. Qualitative research often focuses on cases, and is interpretive, while quantitative research uses a positivist approach that emphasizes numbers and measurable variables (Neuman, 2003). Using a variety of methods to triangulate on the issues is more likely to create data that are well-supported and that will appeal to a broader audience.

Figure 1 outlines the methodological approach used in this research. Note, however, that the majority of stages 4 and 5 shown in the figure are beyond the realm of this study. These would be the next stages in implementing a Child Friendly City that reconnects children with nature.

4.2 Methodological Framework
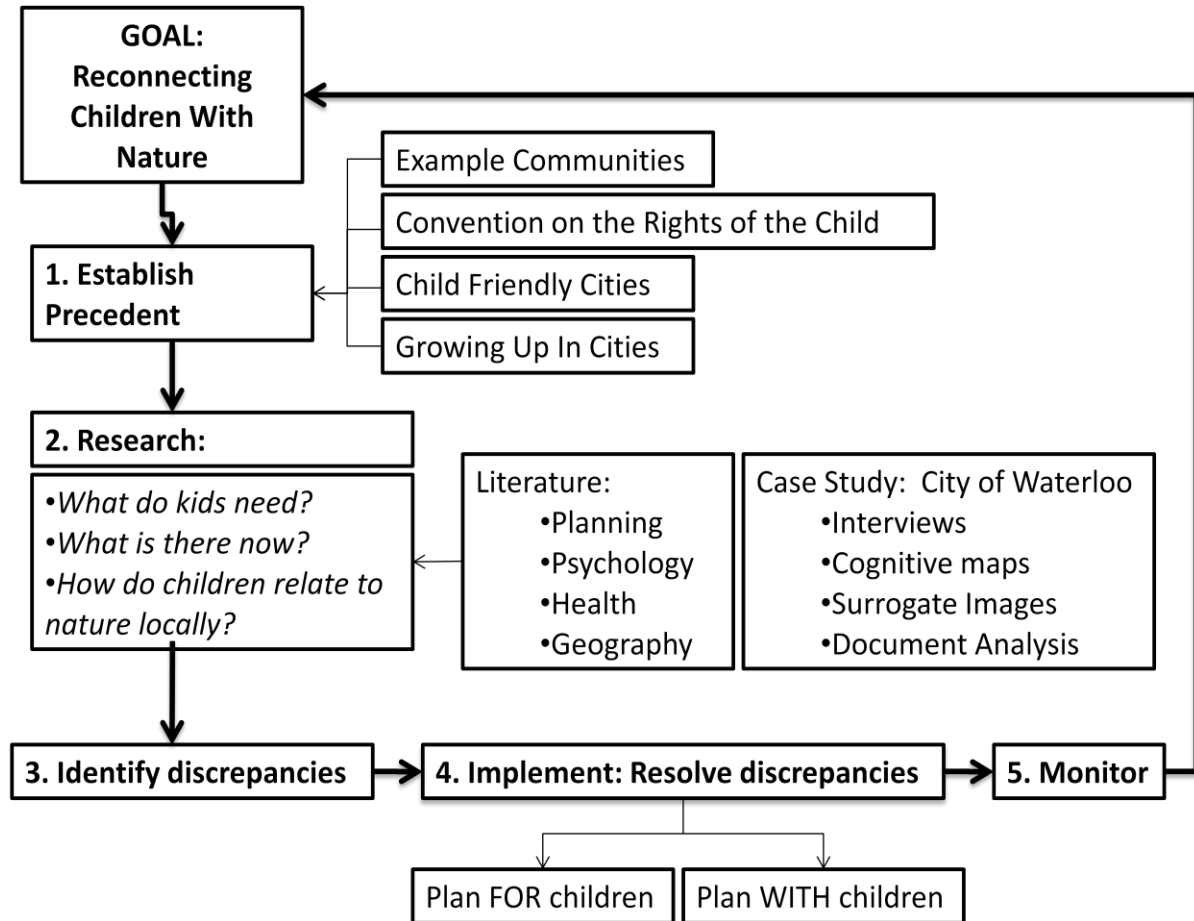
Figure 1: Methodological Framework

Figure 1 serves two purposes. First, it outlines the approach for this research. Steps 1-3, as well as suggestions for step 4 are the fundamental components of this thesis. Step 1 established precedent for creating a Child Friendly City, by examining other communities and programs that have taken steps in that direction. Then, in Step 2, literature concerning planning, children, health and the natural environment was reviewed in order to determine what is already known about these issues. Policy documents that govern the community were also examined at this stage, and subsequently revisited as they were modified by government. Then, primary research commenced, with interviews with students, teachers and city officials. From these results, for step 3, discrepancies were identified between what children need, and what City of Waterloo's children experience. For Step 4, methods were assembled for resolving these discrepancies, and for creating a more child friendly city that helps connect children with nature. The actual implementation and monitoring of these changes is

beyond the scope of this project. Ideally, the procedure would be a loop, in that constant updating of research, consultations and decisions would be necessary.

The second purpose of Figure 1 would be to demonstrate the general process a city could take to help reconnect children with nature, become more child friendly generally, and fulfil the legal obligations of the *Convention on the Rights of the Child*.

4.3 Theoretical Approach to Methodology

4.3.1 Planning Theory

In terms of planning theory, this research primarily takes a transactive planning approach, but also combines elements of communicative and advocacy planning. This research sets the stage for further research which could take an action approach, actively implementing the suggestions from this thesis.

Recent academic planning research has moved further away from the rational comprehensive approach, towards more participatory and inclusive methods. However, in practice, planning still relies a great deal on rational comprehensive methodologies (Campbell & Fainstein, 2003). Planning theory and practice are often divided (Fainstein, 2005). Following Fainstein's planning goal of creating the "just city," which leads to a better quality of life for all citizens (2005), a combined approach best incorporates various forms of knowledge while providing practical solutions for planning purposes.

The transactive approach, outlined by Friedmann (2003) is situation-specific and seeks to bring together expert and experiential knowledge. It involves mutual learning between planners and the populations that could be affected by the planning process.

Components of advocacy planning are also helpful in this context. Since children are not in a position to completely or clearly articulate their needs or desires, it is necessary to involve advocates to speak on their behalf. The planner is responsible to the client in advocacy planning (Davidoff, 2003). However, advocacy planning alone involves little two-way learning. There is less interaction between planners and stakeholders. Children are at a stage where they have little practical experience, but a great deal of relevant knowledge. While there is still a substantial amount of adult discomfort with the idea of children being involved in decision-making processes, there still must be advocates to speak on their behalf.

The newer, emerging paradigm of communicative planning has received great deal of attention in the last couple of decades. Campbell and Fainstein define it as "the mediation of community discourse rather than the creation of a technically rational plan" (2003 p. 10). In this type of planning, the primary role of the planner is to listen to points of view and help create consensus (Fainstein, 2003). This approach is helping to close the gap between theory and practice, as planners are involved in the community, politics and public decision-making (Innes, 1995). However, communicative planning has been criticized for its lack of attention to the context of economy or power (McGuirk, 2001). In addition, consensus can take the form of community forums or meetings where information can be distorted, filtered and indirect on its path to actual decision-making.

With regard to advocacy and collaborative planning, Peterman notes, "[a]lthough neither approach is fully effective, a combination of the two may prove more so. [...] A careful and judicious application of collaborative planning, followed when necessary by advocacy planning may be a good strategy for use by community organizations and their supporters" (Peterman, 2004, p. 274). A combination of different planning approaches is appropriate for this type of research. This study incorporates communicative and transactive approaches by promoting communication and two-way learning between planners and a particular interest group (children), closing the gap between theory and practice, all while taking an advocacy approach by speaking up for those who are not always able to articulate their needs.

The results of this research could lead to action research, if the recommendations are implemented. Action research is a way of working in the field, combining action, research and participation with the end goal of social change. In action research, experts and stakeholders work together to solve problems and generate knowledge (Greenwood & Levin, 2007).

4.3.2 Strategic Foci

4.3.2.1 Planning *With* and *For* Children

Using this theoretical approach, this thesis focuses strategically on two key ideals for planning with respect to children: planning *for* children, and planning *with* children. Combining these ideals is the best way to both consider children's needs, and involve them in the process, while limiting assumptions.

Planning *for* children necessarily involves taking the time to fully understand children's perspectives, before being able to incorporate their needs and desires into practical planning initiatives. In this research, this component means directly researching children by using experiential

and psychophysical methods of community landscape assessment. This will be explained in further detail later.

This strategic focus helps to draw out current childhood perspectives of local neighbourhoods and activities. It identifies what is needed for children to better be able to interact with the community and what changes will be needed to make the community more child friendly and promote positive experiences and behaviours. Environments that are planned without the consideration of children can present accessibility and safety problems for them and for their caretakers (Ware & Cavanagh, 1992). The goal is to understand the ways that children interact with the community and its natural spaces. Are they permitted to use these spaces, and are they even aware that they exist? What would encourage the positive use of natural green spaces and make them more appealing and appropriate for children?

In planning *for* children, the four factors listed in the previous sections each play a critical role. This study focuses on each of these themes. Safety should be a high priority, as this is a main factor for parents when deciding where children are allowed to play or travel alone (Veitch et al., 2006). Natural green spaces are a major consideration, where children can experience diverse natural features which provide excellent opportunities for adventures and play (Freeman, 1995). Access and integration will also be considered in planning *for* children, as providing accessible play spaces and opportunities for children often involves integrating them better into the community. However, the theme of integration is mostly covered in the planning *with* children category.

The other area of strategic focus is planning *with* children. Towards the end of the 20th century, a number of researchers have moved from studying children to studying *with* children (Burke, 2005). Instead of just watching what children do, researchers are starting to consult with them, identifying community strengths and weaknesses and working towards solutions. This is a strategy that should be implemented into the actual planning processes. With the ultimate goal of creating a Child Friendly City, this research can serve as the framework to make planning *with* children a reality in the City of Waterloo.

There are many resources for learning about how to better involve children in their communities, such as the manual *Creating Better Cities with Children and Youth* (Driskell, 2002), which offers valuable tips and activities to help integrate children into their communities. Another useful document is the *Growing Up In Cities Canada Toolkit* which provides activities and steps to help involve young people in civic matters (Growing up in Cities Canada, No Date). One fundamental

document for this study is the framework for building a Child Friendly City provided by the UNICEF Innocenti Research Centre (UNICEF: Innocenti Research Centre, 2004).

4.4 Research Methods

Using communicative planning methodologies, this study involved direct consultations with children to learn about their neighbourhoods, their activities and their preferences. Although actual communicative planning could not take place (the researcher was not in a position to do any actual planning), this approach helps enhance the link between theory and practice. Children have the best knowledge of their environment and how it affects them (Driskell, 2002). A combination of approaches was used to draw out children's evaluations of their environments.

4.4.1 Evaluation Paradigms

People consciously or subconsciously evaluate their environments all the time. This can serve many purposes for the individual, as evaluations can be based on biological or evolutionary principles (Kaplan, 1992; Orians & Heerwagen, 1992). This evaluation of the landscape allows people to identify the best way to stay safe, to acquire necessary resources, and to interact with other individuals effectively. Evaluative responses can be cognitive, affective or behavioural, and evaluation research examines how people respond or rate something on particular dimensions (Tesser & Martin, 1996).

Assessment (or evaluation) paradigms have been examined by a number of researchers (Arthur, Daniel, & Boster, 1977; Dakin, 2003; Daniel & Vining, 1983; Taylor, Zube, & Sell, 1987). Knowledge about how people evaluate their landscapes provides us with important information on how to create aesthetically pleasing and positive spaces. Therefore, the methods used to identify how people see the landscape can be quite important.

Dakin (2003) summarized evaluation paradigms by sorting them into a continuum, ranging from expert to experimental to experiential. The "expert" end of the continuum includes models such as "ecological" and "formal aesthetic." This paradigm focuses on expert evaluations of landscape qualities, using a supposed fixed and universal aesthetic judgment. The centre of the continuum, "experimental" includes psychophysical, psychological and cognitive approaches. These approaches presume that people will respond in particular ways to their environment, and aim to measure these responses. The "experiential" end includes what others call phenomenological approaches, and generally involve a more malleable definition of aesthetics, providing a "holistic account of human-environment interaction" (Dakin, 2003 p. 190).

Different paradigms can be particularly useful at different times in the research process (Taylor et al., 1987). Experiential methods can reveal broad concepts and trends at early stages of research, and can help to direct further study. Later on, once particular hypotheses have been formulated, experimental, psychophysical research can give us the chance to test these more precisely, using proven methods (Taylor et al., 1987). The paradigms complement each other well (Taylor et al., 1987). For this research, a combination of experiential and experimental methods were used to collect children's assessments of their environments, as these are the most appropriate for a participatory style of study. The exclusive use of expert judgements in planning communities has created many of the problems addressed in this paper.

4.4.2 Experiential Methods

Humans interact in complex ways with the environment, and experiential methods attempt to tap into this interaction and the whole human experience, by including feelings, expectations and interpretations (Daniel & Vining, 1983). People's participation in the landscape shapes their understanding of it (Dakin, 2003; Taylor et al., 1987). Methods in the experiential paradigm are not quite as structured as those in other paradigms (Taylor et al., 1987).

4.4.2.1 Cognitive Maps

One experiential way to draw out children's interpretations of their local landscape is by having them construct drawings or maps. Cognitive maps are the representations of ideas, places or things as they are stored our minds (Kitchin & Fotheringham, 1997). "Cognitive mapping" is a term used by some to describe the method of transforming these representations into a tangible form. Drawing is a familiar way that children are asked to express themselves from a young age, and it can offer a great deal of insight into their thought processes in a number of fields. This tool has been used by a number of researchers to identify the ways that children see, relate to, or understand their neighbourhoods (For examples see: Cohen, Baldwin, & Sherman, 1978; Halseth & Doddridge, 2000; Hart, 1979; Malone & Tranter, 2003; Matthews, 1987).

The results can be used by a variety of people, but they may be particularly useful to those involved in property development, designing areas to be used by children (Halseth & Doddridge, 2000). Children's drawn maps can offer important insights into their feelings for an environment. Maps help identify important environmental features (Matthews, 1992), as children will often work hard to represent the areas that are important to them (Halseth & Doddridge, 2000). In an 1987 study,

Matthews used cognitive mapping with children to identify gender differences in their views of the journey from home to school, and of the surrounding areas (Matthews, 1987). In 1979, Hart asked children to construct cognitive maps of their neighbourhoods on large pieces of paper while trying to gain a better understanding of their perceived landscape, and their ranges of permitted movement (Hart, 1979). Malone and Tranter (2003) asked students to draw their schoolyards in two ways: the way they were, and as an improved version.

This study examines how local children represent their neighbourhoods on paper, and particularly natural green spaces in their communities. This fills a specific gap in the research by directly consulting with local children. Each of the children was asked to draw their neighbourhood from a bird's eye view. See Appendix B for the cognitive mapping procedure used.

4.4.2.2 Semi-structured Interviews

Another common form of experiential research employed in this study is the semi-structured interview and narrative. Semi-structured interviews are conducted in all sorts of research fields, including but not limited to: law, medicine, history, psychiatry and education (Casey, 1995). The term "narrative" can refer to a number of different ways of collecting data, such as autobiographies, oral histories or narrative interviews (Casey, 1995). Narrative is often just collected in interview format, where people are allowed to tell stories, and the content can be analyzed afterwards. Some techniques, such as "narrative elaboration" have been designed to elicit further details without influencing the outcome (Saywitz & Snyder, 1996). Transcription, coding and analysis of interviews can be a difficult and arduous process. However, there are many computer programs and protocols to help with this (Kahn, 1999; Littledyke, 2004).

Interpreting narrative can also be difficult. Researchers have the responsibility to be accurate in their interpretations and representations, but still be able to filter out unnecessary material and form logical arguments using large amounts of complex data. Many have struggled with the interpretation of narrative material, and some are developing ways to make this more accurate and effective (Abbott, 1992), while less biased. The creation of grounded theory uses a popular methodology for examining qualitative data that emphasizes the derivation of theory in the process of analysing the data (Glaser & Strauss, 1967). This process is somewhat the reverse of traditional scientific inquiry, but helps to reduce pre-conceived bias. The "constant comparison" method allows researchers to compare data with data to find similarities and differences (Charmaz, 2006; Glaser & Strauss, 1967).

For the sake of this research, coding, grounded theory and constant comparison methodologies were employed, but with the ultimate purpose of producing descriptive data rather than generating theory.

Flexible interview styles can generate a large amount of information that is less biased by researcher interpretation than experimental methods. Allowing research participants to guide the discussion leads to a natural flow of conversation, and allows them to discuss the issues that matter the most to them (Blakely, 1994). Blakely used these techniques to discuss with parents their perceptions of danger and the limits they place on their children (Blakely, 1994). Hart used extensive narrative, open style interviews with children to gain a clearer understanding of their interactions with the landscape. He asked them to describe and discuss their favourite places (Hart, 1979). Littledyke (2004) used a flexible group interview style to discuss environmental views and issues with children. Lauwers and Vanderstede (2005) used semi-structured interviews to talk about children's participation in planning with local government officials, as well as to discuss with children their views on the community.

This study involved consultations with three main groups: children, teachers and local government planners and decision makers. Interview questions with children focused mostly on the ways they view and use their neighbourhoods. What are their favourite places, and where do they typically play? Teachers of these children also added additional insight into similar questions based on their observations of children's activities. They also contributed valuable information on how to improve the neighbourhood, how issues of environment and community are addressed in the school system and how to facilitate children's participation in community decision-making.

Another set of interviews was conducted with local planners and decision makers. They were able to provide details on the extent to which children are actually considered or involved in the planning process. They were asked what local initiatives have been taken with children in mind, and how to best facilitate the inclusion of children in their processes in the future. See Appendix A for the actual questions from the interviews. A grounded theory approach and a constant comparison method were used to examine transcripts from these interviews.

Cognitive mapping and semi-structured interviews can form some good basic starting points on how people view their neighbourhoods. However, they provide little controlled evidence, as experiential data can be difficult to compile and summarize and are more subject to problems such as the desirability bias (the desire to please a researcher with the "correct answer"). In addition to these two methods, some experimental (psychophysical) techniques were employed.

4.4.3 Experimental Methods

Experimental approaches are based on the idea that the environment provides a visual stimulus which creates a reaction in humans. The stimulus consists of measurable dimensions, which can be posed to an observer, and their reactions monitored and recorded (Dakin, 2003).

4.4.3.1 Surrogate Images

One popular experimental approach to landscape evaluation is the use of surrogate images (for examples see: Balling & Falk, 1982; Herzog et al., 1976; Kaplan & Kaplan, 1995; Orians & Heerwagen, 1992). In their book, *The Experience of Nature* (Kaplan & Kaplan, 1995), the Kaplans discuss many studies that use this technique. Through the use of surrogate imaging, and the application of Likert scales and other categorization methods, they have developed a deep understanding of human landscape preferences, and the factors that contribute to these preferences. To evaluate visual preference for natural landscapes, Balling and Falk (1982) used images of a variety of landscapes and had participants rate them on a Likert scale. Orians and Heerwagen (1992) used standardized photographic procedures to collect photos of certain types of trees and subsequently asked participants to rate their attractiveness. Herzog, Kaplan and Kaplan used surrogate imaging to evaluate people's preferences for particular urban places (1976). This is a fairly common and well-tested methodology. Research has found that ratings of images correlate highly with ratings of real landscapes (Daniel, 1990; Kaplan & Kaplan, 1995; Shuttleworth, 1980).

To use a psychophysical approach to communicate with local children, a series of surrogate images of a range of natural and built local spaces was constructed. These images were presented in a panoramic view which mimics the landscape that a person would see in real life. Panoramic images were constructed using a camera feature that allows the user to take a series of overlapping images, and then compiling them with the image stitching software, Hugin[©] (d'Angelo, 2006).

Each of the photographs belongs to one of eight categories (Urban Wilderness/Natural Island, Trails and Greenways, Playgrounds and Schoolyards, Landscaped Parkland, Old Urban and Savannah, New Urban and Buildings, Downtown Everyday Spaces, Arterial Streets and Parking Lots). The categories were created by combining concepts from Francis (2003), Brady et al. (1978) and Heft (1988). Appendix D contains a more detailed description and explanation of each of these categories. Each category contained four photographs. Many images were taken, and the most representative were selected (according to the researcher and two additional members of the thesis committee).

Each of the children rated their preference for each of the images using a Likert scale. The pictures also opened up further dialogue with the children about the types of places they like to visit. This approach provided for more controlled conditions, and followed the recommendations for environmental sampling as suggested by Kaplan and Kaplan (1995). See Appendix C for the Likert Scale and procedure that children used.

As another point of comparison, children and teachers from a variety of neighbourhoods, in different areas of the city were contacted. This was simply a function of the variety of schools willing to participate. However, it revealed some interesting differences in the way that children from different neighbourhoods, even within one city, view and interact with their surroundings.

These methods, when used together, provide a broad perspective on local children's relationships with the natural environment. This perspective is valuable in establishing what is important to local children, how they interact with their environment, what could be improved and how they feel they could be better involved. Local planners and decision makers could use this information to evaluate in part whether they have been effective in providing sufficient opportunities for children to explore their neighbourhoods.

This research addresses in some way each of the four main issues discussed in the first section of this paper: health and safety, natural green space, access and integration. Feelings of safety were evaluated through the way children feel about their neighbourhood. Access issues were addressed by observing how much access children felt they have to specific amenities, as well as the level of parental permissions. Integration came through the discussions with children, teachers and local planners as to how to better involve children. The study, which directly consults and refers to children, helps to serve the purpose of integrating children directly into planning research. Natural green spaces were evaluated with all of the methods. Specifically, the cognitive maps provided good evidence of children's actual awareness of community green spaces. The research also addresses the *Convention on the Rights of the Child*, which gives children the right to have a say when it comes to decisions that will directly influence their lives (Office of the United Nations High Commissioner for Human Rights, 1989).

It is important to realize that the results of this research are not static. There is evidence to support the idea that children have changed their relationship with nature over the past few decades (Louv, 2005). In addition, the results are technically relevant to children only in this one particular community. Children in other places may have very different feelings toward and interactions with their communities. Similar studies conducted in other cities would help to reinforce the information

gained through this research. At the very least, an examination of the policies and initiatives in a variety of other communities would provide some information on how much children are considered or consulted across Canada or around the world.

Despite the limitations of the research, it is an important step in figuring out how to connect childhood research and planning practice. It gives planners material based on actual data rather than assumptions and set standards. In addition, it tests a methodology that could be used to continually consult with children on these types of issues. It establishes the need for further answers and continuing research on children's relationships with their communities.

4.5 Procedure

4.5.1.1 Procedure for Data Collection

Consent forms, information letters and recruiting scripts were prepared. Once the Office of Research Ethics at the University of Waterloo and the Waterloo District School Board approved the research, individual schools were contacted. The principal of each school was first asked for permission to have the research occur in the school. If this was approved, they were then asked for the name of a grade five teacher who would be willing to participate. At that point the teachers were contacted, and with their consent, they were given a package of permission forms to be sent home to students and then collected.

Due to a lack of interest on the part of many schools and difficulty making contact with teachers, every school from the Waterloo Region District School Board with a grade five class within the City of Waterloo was contacted. All of the classes who agreed to participate were included, and interviewed in the December of 2008 and January and February of 2009. The interviewed schools ranged in neighbourhood type and age, as well as the socioeconomic status of families with children attending.

A pilot test was conducted to identify any problems in the methodology. For the pilot test, ten randomly selected grade five children from one school were asked to participate. Students were interviewed individually in a quiet area of the school (such as the library), and were audio-recorded for accuracy. Each interview took approximately half an hour. The students were asked to sign a consent form before proceeding with the interview.

At the beginning of each interview, the children were briefly asked about their neighbourhoods with questions such as: "Have you lived in Waterloo your whole life?" and "Could

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you please tell me a little bit about your neighbourhood?" This step was included to get the students comfortable and to start them thinking about the community.

Following this, the students were asked to draw a cognitive map of their neighbourhood, with the following instructions: "Picture yourself in a hot air balloon flying high over your neighbourhood. I'd like you to draw what your neighbourhood looks like from up there. Please include as many details as possible, and label as much as you can." (See Appendix B for details.)

This activity was followed by a semi-structured interview, focusing on neighbourhoods, activities and favourite places. While the interviews were semi-structured and each took a slightly different path, they generally included questions such as: "Would you please describe your drawing to me?" "What do you like about your neighbourhood?" and "What do you like to do in your free time?" (See Appendix A for a complete description of interview questions, prompts and procedures.)

As a final activity, children were asked to rate a series of surrogate images on a simple Likert scale with the instructions: "Please rate each of these places on a scale from 1 to 5. 1 means you don't like the place at all. 5 means you like it a lot. Please copy the image number into the left hand box and then place an X in the box that describes how you feel about each place." (See Appendices C and D for an image of the Likert scale and sample photographs). This was followed by a few more questions relating to the rated images such as: "Which was your favourite picture?" and "What could you see yourself doing there?"

At the end of the interview, each child received a certificate and a decorative pencil as a token of appreciation.

After the pilot test, no major changes were needed to improve the accuracy or validity of the study, or to meet practical requirements (such as time limitations). After this point, the rest of the schools were contacted, and the same procedures were followed.

Given the difficulty in recruiting schools, pilot study results were included, as no changes were made to the procedure. Five grade five classes participated in the study. From these, 41 students were interviewed. Only those who returned their permission forms were interviewed. In addition, 13 students from one grade six class who were all members of an environmental club also participated in the study. This class was taught by a teacher who took a particular interest in the study and we felt these students could provide some interesting comparative data. Their data were kept separate from the grade five data.

Semi-structured interviews with teachers and city officials were conducted individually and at their convenience. These were also audio recorded for accuracy. The teachers were mainly the grade

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five teachers of the students already involved in the study. Teachers were asked questions such as "What sort of environmental education is provided to the children?" "Have you talked about the community and community issues in your class" and "As a person who works with children, do you think that Waterloo is a Child Friendly City?"

City officials were selected through snowball sampling, and were asked questions that related to their line of work, such as: "Are children and youth considered in city planning processes?" "Do children have the opportunity to be involved in decisions about the community?" and "Should they be?" (Please see Appendix A for a more complete list of questions used).

4.5.1.2 Procedure for Data Analysis

Neighbourhood drawings were analysed for content. Given the variability of perspectives and abilities displayed by the students, more sophisticated means of image analysis were omitted. A simple table was constructed to identify the items that were included in each of the drawings (such as houses, trees or schools). Each picture was also examined comprehensively with the rest of the data from each student to identify any anomalies or interesting trends.

Surrogate image data were examined statistically. Image category ratings were compiled and analysed for normality. Following that, a repeated measures Analysis of Variance, Tukey and t-tests were used to identify significant differences between picture category ratings.

All interviews were transcribed and then coded using the constant comparison method. Interviews were broken down into isolated pieces of information (each containing a single thought). Each of these pieces was given a code (a two or three word summary of the thought). Rather than design the codes beforehand, the codes were constructed using grounded methodologies. Codes from the interviews were stacked, and then axial coded (Strauss & Corbin, 1998), using the constant comparison method. In this way, categories and subcategories emerged, and themes of importance were allowed to emerge independently of the researcher's biases or pre-conceived frameworks. Interviews from the students, teachers, and city officials were all coded separately. In addition, interview transcripts were re-examined as a whole, to avoid the elimination of complete thoughts that could be a hazard of this methodology.

Coding, and the use of the constant comparison method was a systematic way of organizing and summarizing information from the interviews. Please note that it was not done with the intention of creating new theory in this context. In addition, the coding and analysis were done by hand, rather

than through the use of available computer programs, in order to avoid the loss of context in the interviews.

4.6 Reliability and Validity

The use of triangulation in this study helps establish internal validity. The combination of policy and strategy document analysis with the interviews with children and adults means the issues were examined from a number of different angles. Children's perspectives were also triangulated, in that three methodologies (semi-structured interviews, evaluations of surrogate images, and drawing neighbourhood maps) were used to gather information, and allow the children to communicate in a variety of ways.

Also, the grade six environmental club students offered a (uncontrolled) point of contrast. As all of these students were self-selected for environmentalism, their results were used to help determine if the measurements were evaluating the intended constructs.

In terms of external validity, unfortunately, the non-random sample severely limits the possibility of statistically generalizing the results of this study. A lack of interest from a number of principals and teachers led to a limited and biased selection of classes and students. To make this research truly generalizable, a larger and more random sample would be needed.

