PLANNING FOR SELECTIVE USE AND ECOLOGICALLY COMPATIBLE FORMS OF OUTDOOR RECREATION: ONE MEANS OF CORE AREA REVITALIZATION IN THE CITY OF WATERLOO, ONTARIO

by

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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

This thesis explores the potential contribution that could be made to core area revitalization through the integration of outdoor recreation planning, ecological planning, and urban planning. The revitalization of urban centres, and especially those of mid-size cities, has typically been explored through policy planning, economic vitality, and urban design. An area, which often has been neglected, is that of urban outdoor recreation, specifically recreation that is carried out in an ecologically compatible fashion. The thesis examines theoretical and practical approaches in outdoor recreation planning, ecological planning, and urban planning, addressing any gaps and insufficiencies that seem to hinder the integration of the three disciplines in terms of devising practical solutions to identified issues. The core area in the city of Waterloo serves as a case study to examine the feasibility of integrating ecological planning, outdoor recreation planning, and urban planning.

This research indicates that ecological planning is a versatile and responsive planning approach whereas outdoor recreation planning and urban planning seem disconnected from each other. Planning for outdoor recreation needs to be more inclusive and coordinated with other disciplines, such as urban planning and ecological planning. The thesis applies these findings in recommendations for the City of Waterloo to consider when planning its core area.

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1. INTRODUCTION

Cities are major recreational areas. In Canada, most people live in urban areas, and these urban populations engage in most of their outdoor recreation activities within their community (Williams, 1995). While much research exists on recreation in rural areas, the social context of leisure, and open spaces, outdoor recreation in an urban setting is relatively neglected (Williams, 1995). Outdoor recreational activities in urban areas may be far more varied than is recognized, thus may require more flexibility and imagination from recreation planners. Since outdoor recreation in urban areas is multifaceted, outdoor recreation, ecology and urban planning need to be carried out in coordination. In consideration of urban processes and revitalization efforts, planners must regard the ways in which people use the urban environment for outdoor recreation and how this environment facilitates various recreation activities. Otherwise the capacity of urban areas to attract and sustain recreational usage may be hindered by competing processes of change (Williams, 1995).

From an ecological perspective, the debate between recreation and conservation cannot be isolated from the various issues of land use planning and community development at the municipal, regional, and even national scale. Instead, it should be recognized that conserving the integrity of natural systems demands a shift in policy from species to habitats, from sites to ecosystems, and from national to global measures (Swinnerton, 1999). Cities worldwide are experiencing problems from growing consumption, population and environmental degradation, to global warming, biodiversity loss, uncontrollable patterns of sprawling land consumption, and overall decline in quality of life (Beatley, 2000). *Urban Ecology* "reflects the reality that towns and cities as they have developed through history, not only represent important forms of human coexistence, but also of relationships between [people] and nature" (Štepánek, 1995: 1). As such,

urban ecology encompasses ecological research in towns and cities, and is a "diverse field of research that forms a continuum from 'pure' ecology in the urban setting to a combination of ecology and social sciences to examine urban systems" (Niemelä, 1999: 59).

Numerous research findings point to the conclusion that urban health is compromised for a majority of people internationally, with little evidence that current strategies for economic development are beneficial even though the objective of economic development is to improve people's quality of life (Bradley et al., 1992; Stephens et al., 1996; Songsore & McGranahan, 1998; Stephens, 1999). Instead, urban economic policy fails to be based primarily on people's health. On a positive note, spatial and environmental policies are interdependent and focus on the quality of the natural environment, even though the two are concerned with different aspects of quality. Since cities have the heaviest ecological footprint, they are called upon to counteract the devastating trends in the belief of achieving a more sustainable future (Beatley, 2000).

The dispersed city represents a recent progression in Canadian urban form (Bunting & Filion, 1996). The challenges faced by vulnerable core areas can include issues of health and safety, social problems such as homelessness and poverty, poor aesthetics and design, economic instability, substandard physical infrastructure and a deteriorated natural environment. The dynamics of core areas are complex and multi-faceted. A *core area* is recognized to include the downtown as well as surrounding districts within approximately one mile (1.5 kilometers) of its centre. These districts can be commercial, residential or industrial in nature. The body of research on core areas in Canadian and U.S. mid-size cities (50,000 to 500,000 population) is surprisingly limited, and most often targeted from an economic perspective. Communities of mid-sized cities need applied research specific to their local core area issues (Haldenby, 2000).