On the other hand, the methodology built during the course of this study, the concepts examined, and the policy analysis all could be used generally to apply to a broader population (at least in a similar cultural setting). In addition, the deeper understanding of children's environments and needs, and the interplay between local government and citizens can be generalized and added to a larger body of knowledge. This approach was discussed in Miles and Huberman's text, *Qualitative Data Analysis*: "Sampling like this, both within and across cases, puts flesh on the bones of general constructs and their relationships. We can see generic processes; our generalizations are not to 'all kindergartens,' but to existing or new theories of how role modeling works" (Miles & Huberman, 2004, p. 27).

Interviews and procedures with children were all applied in a consistent manner. Pictures for the surrogate image ratings were randomized and consistent instructions for that activity and for the neighbourhood drawings were provided. However, the nature of social research means that reliability can be difficult to establish. The semi-structured interview style leads to a meandering conversation with variable results.

Despite the limitations, this research does provide an in-depth picture from a large number of students from a variety of schools in the city. Their perspectives are no less valid or valuable due to their lack of randomness. The current structure of city forums, meetings, workshops and other public engagement measures would undoubtedly draw a far more biased, less random, and more limited sample than would outreach of this sort.

4.7 Boundaries of the Study

This thesis will result in a tool which will help start the process of developing a Child Friendly City. This tool could be applicable to many mid-sized Canadian communities. On the other hand, the research resulting from consultations with Waterloo's children is specific to Waterloo. The tool would need to be applied to individual communities, whose children are dealing with challenges unique to that area.

Since this research was limited by time and other practical considerations, children of only one particular age group (grade five) were consulted (plus a comparison group from grade six). This is not to say that this age group has the most valuable opinions. It was chosen based on the public school social studies curriculum which, in grade five, relates to civic responsibility and local government (Government of Ontario, 2004). A larger group containing a diverse range of children should actually be addressed when the intention is creating child friendly communities. However, with limited resources and time, this age group was considered old enough to express views effectively and young enough to relate to the world in a very different way from adults.

In addition, the timeframe of this study did not allow for a longitudinal study of children's views. It is more than likely that these will change dramatically over time. Thus, this sort of research is just a snapshot in time of Waterloo's children's views. A city's consultation process should really be ongoing and continuously monitored.

As with any study, there are limitations in the methodology. The research has been undeniably and unavoidably biased by the researcher's preconceptions. By some, this could be seen as a limitation, and by others a strength. Researcher biases are a product of factors such as personal experiences, values, and traditions, but also factors such as education and participation in community life. Materials provided to the children, and questions asked by the researcher were likely shaped by these biases (although a concerted effort was made to limit this problem). In addition, limitations to children's knowledge of the subject matter may have severely limited their ability to provide helpful information. In a more involved study, the children would be given a more participatory role in

community development, thereby learning more, and contributing more effectively. Further sources of possible bias will be examined in detail in the discussion chapter.

Chapter 5: Talking to the Children of Waterloo: Results

"I have a friend who has a cottage behind [ours],
so we play at her house because they have a trampoline and a computer."

- (Student Participant 1d, 2009)

5.1 Sampling

All City of Waterloo schools in the Waterloo Region District School Board with grade five classes were contacted. All of those with principals and teachers who agreed to participate were included in the study. From those grade five classes, either ten students were randomly selected by the teacher, or, if the classes were small (due to being a split class containing two grades), then all students at the grade five level were given permission forms to take home. Ultimately, 41 students from five different grade five classes were interviewed. In addition, 13 students from one grade six class, who participated in an environmental club, were also interviewed for comparative purposes. Students were assigned random anonymous codes, so direct quotations will be indicated by "(Student Participant ##)." True random sampling would have been preferable, but was not possible in this context.

5.2 Cognitive Mapping Results

Student drawings were analysed for content. Appendix E contains some sample maps from interviewed students. Items were tallied in a chart. Each item was only counted once per drawing. Percentages of students including each item can be found in Table 3.

Table 3: Percentages of students including particular items on their neighbourhood drawings

Item drawn on neighbourhood map	% of grade 5s N=41	% of Environmental Club students N=13
Own house or building	92.68	61.54
Streets/roads	90.24	92.31
Other houses or apartment buildings	85.37	38.46
Paths/sidewalks	46.34	61.54
Trees, Bushes or Grass	41.46	53.85
Playground	31.71	69.23
Friend's house	29.27	15.38
Forest/Greenspace	26.83	30.77
Store	24.39	15.38
School	24.39	76.92
Parking lot	21.95	15.38
Fences	21.95	7.69
Services (fire dept, library, lawyer, church)	17.07	0.00
Pool/hot tub	14.63	7.69
Signs/traffic lights	14.63	7.69
Field/baseball diamond/Rink	9.76	15.38
Garbage cans/mailboxes/benches	9.76	7.69
Cars	9.76	0.00
Natural Water feature: Creek, pond, swamp	9.76	15.38
Undesignated Play Area/Fort/Toboggan Hill	7.32	23.08
Potholes	4.88	0.00
Animals	2.44	7.69
Construction	2.44	0.00
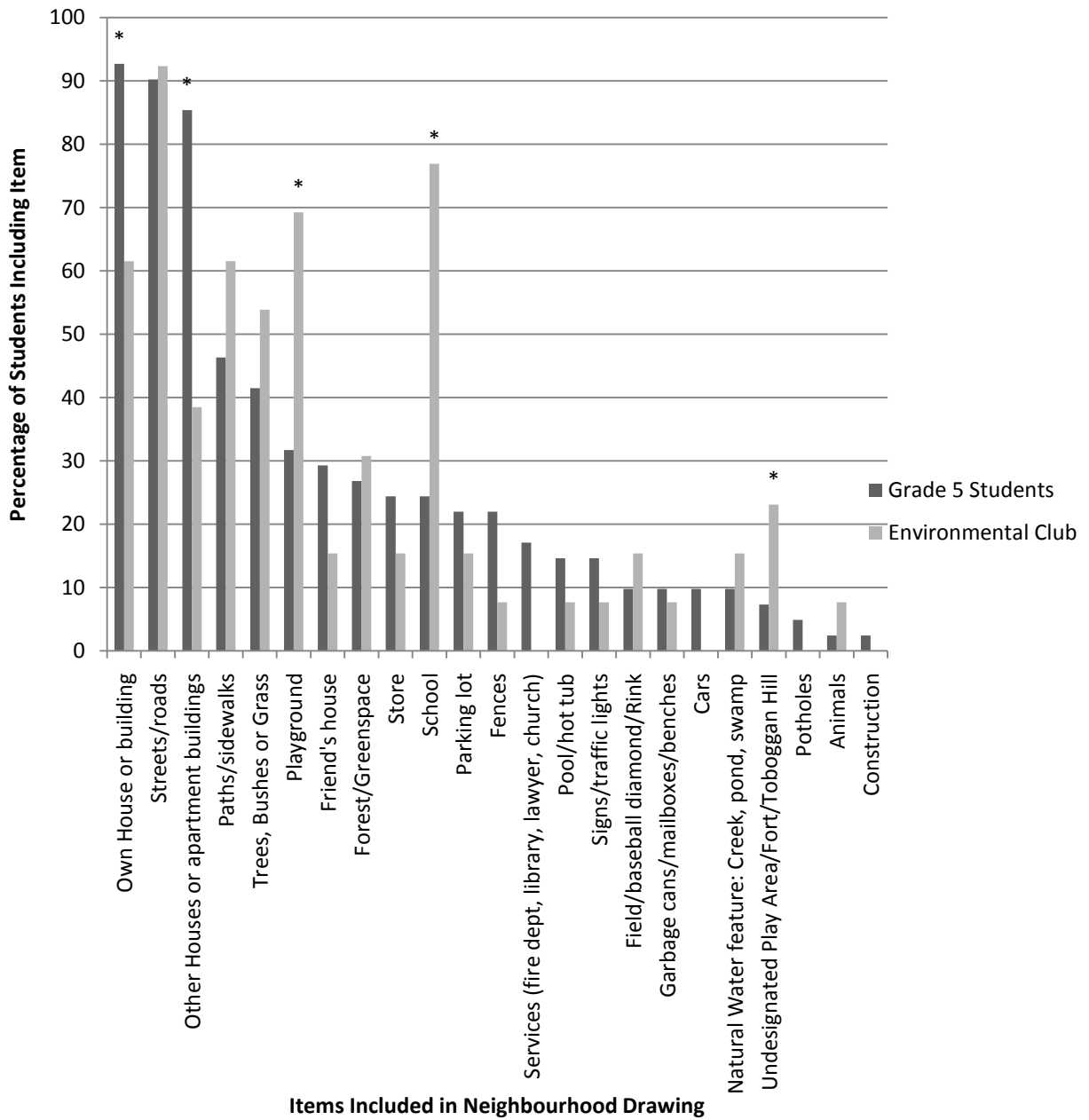
Figure 2: Percentages of students who included particular features in their drawings. The figure also compares 41 grade fives and 13 grade six environmental club students. An asterisk (*) indicates a significantly different value according to chi-square (X^2) analysis.

Table 4: Proportions of students including natural features in their drawings (including trees, bushes, forests or natural water features). Playgrounds and sports fields were not included. Students including multiple features were counted only once.

Group	Percentage of students including at least one natural feature
Grade five students (out of 41)	58.53%
Grade six environmental club students (out of 13)	77%

Using chi-square (X^2) analysis, grade five student statistics were treated as the "expected" values, and the null hypothesis was that environmental club students and grade five students were selected from the same population. According to this analysis, significantly more environmental club students included schools, playgrounds and undesignated play areas in their drawings $X^2(1) \geq 3.84, \alpha = 0.05$. Significantly fewer environmental club students included their own house or other houses and apartments.

While not significant in value, higher percentages of environmental club students included natural features both when grouped and individually. Grouped percentages are found in Table 4. Grade five students and environmental club students included streets in their drawings roughly equally. Overall, the grade five students included more built elements, and the environmental club students included more natural features.

5.3 Surrogate Image Rating Results

Students examined a series of 32 randomized images. There were eight categories of images, and each category consisted of four images. Each image was rated by participants on a 5-point Likert Scale (See Appendix C). Data were transformed by taking the average of the four picture ratings per image category for each student. (Thus, each student had a single average rating for each category, such as "Playgrounds," composed of four separate playground picture ratings). This procedure resulted in normalized data. Normality was tested in each picture category using a Kolmogorov-Smirnov test. Data were found to be normal for the 41 grade five students. Data were examined separately for the 13 grade six environmental club students. These data were also found to be normal. The normality of these values permitted the use of a Repeated Measures ANOVA.

Image categories were:

- Urban Wilderness/Natural Island
- Trails and Greenways
- Playgrounds and Schoolyards
- Landscaped Parkland
- Old Urban/Savannah
- New Urban and Cliff/Organic Detritus (Buildings)
- Downtown Everyday Spaces
- Arterial Streets and Parking Lots

(Note: Please see Appendix D for detailed descriptions and a rationale for these categories)

5.3.1 Descriptive Statistics

Table 5: Descriptive statistics of image ratings

Image category	N	Mean Likert Score	Std. Dev.	Min	Max	Mean Rank
Urban Wilderness/Natural Island	41	3.866	1.078	1.50	5.00	4
Trails and Greenways	41	3.915	0.751	1.50	5.00	3
Playgrounds and Schoolyards	41	4.183	0.491	3.00	5.00	2
Landscaped Parkland	41	4.476	0.425	3.50	5.00	1
Old Urban/Savannah	41	3.646	0.711	2.25	5.00	5
New Urban and Cliff/Organic Detritus (Buildings)	41	3.213	0.648	1.75	4.75	7
Downtown Everyday Spaces	41	3.512	0.823	1.50	5.00	6
Arterial Streets and Parking Lots	41	3.116	0.841	1.25	5.00	8

From these statistics in Table 5, the relatively favoured images were *Landscaped Parklands*, followed by *Playgrounds and Schoolyards*. *Trails and Greenways* were next, followed by *Urban Wilderness* images. *Old Urban* neighbourhood images, *Downtown Spaces* and *New Urban* neighbourhoods fared less well, and the least liked images were of *Arterial Streets and Parking Lots*.

Interestingly, the *Urban Wilderness* category demonstrated the highest Standard Deviation. This likely indicates that responses for this category were more polarized than for the others.

5.3.2 Tests for Normality

The Kolmogorov-Smirnov (K-S) Test compares a distribution against the normal distribution. It is an excellent nonparametric test for this, because it makes no assumption about the distribution of data. It is not a particularly sensitive test, and is therefore more conservative. Table 6 and Table 7 indicate that the transformed data are normal for both the 41 grade five students and the 13 grade six environmental club students.

Table 6: One-sample Kolmogorov-Smirnov Test (for normality) for 41 grade five students

Image category	Significance (2-tailed)*
Urban Wilderness/Natural Island	0.058
Trails and Greenways	0.278
Playgrounds and Schoolyards	0.443
Landscaped Parkland	0.062
Old Urban/Savannah	0.441
New Urban and Cliff/Organic Detritus (Buildings)	0.452
Downtown Everyday Spaces	0.769
Arterial Streets and Parking Lots	0.888

*These values all exceed the accepted $\alpha > 0.05$, and the data can be safely considered normal.

Table 7: One-sample Kolmogorov-Smirnov Test (for normality) for 13 grade six environmental club students

Image category	Significance (2-tailed)*
Urban Wilderness/Natural Island	0.631
Trails and Greenways	0.935
Playgrounds and Schoolyards	0.830
Landscaped Parkland	0.825
Old Urban/Savannah	0.409
New Urban and Cliff/Organic Detritus (Buildings)	0.974
Downtown Everyday Spaces	0.722
Arterial Streets and Parking Lots	0.441

*These values all exceed the accepted $\alpha > 0.05$, and the data can be safely considered normal.

5.3.3 Repeated Measures Analysis of Variance

A repeated measures Analysis of Variance (RM ANOVA) was performed on the data from the grade five group to test for significant differences in their ratings for the picture categories. Sphericity was violated when testing with Mauchly's Test of Sphericity (Sig. < 0.001). As a result, the corrected Greenhouse-Geisser values were examined. These values also revealed significant differences in the data (Sig. < 0.001).

Following the RM ANOVA, the Tukey Honestly Significant Difference (HSD) was performed post hoc. The Tukey HSD compares all possible pairs of means to find significant differences. It assumes normal data, and is used when sample sizes are all the same. It is a conservative test. Therefore, more subtle significant results may not be fully detected. However, in this case, the more extreme differences were of interest, rather than borderline ones.

Table 8: Tukey HSD results. All significant values (Sig. <0.05) are highlighted.

	Land-scaped Parkland	Play-grounds	Trails	Urban Wilderness	Old Urban	Down-town	New Urban	Arterial/ Parking
Landscaped Parkland		0.433	0.002	0.001	0.000	0.000	0.000	0.000
Play-grounds	0.433		0.550	0.326	0.004	0.000	0.000	0.000
Trails	0.002	0.550		1.000	0.550	0.086	0.000	0.000
Urban Wilderness	0.001	0.326	1.000		0.775	0.196	0.000	0.000
Old Urban	0.000	0.004	0.550	0.775		0.981	0.048*	0.005
Downtown	0.000	0.000	0.086	0.196	0.981		0.405	0.096
New Urban	0.000	0.000	0.000	0.000	0.048*	0.405		0.997
Arterial/ Parking	0.000	0.000	0.000	0.000	0.005	0.096	0.997	

* This value is borderline, and possibly not truly significant.

The overall trends for Table 8 are its most important feature. From this analysis, Landscaped Parklands and Playgrounds are the most "liked," but do not differ significantly from each other. Arterial Roads and Parking lots, as well as New Urban neighbourhoods and buildings are the most

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significantly liked the least, and these are also not significantly different from each other. The pattern that these categories follow is interesting. The most groomed, recreational area images were rated highest, followed by the greenest natural areas, and then the Likert scores drop further, corresponding to a decrease in the abundance of natural features, ending with the most built, least natural images.

5.3.4 T-tests: Comparing Grade Five and Grade Six Environmental Club Results

A t-test was performed to compare grade six environmental club data (13 students) to grade five data (41 students). T-tests are commonly used to determine whether two distributions are equal. They assume normal data. Levene's test was used to test for equal variances. If Levene's test revealed a significant value, then the corrected significance values from the "Unequal variance t-test" are reported. This correction adjusts the degrees of freedom.

Table 9: t-test results comparing ratings for categories of grade six environmental club students and grade five students. Significant values indicate that ratings from environmental club students were significantly different than those of the grade five students.

Image category	Equal Variances?	Significance (2-tailed)
Urban Wilderness/Natural Island	0.001 Equal variances not assumed	0.014
Trails and Greenways	0.138 Equal variances assumed	0.097
Playgrounds and Schoolyards	0.001 Equal variances not assumed	0.510
Landscaped Parkland	0.546 Equal variances assumed	0.224
Old Urban/Savannah	0.046 Equal variances not assumed	0.945
New Urban and Cliff/Organic Detritus (Buildings)	0.371 Equal variances assumed	<0.001
Downtown Everyday Spaces	0.781 Equal variances assumed	0.057
Arterial Streets and Parking Lots	0.807 Equal variances assumed	<0.001

As seen in Table 9, ratings for the *Urban Wilderness*, *New Urban/Buildings* and *Arterial Streets and Parking Lots* categories were found to be significantly different between the grade six environmental club group and the grade five students.

5.4 Semi-structured Interviews

Grade five students appeared intimidated by the semi-structured interview format. Few of them were willing to start a narrative, as they were shy, and more comfortable answering questions with single word answers. Students often answered very briefly and in point form. Emergent themes were clearly limited by the questions asked.

Students tended to describe their world in terms of a few factors, such as things they do, and the places they live and visit. Analysis was sparse, and prompts such as "why do you like it there?" were frequently answered with "I don't know" or a shrug. However, students did offer insight about what makes for good and bad places to live or visit. Many students provided 'opinions' that were very obviously repeated directly from parents or teachers and poorly understood.

5.4.1 Emergent Themes

Table 10: Emergent themes from interviews with Waterloo students

Theme	Categories	Sub-Categories	Example
Activities	• Physical Activities		• "I ride my bike sometimes or play like soccer and stuff" (Participant 3a).
	• Sedentary Activities		• "..watching movies, listening to music, or playing on the playstation 2. Also I like playing on the computer" (Participant 7b).
Freedom	• Boundaries and Rules		• "I walk to school by myself, and that's probably as far as I can go" (Participant 11d).
Good Places	• Good Places to Live	• Proximity and Access	• "It's really close to the school so I can just go to the path and cross where the crossing guard is" (Participant 5p).
		• People	• "I like the people on my street. They're very kind" (Participant 4d).
		• Quality	• "There's not a lot of litter around it or anything" (Participant 10d).

	• Good Places to Visit	• Natural Qualities	• "There's grass, lots of leaves and the grass has been sprinkled. It just feels good if you were there." (Participant 5a).
		• Activities	• "I like community parks and all [...] because they look fun to play" (Participant 8d).
Bad Places	• Bad Places to Live	• Proximity and Access	• "I think it needs more places for kids [...] a place where we can hang out" (Participant 5p).
		• Qualities	• "Not enough people have wildlife as trees and a good environment for animals" (Participant 4d).
	• Bad Places to Visit	• Fear	• "I don't like the paths covered with trees and stuff because it feels a little scary to go down them" (Student Participant 9d).
		• Boredom	• "But the park, it gets so boring" (Participant 5a).
Opinions and Environmental Messages	• Self – Identification		• "I'm kind of an "environmental person" I don't like a lot of busy-ness" (Participant 12d).
	• Environmental Opinions		• "I think of all the pollution that comes out of the cars" (Participant 2d)
Environmental Club Student Responses	• Natural Features		• "There's lots of trees, at our school we have little areas where there are lots of trees" (Participant 6e).
	• Environmental Opinions		• "For schools, when they put the wax on the floor, there's chemicals" (Participant 7e).
	• Fears		• "I don't feel safe around school property after school or before school. There's things going around saying there's predators on the yards after school, and before there have been teenagers hanging out in our naturalized area" (Participant 13e).
	• Limits		• "I'm not allowed to go anywhere further than school unless I'm with someone" (Participant 13e)

5.4.1.1 Activities

Students were happy to discuss their favourite activities. The activities they mentioned were categorized into physical and sedentary activities (see Table 11 and Figure 3).

Table 11: Activities mentioned in semi-structured interviews with students

Activity*	Number of grade 5 students mentioning activity (Out of 41)	Percentage %
Physical Activities		
Biking, Using Scooter, Rollerblading	23	56.10
Informal sports with friends	18	43.90
Playing with friends or family (undefined)	13	31.71
Walking/Hiking/Exploring	12	29.27
Swimming	12	29.27
Visiting a Playground	10	24.39
Undefined outdoor play	9	21.95
Walking the dog	8	19.51
Interacting with pets or other animals	8	19.51
Skating	7	17.07
Sledding	6	14.63
Playing with snow and ice	5	12.20
Building Snow Forts	4	9.76
Making forts, climbing trees	4	9.76
Organized sports	2	4.88
Outdoor Games (tag, manhunt)	2	4.88
Sedentary Activities		
Screen Time: Video games/Computer/Movies/TV	21	51.2
Reading	9	21.95
Art/Drawing/Photography (Visual Arts)	9	21.95
Going to a friend's house	6	14.63
Games/Toys	5	12.20
Listening to music	3	7.32

*Note: This table omits responses only given by a single student
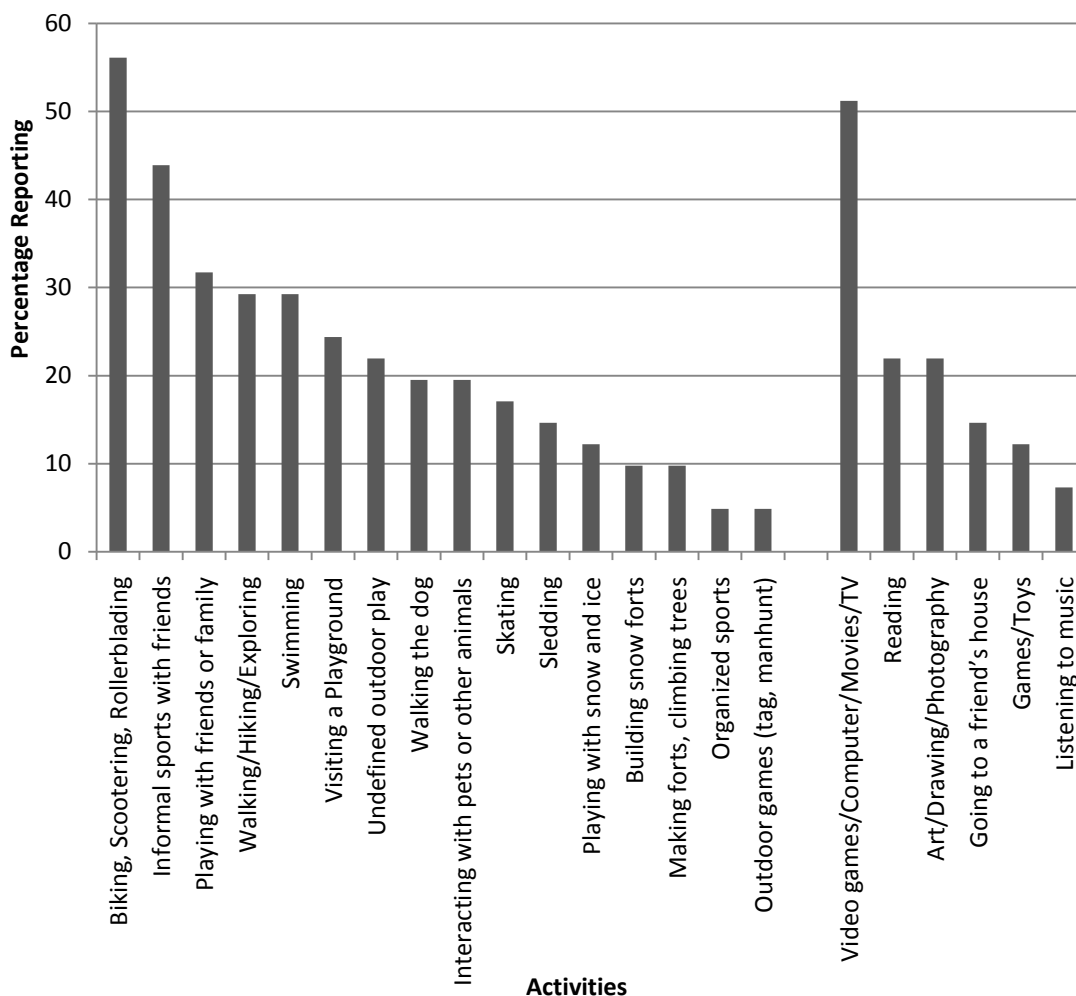
Figure 3: Percentages of students reporting particular activities. Note: The first group consists of physical activities, the second, sedentary.

5.4.1.1.1 Physical Activities

The most frequently mentioned physical activity was cycling. Wheeled activities such as biking, riding on scooters and rollerblading were very frequent answers to the question: What do you do in your spare time? "I like playing outside on our driveway. We bike and scooter" (Student Participant 12d). In fact, 56% of grade five students interviewed (23 out of 41) mentioned some sort

of wheeled activity in their interview. One student noted, "There's a hill that my friends sometimes go down, and there's this ramp. We ride our bikes on it" (Student Participant 5a).

Playgrounds are popular with this age group. The popularity was consistent in the drawings, the surrogate images and the interviews. 31.71% of the grade five students included a playground in their drawings. Playgrounds were the second highest rated image category after landscaped parklands, and many students selected playground pictures as their favourite photos. Ten students mentioned going to playgrounds as an activity. "We usually go to the park or something. It's around here. There's swings and a little playground." (Student Participant 4p). When describing a "park," students were universally referring to a playground, rather than the broader definition of park. However, some students at this age are starting to lose interest in typical playgrounds. "The park. It's a baby park."(Student Participant 8c).

Other popular physical activities included walking or hiking, swimming and skating. Only two mentioned organized sports, while 18 mentioned informal sports with friends. Some students talked about playing with snow or ice, sledding or building forts in the snow. This may have been a reflection of the season in which the interviews were conducted (winter), and could have varied depending on the weather. Many students mentioned playing outside generally. Four students mentioned making forts or climbing trees. "At winter, spring, summer, fall, any season, I go to [----] Park. We have a secret fort there, and we have furniture. We collect boxes, junk, like a broken TV or something we put in there." (Student Participant 4a).

Activities such as walking the dog or playing with pets were frequently mentioned (8 students mentioned each). Ambiguous answers, such as "playing" with family or friends or "going to a friend's house" were common. There were a few uniquely reported activities such as dancing, gardening, camping or playing outdoor games such as tag or manhunt.

Neighbourhood maps often reflected the physical activities of the students, as student activities often dictate knowledge of local areas. Playgrounds, permitted streets for cycling and playing fields appeared in these maps.

5.4.1.1.2 Sedentary Activities

The most popular mentioned sedentary activity was the use of video or computer games. Television and movies were also frequently mentioned. 21 students mentioned at least one screen-related activity. Students spoke about these with enthusiasm. "We go on computer and we play

shooting games and gun games" (Student Participant 6a). "I'd rather play on my Wii, go on the computer or play on my DS" (Student Participant 7p).

Reading (9 students) and visual arts (such as art or drawing – 9 students) were also mentioned fairly frequently. Some students mentioned playing with toys or listening to music. Unique answers included astronomy, sewing, cooking and woodworking.

5.4.1.2 Freedom

Freedom for local grade five students varies from child to child, and parents appear to make rules based on their level of comfort with local conditions and their child's knowledge and maturity. Many students at this age are allowed to walk to school alone.

Frequently, the school forms an important boundary for permitted range of travel. This was also observed in the neighbourhood drawings, as the students frequently used the route to school as a foundation for their knowledge. As one student noted, "I can walk back from school and that's about it" (Student Participant 3b). Another said, "I think we're only allowed going around the block and if we're walking back from school" (Student Participant 5b). Busy streets were also cited as major boundaries. "I'm probably allowed to go around our neighbourhood, not down by [local stores] or anything down there 'cuz there's a busy road down there" (Student Participant 10d). Students would often identify particular streets as boundaries, both in their interviews and drawings. "It's a really busy street, but it's never safe to cross, unless you have somebody with you" (Student Participant 6b).

Some students identified parks or natural green spaces they are not permitted to venture into alone. "I wish I was allowed to go to the forest, but I go with my sisters and brother" (Student Participant 5c).

On the other hand, some students were only restricted by their own sense of navigation, as their parents just want to be sure they can find their way home. "I can go like, as far as I want unless I don't know the way back home" (Student Participant 4p).

5.4.1.3 Places

Students were able to identify what made for good and bad places for living and visiting. These key neighbourhood qualities provide a great deal of insight into student opinions, values and priorities, some of which seem to be repeated from parents, and some come from personal experience.

5.4.1.3.1 Good Places

5.4.1.3.1.1 Good Places to Live

The grade five students had opinions on the attributes of good neighbourhoods. The reported attributes can be broadly grouped into three categories: proximity/access, people and quality.

5.4.1.3.1.1.1   Proximity and Access

According to the students, good places to live generally have good proximity and easy access to a variety of places and services. They are close to other children. They are near schools, parks, playgrounds and natural green spaces. They also must have easy access to stores and other facilities. Some comments include: "I have lots of friends there and my friends also go to the same school" (Student Participant 4c). "There's lots of places to play. There's lots of open places and fields and stuff" (Student Participant 11d). "It's close enough to my school that I can walk" (Student Participant 8c). "The pond is really...there's plants and it's really peaceful" (Student Participant 5p).

5.4.1.3.1.1.2   People

The students felt that good places to live are full of friendly, helpful neighbours, who they know. While children appreciate proximity to other children for companionship, friendly adult neighbours give the students a sense of security. "I feel really safe. I know almost everyone on the street" (Student Participant 1b). Knowing neighbours also creates a sense of community. "There's a lot of sharing in our neighbourhood and there's a lot of places where you can find people, like if you don't know where you're going and there's a lot of people you know that you can count on to help you find where your house is" (Student participant 5c). One student commented on their neighbourhood BBQ: "At the end of the school year...we usually have this big BBQ party with a bunch of your friends on the block and freezies, things like that" (Student Participant 2c).

5.4.1.3.1.1.3   Quality

According to the students, good neighbourhoods are quiet. Usually this means there is little traffic. "There's not that much cars, so it's not noisy" (Student Participant 1p). Quiet neighbourhoods can also be influenced by demographics. "At night it's not usually loud, like teenagers out there and stuff. It's quieter" (Student Participant 10d).

Good places feel safe and are green and clean. They are easy to get around. The schools are good. The houses are large and "nice," and have big yards with plenty of space to play. "There's reasonable houses...they have enough rooms and space, backyards and stuff" (Student Participant 9d).

5.4.1.3.1.2 Good Places to Visit

5.4.1.3.1.2.1 Natural Qualities

In terms of places to visit, many grade five students showed a preference for manicured, grassy and organized spaces, areas they understand how to use. This mainly came across in the surrogate image ratings. When they were asked to identify some pictures they liked best, students said: "Ones that looked kind of public, sunny, just kind of nice and calm" (Student Participant 5d). "There's grass, lots of leaves and the grass has been sprinkled. It just feels good if you were there" (Student Participant 5a).

At the same time, some students showed a preference for naturalized green spaces, for the peacefulness or the positive feelings they create. Twenty students reported "liking nature" in some way. "I like going to the forest a lot" (Student Participant 5c). "I just like it because it gives me a happy feeling because I'm surrounded by trees, dirt and trees" (Student Participant 3d).

5.4.1.3.1.2.2 Activities

Sometimes, students would see natural spaces as opportunities for certain activities. "I like this one because I like going to places like a swamp to catch frogs and snakes" (Student Participant 7p). "It's kind of nice, it's like a forest thing. We just bike through it and stuff" (Student Participant 5d). "I have a friend who has a cottage behind us, so we play at her house because they have a trampoline and a computer" (Student Participant 1d).

As mentioned earlier, playgrounds were quite popular, as 18 students mentioned them as good places to visit. Eight students mentioned Waterloo Park specifically as a good place. Six identified Waterloo Park in the surrogate images, and selected those images as favourites. Students also mentioned stores, attractions such as Canada's Wonderland, local amusement facilities, theatres and museums. Some unique preferences included the library, church and construction sites.

5.4.1.3.2 Bad Places

5.4.1.3.2.1 Bad Places to Live

Bad qualities of neighbourhoods as seen by these grade five students can be broadly grouped into the categories: Proximity or Access, and Quality.

5.4.1.3.2.1.1　Proximity and Access

Negative perceptions of neighbourhoods sometimes stem from feelings of boredom. Students sometimes have no nearby friends, or feel there is nothing to do. There may be few attractions or amusements nearby. "Around my house is boring because my friends live far away from me" (Student Participant 1a). "They could make more activity fun stuff for kids, 'cuz there ain't much around my street. Like there's nothing really close. Like, I only know like two places. Maybe they could make a game arcade or something" (Student Participant 2p).

Few students were able to offer any ideas for improvements. However, one particular student made an interesting suggestion: "There should be more snow in places where kids play. You know how the truck takes snow, if they don't know where to put it, why don't you put it in the park? Because kids play there, and if kids play there then everybody could have fun, make a huge fort" (Student Participant 5a).

5.4.1.3.2.1.2　Quality

Students often judged the quality of neighbourhoods by the way they felt in the spaces. Sometimes students felt they didn't have enough space to play or move around. "Sometimes the houses are a bit too close, so it's kind of hard. I also wish we had a bigger garage" (Student Participant 5p).

Negative attributes included poor maintenance, dirtiness, poor traffic control and a lack of greenery. "The speed limits maybe, there aren't that many signs" (Student Participant 12d). "Not enough people have wildlife as trees and a good environment for animals" (Student Participant 4d).

In some cases, certain individuals in the neighbourhood cause fear in the children. When asked what was not good about their neighbourhoods, or what they would change, they responded with things like: "Some older people in highschool like bully some little kids in my school who are in my neighbourhood" (Student Participant 5c).

5.4.1.3.2.2 Bad Places to Visit

Undesirable places to visit could generally be categorized into places that were either boring or scary.

5.4.1.3.2.2.1 Boredom

The grocery store, market, and other stores were frequent answers to the prompt: "What are some boring places to visit?" "My mom, sometimes when she's shopping it's boring" (Student Participant 2c). School was mentioned by two students. Other "boring" places include the doctor, the library, downtown, parks and museums. One student didn't like "Places where you can't do much, with no playgrounds, where it's just like a muddy field" (Student Participant 5d).

5.4.1.3.2.2.2 Fear

Fear seemed to be a bigger factor determining undesirable spaces. For example, students often felt that natural green spaces are unsafe or undesirable, just in general or because of things like poison ivy and bugs. Common responses included: "The forest. That scares me. There's a lot of broken trees and everything" (Student Participant 2a). "And like forests have a bunch of bugs, and I don't like bugs" (Student Participant 2c). "Unsafe? Into the forest. 'Cuz most times there's animals there, and then there's dead animals" (Student Participant 4c). "Forests that are protected, where no one can really see you. Nobody would think of coming in if you got in trouble or something" (Student Participant 5d).

Often, fear of places stemmed from a fear of people. There was a general fear of strangers and predators. "I don't really like going places with lots of strangers in them" (Student Participant 3d). "Smokers" were mentioned twice.

Teenagers and bullies were often mentioned during discussions. It's "unsafe where it has lots of teenagers up at the end of the street. At the end there's lots of teenagers that live there and they do like really bad stuff" (Student Participant 3a). "There's these big teenagers and they come to the park. They always bring a marker and draw bad words on it and say them. They usually come out at night and do it" (Student Participant 2c). "Because of teenagers, because they have air soft guns and they don't like people going in their fort. They just have air soft guns. They don't actually shoot people with it, they just shoot like targets in their fort. No one really goes in there" (Student Participant 3p).

The dark was another frequently mentioned quality of scary places. "I usually don't like to go anywhere in the dark or anything" (Student Participant 10d). "Sometimes in dark places it's bad to be. A lot of bad people, but I don't know if it's safe or not" (Student Participant 8d).

Waterloo's Uptown area (children sometimes referred to this as downtown) was brought up as an unsafe or undesirable place to go by seven students. When asked if there were places where they didn't feel safe going, some typical responses included:

- "Downtown, the smells and all that. It's like dirty" (Student Participant 8d).
- "Maybe downtown Waterloo because it's kind of busy" (Student Participant 5d).
- "Downtown, there's really nothing for me to do" (Student Participant 2e).
- "I think downtown. It's like in, you know, Oliver Twist...like people stealing and kidnapping and stuff. It needs to be more funner, more bright, not just grey. Because it's all grey basically. When you walk up to a building it's grey. It should be a little more colourful. Kids they don't have to be like 'Oh, I don't want to go there'" (Student Participant 5a).

Other places were unpopular because students didn't like busy places, crowds, or cars. "There's places where there's a lot of city and traffic and all that's not really my favourite because I don't think that's really a safe place to play around for a child" (Student Participant 5b). "When you're trying to cross the street there's so many cars going, like if you're trying to cross here, all these cars go that way and then that way and that's so annoying" (Student Participant 6d). In the surrogate images, built up areas, busy streets, parking lots and large apartment buildings were generally disliked, and identified specifically by students. One student didn't like "the ones that look really crowded with vehicles and buildings" (Student Participant 2d). "Conestoga mall isn't safe. It's too far and I can get run over by a car" (Student Participant 6a). Some other places students felt to be generally unsafe, such as construction sites or the library.

5.4.1.4 Opinions and Environmental Messages

5.4.1.4.1 Self Identification

Some students based their opinions about places they like or do not like on environmental values they have been learning about in school or at home. Some students self-identified as "environmental." "I'm kind of an "environmental person" (Student Participant 12d) or "I'm a really person who likes places that are really "planty" and "earthy." I like those places because they're pretty and my mom is a big fan, so I guess I'm a big fan. It's in my genes" (Student Participant 5p).

5.4.1.4.2 Environmental Opinions

Students had strong opinions about litter and recycling. One image where the houses had recycling bins displayed out front was favoured by two students. Images of natural areas were popular with some of the students "I like all the nature pictures, with like no pavement. I kind of count how much mother nature has done and how much mankind has done to it" (Student Participant 4d).

Some students were troubled by vanishing green areas. "This is a good spot to help the environment. If this was cutting down I'd be really, if all the trees and plants were cut down I'd be really sad. You need a little greenery so people can be fresh, and the cars are polluting the trees which are there so the trees will be rotten and will die then because the cars go by and so all the pollution from the cars will destroy the trees" (Student Participant 3a). "If there wasn't any houses, then nature could have grew there, be like tons of plants and flowers. All the big cars ruining the earth by using all the gases" (Student Participant 6b). "What if an animal runs on the road? Like, I've seen dead animals on the road. They should keep the forest like it was" (Student Participant 2p).

Students stated that trees are important for oxygen and for providing habitats for animals. The use of gasoline and the pollution that comes from cars were frequently mentioned problems. "They had a lot of cars there. That means a lot of pollution had gone to it, which is bad for the environment, which we need to use" (Student Participant 4d). These were things students were concerned about, and impact the way they feel about their communities.

5.4.1.5 Grade Six Environmental Club Student Responses

The grade six students from the environmental club also offered a wealth of information. Their interviews could not be grouped with the grade five data. Whether due to an extra year of school, or their participation (and self-selection) in the Environmental Club, these students offered a much larger number of environmentally-oriented opinions. They also provided much more elaborate descriptions.

5.4.1.5.1 Natural Features

The presence of natural features very much defined this group's idea of a good neighbourhood. "It's a very pretty neighbourhood, lots of plants and things and green areas 'cause of our school" (Student Participant 3e). This came across in descriptions of their own neighbourhoods, as well as in their choices of favourite surrogate images. One student liked places "that were very open and lots of trees and stuff, and lots of grass. Because I can just imagine myself running around

and playing" (Student Participant 11e). Another student liked, "the ones where there are lots of green trees, and paths you can walk on with no cars, no air pollution, with a healthy environment. Because since there's no air pollution, animals like to go in there, and if you're really quiet you can sometimes see or hear animals and you can just walk and enjoy the nature" (Student Participant 7e).

5.4.1.5.2 Environmental Opinions

The students in the environmental club focused a great deal on the presence of cars, pollution, streets and buildings when identifying places they did not like very much. This came across mostly in their choices of most disliked surrogate images. One student didn't like "the intersections with all the cars, and traffic lights aren't all that eco-friendly. The gas is wasted. I didn't really like the parking lot, because it isn't that "naturous" I guess" (Student Participant 6e). Another student preferred "the ones where it didn't look like there's be a lot of cars and you could do a lot of things. You could play, fool around, you wouldn't have to stay on trails. You would be able to go off and do the things you want to do" (Student Participant 9e).

These students were very aware of maintenance issues, especially around their school and schoolyard, as well as around the community. One stated, "I don't like that the old, unkempt buildings that aren't clean" (Student Participant 13e).

5.4.1.5.3 Fears

The environmental club students had similar fears and limits as the grade five students. Teenagers, groups of smokers, and potential predators were consistently perceived as threats. These factors limited range of movement as well as feelings of security. These types of comments are very useful in determining use of space by children.

- "I'm not usually allowed to walk through [---] Park on my way home or back from school because there's teenagers and things that hang out there" (Student Participant 8e).
- "There's this one person who walks in and out of [---] Park. Lots of people are kind of scared of him because he doesn't talk and he's kind of spooky" (Student Participant 3e).
- "Once I went to the mall and there was this crowd of people but they were like smoking, so it smells really bad and they're just looking. And sometimes when you drive by places, I don't really know where, there's people just...it looks kind of scary" (Student Participant 10e).

5.4.1.5.4 Limits

Although these fears often limited range of movement, these students seemed to have a little more freedom, and awareness of their neighbourhoods than the grade five students. One student was allowed to go: "Not wherever I want, but quite far, not on to busy highways or roads. Not where cars go a lot, but I'm allowed to go pretty far" (Student Participant 5e). One student appreciated "downtown Waterloo because of the old buildings and I'm really interested in old buildings and stuff like that" (Student Participant 4e). General neighbourhood knowledge was better, possibly due to age, and possibly due to participation in and self selection for the environmental club.

Some of these students named found places such as construction sites, "There's a little construction site up there that they haven't worked on in a while and it's really fun there 'cause you don't know what you'll find" (Student Participant 3e). There were also other areas to explore: "There's this one place beside that which is really close to the school which has a rock wall and I like climbing that and hanging on top of that because of the view and it's really pretty" (Student Participant 3e).

5.5 Summary of Children's Data

After data were gathered, each of the interviews was examined for signs of consistency with the following questions in mind: Are there similarities between interview responses, drawings, and surrogate image ratings? In addition, do grade six environmental club responses differ substantially from the grade five students?

There did not appear to be any consistent pattern to indicate that these three methods could predict each other. For example, when students indicated green spaces in their drawings, this did not predict their answers in the interviews or their ratings of the surrogate images. The varied methods and the way the students interpreted particular questions may have played a role. For example, if students, when asked to "draw your neighbourhood as seen from a hot air balloon," believed they were being asked to draw a standard map, they may have focused more on roads, as is done in standard street maps, despite a preference for natural green spaces.

On the other hand, there were some noticeable (though statistically insignificant) trends when comparing the grade five students to the grade six environmental club students. 24 (58.5%) of the 41 grade five students included some sort of environmental feature in their drawing. (For this purpose, "parks" or "playgrounds" were not included unless the student referred specifically to a natural feature.) In Appendix E, sample maps A, B and C were typical maps constructed by grade five

students. Sample map D, which was constructed by a grade six environmental club student, clearly has more trees and focus on a playground. 10 (77.9%) of 13 environmental club students included an environmental feature. 21 (51.2%) of 41 grade five students mentioned some sort of natural feature in a positive way in their interview. (Again, "parks" or "playgrounds" were not included unless students referred specifically to a natural feature.) 8 out of 13 (61.5%) environmental club students mentioned a natural feature positively in their interview. 16 (39.0%) out of 41 grade five students rated natural green space images higher than or equal to the other images. 6 out of 13 (46.2%) of environmental club students did this.

Table 12: Comparison of grade five and grade six environmental club inclusion of "natural features" in their responses.

Action	Grade 5 Students	Grade 6 Environmental Club Students
Included natural feature in neighbourhood drawing	58.5%	77.9%
Positively mentioned natural feature in interview	51.2%	61.5%
Rated natural green space images as highest or tied for highest of the surrogate images	39.0%	46.2%

Higher percentages of environmental club students did the three things in Table 12 consistently. However, according to chi-square analysis, this trend was not significantly different from the grade five group. This could be due to a low sample size. However, the trend helps to demonstrate that these three measures are decent indicators of a preference for natural features, given that this control group is self-selected for environmentalism.

5.5.1 Consistent Themes

There were certain repeated themes that were consistent between methods used during the sessions with the students. To begin with, an affinity for groomed, landscaped park spaces was clear from interviews and in surrogate image ratings. These were areas that were rated highest in images, selected by students as favourite images, and described by students as good places.

Second, an intense dislike for cars, streets and large buildings was very consistent between all three methods. Students rated arterial roads and parking lots very low, and spoke negatively about

cars and roads in their interviews. At the same time, almost all students included drawings of roads in their pictures, and many identified the busy and unsafe streets. While they dislike cars and roads, they are very aware of them.

Third, a strong preference for playgrounds was repeated in all methods. 31.71% of grade five students and 69.23% of the environmental club students included them in their drawings. Ten students mentioned going to them in their interviews. The playground images were also rated second highest after landscaped parkland areas.

Finally, cycling was brought up repeatedly. Sometimes students would identify good places to cycle on their neighbourhood pictures. This activity came up frequently in the interviews and even while looking at the surrogate images, students occasionally mentioned that they would like to cycle around particular areas.

All in all, the three methods provided complementary data on children's views of their community. Where one method would have been lacking, the others added additional information.

Chapter 6: Talking to the Teachers and City Officials of Waterloo: Results

*"In every neighborhood, all across our country, there are good
people insisting on a good start for the young, and doing
something about it."*

-Mr. Fred Rogers (2003)

6.1 Sampling

Four grade five teachers, one grade six teacher, and one former teacher, who is now actively involved in schoolyard greening, were interviewed. These included all of the teachers who were willing to have their classes participate in the study and to undergo an interview themselves. One of the teachers willing to have the class participate opted not to be interviewed. Five city officials were also interviewed. The officials were selected based on snowball sampling, and the fact that they hold positions of relevance to the study. Names and positions are withheld for ethical purposes and research ethics board restrictions. Anonymous teachers will be identified with (Teacher ##), and city officials with (City Official ##).

6.2 Semi-structured Interview Results: Teachers

Emergent themes from the interviews with the teachers revolved around environmental attitudes and family influences, schoolyard greening, teaching style, the state of the City, and children's potential. See Table 13 for emergent themes and sub-categories. Responses varied widely in each category, so this section is intended to explain the range of attitudes and approaches of local teachers interviewed.

Table 13: Emergent themes from interviews with teachers

Theme	Sub-Categories	
Environmental Attitudes and Family Influence	• Environmental Attitudes	• "I don't hear them talking about nature but they appreciate it" (Teacher 5)
	• Family Priorities	• "I think that for many of them, they are just trying to survive today" (Teacher 3).

	• Culture	• "If they come from highly concentrated populations, like Asia especially, they don't know what it's like to run in greenspace" (Teacher 2).
	• Money	• "[This school] is in a moderately rich area, so that financially there's only the odd student that can't afford to pay to go to camp" (Teacher 4).
School Ground Greening	• Benefits	• "They provide a place out of the sun, which some students really appreciate" (Teacher 4).
	• Approaches	• "And we try to cut it and work it in such a way that it's child friendly" (Teacher 4).
	• Popularity	• "We have one tree stump out there that is a very hot ticket." (Teacher 6).
	• Evergreen Program	• "It's not the prettiest looking thing, but in 15 years, that whole slope is going to be a nice shaded area (Teacher 1).
Teaching Strategy	• Curriculum (Government, Community Issues and Environmental Education)	• "We talk about world issues pretty much every day" (Teacher 5).
		• "Most recently, they picked something like ketchup, [...] what was the environmental impact this product has on the environment?" (Teacher 2).
	• Field Trips (Benefits, Options, Barriers and Bridges)	• "The WRDSB provides outdoor ed. centres that provide programs, if you're lucky enough to get in" (Teacher 4).
The State of the City	• General Impressions	• "So there's a great variety and we're very pleased to be living here in Waterloo" (Teacher 4).
	• Areas of Excellence	• "Around where I live in [---], I can go for walks and bike rides, and not go on the street at all" (Teacher 2).

	•	Green Spaces (Availability, Accessibility and Quality)	• "We would go down and do this little stream study right down there, but it's covered in houses now, so we can't. It's not easily accessible to a lot of that" (Teacher 6).
Children's Potential	•	Children's Capabilities	• "It's sometimes quite amazing what they come up with. Not all of it realistic. But you know with the right direction, they could probably have a lot of interesting ideas" (Teacher 6).
	•	Children's Limitations	• I often find that the opinions of the students are reflections of what their parents are saying at home" (Teacher 4)
	•	Lack of Venue for Participation	• "The infrastructure isn't there for grade five kids to be in city council" (Teacher 5).
	•	Other Options for Children	• "I think that at this level, getting them introduced to the idea, getting them involved in school government, and we have groups at our school" (Teacher 4).

6.2.1 Environmental Attitudes and Family Influences

6.2.1.1 Environmental Attitudes

Teachers demonstrated a range of opinions about children's environmental attitudes, and the influence of family. One teacher felt that students are dealing with more environmental issues in school, and that many of them want to do the right thing. "We talk to them more about [the Environment] in school. They're quite receptive and they want to do the right thing towards the environment, towards nature and so on" (Teacher 2).

6.2.1.2 Priorities

On the other hand, some teachers felt that students may have other priorities, and noted that attitudes at home can determine their level of commitment to the environment. Two teachers emphasized that there are distinct differences in financial situations of the students between schools (Teachers 2 and 3). One teacher felt strongly that these differences create a situation where children

can only focus on immediate needs rather than the world around them. "This is a low socio-economic area. The world for these children is six blocks or so. They're worried about whether or not mom or dad are going to beat them up tonight, whether they're going to get enough sleep" (Teacher 3). The same teacher noted that, "Second or third generation Canadians [...] are locked in a poverty cycle. [...] Kids aren't used to it [environmental thinking] at home, they don't care" (Teacher 3).

6.2.1.3 Family Culture

Most teachers felt that parents play a big role in teaching values, and that family culture and traditions can have a strong bearing on a child's exposure, involvement or participation in the community, and their exposure to green spaces. "It [involvement in community] depends on the child, it depends on the family" (Teacher 5). The City of Waterloo is very multi-cultural, and some children speak multiple languages, or have even lived in multiple countries. These factors in a family also create varying levels of willingness to allow children freedom and varying levels of comfort with natural spaces. "Some of them do [visit green spaces]. It depends on the family, culturally speaking too. There's some differences there, in how much freedom the parents want to give their kids to go outside" (Teacher 2).

6.2.1.4 Money

On the other hand, teachers noted that children from more affluent families may have more opportunities to do things like visit cottages, join sports programs, or take trips. Teachers from more affluent area schools also appeared to see higher levels of involvement from parents as volunteers. "A lot of kids in a community like this play some kind of organized sport. Involvement is higher in a school like this. [...] Some parents either don't know about it [recreation programs], or it's not a priority to them, or they don't have the time or inclination" (Teacher 2). Some parents may create barriers through their priorities and lack of inclination. Sometimes the parents simply lack awareness, or have little time to provide opportunities for their children. "For example, we have an art trip next week, which is also important because a lot of kids don't get any external art exposure" (Teacher 6).

Teachers, if they are motivated and willing to make extra effort, are able to provide different opportunities for children who may not have those opportunities at home. One teacher that was interviewed tried to provide as many opportunities as possible, even after school hours, taking small groups of students skating or to museums. Another teacher felt this sort of activity would be beyond the call of duty.

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6.2.2 School Ground Greening

6.2.2.1 Benefits

Green spaces and green elements in schoolyards have obvious benefits. Teachers described them as beneficial for their shade, privacy, aesthetics and teaching potential. As one teacher explained, "They're popular for several reasons. For one, they provide a place out of the sun, which some students really appreciate. Depending on the section that they choose, they're quiet spots where they can sit and converse, sort of meeting as a group of peers in their own little area. For the younger ones it's usually an area for them to play imaginative games" (Teacher 5).

6.2.2.2 Approaches

At the same time, there are varying approaches to green space development. Some schools create these areas to be used by students. "This school has had a naturalized area for a long time. It's one of the earliest schools to get one. It's open to the students. There are really very few areas where the students can't go in and play. The pathways and fences are put together based on where children access the areas. The dogwoods are trimmed back so that it's teacher friendly as well. The visual lines are open" (Teacher 4). At other schools, greened or garden areas are forbidden (for fear of trampling or students hiding from teachers). "There's a garden right down there, and they're not actually allowed to go in that garden, which is somewhat unfortunate, because I think that they would be in it a lot" (Teacher 6).

6.2.2.3 Popularity

According to two teachers, accessible natural elements in their schoolyards appear to be very popular with students. "We have one other clump of trees that has a group of grade 1-2 students that are always in that clump of trees" (Teacher 6). "The green areas of ----- Public School are very popular" (Teacher 4).

6.2.2.4 Toyota Evergreen Learning Grounds

The school ground greening program, Toyota Evergreen Learning Grounds (Evergreen, No Date), has done work with many schools in this area, "about 70 in Waterloo Region" (Teacher 1). However, safety concerns have put major limitations on greening programs. Over-concern with litigation and potential predation has led to cancellation or avoidance of certain projects. With reference to concerns about predation, one interviewee noted, "It's not really an environmental

context that created the opportunity, but nobody hears that" (Teacher 1). Concerns about cats and vandals have limited the inclusion of sandboxes, and "as soon as you put armour rock on a school, then you get a parent phoning saying "my kid's going to split his head open on it." It's the litigation in society that's caused it all. Everybody's worried about being sued" (Teacher 1).

School grounds provide one avenue for reaching children and getting them interacting with nature. Only one of the classes contacted was evidently making use of this approach. Teaching strategies discussed by the interviewees offer insights into how the school system approaches the relationship between children, nature and the community.

6.2.3 Teaching Strategy

6.2.3.1 Curriculum

6.2.3.1.1 Government and Community Issues

Teacher commitment to discussions of community and government varies greatly between grade five classrooms. Although government is a part of the grade five curriculum, there is a variety of approaches, and teachers make their own interpretations and determine where to focus their energies. Some of the teachers seem uncomfortable discussing the topic. "We've been talking a little bit about local government, but I've gotta tell you, they're bored to a coma, they don't care" (Teacher 3). On the other hand, some teachers feel more comfortable incorporating government or community issues into their lesson plans. "We've got the front of the paper up. We talk about issues about nature all the time. I tie it all into math, social studies, science all the time, so they don't know that we're doing math, but I tie it in, and we talk about connections" (Teacher 5).

"The Government" is a grade five curriculum topic, as well as "rights and responsibilities as community members." (Government of Ontario, 2004). One teacher liked to discuss levels of community: school, city, country and world, as well as about levels of citizenship: such as towards the environment, or while playing sports. Depending on current events, some teachers chose to focus on an upcoming election, while others took more indirect approaches, for example comparing ancient and modern civilizations. One teacher used the daily newspaper to discuss the outside world with the students. Another used letter writing campaigns, sending the letters to politicians on topics of interest. At least two of the teachers have taken students to council at city hall, or have visited the mayor.

6.2.3.1.2 Environmental Education

Teachers also take a variety of approaches to teaching environmental education. They each interpret what is in the curriculum differently. Some say that it is "embedded throughout the new science and tech curriculum" (Teacher 2). Three of the teachers mentioned using the unit on "state of matter" to discuss material lifecycles and environmental impact. Conservation of energy and renewable energy sources are similarly discussed. "We have one science unit on conservation of energy" (Teacher 3).

One teacher encouraged students to explore environmental topics in their own research projects. Two teachers took a holistic approach, and discussed the connections in the world (as a systems approach) "We talk about issues about nature all the time" (Teacher 5). These two teachers chose to interpret environmental education as a strand through the entire curriculum, while another teacher criticized the curriculum for its lack of environmental focus, and the lack of time available for environmental issues (Teacher 6). When asked how much environmental education students were getting, the response was: "Negligible. Really very, very little now. We do conservation of energy, look at different sources of renewable energy. We're to be talking a little bit more about how us, as humans impact the environment but our involvement is there, but it's very limited" (Teacher 6).

One teacher found creative ways to incorporate environmental education throughout the year. "A large number of students in my class are in the enviro. club [...] I like to get them outside, I like to get them in the naturalized areas. Sometimes we'll run through the naturalized areas, or we'll do a scavenger hunt cleanup through the naturalized areas. We also go off the schoolgrounds." In this same class, the grade six class, the students are assigned to find a special "nature spot" and share it with their younger "reading buddy" (Teacher 4). "There's a component in one of the programs that we do called the *Earth Keepers* where they have to find a nature spot" (Teacher 4).

6.2.3.1.3 Field Trips

6.2.3.1.3.1 Benefits

Three of the teachers mentioned how much students enjoy field trips. However, most had mixed feelings about conducting them. Three teachers noted that trips mean more when the kids do not get the same opportunities at home. "I take them on a lot of new experiences they haven't done before" (Teacher 5). "They love it, they love when they can get out. It's a different world" (Teacher 3). One teacher noted that schools in wealthier areas seem to have students with more opportunities.

"In a school like this, a lot of parents would have the presence of mind and the opportunity to take their kids to a place like that [Butterfly conservatory]" (Teacher 2).

6.2.3.1.3.2 Options

Teachers feel the need to justify their use of field trips in the curriculum. Some teachers really like to get kids outside into natural areas. However, one outdoor trip in a year seemed to be standard. When asked how much field trips are a part of school life, one teacher responded, "As much as possible, that you can justify in the curriculum. ...We've only been on one sort of outdoor field trip this fall" (Teacher 2).

There is a range of options for field trips. Some more intensive trips involved overnight trips or camps. The Grand River Conservation Authority has programs and outdoor education centres (such as at Laurel Creek). There are options to do things like pond studies, bird studies or learn about maple syrup. Trips to these centres are paid for by the board (including the bus), but they are rare. "Cost is an issue. Outdoor ed. trips are free, so they're sponsored by the board" (Teacher 6). Two of the teachers thought that students should be able to go to the outdoor ed centre every year, but it is dependent on the luck of the draw. "We go to the outdoor ed centre. It's luck of the draw as to whether you get the trip or not. I think they should be going every year" (Teacher 6).

Other trips that were mentioned include visiting a farm, museums, bird sanctuaries, the butterfly conservatory, the children's museum, doing tree planting, trash cleanups, skating, tobogganing, jogging, hiking and swimming. One teacher found it beneficial to combine curriculum goals in the field trip (physical education from walking to the location, science from a visit to the children's museum, and social studies from a visit to city hall all in one trip). "That took the whole day basically, but that was phys ed, it was skating, it was science" (Teacher 5). "We went last year to the rec complex, they love it there, again, walked there, swam, walked back, stopped at Whole Lotta Gelata, had ice cream and walked back, and we met the mayor on the way too" (Teacher 5).

6.2.3.1.3.3 Barriers

Barriers to field trips, as mentioned by teachers, include time, cost (especially for buses), limited volunteers (and required safety ratios), behaviour issues, special needs, safety concerns, tightening regulations, legal concerns and administrative hurdles (paperwork). Safety concerns and fear of litigation seem to be the major limiting factors. Some key answers were as follows:

- "We're looking at going to a conservation area or provincial park for a year end trip but I have to jump through hoops for that, because of the issues about safety, about being on the water, swimming" (Teacher 5).
- "Time comes into it. We do have so many different curriculum areas that you do want to get covered and have a field trip for them" (Teacher 6).
- "The volunteer situation varies from year to year" (Teacher 4).
- "Safety is a huge issue....it's very difficult in the older grades to get parent volunteers to come. They don't want to come. The ratio can be extremely important because we do have some extreme behaviours. You've got to have enough volunteers, which is a problem in this community" (Teacher 3).
- "These kinds of concerns are becoming more important to the school board as a whole. There's problems around the legal aspects and possibly being sued or confronted by parents. It becomes more and more common. Going out on field trips, with the accountability that's developing, it's getting harder to get all the paperwork and filling out all those forms" (Teacher 4).

One teacher completely avoided field trips (mostly due to behaviour issues). "I was going to take them out to the outdoor ed. centre, but because of behaviour, I can't. Some classes can go places and some can't. Plus, I have no adult volunteers" (Teacher 3).

6.2.3.1.3.4 Bridges

Bridges to field trips include enthusiastic, generous and motivated teachers, school council donations and teachers having good relationships with the administration. Schools in more advantaged areas do not face financial issues for field trips. "I'm pretty keen on field trips, and I do a lot of field trips with my students" (Teacher 5). Two teachers (from lower socioeconomic area schools) mentioned using pocket money to help pay for things like field trips and supplies. "I had to pay for it [a trip with a few students to the children's museum]" (Teacher 5). "At this school, teachers put a lot of pocket money into the program, just so they have things" (Teacher 3).

6.2.3.2 The State of Waterloo

6.2.3.2.1 General Impressions

Four of the teachers generally saw Waterloo as Child Friendly, and one felt it was distinctly not child friendly. "We base everything on tradition. Culturally the whole city's different. The population pattern is different; the population density is different; the environment is different. No, our cities are not child friendly, they're not environmentally friendly. For the times, are they improving? Yes. Are they heading in the right direction? Yes. But they're going far too slow and not doing enough" (Teacher 1).

Although few teachers could name specific improvements to make Waterloo more child friendly, they did feel there was room for improvement. "Yes, I think it is [child friendly], generally speaking, but there's still lots of room for improvement" (Teacher 5). One saw the city as worse than it used to be, while some claim there are more opportunities to do things now.

6.2.3.2.2 Areas of Excellence

The city's focus on cycling was particularly appreciated by two teachers. "There's a lot of opportunities for sports and recreation. There's green spaces. I like in Waterloo especially that they promote bicycles" (Teacher 2). Teachers also noted that the city has provided plenty of opportunities for sports and recreation and that the cost of activities is not prohibitive. "Huge number of fields. The opportunities for that [sports] here are huge, just the quality of play is huge here" (Teacher 6). Suggestions for improvements included the addition of a skating rink and a skatepark. (Since these interviews were conducted, Waterloo's town square now has a skating rink in winter, and there are also plans to establish a permanent action sport facility in 2011 (City of Waterloo, 2010d)). One teacher mentioned that it can be expensive to go to movies and other activities, so kids need a place to hang out. Another teacher felt that Waterloo has lots of programs for kids and families, such as the Busker Festival.

The city has provided certain opportunities for working with children (like Sunoco Earth Day) which are appreciated by teachers. "I do like the way the city works with groups like the students. [...] There was a time when the City of Waterloo undertook to provide a lot of activities for students right across the city, but then I think it just became a little too much, so I think they cut back on that" (Teacher 4).

6.2.3.2.3 Green Spaces

        One teacher noted a loss of green space and green space access over time, that nearby natural areas are not available for teachers to use as teaching tools. "I think it used to be better when I first started. When I first started teaching here, we would go down and do this little stream study....but it's covered in houses now. It's not easily accessible. I hardly ever go off the schoolgrounds now. [...] In terms of getting into natural, we are much more limited now, and we're actually in a better spot than a lot of places in KW" (Teacher 6). A different teacher felt that people sometimes fail to appreciate how much green space they actually have. "They didn't realize how much natural space we have in the city. We've got this beautiful piece of property" (Teacher 5).

        There are green space requirements in all new subdivisions. One teacher appreciated the green spaces, paths, parks, playgrounds, with a variety of terrains. "One of our places that we like to go the most is Waterloo Park. We really enjoy the developments that have been made there. We feel safe there. There's community there. We find that the sites are clean. We find that Waterloo is basically clean and that there are a lot of areas to go to with a lot of different types of terrain. There's a great variety and we're very pleased to be living here in Waterloo" (Teacher 4). Another teacher noted that playgrounds, however, have a limited age appeal. "What goes in is just the playground things, which, at a certain point the kids couldn't care less. At 9, 10 years of age they're not getting on them anymore" (Teacher 6).

        Another teacher felt that the city doesn't measure up to green space requirements, and that environmental education sites are not very accessible. For example, Huron Natural Area was built as an educational partnership, but children are not permitted to leave the trails. This teacher also felt that the city tends to take shortcuts and create poor quality green spaces. "The green space in some of our new suburbia developments is the storm water catchment basin. They get to count that towards the green space. In the development plans, they have their percentage for green space, but it can all be lumped" (Teacher 1).

6.2.4 Children's Potential

6.2.4.1 Children's Capabilities

        There were varied opinions about the potential for children to contribute positively to community decision making. Most teachers felt that introducing the idea of involvement is important. "I would say no [they're not involved]. Yes [they should be]. With some of the conversations that do

come up, and their ideas, it's sometimes quite amazing what they come up with. Not all of it realistic. With the right direction, they probably could have a lot of interesting ideas" (Teacher 6). All but one of the teachers thought their students have great ideas, and agreed they should be involved, particularly because they are aware of their own needs. "They hang out in the neighbourhoods, they go down to the creeks. They know the parks and they know the bikeways" (Teacher 5).

6.2.4.2 Children's Limitations

On the other hand, there were some reservations. One teacher believed that most of the class would not be helpful in decision-making. "They lack the commitment; they lack the maturity [to get involved in community decision-making]" (Teacher 3). One teacher felt that the opinions of the students were simply a reflection of parental opinions. One teacher felt that participation should be carefully guided and restricted. "Yes [they should be involved in decision-making], with certain restrictions. Some feedback or some input would be good. It's reflected in what they do. They don't understand the big picture and money and all that. The politics" (Teacher 2).

6.2.4.3 Venues for Participation

There was a general consensus that children are never or rarely involved in community decisions. Teachers felt that children are not aware of the opportunities available to become involved and that they actually have very few opportunities to be involved. "I don't think they think they have any power. I don't think they realize they could be involved. It's a lack of awareness" (Teacher 5). This teacher felt there is no venue for the exchange of ideas. "I think they could do a good job. My grade fives have got some really good ideas. There doesn't seem to be a venue for that exchange of ideas. They have some wonderful ideas" (Teacher 5).

6.2.4.4 Other Options

Certain programs in schools help children develop leadership skills. Getting involved in school government or environmental clubs are some examples. One teacher felt that participation in school activities was the best way to learn about participation in community. "I think at this level, getting them introduced to the idea, getting them involved in school government" (Teacher 4). Another teacher suggested that the use of online tools would help provide access to children's views (Teacher 2).

6.3 Semi-structured Interviews: City Officials

Table 14 outlines the emergent themes and sub-categories generated through the semi-structured interviews with city officials.

Table 14: Emergent themes and sub-categories from interviews with city officials.

Theme	Sub-Categories	Examples
Impressions of the City	• General Impressions	• "Having raised 2 children, [...] my impression over those years has been one that in Waterloo I feel pretty safe for them" (City Official 1).
	• Demographics	• "I think it's very good at the 8 and under. I think it struggles with the teenage demographic" (City Official 2).
Access to Facilities and Opportunities	• Recreational Opportunities	• "We put a lot of effort into rec. and leisure. We've got great recreational facilities. They are accessible" (City Official 5).
	• Reliance on Volunteers	• "We're getting more away from direct programming now, more towards community based programming" (City Official 3).
	• Youth Recreation Council	• "Our intent was to focus on rec. and leisure. Primarily because that's our mandate" (City Official 4).
Safety	• Focus on Safety	• "We're forever looking at safety issues around school zones. I think we really do focus on kids" (City Official 5)
	• Safety Limitations	• "Knowing that we are in such a risk savvy environment, how do you bring back the fun to our resources that we treat like they're rooms that are locked off and you can view but can't sit on the furniture?" (City Official 4).
	• Fear of Liability	• "Liability and safety are forefront in what we do" (City Official 4).

Natural Green Spaces, Playgrounds and Parks	• Availability	• "We have a lot of green space in the city" (City Official 5).
	• Intended Users	• "When they're 3,4,5,6 that they're not into a 20 minute or a 40 minute walk through the woods" (City Official 1).
	• Quality vs. Efficiency	• "Then they can utilize some of our lands, we can use some of theirs. Everyone save a little bit of money" (City Official 1).
	• Accessibility	• "They have very little street frontage and recognisability. They're typically very small and linear in character. They have odd shapes so that there isn't something big enough that you can actually develop significantly" (City Official 2).
Development and Planning	• Ontario Building Code	• "We rely on the Ontario Building Code. That's what our sort of, mandate is (City Official 1).
	• Ontario Disabilities Act	• "Automatically what comes to mind is the ODA, the Ontario Disabilities Act and we're conditioned for access meaning disabilities for all kinds to ensure that they can access our facilities" (City Official 4).
Relationships with Children and Youth	• Conflicting Rights	• "When I hear about some business owners around high schools and the things they have to implement, I don't blame them" (City Official 5).
	• Lack of initiative	• "I will spend the time on the ones who will show up, but I haven't got the time to go there and pull them along" (City Official 5).
	• Outreach (What's been done, what's lacking?)	• "If we can go to where they are, already you're 10 steps ahead of the game" (City Official 3).

The City's Role	• A balancing act	• "Now, in fairness, to anybody we talk to, that does not necessarily mean that happens to what they want" (City Official 1)
	• Asking Questions (consultations, children's participation, research)	• "What is our role? What services are we responsible to deliver? What should the private sector be doing?" (City Official 5).
	• Decision making	• "The financial aspect of running a city is dollars and cents, and that, unfortunately, drives a lot of the things we can provide" (City Official 5).
The School's Role	• Responsibilities of the teachers and the school board	• "Really I think in accessing kids in the school setting, there's just no better venue, but the curriculum is so specific" (City Official 4).
Potential for a Child Friendly City	• Benefits	• "I think people assume what they think that might be, but without the framework or the guidelines to strive towards" (City Official 4).
	• Problems	• "There are certain things that we don't have jurisdiction over" (City Official 1).

6.3.1 Impressions of the City of Waterloo

6.3.1.1 General Impressions

Only one of the five City of Waterloo officials interviewed believed, without hesitation, that Waterloo is generally a Child Friendly City. The others felt the City did well in certain areas, but could certainly use improvement in others. "There are certainly elements that we would rate high in. But there would certainly be elements where we would need to address" (City Official 4). "I think we have pockets of it [child friendliness]. I think there are areas that we do quite well, but we could certainly improve on other areas" (City Official 5). One official felt that the city offers a number of opportunities and activities for children, while still being small enough to be relatively safe (City Official 1).

6.3.1.2 Demographics

Two participants felt that the city struggles with certain demographics, and could improve on reaching the diverse cultures and ages present in the city. The city is, however, limited in both time and hiring capacity. People working in different departments saw this issue from different perspectives. For example, one participant thought the city does well with young children and struggles with older youth. "I think it's very good at the eight and under. I think it struggles with the teenage demographic" (City Official 2). Another said young children are left out. "As a municipality, I think we definitely leave out the really younger kids. Other than our aquatic programming, we have the one preschool program that runs one morning a week" (City Official 3). Another participant suggested that the programs offered may not reflect the diverse nature of the community. "Just based on the divergent nature of our city, and just the ethnicity. When you look at some of our programs, it's not a direct reflection of how our community looks" (City Official 4). The same participant also suggested that what is "eye-pleasing" to adults may not appeal to children. For example, there is nothing in the new public square to appeal to children.

6.3.2 Facilities and Opportunities (Access)

6.3.2.1 Recreational Opportunities

All interviewees from the City felt there are many opportunities for children to participate in sports. They noted that the sports programs and facilities available in the city are extensive and the city is geared to the active side of things. "Minor sport, children's programs, community events and festivals have really been generated with consideration to children and family" (City Official 4). The trail system, and focus on cycling was repeatedly mentioned. "We have the trails and transportation system. Whenever we rebuild roads, we put bike trails on, we look at how we're going to connect more of our trails" (City Official 5). On the other hand, this focus on sports may leave out other children. "I don't think we really have a lot of things for youth. It's very scattered. We have a lot of sports. But, for the kids who don't do that, I don't know" (City Official 5).

6.3.2.2 Reliance on Volunteers

Two officials mentioned that the city was moving away from direct programming towards more community based programs (City Officials 3 and 4). While the city will still support programs, and provide funding and space, volunteers will mostly run programs. The city is working to cut back on redundant programs, and provide services only when there is a need. "We look for partnerships so

that we can best utilize our facilities or funding, can we partner with another agency?" (City Official 5). However, as one participant stated, the move to switch to volunteers does have associated problems, as well as some benefits. Volunteers are typically not as consistent, long-term or reliable. But at the same time, they are often more motivated to be there (City Official 3).

6.3.2.3 Youth Recreation Council

One participant noted that the Youth Recreation Council struggles to reach a wide variety of teens, so the demographic of the group is fairly predictable. Students who join this group are typically high achievers from families with high income levels. "They're usually the kids that are already engaged in their community. It's the other ones that we need to pull in" (City Official 3). Recruitment for this group is aimed at a wider audience, but a great deal of recruitment happens through word of mouth.

The mandate of the council includes being the voice of children to the city council. However, one participant said that in practice, there is little of this. Mainly, the group is responsible for planning "recreation by youth for youth." Recent events included a film contest, a basketball skills clinic and a Terry Fox Run car wash (City of Waterloo, No Date). These students are not often involved in city decision making. However, they are supported in work they want to do on their own. "Kitchener has more of a politically based council. We do not. If they wanted to do something that has more of a flare for environmental issues or a charity, we would absolutely put the framework around supporting that initiative" (City Official 4). Occasionally, the council is approached by city officials for their opinions, or asked to attend community forums. One official felt that members of the youth council are likely tired of being asked for opinions and seeing no results (City Official 4).

6.3.3 Safety

6.3.3.1 Focus on Safety

City officials were very concerned with safety for children and other citizens. One saw safety as the main concern when planning for children. Safety concerns centred on sidewalks and pedestrian safety. "It comes up in things, even like our, developing our sidewalk policy" (City Official 1). All but one of the officials brought up safety as a main concern and responsibility of the city. However, two of them mentioned they feel Waterloo is a "pretty safe place" (City Officials 3 and 1).

The city's initiatives on crime prevention are also intended to help improve general city safety. "There are some really good initiatives in our communities that address from a broader

perspective safety, our crime prevention within the city is very strong and very powerful" (City Official 4).

6.3.3.2 Limitations of Safety

Two officials felt that fun, freedom and opportunities are often lost for the sake of safety. One official said it isn't all about safety, and Waterloo offers enough to be interesting, but still be safe. One official noted the difficulty in finding the balance between fun and responsibility. "Knowing that we are in such a risk savvy environment, how do you bring back the fun to our resources that we treat like they're in rooms that are locked off and you can view but can't sit on the furniture?" (City Official 4).

6.3.3.3 Liability

Fear of liability is definitely present in city administration. This is a major consideration in the camps, as one participant noted, where the city takes direct responsibility for the safety and supervision of children. Liability and safety are at the forefront of the city's camp programs. "If something goes wrong and we didn't have any guidelines to follow, then we work very quickly to put those in place" (City Official 3).

6.3.4 Natural Green Spaces, Playgrounds and Parks

6.3.4.1 Availability

One official felt that Waterloo has more green space than people realize, and that people tend to complain without knowing the reality. "We have more green space than most cities. Every single subdivision you go in has beautiful parkland and space" (City Official 5). Another official thought that we unfortunately treat natural green spaces as museums, and that the visibility, accessibility and quality of green spaces are not as good as they could be (City Official 4).

6.3.4.2 Intended Users

Another official felt that our local natural green spaces are not intended for children, and that playground areas are designed for them instead. "We really focused on the parkettes, and the parkettes are for the most part for the youth. The adults have the passive space with the woods. That's an example where we knew that that was there for the adults, the teenagers or whatever, but that's not going to meet the needs of the youth and the young families. We've got all the woods around here for

everyone else" (City Official 1). Parkettes can vary from benches and a trail, to teeter totters to bigger structures. Planners tried to "make sure that as many of the homes were within that 60m, 200ft walking distance to a parkette" (City Official 1).

6.3.4.3 Quality vs. Efficiency

Two officials noted that green spaces are often designed and planned with efficiency as a priority, and while one thought this was a good strategy, the other felt that this sometimes reduces quality and quantity. Residual land with little value that cannot be developed is turned into parkland. "The only negative aspect I can say to that is typically developed in residual land that has very little value or can't be developed for a whole bunch of different reasons" (City Official 2). Another official concurred that green space land is often shared with schools to create larger land tracts, be efficient and save money. "We do look towards trying to, from an efficiency point of view....for efficiency of land use that we will try to line up parks and different things with them [schools] because we can help program events with each other" (City Official 1).

6.3.4.4 Accessibility

One interviewee felt that while there are plenty of playgrounds and parkettes, there is no supervision and they are poorly located with no street frontage. "The thinking needs to change a little bit. Put the park front and center." In many places in Europe, "the park is the main gathering area and it's front and centre and it's outside your door and part of the public ground that everybody participates in" (City Official 2). "It's not one of these areas that parents feel comfortable just letting their kids go to because of the lack of supervision" (City Official 2). One official felt that Waterloo Park is under-used, that people have a lack of knowledge about the park's facilities, and there is poor access to the park. "Even talking to the stakeholder interviews that actually use the park, there was a lack of understanding of the extent of the park" (City Official 2).

6.3.5 Development and Planning

6.3.5.1 Focus on the Ontario Building Code

Planners and developers for the city are required to follow Ontario building codes. "We rely on the Ontario Building Code" (City Official 1). The Ontario Building Code (OBC) determines design standards, but exceeding expectations is permitted.

6.3.5.2 Focus on Ontario Disabilities Act

Discussions of accessibility appeared to automatically lead to the OBC and the requirements from the Ontario Disabilities Act (ODA). One official felt that the focus on meeting the code means the "fun" is lost. "Automatically what comes to mind is the ODA. We're conditioned to think that way because legislatively we have to be responsive. I'm glad to see the legislation." This same official said that as a result, "You lose some of the very basic questions of "Is this fun? Is this meaningful Is this a draw?" (City Official 4).

The city puts a lot of focus on parkettes, trails, bike routes and family demographics. When it comes to development and planning, children are mostly considered in terms of safety, traffic, cycling, school zones and pedestrian routes.

6.3.6 Relationships with Children and Youth

6.3.6.1 Conflicting Rights

City officials tended to approach their relationship with children and youth in terms of the children's behaviour. It can be difficult to balance the rights of children and the rights of others, especially when a small portion of children and youth are creating problems. "I believe in the rights of children. I also believe in the rights of businesses and the rights of people to take care of their own property" (City Official 5). However, another official felt that "When we develop rules for a small portion, we cascade a realm of blame on other people that that's not how they behave and act. And then we almost encourage inappropriate behaviour by being limiting and being exclusive" (City Official 4).

6.3.6.2 Lack of Initiative

Officials are apparently discouraged by the lack of initiative and participation among children. "The difficulty is getting them to participate" (City Official 2). Children's initiative or lack thereof is going to determine their participation in the community. It can be very difficult to get children to take that step. As a result, a small number of children are reached. "I recruit all the time for [---]. They're all interested and then they disappear. When you get into grade 10s, they don't want to talk out of turn, they don't want their friends to think they're into this" (City Official 5).

6.3.6.3 Outreach

The city has made some efforts to reach out to children. They are welcome for tours or in council. People from the city sometimes do invited talks. However, one official felt the city's strength was in responding to issues, rather than spending time on outreach. "When it's brought to our attention, I generally think that we pay attention. We don't just push it [the issue that's brought forward] aside" (City Official 1). "We could go and speak. [...] I don't think our role is to go beyond that" (City Official 1).

The people in charge of the Waterloo park master plan redesign did reach out to the Youth Recreation Council. "They actually came and presented to our Youth Council, and then got feedback input" (City Official 3). However, typically, "outreach" is limited to passing invitations to the youth council to attend public forums. Two officials brought up the need for a greater amount of outreach. "One of the things that definitely needs to happen though is a reach-out to the broader community. Are we reaching all youth? Definitely not" (City Official 3). One felt that children needed to be consulted more in decisions, but access to children was difficult. "If they're going to be users of the space, we need to engage them, right? What do they want? What are they looking for? What will they go and use? They're the best people to talk to about that sort of stuff. [...] I think the hardest part is access to them" (City Official 3).

6.3.7 The City's Role

6.3.7.1 A Balancing Act

City officials are sometimes torn between public needs and desires and financial limitations. People also expect to see results immediately. The city needs to operate within a budget, and cannot always accommodate everyone. "I would love to see more people that are geared towards doing children's things, but we don't have the staffing capabilities. We are limited in how many people we can hire, so we look for a lot of volunteers to provide that opportunity. I think we could do better, I really do" (City Official 5). Sometimes, also, they are torn between creativity and responsibility. "My heart of a child and my responsibility as a manager is a divergence. It's trying to find where is that middle ground" (City Official 4).

6.3.7.2 Asking the Right Questions at the Right Time

One major role of the city seems to be "asking the right questions." It's important to first find what questions need to be answered, such as "what is a priority?" and "As a city, in a community, what else is there to provide?" (City Official 5).

6.3.7.2.1 Consultations

Consultations with the public are expected. Committees, task forces, public forums are commonly used for large changes (this is required in the Ontario Planning Act (Government of Ontario, 1990b)). There was a diverse public task force of citizens assembled to put together the Waterloo Park master plan. Open houses were held at every stage of the plan as well. "We engaged the public in the development of the public consultation process. We developed a process and a public participation program. Every time we came to a decision point, or a major deliverable, we went to the public. We actually went to all the stakeholders. A lot of their input initially, before the project started, really influenced the development of that concept plan" (City Official 2). Other forums, like "Imagine, Waterloo" are cornerstones for major planning documents (such as the City's *Official Plan*).

However, one official felt these consultations happen too late, when they are no longer meaningful, and they fail to capture the full population. "We're not asking, we're trying to get confirmation that what we're doing is the right thing. The point of ask is really critical, and it's before the idea stage ever hits a piece of paper. We often don't have the time and resources to do it" (City Official 4). "I think we've got a lot of pockets who are getting a little tired of the multitude of asks and not seeing a lot of outcomes that reflect change" (City Official 4).

6.3.7.2.2 Children's Participation

All city officials interviewed saw the value in children's participation in at least some stages of government process, particularly when they will be the end users. "If whatever you were working on, if they were the end users, then absolutely" (City Official 2). The city does attempt to involve youth in some things, but most participants saw room for improvement in the way the city approaches this. There is no requirement for consultation with children in Waterloo.

Most officials felt that there are barriers to children's involvement. For example, staff is stretched, and sometimes children's input isn't practical, is simplistic and hard to interpret. "There's a simplicity to some of the stuff that they provide and how you interpret that can be challenging" (City

Official 2). Plus, it is difficult to access children, and to get them actively participating. There is also just not the venue for children's participation. "There are always the opportunities to voice your concern regardless of age. However, what I think is probably lacking is, there's not a lot of open venues that are formalized that prompt, encourage, and most importantly that show some vivid results of making a difference" (City Official 4). The same participant noted the importance of involving children for children's sake. "The power of involving children when they're young. It progresses good solid citizens" (City Official 4).

One official did not see any barriers, and did not see the need for additional children's involvement. "I don't think there are barriers [to children's involvement]. Just there's no requirement per se. Public involvement is what we're looking for, we don't target a specific type of public for it. It's not something we consciously do as part of our consultation process" (City Official 1).

6.3.7.2.3 Research

Research, or connecting with appropriate resources for information, is another aspect of the city's role. More is needed, through connections and ties with other cities. Children's needs are not researched. When asked what needs improvement, one participant responded: "Maybe the research side. That comes out right away" (City Official 1).

6.3.7.3 Decision Making

One official mentioned that the city's role comes down to the allocation of money. While this community is relatively well-off, money seems to be the number one limiter for most projects. The city is forced to made priorities. "We're geared towards the active side of things. Typically we don't have enough money to fix what we have, let alone try and evolve and develop something new" (City Official 2).

In decision making, the city is accountable to the people, and must listen to and address concerns. It takes patience. Council is a public forum, but likely too intimidating for children to attend. "Decisions, a lot of them are made in the council chambers" (City Official 1).

However, policies are not typically examined from a child's perspective. There is no one responsible for examining children's issues, and the effects of policy on children. "There's no one that is deemed responsible or accountable for that, that I'm aware of. Whether an individual that's dealing with a policy decides to, or chooses to look through that, that will revolve around the

experiences and stage of life that that individual is living in. I wouldn't say it's systemic or process, maybe it should be. I think at best it would be a hit and miss to be honest" (City Official 1).

Most officials are open to further involving children in decisions, with limits. "I'd love it. I'm absolutely open to that. I would love to see more kids step up" (City Official 5). Mostly, officials see room for consultation with children in the preliminary stages of planning, idea generating and brainstorming.

6.3.8 The School's Role

Some city officials saw children's involvement in the community as the role of teachers, the school board and the curriculum. They claim they are the ones with access to children, and that the board should facilitate participation. "I think it could be facilitated through the school boards. I think school boards could if they wished, try to build youth involvement in community building. I think they could build it into their curriculum. I think there should be, to be honest, more civics, if you will, and involvement in community building" (City Official 1).

6.3.9 Child Friendly City Potential

6.3.9.1 Benefits

The Child Friendly Cities program and the *Convention on the Rights of the Child* were unknown to all city officials interviewed. After examining key points from these programs, many felt that they could bring important issues to attention, especially since there is no current framework. "Being child friendly is being family and adult friendly. You start at the child" (City Official 4). "To me, an intelligent community is inclusive of all, and should be able to take that one step further and be inclusive of children" (City Official 5). One official mentioned that the city needs targets and the Child Friendly Cities program captures the key elements (City Official 4). Another official thought that a certification process for the Child Friendly City program would be a motivator. "I would be very interested in that [a Canadian certification program]. It would be a motivator. I would love to champion that" (City Official 5).

6.3.9.2 Problems

However, one participant was more hesitant, and saw associated problems. This official felt that participation in this program would be difficult because of how governance works. For example, some things are not within the control of the City. The Region of Waterloo is responsible for a

number of services, such as health care (City Official 1). This official felt that the City is already doing these things without any guidelines. "Not having ever heard of it [CRC], a lot of, I would like to think of myself included, people are trying to do that regardless of ever having heard of such a thing. [...] But it does help. It is a document that can bring it to the attention of people, which is important" (City Official 1). Another official mentioned that they had at one point started an application for the Youth Friendly Communities program, but it took too much time (City Official 4).

All in all, the adults interviewed for this study provided a good picture of how children are treated, and children's issues are addressed in the City of Waterloo. Teachers and city officials demonstrated a very wide range of opinions about and approaches to these issues.

Chapter 7: State of the City of Waterloo: Discussion

*"I don't like the paths covered with trees and stuff
because it feels a little scary to go down them."*

- (Student Participant 9d, 2009)

7.1 Introduction

The results described in the previous chapter, when paired with the literature review, provide fairly substantial responses to the original research questions. They reveal a detailed picture of how local grade five children view and interact with their community, as well as how this topic is seen from teacher and city official perspectives. The results led to the construction of the "ideal neighbourhood" profile as seen by local grade five students based on their activities, their preferences and priorities, and their understanding of the world.

The results also supply the material necessary to build a framework that describes the barriers and bridges between local children and the natural environment. As well, the question of how children are considered and consulted in the community was examined in detail, in terms of the four main tenets of a Child Friendly City outlined in the literature review. The concept of the Child Friendly City and the applicability of the Child Friendly City UNICEF program will be discussed as a potential framework for action for the City of Waterloo.

7.2 Research Questions

7.2.1 Question 1: "How do urban children perceive and interact with their communities?"

The grade five children's drawings of their neighbourhoods, their responses to interview questions and their Likert ratings of local images all provide information on how they perceive and interact with their local communities. A description of the "ideal community" as seen by grade five students in the City of Waterloo was compiled from these data.

> **My ideal community:**
>
> The thing I like best about my neighbourhood is that there are a lot of kids around to play with. My neighbours are friendly, and I know most of the people on my street. There is very little traffic and no large roads. I feel safe walking around by myself, and I am allowed to walk to the nearby school and some stores alone. The neighbourhood is clean and well-maintained. There are trees, gardens, and forests that are also well-maintained. The parks have large open spaces with scattered trees. It is easy to get around and find my way home. The houses are large and have big backyards.
>
> There are many interesting places to ride my bike. I like having places nearby to go skating, swimming and walking, as well as places where I can play in the snow and build forts. I often visit the nearby playgrounds, where there are no teenagers bullying us or smoking. My pet is very important to me, and we spend a lot of time walking around the neighbourhood. When I am at home, I like to play video games, watch TV, and read books.
>
> When I go downtown, it is clean, brightly lit, colourful, and there are many things for kids to do besides go shopping with their parents. We also have plenty of big attractions nearby, like amusement parks, museums and theatres.

Text Box 1: My ideal community: Compiled from interviews with 41 grade five students from the City of Waterloo.

7.2.1.1 Children's Preferences

Most of the description in Text Box 1 does not vary from what we can assume most adults want, but there are some subtle points to note. It highlights the important key issues for children. The emphasis on community and the need for connections with neighbours and friends is something often lost in adults, but which stood out keenly in the interviews.

Children's fears, including teenagers and the dark, are factors that are possibly neglected in planning. Creating spaces that are colourful, fun, and which provide things for children to do in areas typically designed for "adults" is not standard practice either. Unfortunately, the way communities have been planned and designed in the past is contrary to many of these preferences. The emphasis on walkability and community has been lost in part due to the way communities have been designed. Fortunately, some initiatives, such as the pedestrian charter (City of Waterloo, 2008a), are intended to improve these situations.

Proximity to other children, services and other amenities prove to be critically important to children who must rely either on their own feet, bicycles or their parents' cars to get anywhere. This was very apparent from the interviews.

The favourite places that students mentioned were landscaped parkland areas. (See an example of a Landscaped Parkland Image in Appendix D). Grassy, mowed spaces, with scattered trees were popular. Explanations for this preference may be based on the affordances of the spaces. In other words, the children understand these areas and how to use them. The games and sports they play are geared to this sort of landscape, and they feel they are the most usable. This would also explain the high rankings for playground images. This trend certainly leads to the question of whether or not we are training children to prefer certain types of landscapes based on the types of activities we encourage. In addition, have affordances for children changed over time? Did children previously find affordances in nature (climbing trees, making forts), that no longer exist? Is a stream now simply a barrier, rather than a place to build bridges and catch frogs? Although twenty students indicated they "like" nature in some way, this brings up the question of how children today define nature. If scattered trees in a bare field now constitute "nature," what will this mean for the future of our woodlots?

Another possible explanation for these preferences can be traced back to a theory of evolutionary preferences. The "Savanna hypothesis" (Balling & Falk, 1982; Orians & Heerwagen, 1992) discusses innate human preferences for environmental features found in savannas (which provide both prospect and refuge), and some researchers have shown these preferences to be stronger in children.

In addition, there seemed to be a consistent trend of preference for familiar spaces. Children tended to rate a picture higher when they recognized the location, even if it was not otherwise a desirable space. A good example of this was an image of a treeless playground that was rated highly by all the students attending the school where the playground was located, but not as high by others. One student recognized the plaza where her mother worked, and gave the picture a high rating because she liked visiting the location. If familiarity breeds preference, a city with no green spaces could mean trouble.

It was interesting to note the feelings that students had towards the core areas of the Waterloo community. At least four students felt that downtown (or uptown) was an unsafe or boring place to visit. The uptown area does not appeal to children, and contains no attractive features to the younger generation.

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Students had few opinions on what could be improved about the city or their neighbourhoods. Many of them had limited views of their neighbourhoods, and got confused when drawing maps. It was clear that most had never been asked this question, or considered the possibility of change. On the other hand, many of the students in the environmental club group had numerous ideas about what could change.

All in all, the environmental club students portrayed their views of and interactions with the city in slightly different ways than the grade five students. Preferences more frequently focused on natural elements, and opinions revolved around environmental issues. While these students are clearly self-selected for environmentalism, there is likely a positive feedback between personal preferences and the values discussed in the environmental club.

7.2.1.2 Children's Activities

Children's activities varied widely, though some activities were clearly dominant. In terms of active pursuits, cycling was by far the most popular. The city is right to focus on providing safe bike lanes and other provisions for cyclists.

The reported number of organized sports was low, with only two students discussing participation in organized sports, and 18 speaking about informal sports with friends. This may have been due to the interview question using the term "spare time." Students may not think of organized sports as something they do in their "spare time." Both teachers and city officials tended to focus a great deal on organized sports, and were pleased with the opportunities provided by the City. This discrepancy would be worth further examination.

The descriptions that the children provided about their levels of activity have likely been exaggerated. These students are old enough to be aware of adult preferences, and would be biased to respond with frequent examples of outdoor activity. Cycling was reported more frequently than video games or television. While this would be an encouraging trend, the potential for desirability bias is strong in this case. A thorough examination of this topic would need to include other methods like detailed activity diaries, in order to accurately document the frequency and amount of time spent at particular activities. Bias will be discussed in further detail later.

7.2.2 Question 2: "What is the relationship between children and the natural environment within urban settings?"

The relationship between children and the natural environment is complicated, and constantly evolving. This study provides a cross sectional view of the relationship of a large group of Waterloo's students at one particular time. Figure 4 outlines the factors that are seen to foster or inhibit these children's relationship with nature in the City of Waterloo. It was derived through interviews with teachers, city officials and children.
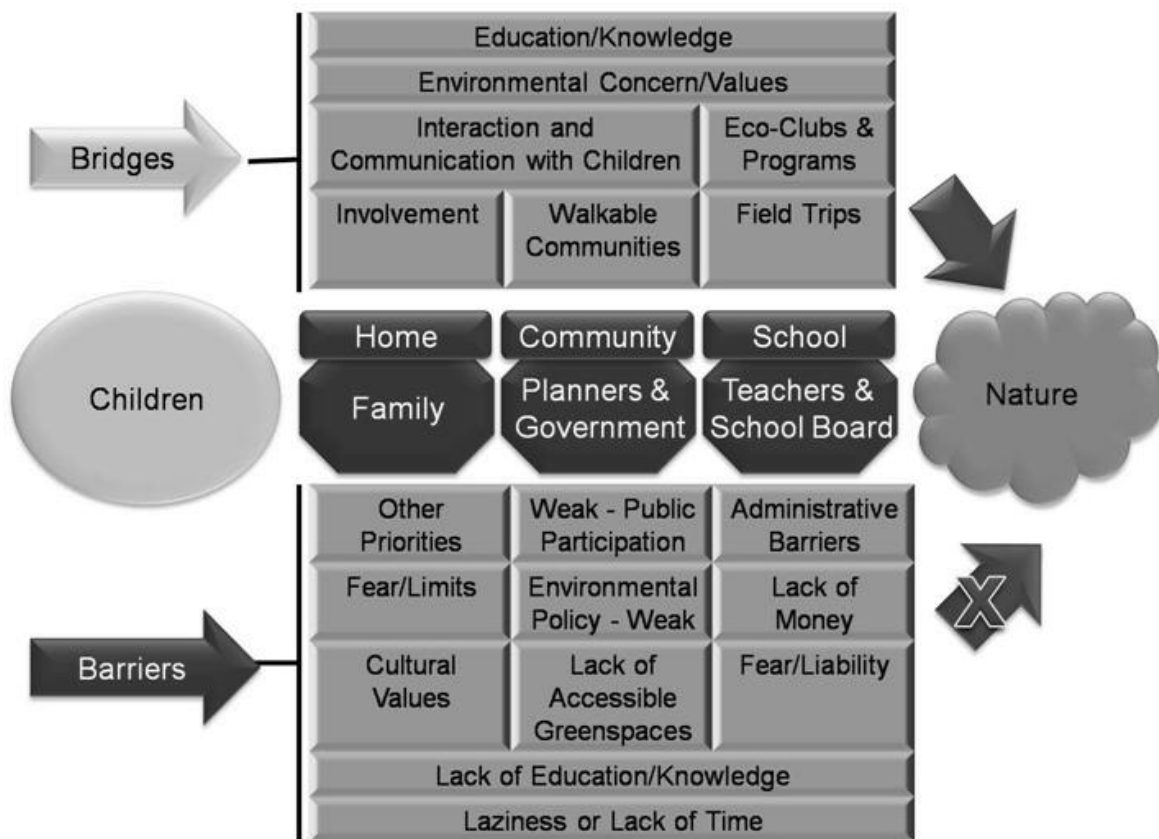
Figure 4: Bridges and barriers identified as standing between children and nature in the City of Waterloo. Home, community and school are the three main entities with which children interact. Within each of these entities, a number of bridges and barriers have been identified.

Home, community and school form the three main domains, through which, children learn about the world. In each of these domains, a set of adults regulates the information they receive, and

the activities in which they participate. The approach taken by these adults help form the barriers or bridges to children's interactions with nature. By promoting the building of bridges, and deconstructing the barriers, it may be possible to help Waterloo's children develop a closer connection with natural spaces. All of the factors mentioned were derived from the interviews.

7.2.2.1 Bridges

Those adults who are interested in and educated and knowledgeable about environmental issues and the benefits of green space are more inclined to help promote this connection through direct exposure, lesson structure, and policy direction. Paired closely with this concept is the idea of environmental concern and values. Those adults who feel strongly about natural spaces are more inclined to promote the same values in future generations. At home, parents who have strong environmental values seem more inclined to take children on excursions and into natural spaces.

In government, and more specifically urban planning, the current trend for building walkable communities is crucial for the promotion of walking, rather than driving. The City of Waterloo's pedestrian charter is a good example of this promotion (City of Waterloo, 2008a).

Interaction and communication are important steps to getting children more involved in environmental decisions and actions. By communicating with children, parents and city officials can figure out ways to make nature and nature excursions more appealing and perhaps induce children to spend more free time in those spaces. Similarly, by starting environmental clubs or projects, teachers can promote this connection, open up lines of communication, and get children involved. One school with a strong environmental agenda, and a teacher committed to this cause, had an environmental club with a very active membership, regular activities, and students who cared deeply about the natural environment. The members of this club were more aware of environmental issues, included more natural features in their drawings, preferred more natural images, knew about local green spaces, and seemed to spend more time outside than other students that were interviewed. While these students were self-selected for environmentalism, there seems to be positive feedback happening as well. While they joined the club with an initial interest in environmental issues, their time spent learning about and participating in activities surrounding them will contribute to their overall environmental attitudes.

In certain schools, there are teachers who are committed to the idea of field trips. These teachers provide wonderful opportunities to their students. One teacher regularly takes students on walks around the community, visiting places along the way, as well as incorporating physical

education (Teacher 5). Although he benefits are countless, some teachers are finding the barriers to field trips insurmountable. This will be discussed further in the barriers section below.

7.2.2.2 Barriers

A lack of interest in environmental issues may be a hindrance for some adults in terms of promoting environmental interaction. For example, teachers with little commitment to the environmental curriculum failed to incorporate environmental issues into their teaching. Parents, with little education, may not understand the importance of taking their children to natural spaces. Some participants named laziness or a lack of time among common barriers. Parents also may not feel inclined to spend their free time in natural spaces. On the other end of the scale, some parents schedule many activities for their children, such as sports or music lessons, and do not allow for much actual free time. City officials may feel burdened already by the many pressures of their jobs, that they do not feel they have the time to spend on promoting children's connection with nature. Similarly, teachers, feeling strained with curriculum demands, may not be able to figure out ways to promote environmental education under these constraints.

Cultural values were cited by a few teachers when it came to reasons for children's varying exposure to natural spaces. The City of Waterloo is home to a wide variety of cultures and immigrant families. Teachers noticed that sometimes children from other countries have different values and approaches when it comes to green spaces and the natural environment.

A major barrier is a lack of accessible natural green spaces. Many feel that the government is taking shortcuts and creating green spaces that are unusable. The cash-in-lieu policy means that green spaces are located further from neighbourhoods. The new recreation and leisure master plan that emphasizes that no new naturalization projects should be developed in neighbourhood open spaces (City of Waterloo, 2008b) only furthers this problem. Contradictory policies on green space creation and preservation can only lead to confusion and a lack of action.

In terms of field trips, teachers feel that a lack of money and administrative hassles are prohibiting the number and type of field trips they can provide for their students. Provincially funded trips are limited, and additional trips can be a problem, especially in schools where students come from a lower socioeconomic group. The amount of paperwork and legal barriers create a situation where teachers feel it would be simpler to stay in the classroom, rather than taking the class on a walk around the block.

Safety concerns and liability are major limiting factors for teachers. Schoolyard greening and field trips are severely limited by these factors. Teachers feel they need to constantly supervise and eliminate the potential for danger, especially with the climate of liability that is developing. The fear propagated by excessive media attention to singular cases may have made parents and teachers paranoid and excessively sensitive to minor dangers.

It is this same fear that leads parents to limit their children's activities, range, and access to a variety of opportunities. When children play outside, it is typically in their yards or local playgrounds. Children rarely play in natural green spaces without their parents. This fear stems from many things, such as abduction, UV rays, possibility of injury, and a generalized fear of the unknown.

In addition, children are finding themselves with less free time and more scheduled activities, such as sports teams or music lessons. Adults interviewed in this study were particularly focused on the importance of organized sport opportunities. Of course, children's preference for television, computer and video games (as indicated in the interviews), will absolutely detract from time potentially spent outdoors. These other priorities can get in the way of exploration, play and nature appreciation.

In terms of city planning, weak environmental policies are proving to be a barrier to access to green spaces. While Waterloo claims to be an "Environment First" city (Pim & Ornoy, 1996), there is little to show that there are any efforts to create, restore or conserve naturalized green spaces in Waterloo, beyond minimum requirements. The aforementioned recreation and leisure master plan (City of Waterloo, 2008b) is a prime example of this. As well, weak public participation means that children are not consulted about the areas they could be using. Natural green spaces are not really seen as places for children, and so, when public participation is conducted, it is only with adults. As well, without fully considering community knowledge of current space use, it is difficult for planners to figure out what is needed.

7.2.2.3 Current Trends in Relationships with Nature

The interviewed students primarily use natural green spaces and their trails for the purposes of cycling. They spend little time stopping and appreciating these spaces, or creating special bonds with particular areas. Overall, wilderness images received a lukewarm reception, ranking fourth, below landscaped parklands, playgrounds, and trails.

Plus, while some students did appreciate natural green space images, and were self-declared "environmentalists," few mentioned visiting truly natural spaces. Most still preferred landscaped

parkland areas. These preferences may indicate that the students do appreciate natural elements, but in an organized, "usable" format. Indeed, many children were forbidden from green spaces, or even feared them for one reason or another. The ratings for wilderness images were the most polarized, with a high standard deviation. Children appear to feel strongly one way or the other, and fewer are indifferent.

Only 58.53% of the grade five students actually included any sort of natural element in their neighbourhood drawings. A substantial proportion included only built elements. This raises the question of how much students are actually aware of natural green spaces or green elements in their neighbourhoods at all. On the other hand, 77.9% of the grade six environmental club students included a natural element. The environmental club students overall included significantly more outdoor play areas. These students also showed a significantly higher preference for natural green spaces, and a significantly lower preference for arterial roads and new urban built areas. This group may be more aware of and inclined to prefer green features and outdoor spaces naturally, or it could be a result of participation in the club. As mentioned previously, they are self-selected for environmentalism.

Through efforts in building bridges between children and the natural environment, and tearing down the barriers, the City of Waterloo, local teachers and parents could help to promote the child-nature connection. At the moment, a positive relationship between many children and natural spaces in the City of Waterloo is tenuous.

7.2.3 Question 3: "To what extent are children consulted or considered in community planning and decision-making?"

In local policy documents, there is no requirement to examine the community or community policies from a children's perspective or to consult with children on issues that relate to them. Local officials were entirely unaware of the *Convention on the Rights of the Child*, and none could identify any sort of policy which would reinforce this concept. On the other hand, some individuals working in public office make the personal choice to do these things, mostly when children will be the end-users of a community project.

This research question can be addressed by examining the four child friendly tenets mentioned in the literature review: Safety, Access, Integration and Natural Green Space. The extent to which each of these subjects is addressed with regards to children will determine how children are both consulted and considered in community planning and decision-making.

7.2.3.1 Safety

Safety appears to be the primary concern when it comes to children. Teachers and city officials frequently cited safety as the major factor in planning and caring for children. The safety priority overshadows the other tenets of a child friendly city. Safety concerns limit children's access, remove the potential for integration, and reduce access to natural green spaces. When children are considered in community design or planning, this almost exclusively refers to safety issues, such as traffic control around schools, the provision of sidewalks, or regulations concerning playgrounds. Creativity, access and integration are not considered. Safety concerns are also major factors in schools. Children's safety seems to be the determining factor when it comes to school and school ground design.

Waterloo's suburban developments have generally adhered to the idea of the "neighbourhood unit" conceived by Clarence Perry in the 1920s (Perry, 1929). This has undoubtedly increased safety by diverting traffic to major arteries, and grouping neighbourhoods around schools. Some may argue, however, that increased traffic on those arterial streets may now pose increased danger, especially for children. Some of Clarence Stein's ideas (Stein, 1957) are also incorporated, with an inner network of pedestrian trails. The plan to improve trail networks for cyclists and pedestrians throughout the city was mentioned frequently by city officials.

Some New Urban design features, including smaller lots, a higher density, and the reduction of emphasis on garages and cars, have been the focus of new suburban developments in Waterloo. While issues of accessibility, mobility and community might be addressed by this design, there is still some doubt. One researcher found the application of these principles in the City of Waterloo have been ineffective in changing habits of car use (Cipriani, 2009). In addition, a return to a grid pattern may actually decrease safety (Wang & Smith, 1997).

While traffic is clearly the number one planning issue when dealing with children's safety, other issues should not be overlooked. A generalized fear portrayed by the parents, and a fear of incidents and litigation in teachers puts very severe limits on design and creativity in playgrounds and school grounds. Field trips are declining, as well as changing in nature. While generalized fear and a concern for safety were mentioned by many children, teachers and city officials, others felt it was a relatively safe community. An informal online poll conducted by The Waterloo Region Record with readers asked "Do you think Waterloo Region is a safe community?" (The Waterloo Region Record, 2008) July 21, 2008, out of 859 responses, 63% said yes, and 37% said no.

The grade five students feared two main things in their communities. Primarily, teenagers created the greatest concern. The fear of "older children" or "teenagers smoking" kept students out of desirable spaces, and generally made them feel uncomfortable. This fear was not addressed by adults. The recommendations chapter will discuss some possible approaches for dealing with this problem. The other major fear in these students was the presence of busy streets. Safety initiatives dealing with issues such as traffic calming around school zones, and improving walkability are keys to helping children feel safe on their streets. Their freedom is often bounded by large streets.

7.2.3.2 Access

Many of the students appreciated having easy access to things like playgrounds, schools and stores. They liked feeling safe, and being allowed to travel to these places alone. Clearly, access is an important issue for children. However, the definition of *access* is mainly considered (and addressed) only in terms of disabilities, rather than access for all people, regardless of factors such as age, culture or ability. While it is absolutely imperative to create communities that are accessible to people with a full range of disabilities, the definition of accessibility should be expanded. The definition of *accessibility,* as previously listed in the introduction, and according to the Oxford Paperback Dictionary means 1. A way in, a means of entering or approaching and 2. The right or opportunity of reaching or using (Hawkins, 1979). These definitions would imply that accessibility means much more than providing for people with disabilities. All members of the population should be able to easily access, understand and use public facilities.

The city is taking steps to ensure facilities are accessible according to the needs of a broad range of disabled individuals. For example, a priority in Waterloo Park is the development of an "accessible" playground (City Official 2).

Interviewees from the city noted that all new facilities are designed according to Ontario Building Codes. Although these standards are required, they do not take children into consideration. While these codes are necessary to ensure minimum safety, they should be considered a minimum, rather than simply the expected. When the focus turns entirely towards meeting standards, creativity can disappear.

Opportunities and facilities were generally seen to be satisfactory in the City of Waterloo by interviewees. However, there do appear to be pockets of inequality of access. Access to things like green space or parks is certainly not equal. Areas of the city that are older and denser, with apartment buildings and townhouses, and those which are home to people of a lower socioeconomic status,

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appear to provide less green or open space. When these areas were built, they were not subject to the same parkland requirements that new subdivisions must observe. In addition, as one researcher noted, recreational facilities are poorly distributed within Waterloo's neighbourhoods (Cipriani, 2009).

At the two schools which ranked lowest in terms of parental income, there were noticeable differences in resources available and opportunities provided. At both of these schools, the teachers mentioned that teachers often contribute pocket money to provide things for their students. At one of the schools, volunteers were not plentiful, and this posed difficulties for field trips and discipline, as behaviour issues were more frequent and more extreme. There are certain devoted teachers who help to improve access to certain opportunities for their students.

The inclusion of numerous small parkettes for children in new subdivisions is a priority for planners. The intention is to ensure families with small children have access to recreational areas. However, traditional playgrounds are the only public areas really considered for children. In particular, the comment from a city official that green spaces are there for the adults, and the playgrounds are there for children (City Official 1) indicated this bias. The one Ontario Trails document even indicated they may introduce a minimum age for trail use (Ministry of Health Promotion, 2005). The policy that allows cash to be paid in lieu of providing five per cent of land to set aside for parks (City of Waterloo, 2004) allows planners and developers to either provide low quality land, or cash so the land can be bought elsewhere, away from neighbourhoods. Also, the Recreation and Leisure master plan clause that recommends against creating new naturalized areas in neighbourhood parks (City of Waterloo, 2008b) could be particularly harmful to providing accessible naturalized areas for children.

7.2.3.3 Integration

Integration is one topic that seems to be a particular problem in the City of Waterloo. Although Article 12 of the *Convention on the Rights of the Child* gives children the right to be heard (Office of the United Nations High Commissioner for Human Rights, 1989), there is no local awareness of this convention.

While teachers and city officials agree that children have much to offer, there is no real mechanism for involving them in decision making. Few are willing to make the effort, or do not have the time to include them in projects. Most officials were amenable to the idea of child involvement, as long as it did not mean additional work. Indeed, the City has just (Summer, 2010) implemented *Public Involvement Guidelines* in order to "offer a set of consistent approaches and practical tools for

staff" (City of Waterloo, 2010e, p. 3). This document is based on the involvement strategies: "Inform, Listen & Learn, Consult, Collaborate and Empower" (City of Waterloo, 2010e). While the document is an excellent step, and youth are even briefly mentioned as examples of potential stakeholders, it does not go so far as to say that children and youth may require creative or alternative means of outreach to truly achieve participation. It also gives government staff the responsibility to determine which stakeholders will be involved in any project. This could yet again lead to the conclusion that children have no "stake" in local green spaces. A transactive approach to planning that involves elements of advocacy planning would reinforce the importance of children's input.

Certain projects have included concerted efforts to include older youth. A good example is the invitation extended to skateboarding youth to contribute to the design and plans for the new skateboarding park. Through the use of Facebook ©, the planners of this facility were able to contact and encourage participation of a large number of youth (Schumacher, 2010). This type of outreach is excellent, and should be extended to include other types of decisions.

The City does have a Youth Recreation Council. This was established so that youth aged 13-18 could work together to create recreational opportunities for children that are organized and designed by children. Although the mandate of this group is to "be the voice of youth" in the city, it focuses on organizing recreational events, rather than addressing local issues (City Officials 3 and 4). The youth of the Recreation Council are often sent invitations to open houses and other community forums. Unfortunately, these events are not particularly appealing to a younger audience, as the events are targeted at adults, and are not child friendly in nature. In addition, the council is a limited group of youth, who are typically already engaged in public affairs. The Youth Recreation Council relies on youth coming forward. The opinions of other youth, and particularly the ones who might be causing problems, are generally neglected. These might be the most important youth to reach.

Integration projects in the past appear tokenistic. For example, one official cited a small visioning project done by a class of kindergarten students ten years ago. However, on occasion, some officials have made real efforts to reach out to youth. For example, the Waterloo Park Master Plan update included a visit to members of the Youth Council. While this outreach is commendable, unfortunately, it was only on one occasion, during the preliminary stages. Aside from this, there were no efforts to include younger children (below the age of 13), or to further involve youth.

The responsibility for involving children in the community appears to be handed from the city to teachers, and from teachers to parents. Even the responsibility of getting involved is sometimes passed from parents to their children. One city official thought the school board should change the

curriculum to involve more civics (City Official 1). The school board gives teachers the responsibility to interpret the curriculum in appropriate ways. Teachers say that parents are responsible for teaching children about civic responsibility.

Teachers are often the first adult individuals to have a major influence over children's activities outside the home. If they do not provide opportunities to learn about the world, the community and the local environment, students miss out. Some teachers feel strongly about integrating children into the community, while others focus more on traditional subjects.

All in all, the lack of integration may be one of the major failings of the City of Waterloo when it comes to children. Children are not well integrated into city design. They are not visible, and they are rarely included. There are no requirements to include children's views in decisions.

Personal observation: Access to children

Access to children's views is difficult to attain. I needed no less than eight levels of permission in order to conduct short, simple interviews with children at elementary schools. Between ethics committees, police checks, school board approvals, principals, teachers and parental permission forms, it is easy to see why people might turn away from research or outreach with children. These layers of protection, while installed with good intentions, limit children's ability to communicate with and learn about the outside world. One principal I spoke with flatly refused to have the school's children interviewed, as this would potentially interfere with learning time. As an individual researcher, without a team of researchers, an established initiative or government connections, it was also difficult to garner interest in this project. A project put together by a trusted organization or local government would likely attain a larger number of willing participants.

In addition, institutional settings, and an atmosphere of constant surveillance make accurate opinions from children difficult to capture. Students are unlikely to tell researchers in their school about the actual spaces they explore on their own, especially if they don't want their teachers or parents to know (Personal Observation, 2010).

Text Box 2: Personal observation: Access to children

7.2.3.4 Natural Green Space

While the city has natural green space strategies, such as the *Environmental Strategy* (City of Waterloo, 2009b) and the *Environmental Lands Acquisition Strategy* (City of Waterloo, 1997) as well

as an "environment first" mandate (Pim & Ornoy, 1996), there seems to be little concern for creating new naturalized green spaces, or preserving and improving older ones. The city is expanding and building at a rapid pace, but there is little in the way of park space included. Subdivisions continue to grow, and existing green spaces are gradually reduced for other purposes. As mentioned before, the new *Recreation and Leisure Master Plan* recommends *against* naturalizing parkland areas (City of Waterloo, 2008b).

The Parkland Dedication Fund, money that is taken from developers in lieu of the five per cent of land required to be set aside for parkland purposes, has been used to purchase land along the western edge of the city (City of Waterloo, 2008b), rather than use prime real estate in neighbourhoods for park areas. Some of the officials and teachers interviewed agreed that parklands are often developed on non-prime, residual land that has little value or cannot be developed (City Official 2, Teacher 1). For example, storm water management ponds count as parkland. This focus on efficiency means that these parks are not necessarily accessible, desirable or visible.

Local natural green spaces are not designed for children, and the official who claimed that green spaces are for adults (City Official 1) highlights this problem. While most city officials agreed that children should be involved in decisions about spaces where they will be the end-user, if woods are not seen as a child's domain, they will never be consulted.

Natural areas are treated as museums. Visitors can look, but not touch, or venture past the "velvet rope" (City Official 4). There is little that children are permitted to do in natural areas. This is highlighted by signage requiring people to stay on the trails, or by trail associations actually considering setting a minimum age limit for trail use (Ministry of Health Promotion, 2005). Even programs that promoted children's interaction with nature, such as Girl Guides of Ontario, are losing funding and closing their camps (Schrivener, 2009).

Schools offer a unique opportunity to help children, who might not otherwise have access to nature, form that important connection. Programs such as Toyota Evergreen Learning Grounds (Evergreen, No Date) are working to improve school ground green spaces. The Evergreen Learning Grounds program helps schools avoid problems that arise from a lack of knowledge (such as placing trees too close to the school). It aims to provide green areas that are accessible and practical for student use (Teacher 1). While some of these school ground projects do involve children, and often gather their input, admittedly, they are more focused on planning *for* children than *with* children. However, there are still schools where any attempts at naturalization are off-limits to students.

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Board funded field trips to conservation areas are limited, and subject to "luck of the draw," as noted by the teachers. Trips to other environmental education spaces elsewhere can be costly, and this is particularly a barrier in the schools in lower socioeconomic areas (where children need them most). Despite what we know about participatory, interactive learning (For examples, see Bouillion & Gomez, 2001; Dillon et al., 2006), and current environmental challenges, these trips are becoming even more structured, and more limited.

Children that were interviewed generally only mentioned using natural green spaces to speed through on bicycles, and rarely interacting with the natural features. While a number of children did appreciate photos of naturalized spaces, and there was the occasional child that truly did appreciate wilderness, landscaped parklands were the most popular. Children seemed to see these areas as having more affordances. "Green" was appreciated as a quality of a place. Green features (scattered trees, gardens) were important, but naturalness was not. While many "liked" wooded areas and pictures of naturalized green spaces in pictures, they rarely mentioned using them in interviews. In terms of the neighbourhood drawings, the "score" for including natural features was very generous. If a child drew one tree, or indicated the direction of a pond, they were included. Actual inclusion of a forested natural area was rare. Even with this generous scoring system, only 58.53% included some sort of natural feature. However, the students that focused their attention on the natural areas in their drawings did tend to talk about visiting them.

7.2.3.5 Points of Agreement

In terms of the way the City of Waterloo addresses children, there were many points of agreement between city officials, teachers, and many of the students. General impressions and issues such as safety, facilities, and integration all showed a great deal of agreement between all interviewees.

7.2.3.5.1 General Impressions

The majority of all interviewees felt positively towards the City of Waterloo. There was a general feeling that it is a good place to grow up and raise children. Few interviewees, child or adult, could come up with any major things that needed to change. There also does seem to be consensus on what makes a pleasant and child friendly city between all three groups. Generally, safety is important, traffic is a big concern, green spaces are favourable attributes and biking trails are important.

Teachers and city officials all agreed that the city has done a good job promoting bicycle trails and sports within the city. Everyone seems to be, for the most part, working towards common goals.

Students, understandably, given their age and life experience, seemed to be more aware of their direct world interactions than the broader picture. At this stage of life, they were not ready to comment on the state of the city. Students have little frame of reference or comparison. They have few complaints, and often end up repeating messages from their parents and teachers.

7.2.3.5.2 Safety

Safety was a major concern for all interviewees. Children were quite aware of spaces where they did and did not feel safe. Busy roads were the area of main concern, though many also felt unsafe in wooded areas. Teachers and city officials take pedestrian safety issues very seriously. Adults (both teachers and city officials) were very concerned with liability as well as with the actual safety of children.

Among the interviewed children, fear of bullies, strangers, and teenagers was common. This topic did not arise with teachers or city officials. Teenagers were addressed from an adult perspective more as a nuisance to adults than a threat to younger children.

7.2.3.5.3 Facilities and Services

Both children and adults seemed generally satisfied with the facilities and services available to children in the city. In terms of activities, at this age, playgrounds are still relatively important, but their popularity is waning. The City's focus on accessible parkettes and the addition of new accessible playgrounds meshes with this interest.

There is also a major focus on cycling in this city. Teachers and students alike were very focused on the use of bicycles. This was the most frequently cited activity among students. Two of the teachers mentioned cycling to work on a regular basis. As such, it is excellent that the city is working to improve bike lanes and connect trails.

7.2.3.5.4 Integration

City officials felt it was the responsibility of teachers to get children more involved in community. Teachers felt it was the responsibility of parents. City officials and teachers seem to have the same goals, but want each other to take the lead. Parental input into this discussion would have been valuable, but was not practical for this study. Teachers and city officials all felt that there was a lack of children's participation in city decision-making. Both groups agreed that children could

provide valuable input. This was fairly consistent. They also agreed that there was a lack of appropriate venue for children to share their ideas. The responsibility for this situation was where they differed.

It seems that when children will be the specific end-users for a project (for example, the new skate park), then they are consulted. Places like this are the only parts of the city seen as "for children." The majority of public space is designated for adults. For example, natural green spaces and shopping areas are not planned with children in mind. Many officials felt this was an appropriate approach. The effects of this approach appear consistently in children's dislike for "boring" places, like shopping areas, or "scary" places like many forested areas.

7.2.3.6 Points of Disagreement

On the other hand, there were some areas of disagreement that are probably worthy of discussion. These include responsibility, the importance of organized sports, the provision of green spaces, and planning and development.

7.2.3.6.1 Responsibility

One of the main questions a city government must answer is: *who is responsible for what*? In this process, it seems that the responsibility for getting children into natural green spaces and involved in the community is passed from one group to another. The city feels that teachers are responsible for these things. The teachers feel the parents are responsible for these things. Unfortunately, this passing of responsibility leads to a neglect of responsibility. However, all groups are ultimately responsible.

7.2.3.6.2 Organized Sports

The City has emphasized facilities for organized sports. Teachers recognized this as a positive feature of the community. However, organized sports seem to be most important from an adult perspective. As mentioned previously, nearly half of the students discussed casual sports they play with their friends, but organized sports were only mentioned twice. Without internal motivation for these activities, and the feeling that they are optional and fun, will children maintain sports as part of their lifestyles in the long term?

Enrolling children in organized sports is touted by many as the solution to problems of inactivity and obesity (for examples, see Alfano, Klesges, Murray, Beech, & McClanahan, 2002; Weintraub et al., 2008). However, some are now asking whether we are over-scheduling our children,

and whether sports the best way to promote active lifestyles. Some researchers (Burdette & Whitaker, 2005) and organizations such as the International Play Association (IPA Canada, No Date) are instead promoting the benefits of free play.

7.2.3.6.3 Natural Green Spaces

A third major area of disagreement concerns the provision of green spaces. There seemed to be widely varying opinions about whether we have sufficient high quality green spaces for children to use. Some officials and some teachers seemed to feel green space provision in the City of Waterloo was adequate or even plentiful, and some felt the opposite. Some children were happy with the amount of green spaces and natural features in their neighbourhoods, and some felt they needed more. There was no consistent answer to this question. This is probably a realistic assessment, reflecting general local opinions. There will never be a complete consensus on these sorts of issues.

7.2.3.6.4 Planning and Development

The theme of efficiency in green space design and placement came up with a number of adult interviewees. One city official felt that pairing natural spaces with schools or storm water catchment basins, and assigning un-developable areas to be designated green space was a positive way to save money, while other officials and some teachers felt this focus on efficiency was cheating city residents out of plentiful, usable, high quality green space areas.

While children are considered in some obvious aspects of city planning, this consideration is limited. Children are rarely consulted on many of the issues that will affect them. The city needs to consider a broader, more consistent approach for including children in Waterloo.

7.2.4 Question 4: "Can the Child Friendly City model be used to re-connect children with the natural environment?

7.2.4.1 What Does the Child Friendly City Model Offer?

The Child Friendly City model was developed based on the *Convention on the Rights of the Child*, and primarily, the fundamental principles of non-discrimination (article 2); best interests (article 3); every child's right to life and maximum development (article 6); and listening to children and respecting their views (article 12) (UNICEF: Innocenti Research Centre, 2004).

As discussed earlier, the Child Friendly City guarantees the right of every young citizen to:
1. Influence decisions about their city
2. Express their opinion on the city they want

3. Participate in family, community and social life
4. Receive basic services such as health care, education and shelter
5. Drink safe water and have access to proper sanitation
6. Be protected from exploitation, violence and abuse
7. Walk safely in the streets on their own
8. Meet friends and play
9. Have green spaces for plants and animals
10. Live in an unpolluted environment
11. Participate in cultural and social events
12. Be an equal citizen of their city with access to every service, regardless of ethnic origin, religion, income, gender or disability.
    (UNICEF, No Date-a).

The Child Friendly Cities program also outlines a framework for municipal action (as was discussed in the introduction.) The elements of this framework include:

1. Children's participation;
2. A child friendly legal framework;
3. A city-wide Children's Rights Strategy;
4. A Children's Rights Unit or coordinating mechanism;
5. Child impact assessment and evaluation;
6. A children's budget;
7. A regular State of the City's Children Report;
8. Making children's rights known; and
9. Independent advocacy for children
   (UNICEF: Innocenti Research Centre, 2004).

While the program does give children the right to have green spaces for plants and animals, it also encourages cities to forge many of the connections needed to help improve the relationship between children and nature on a deeper level. It emphasizes the importance of safety, access to resources, and gives children the right to participate in the community and in decisions. While this thesis focuses on the urban planning aspects of this program, other aspects, such as legal rights, healthcare, and protection from abuse are clearly of critical importance.

7.2.4.2 What is the Child Friendly City Model Missing?

The Child Friendly City model was designed very broadly to allow cities from all over the world, in very different contexts, participate. With that being the case, it is difficult to create specific criteria that apply to all possible communities. This is the main reason that there is no universal certification program for Child Friendly Cities. Switzerland has adopted a country-wide certification

program that proved to be quite popular, and a good motivation for participation (UNICEF, No Date-e). A Canadian UNICEF Child Friendly Cities certification program would be a major motivator for community participation, according to one city official interviewed (City Official 5).

One factor that could make participation in this program a challenge is the fact that Waterloo is governed at two different levels. The regional government and the municipal government each take care of a subset of issues in this community. Cooperation and communication between the two levels would be necessary for a Child Friendly program to work. The Child Friendly City model does not take this sort of problem into account.

7.2.4.3 What is the City of Waterloo Missing from this Program and Framework?

Many teachers and city officials felt that the City of Waterloo is already a Child Friendly City. However, when measuring the city against the criteria and the framework for action (Table 15), some large gaps become evident.

Table 15: How does the City of Waterloo measure up to Child Friendly City Criteria?

Child Friendly City Criteria*	State of the City of Waterloo
Influence decisions about their city; Express their opinion on the city they want	• While children are welcome to present their views at forums or council meetings, no child friendly venues exist. Any sort of outreach is on an ad-hoc basis, and the personal choice of project managers. • The City's Youth Recreation Council focuses on event planning for youth, and not on political issues.
Participate in family, community and social life; Participate in cultural and social events	• Opportunities for sports are abundant in this city. • There are city-wide family festivals, which promote children's attendance. • Older youth can be involved in the Youth Recreation Council. • Playgrounds are designed to keep children insulated, lack visibility, and are generally poorly integrated with the community (City Official 2).
Receive basic services such as health care, education and shelter; Drink safe water and have access to proper sanitation; Be protected from exploitation, violence and abuse	• Canada's children generally have many of their basic needs met. Health care, education and social services are universal in Canada. • Canada ranks 4th in the Human Development Index, indicating high life

	expectancies, levels of education, and standards of living (United Nations Development Programme, 2009).
Walk safely in the streets on their own; Meet friends and play	• The city has made safety a priority. • The focus on improving walkability, and crime prevention efforts may help further. • Children are still afraid of busy streets and teenagers.
Have green spaces for plants and animals; Live in an unpolluted environment	• New developments are required to put aside 5% of land for parks or provide cash-in-lieu for a Parkland Dedication Fund. Large areas of land have been purchased at the edge of the city with this fund. • While the city prides itself on its green spaces and parks, there are no known plans to expand this system. Naturalization is discouraged by the Recreation and Leisure Master Plan (City of Waterloo, 2008b) • Green spaces are abundant in the form of sports fields and playgrounds. • Air quality is an ongoing struggle in Southwestern Ontario due to the industrialized nature of the region, and proximity to emissions from the United States (Clean Air Partnership, No Date).
Be an equal citizen of their city with access to every service, regardless of ethnic origin, religion, income, gender or disability.	• The city is very diverse, with many people of varied cultures, ages and abilities. It strives to follow guidelines for improving accessibility for those with language barriers or disabilities. • As one city official noted, the programs that are provided by the City do not reflect the diverse nature of our community. There are plans to discuss this issue (City Official 4). • While the city struggles to reach all ages, new projects, like the action sports facility, may help youth feel more welcome and accepted in the community.

*(UNICEF, No Date-a) (Note, the criteria have been clustered into related groups).

7.2.4.3.1 Framework for Action

The framework for action represents the building blocks that can help communities become child friendly. One of the City's officials felt that the city already makes Child Friendly decisions,

without the need for a program to guide these decisions. However, the majority of elements of the recommended framework appear to be missing. Please see Table 16 for an evaluation of the City of Waterloo from a Child Friendly City framework perspective.

Table 16: How does the City of Waterloo measure up to the Child Friendly City Framework?

Framework Components*	City of Waterloo
Children's participation	• This is limited. There is a Youth Recreation Council, but it does not really participate in local government. • Consulting with older youth on specific projects happens on an ad-hoc basis.
A child friendly legal framework	• Beyond the scope of the study. (Unknown, but possible).
A city-wide Children's Rights Strategy	• None
A Children's Rights Unit or coordinating mechanism	• None
Child impact assessment and evaluation	• None
A children's budget	• None
A regular State of the City's Children Report	• None
Making children's rights known	• None of the interviewees had heard of the *Convention on the Rights of the Child*.
Independent advocacy for children	• While there are numerous organizations in the city that focus on helping children, there is no government body or ombudsperson responsible for advocating for children in government decision-making.

*(UNICEF: Innocenti Research Centre, 2004)

7.2.4.4 How Could the Child Friendly City Model Help the City of Waterloo Fill These Gaps?

Participation in the Child Friendly City program, using the UNICEF framework as a guide for action would be a logical step for the City of Waterloo. By following some or all of the guidelines in the CFC framework, the City would be asserting its commitment to the cause of children's rights. As there is currently no certification program, there is no requirement to follow every suggestion. Rather, these are a series of recommendations a city can follow. As it stands, however, none of the features of

the framework are truly in place at the City of Waterloo. Optimally, implementing all of them would be beneficial for the city.

A glaringly obvious missing feature in the City of Waterloo is a method for including children, their opinions, and their needs in local governance. This is the main benefit that participation in the Child Friendly Cities program would provide. The only evidence of children's involvement in city affairs is the Youth Recreation Council, which is involved with organizing things like art displays, sports events, fundraisers and fashion shows (City of Waterloo, No Date). Although participation in this council would undoubtedly be beneficial for a young person, there is no direct or official opportunity to have a voice in community decisions. This only happens in an ad hoc fashion.

Adherence to the Child Friendly City program would oblige the city to examine city policies from a child's standpoint, and draw together a plan to bring children into the consciousness of all involved in making decisions for the City. That said, taking smaller steps by implementing certain features of the Child Friendly City framework may be a more reasonable goal. The following chapter will address specific recommendations for the City of Waterloo.

7.2.5 Limitations of the Research

As with any research, and particularly qualitative social research, this study is subject to bias. First and foremost, it is important to recognize researcher bias. I have entered this field, developed questions and spoken with people all with a particular education and set of opinions, past experiences and feelings. That said, I have tried to remain as neutral as possible. Other unavoidable forms of bias include sampling bias, desirability bias and familiarity bias. Missing elements and measures taken to avoid exaggeration of results will also be addressed.

7.2.5.1 Sampling Bias

Unfortunately, the sample of children interviewed was not random. A lack of cooperation from the majority of principals and teachers meant that every school in the City of Waterloo with a grade five class was contacted, and all of those who agreed to participate had to be included. The teachers who agreed to participate were already biased in favour of environmental research, and towards involving their students in projects outside school. This may have biased the responses from the teachers and their students in an environmental and community-oriented direction. In addition, there was no way to control the information the teachers provided their students with before the interviews. Although they were asked to remain quiet about the purpose of the interviews, there is

reason to believe that at least one teacher mentioned that this study had to do with the natural environment.

Due to these limitations, this study cannot statistically be generalized to the entire child population of Waterloo. It serves as an example of the type of research that could be done with all children. Comprehensive research involving children from all age groups would be much more beneficial. This study can only be said to represent the views of 41 grade five students and 13 grade six students from a variety of schools in the City of Waterloo. The results would undoubtedly vary across different grades, cities, and schools. In addition, the study is cross-sectional rather than longitudinal in nature. Environmental attitudes and habits have changed rapidly over time, and on-going consultations with children would be a necessary step in order to ensure realistic and current data. Indeed, a longitudinal study that revealed how children's interactions with nature have actually changed over time would be very beneficial.

The city officials and teachers were also not randomly selected for interviews. The teachers were all the grade five teachers that allowed research to take place with their classes. The city officials were selected based on the relevance of their positions to children, to decision-making and to planning in the city. Snowball sampling was used in this case.

7.2.5.2 Desirability Bias

Another very plausible source of bias is that students would want to provide the "right" answers. Everyone wants to make a good impression. For example, most children know that playing video games is not considered widely acceptable by adults, and that playing outdoors is preferable. The recorded numbers of responses for activities such as these are likely distorted from reality. In further studies, more accurate ways of measuring these activities would include activity diaries, or random responses to questions such as "what are you doing right now?" using a pager or other device.

Many times, students would provide opinions (particularly environmental ones) that they seemed to be simply repeating from parents or teachers. It was unclear if they really understood or had internalized the issues. For example, students would make comments about tree diseases or inconvenient intersections for driving. It was apparent that these students were trying to impress with their knowledge.

One of the interviewed classes consisted of grade six students who were all involved in the environmental club at the school. The teacher showed a great deal of interest in the project, and we felt they would make an interesting point of contrast against other students. These students were older

than the main group of respondents, all female, and self-selected "environmentalists." Clearly, this was a strongly biased sample, so none of their data were used in the compiled analyses. However, their data proved beneficial in evaluating whether this study's methods were measuring intended variables, and provided a point of contrast for the grade five students. In addition, they provided an example of the benefits of participation in environmental school clubs.

7.2.5.3 Familiarity Bias

Preferences for images often seemed to be influenced by familiarity. When students commented that they knew a particular place in an image, they would typically rate it highly. For example, it happened by chance that one of the playgrounds from an interview school was used as an image in the series of surrogate images (pictures were taken far before schools were chosen). This playground was in a bare field, with no trees, and was rated as less desirable by most students from other schools. However, the students familiar with the playground rated it highly. This actually provides some important insight into what students find appealing. Familiarity breeds preference.

7.2.5.4 Missing Elements

The study would have greatly benefited from parent interviews. Parents are typically the most influential individuals in a child's life, and the full picture about children's relationships with nature and the community cannot be drawn without this missing element. Unfortunately, the administrative barriers to speaking with children in the classroom would have extended further if we had also requested an additional interview with parents. This would not have been practical in this context. Further studies should definitely attempt to address this missing link.

Also, students at this age were not entirely comfortable with the semi-structured interview format. They were comfortable drawing pictures and rating images, but were shy and hesitant to answer questions. Although I was a female interviewer, and had permission from parents and teachers, questions about their homes, play habits and activities may have triggered a sense of caution, in that children are constantly aware of potential predators. A longer opportunity to engage with the children and earn trust, perhaps as a group, would have been beneficial to this study.

On a positive note, there are some ways that elements of bias could work in favour of the thesis. For example, if the bias is that students were fore-warned that the study was about nature, or if they were exaggerating their outdoor activity and time in nature, but many still responded that they are spending little to no time outdoors or in nature, this indicates a real problem. In addition, any

quantitative calculations were performed generously. Counts of "natural features" in the neighbourhood drawings included single trees and even grass. Borderline differences were not examined in detail, and overall trends formed the basis for analysis.

7.3 Summary

Despite possible sources of bias and missing elements, this study has revealed some important gaps in the city's policies and operations, established a perspective of the city from Waterloo's grade five children and demonstrated one potential way for performing research with children.

The children interviewed for this research demonstrated that they see the world in slightly different ways than adults. Their concerns and preferences are based on a different set of experiences, and are not necessarily evident to adults.

While many of the children that were interviewed appreciated the aesthetic value of nature, it seemed most of them preferred it in organized, landscaped spaces, rather than in a wild state. Feelings of discomfort showed up repeatedly concerning the use of wooded areas. At the same time, local children's access to natural green spaces appears to be limited by a number of factors including priorities, rules, by-laws and city design.

The City of Waterloo's children are valued and protected, but they are rarely consulted, and often not even considered in city design and management, even about issues that directly affect their lives. Children have the right to participate.

The City of Waterloo was compared against the UNICEF Child Friendly Cities goals, and was found to be lacking in a number of key areas. The CFC goals and framework would provide a reasonable approach to improving child friendliness in the City of Waterloo. The next chapter will discuss a broad range of recommendations for the City and its residents.

Chapter 8: Recommendations for Action in the City of Waterloo

"These things are fun
and fun is good."

- Dr. Seuss (One Fish Two Fish Red Fish Blue Fish) (1960, p. 51)

For children to reconnect with the natural world, and for children's role in society to change, all citizens must take part. From the United Nations and the *Convention on the Rights of the Child*, to municipal governments, to individual children, everyone has a role to play and can contribute to the solution in unique ways. Even people with no direct contact with children have a responsibility to help maintain safe, welcoming and vibrant communities. When the responsibility for involving children and teaching them about the natural world is ignored or passed along, the potential for change disappears.

The *Convention on the Rights of the Child* is an important document for many countries, and was ratified in Canada almost twenty years ago. However, no one interviewed for this study, teachers or city officials, had even heard about it. The issue of children's rights needs to be at the forefront of government agendas. While much of UNICEF's focus has been on developing countries, all Canadian communities could benefit from participation in this program, particularly since many have the resources to make these changes.

This chapter will outline changes that the City of Waterloo can make, and offer suggestion for teachers, parents, children and researchers. In addition, it will address the potential for partnerships with various organizations.

8.1 The City's Role

The City of Waterloo could make many changes in priorities, research, policies and programming as well as an overall approach that would help improve child friendliness. Giving children the opportunity to be heard is not only a good idea and desirable for effective and equitable community planning, but is also their legal right. A commitment to become a more Child Friendly City would make sense for the City of Waterloo. For an "Intelligent" and "Environment First" community, the quest to become a "Child Friendly City" would be a logical next step. A city that is friendly to children is friendly to everyone. Table 17 outlines recommendations for changes the City of Waterloo could make to become more Child Friendly. Each will be discussed in detail.

Table 17: A City of Waterloo Guide for Action for a child friendly, nature friendly city.

Recommendation	Actions	Examples
Evaluate priorities and put children on the agenda	• Create a Child Friendly Waterloo Strategy • Consider child, nature and community connections	• Establish a set of steps the city will take to address children's rights. • Promote Conservation and Restoration • Improve Access (to natural green spaces, to facilities) • Improve Integration
Examine research and other communities	• Work with local institutions • Look at examples of child friendly initiatives in similar communities	• Partner with Universities and Colleges • The Child Friendly Cities secretariat is a good resource. Edmonton is one excellent example.
Examine policies and government structure	• Look at policy from a children's perspective • Create new positions and/or committees to fill this critical gap	• Install a children's ombudsperson • Create a committee on child and youth issues
Consider programs and projects	• Join International, National and Provincial Programs • Create individual programs	• Child Friendly Cities • YouthScape • Youth Friendly Cities • Youth Council could have a more political role • Expand outreach programs to include children and youth in decision-making • Introduce more nature programs for children
Overall Approach	• Recognize and celebrate achievements • Create a more lively, inviting atmosphere for children • Involve children	• Celebrate Waterloo's positive attributes. • Think creatively about new approaches (e.g. natural or adventure playgrounds, colourful and interactive buildings and art) • Invite children to participate in community enhancement projects

8.1.1 Evaluate Priorities and Put Children on the Agenda

8.1.1.1 Create a Child Friendly Waterloo Strategy

The creation of a Child Friendly Waterloo Strategy would be an excellent first step to put children on the agenda, organize priorities and create a plan for the creation of a Child Friendly City. This was one of the first steps performed by the City of Edmonton, which used a participatory approach to create their *Child Friendly Edmonton Strategy*. Edmonton found that the goals and values promoted by UNICEF's Child Friendly City program were shared by the community (City of Edmonton Community Services, 2008).

If Waterloo undertook the creation of an official *Child Friendly Waterloo Strategy*, certain issues must be addressed, such as those outlined in the next section, in order to help reconnect children to the natural environment and to the community. The *Strategy* could be used to identify reasonable goals among the other recommendations in this section.

8.1.1.2 Connecting Waterloo's Children to the Natural Environment and the Community

While it excels in many areas, there are a number of ways the City of Waterloo could help local children re-connect with the natural environment as well as the broader community. These issues are all inter-related, and the heuristic in Figure 5 outlines the relationships between some major issues.
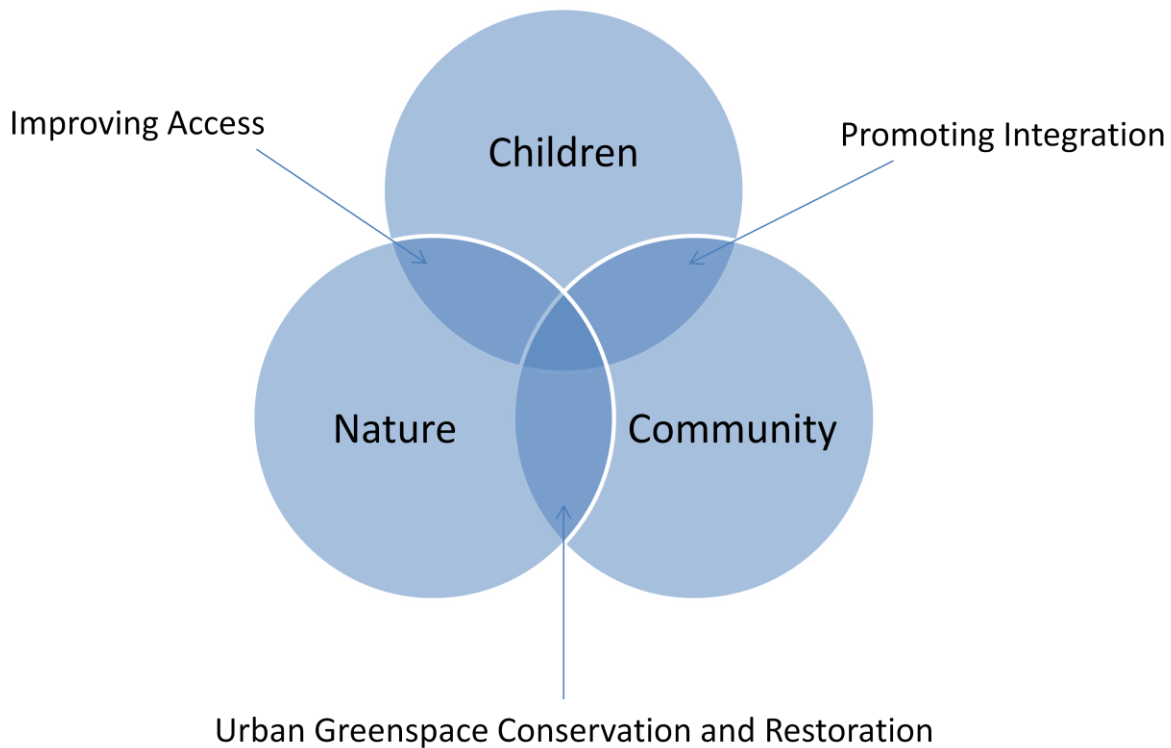
Figure 5: Venn diagram of relationships needed in the City of Waterloo. The intersection of the three circles results in a child friendly community that promotes the child-nature connection.

This diagram describes the key relationships necessary to create a child friendly city that promotes the connection between children and nature. The three circles contain the three domains that must be connected: Children, Nature and Community. The circle intersections are areas where the City can take action to help provide these connections: by improving access to natural areas, by improving integration of children in the community, and by promoting urban natural green space conservation and restoration. When all three are supported, children should have a better connection with natural areas and with their communities. Additional benefits potentially include improved community health and even safety. These three actions are all addressed by the Child Friendly Cities program.

8.1.1.2.1 Improving Urban Natural Green Space Conservation and Restoration

Policy documents consulted for this study do not acknowledge the importance of natural green spaces for human health. When it comes to creating healthy communities, most of the strategies and policy focus is on improving walkability. While this is a key attribute of a healthy community, it

is not the only factor. At the same time, "walkability" is left as an open-ended concept and rarely defined. "Green space" is also poorly defined. Some documents define it as any space without buildings or roads. The city's definition of green space includes sports fields and other expanses of grass even with no other natural features. Definitions for these sorts of terms should be made clear in order to avoid confusion.

The city could also improve efforts in natural green space conservation and restoration. Although the city is proud of the "Environment First" strategies and plans, there are some that could improve substantially. The Recreation and Leisure Master Plan's statement recommending against naturalizing park areas (City of Waterloo, 2008b) is a prime example of this problem. The focus on economic development, attracting businesses and core intensification has left little room for natural green space enhancement. A focus on efficiency has led to natural spaces and park areas that are of low quality and/or inaccessible. See the section below on Policies for more in-depth recommendations.

8.1.1.2.2 Promoting Integration

This research has revealed that one of the main problems concerning children in the City of Waterloo is the lack of integration. While other groups have similar problems (such as the elderly and immigrant populations), this study has specifically identified the lack of children's participation in city decisions. As this study has taken a transactive approach with advocacy and communicative elements, so should planning processes in the City of Waterloo. In this way, knowledge can be shared in two directions (from the City to children, and from children to the City), and local knowledge from the younger members of the community is given due respect as a valued resource.

City officials lament the lack of public interest, initiative and involvement. However, when children are given the impression from an early age that they have no power and can have no influence over their own communities, they will develop apathy towards the system. A number of the teachers interviewed felt that children had no power, and that children also felt that way. Why not emphasize the importance of public participation from an early age? City officials also complain about a lack of student initiative. However, we do have a responsibility to children, some of the most vulnerable members of society. Every effort for outreach should be made to the public generally, and particularly to children who are typically insulated from public life. When the only advertising for public forums happens in the very back of the classified section of a community newspaper, it cannot be considered well-promoted.

Community involvement is one of the only real routes to environmental action, and yet children have never truly been involved in green space planning. The trend is to teach students about environmental issues, without giving them the tools they need to make a difference. This is bound to be ineffective (Chawla & Flanders Cushing, 2007).

There is no one responsible for examining policy documents from a child's perspective. Without integrating children's views and needs into community policy, how can we ever hope to create an inclusive society? The only time that children are really considered is in obvious matters such as playgrounds and schools.

The question then becomes, how can this these issues be resolved? Participatory approaches to decision-making that involve children, and go further than simple invitations to council meetings and adult-oriented forums are necessary. These approaches must be designed with regard to age (Punch, 2002). Effective practices according to Frank (2006), "give youth responsibility and voice, build youth capacity, encourage youthful styles of working, involve adults throughout the process, and adapt to the sociopolitical context" (Frank, 2006, p. 366).

More specifically, Driskell outlines specific types of activities that can be used in order to engage groups of children in community decisions (Driskell, 2002). As some examples of child-friendly participation techniques, he lists: informal observations, interviews, drawings, activity schedules, role-play, puppetry, guided tours, photographs taken by young people, behaviour mapping, questionnaires and surveys, focus groups and workshops and community events (Driskell, 2002, p. 98).

Most importantly, the necessity of including children and youth in community decision making and planning must be integrated into policy in a systemic and systematic way in order to ensure the endurance of the concept" (Knowles-Yánez, 2005).

8.1.1.2.3 Improving Access

The City of Waterloo should be promoting children's access to a full range of services and environments. Service provision does not seem to be a particular problem in the City of Waterloo, although it has been suggested that recreation facilities are somewhat centralized (Cipriani, 2009). In particular, the provision of sports opportunities is clearly one of the City's strengths.

However, one problem is a lack of access to natural green spaces. Again, the type of attitude demonstrated in the recreation and leisure master plan that recommends against new naturalization

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projects could be considered a major barrier in this case (City of Waterloo, 2008b). While plans and guidelines put forth by the City of Waterloo all stress the importance of natural features, naturalized parkland and the preservation of green elements generally, there is little evidence of these things in actual city practice. Most significantly, naturalized parkland areas are not particularly accessible or open to children. As well, the perspective of natural green spaces as adult spaces is harmful to the child-nature connection.

Community design plays a critical role in creating positive child-nature relationships. Community green spaces (both natural and groomed) that are designed to be accessible, safe, diverse, and inviting to children are more likely to draw families and older children on their own. Certain guidelines, such as those which allow developers to pay cash in lieu of providing parkland in new developments (City of Waterloo, 2004), or those that discourage naturalization in neighbourhood parks means that equal access to natural spaces is unlikely (City of Waterloo, 2008b). Natural spaces must cease to be considered adult spaces. They need to be re-evaluated as potential spaces for play, and we need to find ways to allow children to explore them safely and freely. The city could also promote more community-wide "nature" activities in which children can participate. This also helps to reinforce the connection between schools and the government.

Figure 6: Public sports field in Waterloo. The sign reads "Unauthorized field use PROHIBITED without valid rental agreement." Is this small child breaking the rules?

Access to sports fields and many other amenities are often limited to those paying user fees, or belonging to certain groups even when they are unoccupied. Please see Figure 6 for an example. It may be time to re-think certain rules and regulations, while remembering the type of community Waterloo is striving to become, and the types of activities we would like to encourage among our children.

The city's plan to develop a permanent action sports park in the centre of town is a very positive step forward. Facilities that are designed specifically for (and with) teens create a sense of community and welcome for a demographic that has traditionally been excluded. Hopefully, more of these sorts of spaces will be considered in the future.

The term "accessibility" should also be better defined, to include access for everybody, rather than just abled, English speaking adults. Benefits of Child Friendly Cities often extend to people who are disabled, elderly, and even people who are not native English speakers. Factors such as non-slip surfaces, facilities with handrails, and signage with pictures instead of just words have no negative impact on the general population, but improve accessibility for more people. Adults with no disabilities can live comfortably in a community that makes allowances for children, the elderly and the disabled. The reverse is not true. However, without involving everyone in the decision-making process, decisions typically are made by abled adults who do not have a full understanding of potential barriers.

8.1.2 Examine Research and Other Community Examples

As demonstrated by this thesis, the City of Waterloo could benefit greatly from the abundance of research about planning for and with children. The City is home to two universities and a community college. Improved connections between the city and these facilities could help generate a multitude of community data, as well as a willing workforce for needed research. Students are often looking for topics for study at both the graduate and undergraduate levels in areas such as planning, architecture, children, conservation and restoration. Why not create more research partnerships?

Research with children in the community, whether it is done through university research, individual consultations for a specific project, or a committee, requires creative thinking. Standard practices of consultation are not appealing to children (or even adults for that matter). Information must be presented in a lively manner, and interactive methods of information gathering must be considered. Options are only limited by imagination. However, some examples include those used in this study (neighbourhood mapping, using surrogate images), photo mapping (Dennis et al., 2009; Travlou et al., 2008), photo diaries (Burke, 2005), and sometimes even letting children and youth design the methodologies themselves (Cope, 2009). Driskell (2002) provides an excellent overview of common methodologies that are effective when working with children and youth.

Another aspect of research missing at the City of Waterloo is an examination and comparison of other communities. Countless other cities have programs that can serve as excellent examples of

what does and does not work, when it comes to child friendly programs. Edmonton, Alberta, is an excellent example of a community with an established Child Friendly program. As discussed in the Literature Review, Edmonton's Child Friendly City Strategy led to a detailed program and special initiative entrenching children's rights in policy, creating opportunities for children, and bringing children's rights to the attention of business owners, politicians, children themselves and all community members in general. For more details, beyond those described on p. 37, see the *Child Friendly Edmonton Strategy* (City of Edmonton Community Services, 2008).

8.1.3 Examine Policies and Government Structure

There are some documents and policies in the City of Waterloo that have the potential to be detrimental to neighbourhood natural spaces and children's access to them. In particular, the Recreation and Leisure Master Plan statement that was previously mentioned, recommending against the naturalization of park areas (City of Waterloo, 2008b), is contrary to other policies. In addition, within the recreation and leisure plan, although there are shade guidelines which can be met in any number of ways, there is no requirement for parks to contain even one tree.

The five per cent or cash-in-lieu policy for parkland dedication in the *Official Plan* (City of Waterloo, 2004) is another problematic piece of policy. These clauses appear to contradict overall principles.

Children's participation also needs to be entrenched in policy. Children have the legal right to participate in decisions that will affect them (Office of the United Nations High Commissioner for Human Rights, 1989), but as it stands, there is no requirement to involve children in local decision making. It only happens when individual project managers feel inclined to involve them. Children's spaces, as well as spaces that children can use, such as natural spaces, should be planned both *for* and *with* them. Without this established in writing as a requirement, it may not even occur to many officials to make the extra effort, or consider children as stakeholders.

Occasional token involvement is not sufficient, and neither is claiming children are permitted to present to council or attend adult forums. "It is not enough, of course, to open up government information and structures and meetings to children. Engaging with children will mean substantial and ongoing change: changes in the form and dissemination of information, in the structures for debate and consultation, and in the organisation, timing and agendas of meetings" (UNICEF: Innocenti Research Centre, 2004, p. 8). Ongoing outreach to children needs to be entrenched in local government policies and procedures. It is also important to note that younger children must be

included in this plan as well. Sometimes, involvement is limited to teenaged children, who are considered more capable of contributing effectively. Younger children have valid opinions, which just need to be accessed in more creative ways.

As it stands, there are no individuals officially responsible for examining policy or other decisions from a child's perspective. Those who write the policies may consider children individually, but there are no official requirements for this consideration. As such, the City of Waterloo could benefit greatly from establishing a Children's Ombudsperson, someone who would both communicate with Waterloo's children, and speak up for them. This individual would promote children's rights, ensure child impact assessments are performed on laws, policies and practices, put together a regular State of the City's Children Report, conduct outreach programs with local children and youth, and run child friendly city events, forums and workshops, particularly surrounding issues that relate to children. Another option, in addition to, or instead of, installing this position, would be the establishment of a city committee for child and youth issues. This committee could serve similar purposes. These positions could also take on the role of connecting with programs such as Child Friendly Cities or Youth Friendly Cities.

8.1.4 Consider Programs and Projects

A commitment to a Child Friendly program would be one of the most effective ways that the City of Waterloo could meet its obligations to children. Many suggestions in this study can be found in the framework for the Child Friendly City provided by UNICEF (UNICEF: Innocenti Research Centre, 2004). The City should adopt as many elements of the framework as possible. However, adopting any of them would be a step forward.

The Child Friendly City program offers a comprehensive guide to creating a child friendly city, and gives cities the opportunity to examine their communities from all aspects with children in mind. This is something the City of Waterloo has not done, and which would be immensely beneficial. It would help the city identify strengths and weaknesses, and target those areas which need improvement. The act of making this commitment to children would be an ideal step towards creating a more equitable city. The discussion in the last chapter outlined the missing elements of a Child Friendly City. Please see Table 16 on page 146 for the detailed list.

There are other programs the city could consider joining, such as the Youth Friendly Communities program. This is a Provincial program that certifies Ontario communities as "Youth Friendly" (Play Works Partnership, No Date). At one point, the City of Waterloo considered applying

for this status, but gave up due to time constraints (City Official 4). It would be worthwhile for the city to revisit this program, and see if application would be plausible.

The Child Friendly Cities program considers "Children's Participation: promoting children's active involvement in issues that affect them; listening to their views and taking them into consideration in decision-making processes" to be the fundamental attribute of a Child Friendly City (UNICEF: Innocenti Research Centre, 2004, p. 4). This is a key feature missing in the City of Waterloo. If research shows these programs are beneficial, if countless other communities have successfully implemented programs, if the *Convention on the Rights of the Child* mandates that communities make the effort to reach out to children, and if city officials and teachers all agree that children have valuable ideas, and no one can name a good venue for children's participation in city decision-making, it seems clear that something must change.

Even without connecting directly to any program, or making any specific commitment, the City of Waterloo can take many individual steps to involve children. Individual outreach on particular issues and the enhancement of connections with schools and with neighbourhoods would be excellent ways for the city to improve relationships with children. Interviewed children made it clear how important it is to have strong neighbourhood connections. Many of them felt this was a positive attribute of their community. As such, the city should make every effort to connect with schools. Any opportunity to join children with the city, from tours to guest speakers, to programs that get children involved in the community, will only further these feelings of connection.

8.1.5 Overall Approach

8.1.5.1 Recognize and Celebrate Achievements

While it is easy to list problems, is often more important to recognize a city's strengths, and help the broader community to see and use the resources that already exist. The City has been considered a leader in many ways, including environmental initiatives and innovation. The City's focus on walkability and pedestrian safety, and the creation of accessible play spaces are critical to the creation of a child friendly city. Efforts to tie trails together, promote cycling, and provide opportunities for sport-related recreation are all to be applauded. The promotion of volunteerism and the widely popular local festivals contribute to a feeling of community spirit and cooperation.

8.1.5.2 Create a More Lively, Inviting Atmosphere for Children

Many children interviewed for this study found Waterloo's uptown and other shopping areas unappealing for a variety of reasons. Some felt these places are unsafe, while others simply found them dreary or boring. Children definitely showed a preference for playgrounds, and other areas that have child-geared activities. By integrating points of interest, activities, colour, and a little creativity, the city could go a long way toward making a more child friendly uptown area. Two city officials even mentioned the lack of appeal of the newly built town square for children.

While the city has made some definite recent strides in planning for youth, in the plans for the action sports park, and other proposed changes to Waterloo Park, many of these kinds of projects are well established elsewhere, and show little in the

Figure 7: Informational plaque on Walter Bean Trail in RIM Park.

way of innovation. More creative and unconventional approaches to planning spaces, such as creating adventure or natural playgrounds (Gardens for Living Inc., 2008), or adding colourful and interactive artwork to the uptown area would give the city a creative edge, and create spaces that appeal to children's desire to explore and discover. This is also recommended in the *Urban Design Manual* (City of Waterloo, 2009a).

The addition of interactive components to green spaces can also give children something to discover and enjoy. Informational plaques that can be found in some public green space areas are colourful and informative. However, these are geared at an older audience, heavy on text, and are unlikely to appeal to a young audience (See Figure 7). Involving children in the design of these types of interactive features would undoubtedly result in more creative solutions.

The climate of fear in this society, the adoption of safety standards as policy and the elimination of any sort of risk in play environments severely limit children's opportunities for discovery and growth. "If playground designs are based on the policy that all perceived risks should be omitted from the play experience, we wonder if children will look elsewhere for play" (Herrington & Nicholls, 2007, p. 136).
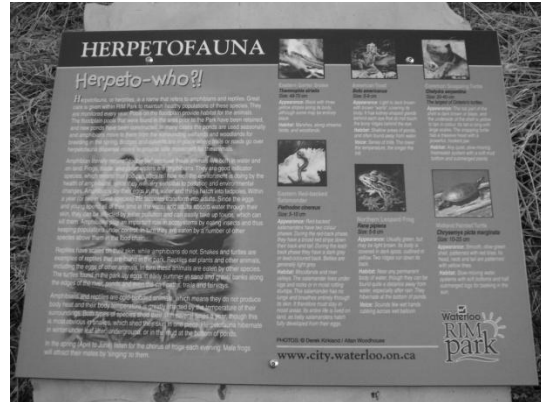
8.1.6 Overcoming problems

During this research, it became clear that there were a number of practical and ethical issues that arise when working with children. Some of these problems come from the actual differences between children and adults, and some of them come from society's resistance to and fear of change and the unknown. In addition to the challenges I encountered while working with students for this thesis, concerns about the practicality and value of children's participation were raised by a number of city officials and teachers.

Table 18 describes a number of issues that were brought up by adults in this research, experienced during the research process, or simply discussed in the literature. These commonly mentioned issues include: recruitment, lack of skills and training, bias, time and cost, retention of participants, ethical issues, and the value of children's opinions. Solutions were mainly derived from Frank (2006), Smith et al. (2002), and Driskell (2002).

Table 18: Possible issues with children's participation and recommended solutions

Issue	Solutions*
Recruitment	• Groups that are already involved with children can make valuable partners in research. They also help to build trust. • Personalized outreach to youth groups and schools are more likely to be effective than impersonal advertisements. • While schools are obvious sources for reaching children, they also involve a number of administrative barriers. Summer camps or youth groups may be a simpler alternative.
Lack of skills and training	• Research methods should be adapted to children and appropriate to age, maturity and context. • Involvement in research and decision-making is an opportunity for children and youth to build skills. • Adults must also learn a set of specialized skills for working with children, such as how to use appropriate language and methods. • Youth that acquire skills can also help pass them to younger children, who in turn will grow up and teach again.

Bias	• Familiarity Bias: Children are more likely to report "liking" things they are familiar with. This can actually provide important clues about how children see the world, and how effective planning has been. Adults do this too. • Desirability Bias: Children want to please adults and provide the "correct" answer. Every effort must be made to ensure that children are being as honest as possible. Some research methods (such as activity diaries) may help provide more accurate responses. • Participation should involve a two-way transfer of knowledge. More informed participants are less likely to provide biased responses.
Time and cost	• Additional time and cost will clearly be necessary when involving children and youth. Those involved must be prepared to be patient. • Time and cost may ultimately be saved by creating spaces that are usable and desirable by children, and avoiding potential problems and conflicts from the beginning.
Retention of participants	• Providing feedback, working towards tangible results, and a good relationship will help retain children in projects. If they feel they can make a difference, they are more likely to stay. • Children should be involved in the whole process, not just in the preliminary research or brainstorming. A sense of responsibility improves retention.
Ethical issues	• Extensive ethical issues and problems of power must be addressed when dealing with children. Researchers must learn about respectful interaction, and follow proper channels. Confidentiality is critical. • Research situations should not re-create situations of powerlessness. • While research and school boards are there to protect children, they also limit access to children, creating barriers to their interaction with society.

Value of opinions	• Children are members of society and their opinions and needs are as valid as those of adults.
	• Research that actually involves children will be more valid than that which makes assumptions.
	• It takes time and effort to convince organizations, government officials and other adults of the value of children's contributions, but it is certainly worth the effort. Only with consistent and persistent efforts of advocates and researchers will this trend change.

*Material adapted from Frank (2006), Smith et al. (2002) and Driskell (2002).

Despite the possible problems with engaging children and youth in research, there are countless benefits. Participation in research and local decisions benefits participating children because they gain local knowledge and valuable communication skills. They develop positive attitudes and behaviours about local participation and community contribution. Most importantly, they learn that their opinions are valuable and they are capable of creating change. In addition, participation helps to change adult views of youth (Frank, 2006). These benefits are in addition to the obvious benefit of the creation of child friendly environments.

Researchers working with children have found the experience to be positive, and are often surprised by the abilities and communication skills of their young participants. Many of the possible problems did not even appear for some researchers. For example, none of the studies examined by Frank (2006) had any trouble recruiting or retaining participants.

The most significant problem encountered by most researchers and child advocates appears to be adult resistance to child participation. This was found to be true even for the purposes of this study. This problem is also the most difficult to resolve, and will require persistence on the part of child researchers and advocates.

8.2 The School's Role

Teachers have a vast amount of influence over the children they teach. At the same time, they have variable approaches to teaching. Some teachers are very committed to environmental values, and to getting children involved in the community. Some have other priorities. Some see the benefits of field trips, and others see only the barriers. Schools provide an excellent opportunity to connect children with nature, through teaching strategies, field trips, and green school grounds. Schools also play a key role in establishing positive community relationships and improving safety.

The curriculum provides guidelines, but these can be interpreted in many ways, and sometimes not followed at all. The curriculum for environmental education has been designed mainly to encourage teachers to incorporate environmental issues into other strands. There are some units in the science curriculum which directly address the environment, but little else is required. Unfortunately, some teachers have failed to incorporate it beyond the requisite science unit, and claim there is too little environmental education in the curriculum, and they have little time for it elsewhere. The curriculum guidelines need to be made clearer. Environmental education needs to be mandatory, and clearly outlined in the curriculum. Teachers need to take environmental education seriously, and follow the recommendations to incorporate it into other strands.

Similarly, field trips are diminishing and teachers are finding it more of a struggle to meet the safety standards, costs and administrative requirements. As it stands, outdoor education is not required by the curriculum. The potential for including this as a mandatory component should be examined. Through hands-on environmental education, children can have experiences they would not necessarily get at home. Unfortunately, from the interviews in this study, it appears that the schools where this is the biggest problem (such as those with families of a lower socioeconomic status) also face a higher frequency of problems such as behavioural issues, a lack of volunteers and a lack of money. Field trips in these cases become limited, and excuses for avoiding field trips are varied and plentiful. On the other hand, there are still teachers who are engaged and willing to make the extra effort to give students opportunities and help connect them with nature and the world around them.

There are also various approaches to the provision of natural areas on school grounds. Even the wealthiest schools sometimes have very little natural green space, and children are not allowed in that which is available. When schools participate in programs such as "Evergreen" (Evergreen, No Date), they are provided with resources and knowledge to help create child friendly, practical, and well-researched green areas.

Teachers also have the opportunity to provide students with extra-curricular guidance. Environmental clubs allow students to gather together for a common purpose, and encourage them to teach fellow students about environmental issues. Participating in programs like this, or taking a leadership role at a young age can help students learn about community participation in a setting where they are comfortable.

The school's role also extends to children's relationships. One of the main things that children fear is teenagers, older children, and in particular, bullies. Teachers need to be aware of these problems, and work on initiatives to target bullying. There are some programs in place for these

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issues. One possible method for working on this problem involves promoting contact between different ages of students. High schools and elementary schools should be working together to foster positive relationships between students. Schools may also consider expanding intergenerational cooperation. While there are examples of this, such as reading buddy programs, schools could also partner with nursing homes or senior complexes in order to provide volunteers, establish positive relationships, and improve communication. It can also help teach empathy and patience from both ends. These types of partnerships can also help build community and neighbourhood spirit.

Despite all of the guidance that teachers must give to students, possibly the most important thing they can do is listen. From a very young age, students need to learn that they have valuable opinions, and that adults can be respectful enough to listen. If children believe from a young age that they have the potential to make a difference in the world, they will grow up with that understanding and motivation.

8.3 The Parents' Role

"If a child is to keep alive his inborn sense of wonder [...], he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in."

-Rachel Carson (1998/1965 p. 55)

Parents are typically the greatest adult influence in a child's life. As a parent, it is important to both set a good example, and provide opportunities for children to form attachments with the natural world and get involved in the community.

A number of children expressed a discomfort with natural areas. Whether this discomfort stems from a fear of the dark, a fear of strangers or a fear of the unknown, this fear is real, and is stopping them from fully connecting with the natural world. It is also likely a result of lack of experience with and time spent in natural spaces. In order to counteract this trend, parents need to take their children into nature, teach them to play safely, and to appreciate and respect the natural world. Gradually, children need to be able to explore more independently, and learn to cope on their own. The climate of fear that has been created needs to change, and parents need to let children out of the "bubble wrap" that has become the cultural norm.

Teachers indicated that home culture, habits and values were the main factors determining children's access to natural environments and their environmental attitudes. The home culture determines whether children are allowed to play freely, whether parents are willing to volunteer, and

whether the children can afford to participate in activities. It also plays a role in children's attitudes towards things like waste reduction and conservation.

Children need encouragement to get involved in the community, to meet friends, join events, clubs, and other groups outside the home. At the same time, children need plenty of time for free play. The focus on over-scheduling, with activities such as organized sports or other lessons, has taken time away from children's main job, which is play. Play is one of the main ways that children learn and develop (Noschis, 1992). These scheduled activities also typically take place either indoors or on bare fields where children have little opportunity to interact with the natural world.

Children also indicated the importance of knowing the neighbours, young and old. Children can actually be very helpful in forging neighbourhood relationships, bringing adults outside together. Knowing neighbours provides security, as well as positive feelings about the neighbourhood. Outdoor neighbourhood play adds vitality and improves community feel. Parents can help build these relationships.

8.4 The Children's Role

Children are a vulnerable group, and adults have a responsibility to speak up for them, and to help them express their views. At the same time, children must be willing participants. They need to be involved with school and community activities and events, show an interest in and visit natural areas, and prove to adults that their opinions are valuable and important.

As younger children do not have the same ability to express their opinions, adults must find creative ways to access these opinions. Older youth can be involved in programs that are available, such as the Youth Recreation Council. They can prove to adults the importance of developing areas for youth to gather, and that they are capable of contributing to the design and development of spaces. In some cases, older youth can even become involved in actually conducting research, thereby accessing information about other youth that would not be revealed to adults (Smith et al., 2002).

Many adults and young children that were interviewed are particularly frustrated by teenage behaviour. Adults find teenagers a nuisance, and young children find them threatening. While the focus has often been on finding ways to drive teenagers away from areas in which they congregate, this is far from an effective solution. Programs that promote youth involvement in the community, and the creation of intergenerational partnerships, would be beneficial for all participants. Teenagers must realize that to change their reputation in a community, they must be willing to participate in a positive way. The number of youth present at the recent Waterloo forums and workshops for the

action sports park was impressive, and an encouraging trend. They were willing to participate in the design of the park, and the discussions between city officials and young skateboarders were positive and productive.

8.5 The Researcher's Role

Research on the importance of nature for children is a rapidly growing field, as is the theory and practice of involving children in decision making. The combination of these two, however, is not commonly seen. In places where children are actively involved in decisions, the location is, almost exclusively, a playground. The results of this study suggest that while children do appreciate playgrounds, and should absolutely be involved in their planning, design and maintenance, there is also a much broader world in which children should be involved.

Further research on using participatory methods to get children into green spaces would be a welcome addition to the body of literature. In particular, examples of real-life applications or action research of this sort would be very useful. Indeed, if Waterloo decides to make the effort to become a more Child Friendly City, the processes and lessons learned should be recorded for the benefit of the research field.

Research on Child Friendly Cities in Canada is also lacking. Canadian children are relatively wealthy and have education, health care, and social services available. The *Convention on the Rights of the Child* has not been well disseminated in Canada. Some people do not see the need for it here. However, there are still key missing pieces. Standard measures of child welfare do not typically include access to natural spaces. Nor do they record the level of children's participation in community decisions and activities. Research of this sort should take these crucial factors into consideration. Researchers can also help to spread knowledge about children's rights, by incorporating the *Convention on the Rights of the Child* into their research.

Research with children in this system takes a degree of persistence and patience with administrative barriers. However, the ultimate goal of giving children the opportunity to speak up, and gaining better understanding of child needs and wants, is certainly worth the challenge. It may be worthwhile to consider doing research outside the school system to simplify the process. One official suggested that a simpler method for researchers to get in touch with children would be to work through summer camp programs (City Official 3).

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Overall, this research study would have benefited greatly from a broader sample size, from a full range of ages of students, and from the addition of parent interviews. The scope of the study and the lack of cooperation from schools unfortunately did not allow for the inclusion of these things.

Just as working with the school system can be difficult, so can working with government. Government officials must deal with a multitude of requests, and competing agendas. Changing the "status-quo" can be difficult. However, it was apparent from the interviews that most city officials were open to new ideas, and willing to consider the possibilities. Convincing research may be able to put children's rights and environmental causes on government agendas, creating the potential for real change.

8.6 The Big Picture: The Case for Case Studies

In this study, the City of Waterloo serves as an important case example of a community that has the resources, the capability and the need to become more child-aware and child friendly. While the specific results from this research apply only to Waterloo, the methodology is applicable anywhere. Although the results cannot be statistically extrapolated, the procedure, methodologies and tools for analysis can be applied in many places, particularly those in a similar context, with a similar culture. Each community has a very specific local context, and unique challenges to address.

This case study also serves as an example for the academic literature, providing a case study that could be used for meta-analysis or knit together as a part of a larger picture. The more examples and resources available for this topic, the more likely cities will see this as a viable approach. The UNICEF Child Friendly Cities secretariat maintains a database of communities and projects working towards improving child-friendliness. If some of the recommendations from this study are implemented, the city could make a valuable contribution to this sort of database. There are few contributions from Canadian communities.

The results of this particular study will be brought to officials at the City of Waterloo. Preliminary results were, in fact, already presented to the Mayor and Council. As the methodologies and analyses were all tailored in this case for the City of Waterloo, City Council could potentially implement some or all of the recommendations. If this is the case, the research may extend into action research. At the very least, the act of bringing these issues to city hall with well-supported evidence, examples of other communities, usable methodologies and direct recommendations for action, will increase child-awareness among government officials.

8.7 Potential for Linking with Local Initiatives, Organizations & Concepts

The introduction of a Child Friendly City concept to city government could easily stand on its own merits. However, creating partnerships with other organizations or initiatives may help to more effectively promote these issues. Indeed, in some ways, partnerships would be absolutely essential in creating a Child Friendly City. While this study has focused on the City of Waterloo, partnerships with the Region of Waterloo and with the neighbouring City of Kitchener would be essential. The Regional government is responsible for many health, safety and environmental issues.

The goals of the Child Friendly City are closely linked with those promoting healthy communities. As health can be broadly defined, a truly healthy community will be child friendly by nature. In terms of research, the University of Waterloo hosts the Healthy Communities Research Network (University of Waterloo, No Date). The Ontario Healthy Communities Coalition (Ontario Healthy Communities Coalition, 2003) is funded by the Ministry of Health, and locally, there is the Waterloo Region Healthy Communities Coalition (Waterloo Region Healthy Communities Coalition, No Date) and the Social Planning Council of Kitchener-Waterloo (Social Planning Council of Kitchener-Waterloo, No Date). The Region also has an Alliance for Children and Youth of Waterloo Region (Alliance for Children and Youth of Waterloo Region, No Date). These organizations could prove to be valuable allies in the quest for a Child Friendly City.

Child Friendly City goals could easily be incorporated into the goals of many existing local organizations or initiatives. "Age Friendly Waterloo," is a particularly relevant project that focuses on seniors, but could theoretically be modified to become "Waterloo for All Ages." The guiding principles of this initiative are livability, accountability, access and inclusion for all, respect and support for all and community engagement in decision-making (Age Friendly Communities, No Date). These tie in very closely to a number of the Child Friendly City goals.

Age Friendly Waterloo is related to a larger, Public Health Agency of Canada initiative, Age Friendly Communities. "The Age-Friendly Communities project seeks to engage older Canadians and their communities in making their communities better, healthier and safer places for seniors to live and thrive. In an age-friendly community, policies, services and structures related to the physical and social environment are designed to support and enable older people to "age actively" – that is, to live in security, enjoy good health and continue to participate fully in society" (Public Health Agency of Canada, 2008). Models for these programs are derived in part from the World Health Organization, which put together a Global Age Friendly Cities guide (World Health Organization, 2007b).

The fundamental principles of "age friendly" and "child friendly" communities overlap a great deal, and cooperation between these initiatives could be tremendously beneficial to all parties. Concepts such as inclusion, safety and walkability are universal, and are particularly relevant to both younger and older members of society. However, it is also important to realize that there are important key differences in the needs of children and the elderly, and while many measures could assist both demographics, a program could not fully address both in entirely the same ways. For example, children need places to run, climb and play. On the other hand, the need for quiet, peaceful spaces may be more important for seniors.

It can be difficult for new initiatives to gain momentum independently. In particular, an initiative that focuses on one demographic may face resistance from a government that is focused on providing for all citizens. However, connections with other programs and organizations, especially those who already have gained initial government support or endorsement, may help initiatives such as "Child Friendly Cities" to gain acceptance.

8.8 Summary

The City of Waterloo is missing critical elements of a Child Friendly City. Although Canada ratified the *Convention on the Rights of the Child* over twenty years ago, city officials are entirely unaware of this Convention. In fact, Waterloo lacks any sort of official commitment to children, or any sort of systematic process for including them in decision making or in community life. In order to fulfil the conditions of the Convention and improve conditions for children in Waterloo, the City must consider implementing practices, policies, programs and initiatives that put children first and include them in decisions. An effective Child Friendly Waterloo program would take a systematic and sustained approach that guarantees the long-term survival of these concepts.

Children must cease to be viewed as a problem to overcome, and rather as equal members of society with valid opinions and the potential for providing valuable contributions. In order to achieve this level of equality, in order to create a truly child friendly community, changes must come from all directions.

While this study mainly focuses on the responsibilities of the municipal government in getting children involved, schools, parents, children and researchers must also contribute to the solution. Schools can help get children more involved in community, and give them access to green spaces through green school grounds and field trips. Parents are responsible for teaching their children about citizenship, and can help them develop a love for the natural world. Children

themselves must be willing participants when they are invited to join the community. At the same time, researchers in this field must persist, drawing together resources, creating practical solutions, and finding ways to break down the barriers between children, the natural world and their communities. Fortunately, there is a growing body of organizations, researchers and individuals working towards the creation of inclusive, healthy communities.

This research serves as a starting point by gathering information from some local children and adults about how children use local spaces, how they feel about the community's natural spaces, and whether or not they are included in decision making. This study also provides a tool which lays out some specific methods for consulting with children, for creating better conditions for children, for helping children re-connect with nature, and for implementing a system for all of this in the City of Waterloo.

The process of creating a truly Child Friendly City will take a great deal of effort from all citizens, with a number of changes needed in local governance, including modifications in policy, as well as the creation of formal mechanisms for involving children.

Chapter 9: Conclusion

"Cities have the capability of providing something for everybody,
only because, and only when,
they are created by everybody."

- Jane Jacobs *(The Death and Life of Great American Cities)* (1961, p. 238)

Whether they are lacking the opportunity, the ability or the resources to speak up for themselves, children need champions to defend their rights, to ensure their needs are met and their voices are heard. These rights have been entrenched in the *Convention on the Rights of the Child*, which was ratified by Canada in 1991 (Canadian Children's Rights Council, No Date), but goes largely unnoticed. While Canadian children fare very well in many aspects, such as health care and education, there are certain rights covered by this Convention that are clearly lacking. Who is going to speak up?

In a similar vein, our urban environment has no voice of its own. It depends on advocates, and a government structure that will defend its right to exist. As John Dryzek put it, "…the nonhuman world can communicate, and human decision processes can be structured so as to listen to its communications more or less well" (1997, p. 200). Even ignoring the idea that the natural world may have an inherent right to exist, human beings rely entirely on their environments. The environment in which we live determines our survival, health, lifestyles, and psychological well-being. Despite our knowledge of the importance of connections with nature, we continue to build treeless suburbs, teach classes indoors, and schedule our children into sports and indoor activities that decrease their free play and interactions with the natural world.

The City of Waterloo is lacking some key interactions or relationships that are needed in order to create child friendly, nature-friendly environments. This study revealed that there are three key interactions missing, as outlined in Figure 5 on page 59: children and nature, nature and community and children and community. Through the promotion of these three interactions, as well as the establishment of the initiatives suggested by the Child Friendly Cities program, the City of Waterloo would be well on its way to improving Waterloo for children, and indeed, all residents. These relationships have profound influences on health, but must be supported by both the educational system and the local government.

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9.1 Relationships

9.1.1 Children and Nature

Children need to interact with the natural world on a regular basis. The concept of biophilia claims we have an innate tendency to focus on and connect with life (Wilson, 1984). Severing this connection has unknown consequences, though we may be seeing some of these in terms of the startling trends in childhood obesity and attention deficit disorders. Without exposure to the natural environment, children also fail to form attachments to nature and will cease to defend its existence. Familiarity breeds preference.

Children in this study appreciated landscaped parkland areas the most, with little vegetation and mowed grassy areas. There seemed to be a generalized uneasiness when it came to densely wooded areas. Is this new? Have children been taught that being in the outdoors means running on a soccer field? Can children even see the affordances in natural spaces anymore (eg: trees to be climbed, forts to be built)? Woods are typically only mentioned as a route for bicycles. There is little interaction with the natural elements of these spaces.

These children see their world as a series of roads and buildings and generally fail to notice the green elements in their neighbourhoods. While they do tend to show a preference for certain organized green elements in pictures, fully naturalized areas were not particularly popular. The interaction between children and nature has not really been promoted in the City of Waterloo. When it comes to children, the focus has been on standardized playgrounds, safe school zones and sports fields.

Increasing children's access to natural spaces is the job of parents, teachers and city decision makers. There are some beautiful natural areas in the city which are often completely deserted, even on beautiful sunny weekends. Who will defend these areas, if no one uses them or even knows they exist?

9.1.2 Nature and Community

Healthy and pleasant communities include abundant natural features, and policies and a government willing to protect them. In order to protect our urban natural spaces, there must be strong policies in place to prohibit their destruction, as well as promote their restoration and/or development. While many residents of the City of Waterloo feel strongly in favour of urban natural spaces, the trend is to continue building treeless subdivisions. The city puts a great deal of focus on economic growth, attracting business and intensification. Without strong ideals that encourage the conservation,

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restoration and maintenance of natural spaces within urban areas, these spaces get pushed to the fringes. While many of the local strategies and policies emphasize the importance of natural spaces and naturalization, this has not been reflected in other policies. This creates conflicting messages. The focus on sports fields and play structures seems to be such a priority, that the potential for play in natural areas is rarely considered an option.

The relationship between nature and the community can be improved by improving restoration and conservation initiatives within urban boundaries, and particularly within neighbourhoods. Promoting the connection between nature and community will also be key to improving access for children. Child Friendly Cities give children "the right to have green spaces for plants and animals."

9.1.3 Community and Children

Children have the right and the ability to contribute effectively to community life and decision-making. Adults must find ways to help them do this. Children's participation is good for both children (in terms of inclusion and empowerment), and for the community (better decisions can be made with input from actual users).

The City of Waterloo could go a long way to improve the connection between children and the community. The current approach is to isolate children in safe play areas, schools and their homes. While youth opinions are occasionally requested on particularly "child-relevant" issues, there is no requirement for this; nor is there a regular venue. While the city does have a Youth Recreation Council, this is different from the youth councils of other communities. It does not serve as a connection between youth and city hall. It only really provides recreation planning for youth events.

The connection between the community and children is the main feature that would be enhanced by a Child Friendly Waterloo program. Respecting children's views is a major tenet of the *Convention on the Rights of the Child*. This connection could be enhanced by following many of the guidelines of the Child Friendly City program as discussed in the discussion and recommendations chapters.

Interviewed teachers and City Officials agree that children are capable of contributing to decision-making in the city, but that there is no real venue for this and that there is no requirement to seek out their opinions. Clearly, this must change.

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9.2 Health

Strong interactions between children, the natural environment and the community, can have profound influences on children's physical, social and mental health. Many studies on children's health have focused on the physical aspects, but a broader definition includes social and mental health as critical components of whole human health ((World Health Organization, 2007a). Disconnecting people at a young age from nature and from the community may have profound influences on all of these.

In terms of physical health, childhood obesity is reaching frightening levels. The loss of free childhood play, and the trend towards indoor and organized activities may actually contribute to the problem. Organized sports seem to be a priority for adults, but not for children, who do not feel they have a choice about these activities, and may not internalize them as part of their lifestyle. However, proximity to parks has been shown to actually correlate with physical activity. Even natural views have been shown to have medical healing properties.

In terms of social health, teachers have noticed that green schoolyards create a more inclusive environment, promote cooperation, and lessen bullying. Children interviewed for this thesis appreciated living in neighbourhoods with lots of children and friendly adults. The sense of community certainly contributes to social health.

In terms of mental health, there is a growing field of research on the connection between green spaces and improvements in symptoms of attention deficit disorders, as well as on the potential for stress relief. As well, studies have shown that feeling respected and having responsibilities can improve mental and physical health. However, teachers in this study mentioned the lack of power that students feel they have.

The Child Friendly Cities program promotes healthy environments for children. To fully understand what these are, we need to involve them in the process, and promote the interactions discussed previously.

9.3 Education

Schools play an incredibly important role in childhood development, and teachers and school boards must not undervalue their contribution to children's understanding of the natural environment and the importance of community participation. Teachers have the unique opportunity to provide experiences for children to interact with nature. This is particularly important for children who may not get these opportunities at home. There are some dedicated teachers who create an excellent

environment for learning about nature, and about the community surrounding the school. However, generally, environmental education still does not appear to be a priority for many schools or teachers. School grounds are places with enormous potential for teaching, but many of them continue to remain barren fields and patches of concrete, with one or two standardized play structures. The schoolyard greening movement is gaining momentum, but for those who are holding out, the research and the resources are there to help improve the situation. This opportunity should not be missed.

Teachers and schools also have the potential to improve the key interactions listed above. They can promote the interaction between children and community, by getting them involved in the community and helping promote connections between the government and the schools. Schools can improve the child-nature interaction by encouraging field trips and school ground greening. Plus, school ground greening offers an excellent opportunity to improve available neighbourhood green spaces, thus improving the nature-community interaction.

9.4 The City

The City of Waterloo excels in many areas. There is a general feeling that it is a good, safe place to raise children, with plenty of opportunities. There is a definite focus on the provision of sports opportunities, parkettes and safe cycling initiatives. The pedestrian charter aims to improve pedestrian life on Waterloo's streets. The city has active volunteers, whether they are raising money to build a skating rink, or participating in the creation of an action sports park. Planned improvements to central Waterloo Park are creative, inclusive, and forward-thinking. There are certainly other areas where the City of Waterloo excels. Indeed, the city has proven to be a leader in many ways, and has won many distinctions, such as the world's most "Intelligent Community." These are just some key areas that stand out as relevant to Waterloo's citizens and children in particular.

Still, the City of Waterloo has the potential to improve conditions for local children, and serve as a positive example of a community willing to take steps towards being a just society. The recommendations for the building of a Child Friendly City from UNICEF's Child Friendly City program are absolutely feasible for this community. Even without adopting the entire framework, many elements could be incorporated, such as installing a children's ombudsperson, or creating State of the City's Children reports. At least, the creation of a *Strategy* for making a more child-friendly city would give the City an opportunity to examine the issues and determine priorities.

This research demonstrates some simple and cost effective strategies for engaging children and gathering their opinions. There are dozens of other potential methods, which just require some

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creativity and effort to implement. A commitment of this sort would have to be an ongoing process. The child, community and nature connections can be fostered in the City of Waterloo, but will likely fall apart entirely without the promotion of integration, access and the restoration and conservation of our natural resources.

9.5 The Future

Researchers, communities, schools and individuals have been signing up in hordes to join the quest to reconnect children with nature. As this study was conducted, it was difficult to keep up with document changes, new ideas, and initiatives taking place, even just in one community. Conferences, journals and books on the subject abound. Many communities are taking steps to improve conditions for children. The City of Waterloo could join this trend, setting a positive example for other communities. The benefits are undeniable.

By promoting children's contact with nature, we can help to ensure long term environmental sustainability. Simultaneously, we can improve children's social, mental and physical health. By promoting children's interactions with the community, we are helping to build a future of solid citizens willing to contribute to society in a positive way.

Every person, despite their level of political influence, can help to improve the situation for children in their community, from throwing a neighbourhood barbeque, teaching lessons in environmental education, volunteering at a local conservation area, working towards policy changes that give children a voice, planting a tree in a school yard or simply adhering to traffic calming measures around schools. We all must remember, as one grade five Waterloo citizen once said: "You need a little greenery so people can be fresh" (Grade five student, 2009).

Personal Reflection:

As a parent, a student and a citizen of the City of Waterloo, I find myself in a unique position. Not only do I find these issues interesting from an academic perspective, I find myself firmly invested in them in a very personal way. I frequently speak casually about these issues with other community members, and the feelings are mutual. People care about children and they care about the environment.

During the course of this study, I found myself asking the questions: Where will my children play? Will I allow them to play freely, or will I fall into the common trap of fear like so many other parents? Will my fears and society's quickly-multiplying rules stop my children from fully engaging with the outside world?

With "Unauthorized use prohibited" signs popping up, the elimination of field trips and ever-increasing traffic, where will tomorrow's children play and learn? At the same time, as we hike through deserted urban green spaces on beautiful sunny weekends, examining bugs, collecting acorns and taking pictures, we wonder where all the other children have already gone.

My hope, at the very least, is that this research will motivate me to always listen to my children, and to do whatever I can to help them forge their own special relationships with nature and their community. Now, I don't know about you, but I'm going for a walk.

Text Box 3: Personal Reflection

Appendix A: Interview Questions

Children

       Ten randomly selected students from each grade five class were asked to complete a series of activities. Children were interviewed individually, and interviews were audio-recorded for accuracy. To begin with, to get them comfortable, the children were casually interviewed about their neighbourhoods.

- *Have you lived in Waterloo your whole life?*
  - *Have you moved around at all?*
  - *Did you always go to this school?*
- *Can you please tell me a little about your neighbourhood?*
  - *Do you live in a house or an apartment?*
  - *Do you live near your school?*

       Following this, children were asked to draw a cognitive map of their neighbourhood.

- *Picture yourself in a hot air balloon flying high over your neighbourhood. I'd like you to draw what your neighbourhood looks like from up there. Please include as many details as possible, and label as much as you can.* (See Appendix B)

       This activity was followed by a semi-structured interview, focusing on the students' neighbourhoods, activities and favourite places.

- *Would you please describe your drawing to me?*
  - *What are these buildings?*
  - *Why did you choose to include these places?*
- *Tell me more about your neighbourhood.*
  - *What is good about it?*
  - *What needs improving?*
- *Where are your favourite places? Show me on your map.*
  - *When do you go there?*
  - *Who do you go with?*
  - *How far are you allowed to go alone? With friends?*

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- *What do you like to do in your free time?*

- *How can Waterloo be made into a better city for kids?*

As a final activity, children were asked to rate a series of surrogate images on a simple Likert scale (See Appendices C and D for details). This was followed by more questions relating to the rated images.

- *Which is your favourite picture?*

  o *Why is that your favourite?*

  o *Would you like to spend time in that place?*

  o *What would you do there?*

Teachers

Teacher and city official interviews were also conducted individually, and audio recorded for accuracy. The teachers were mainly the grade five teachers of the students already involved in the study. Due to the semi-structured nature of the interviews, every question from every interview is not listed here. The following questions formed the basis for the teacher interviews.

- *How do you see your students relating to nature?*

  o *On the schoolground?*

  o *Do they talk about it?*

- *What sort of environmental education is provided to the children?*

  o *Are there field trips?*

    ▪ *Yes? Where have they gone?*

    ▪ *No? Is something limiting this opportunity?*

- *Have you talked about the community and community issues in class?*

  o *Can you give me some examples?*

- *As someone who works with children, do you think that Waterloo is a child friendly city?*

  o *What is good about it?*

  o *What could be improved?*

- *Do you think that your students are involved in the community?*

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- o *Do they have the opportunity to be involved in decisions?*
- o *Should they be?*
- o *How could this be improved?*

City Officials

City officials were interviewed based on availability, and likely interest in the project. These interviews were also semi-structured, and followed unique paths. The following questions formed the basis for the city official interviews.

- *Are children and youth considered in city planning processes? How?*
  - o *Are they considered beyond parks and schools?*
  - o *Is accessibility for children considered?*
  - o *Are all children and youth considered?*
    - *Young children?*
    - *Teens?*
- *Do children have the opportunity to be involved in decisions about the community?*
  - o *Are they consulted?*
  - o *Should they be?*
- *Do you see any opportunities to involve children more in community planning?*
  - o *How could this process be facilitated?*
  - o *Are there any barriers that must be overcome?*

Appendix B: Cognitive Mapping Exercise

Materials:

- Standard sheets of paper (8 ½ x 11in.)

- Sharpened pencils and erasers

Researcher says: "Picture yourself in a hot air balloon flying high over your neighbourhood. I'd like you to draw what your neighbourhood looks like from up there. Please include as many details as possible, and label as much as you can."

Appendix C: Surrogate Imaging and Likert Scale

Materials:

- 50 laminated panoramic photographs of local scenery, each with a randomly assigned "image number"
- Likert Scale questionnaires
- Pencils and erasers

Researcher says: "Please rate each of these places on a scale from 1-5. 1 means you don't like the place at all. 5 means you like it a lot. Please copy the image number into the left hand box and then place an X in the box that describes how you feel about each place."

	1	2	3	4	5
Image Number*	Dislike it a lot	Dislike it a little	Neither like nor dislike it	Like it a little	Like it a lot
#					
#					
…					

*Images were randomized for each student, so image number was copied from the photograph.

Appendix D: Typologies and Sample Images

Typology*	Description and Sample Images
Urban Wilderness/ Natural Island	• Undeveloped or wild natural areas in or near cities; frequently involves conflicts between users and ecological preservation/restoration • Intact native herbaceous flora • High canopy cover (over 50%) and biomass (Affords: Attached and detached objects, non-rigid attached objects, climbable features, shelter, mouldable materials, possibly water)
Trails and Greenways	• Connect parts of cities through integrated trails; use of streets and open spaces planned as setting for environmental learning; some are designed and marked trails • Interconnected recreational and natural areas connected by pedestrian and bicycle paths (Affords: Flat surfaces, Slopes, Aperture)
Landscaped Parkland	• Green parks with grass and trees; can be traditional, historic parks or newly developed open spaces • Mowed grassland between trees and shrubs • No housing or built structures (Affords: Flat surfaces, Slopes, Non-rigid attached objects, Attached objects, Climbable features, Possibly water)

Playgrounds and **Schoolyards**	• Play area located in neighbourhood; frequently includes traditional play equipment such as slides and swings; sometimes includes amenities for adults such as benches; can also include innovative designs such as adventure playgrounds. • School yard as play area; some developed as place for environmental learning or as community use spaces. (Affords: Flat surfaces, Smooth slopes, Attached objects, Non-rigid attached objects, Climbable features, Apertures, Shelter, Moldable material)
Old urban/Savannah **plus** **Intermediate** **Urban/Savannah**	• Canopy 20- 40%, housing older than 50 years (or 15-50 years) • Landscaping stable • Large or estate homes • Mowed grassland • Biomass increasing (Affords: Flat surfaces, Slopes, Shelter)
New Urban/ Savannah **plus** **Cliff/Organic Detritus** **(Buildings)**	• Canopy from 20% to less than 3% • Housing 15 or fewer years (or Possible high vertical differentiation of buildings) • Biomass low • Mowed grassland • Decreasing animal species • Heat island effect (asphalt, buildings) (Affords: Flat surfaces, Slopes, Shelter)

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Downtown Everyday Spaces	• Publicly accessible open places such as street corners and steps to buildings, which people claim and use. Also includes squares and resting areas • Mostly occupied by stores and other businesses • Intended for pedestrian use (Affords: Flat surfaces, Smooth slopes, Attached Objects, Possibly water)
Arterial Streets and Parking Lots	• High traffic volume streets, highways and parking areas • Designed to accommodate vehicles (Affords: Flat surfaces, Slopes)

*Typologies and Descriptions were created by combining the work of Brady et al., Francis and Heft (Brady et al., 1978; Francis, 2003; Heft, 1988).
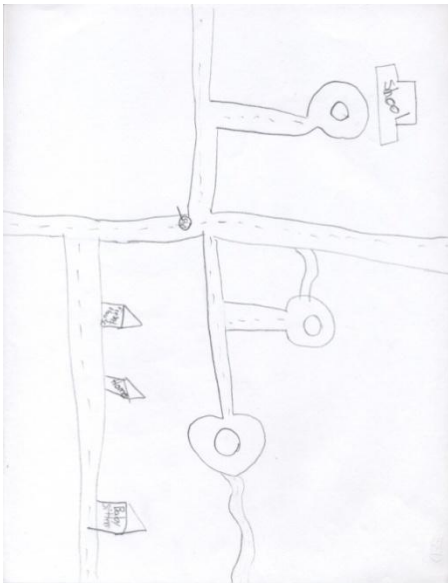
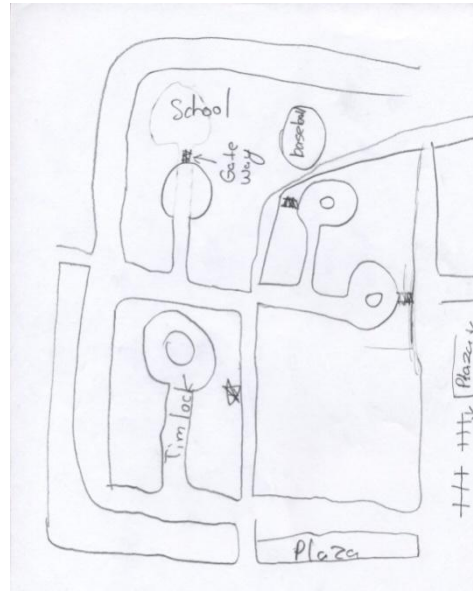# Appendix E: Sample Neighbourhood Maps

Figure 8: Sample Map A

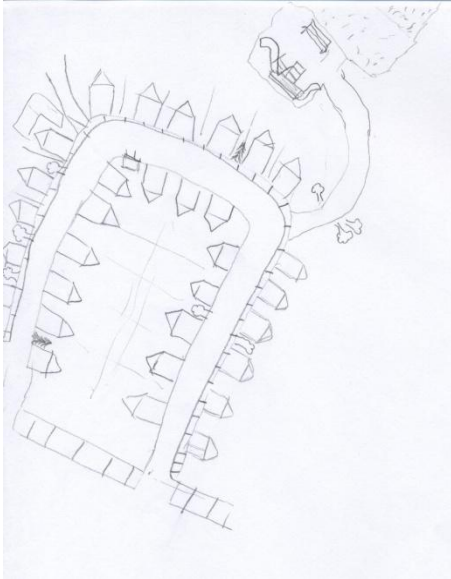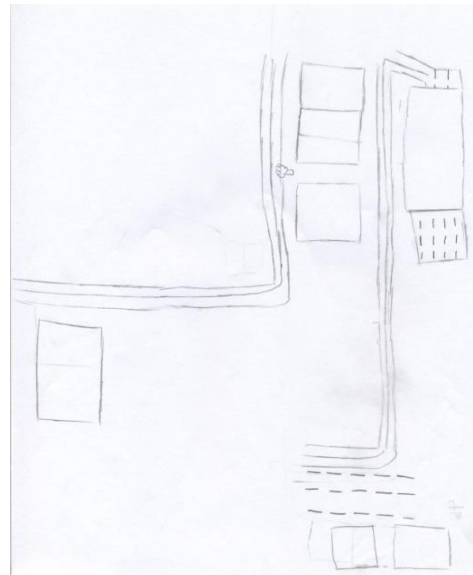**Figure 9: Sample Map B**

Figure 10: Sample Map D

Figure 11: Sample Map C

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