Specifically, the mid-size city of Waterloo (pop. 98,500 - 2002) is undergoing various revitalization efforts directed at its core area. The area of study is the City of Waterloo core area, bounded by University Avenue West and East, Weber Street North and South, and the Municipal boundary in the south, excluding single residential areas (see **Figure 4.1**). The city is unique in several aspects. It is located next to the City of Kitchener and close by to the City of Cambridge, which presents problems for identity of each city and competition for residents and businesses. Also, the cities of Waterloo and Kitchener are both located along King Street, and function as one economic and cultural unit. Lastly, the tri-city area is politically organized into a Regional Municipality of Waterloo, which came into existence as a result of local government reform, the City of Waterloo claiming the smallest land area of the three cities. The Region was the first Ontario local and regional government to incorporate an environmental policy in its Regional Official Policies Plan, having about six per cent of its area covered by the Environmentally Sensitive Policy Areas (ESPA) designated first in 1976 (Ouellet, 1996).

In the last 15 years there have been close to $200 million in public investment in the core (City of Waterloo, 2001c). While economic development and core area revitalization are sought by the City, other initiatives suggest conflicting goals. For example, Project 2007 (A Vision for Uptown) created on June 17, 1999, advocates an environmentally friendly and green city core (City of Waterloo, 2002e). Similarly, the subsequent community vision of April 2001 (Imagine Waterloo) attaches much importance to healthy green spaces and water bodies in the City (City of Waterloo, 2001a), whereas the Regional Municipality promotes Smart Growth as one of its planning initiatives, which may or may not be contradictory to local visions and unrealistic in terms of its full implementation (McKinstry, 2002). The Region of Waterloo seems to have a

natural habitat network that outlines extensive, interlinked pattern of natural areas (Regional Official Policy Plan (ROPP), 1994).

PURPOSE STATEMENT

The purpose of this study is to contribute to the academic body of knowledge on integrated outdoor recreation-ecology planning for urban areas. Although revitalization of urban core areas has been addressed through various planning approaches and economy-guided models, the principles of outdoor recreation and urban ecology as they pertain to core area planning have been understudied. This research explores the role of ecologically compatible forms of outdoor recreation in the process of core area planning and revitalization, and suggests recommendations for an integrated working relationship between the three topic areas. This research focuses on the core area of City of Waterloo and how it could be made more vibrant and sustainable through appropriate forms of outdoor recreation. Based on the input from the City's municipal staff and the academic community, as well as from the analysis of City documents, recommendations are made to help integrate outdoor recreation and ecology into the urban planning for core area revitalization.

RESEARCH OBJECTIVES

The objectives of this research are:

- To identify the role of outdoor recreation in the process of core area revitalization,
- To determine how sustainable and vibrant core areas may be achieved through appropriate forms of outdoor recreation planning, and
- To explore the working relationship between outdoor recreation planning, ecology planning, and urban planning.

METHODOLOGY

This exploratory research has adopted a qualitative methodology with Waterloo's core area as the study area. The main methods of this research included document analysis and structured personal interviews. Based on the applied nature of this research, current practices and views within the area of outdoor recreation planning, ecological planning, and urban planning were examined to assist the researcher in understanding the implications of the research questions. Documents such as the Regional Official Policy Plan, the City of Waterloo's Official Plan, the City of Waterloo's Recreation and Leisure Services Master Plan, and the City's Environmental Strategic Plan were used as a point of reference for this study, since planning policies and legislation are fundamental in establishing change. These documents were further incorporated into discussion and challenged by views from local practitioners and academics who were associated with each of the three topic areas and knowledgeable about the city's issues.

RATIONALE FOR RESEARCH

The research is important for three reasons. First, mid-size cities differ significantly from large urban areas, both in their structural and policy issues, and as such need research attention (Bunting & Filion, 1999). Also, each mid-size city, while often sharing common problems, needs specific and locally-generated solutions that differ in their applicability (Millward & Bunting, 1999).

Second, recreation is a genuine human need (Revelle, in Wall, 1989) that is intertwined with physical and psychological health of the individual and the society as a whole. It is characterized by valued experiences and benefits that promote overall health (Manning, 1999; Brown, 1981). Outdoor recreation, in particular, has much potential to strengthen the human

connection with the environment. Further, a vital component of a sustainable city, as identified by Pickett et al. (1997) and the Green Infrastructure.Net (2002), is the integration of the natural (biological and physical) environment in a city's core area.

Third, this research identifies forms of outdoor recreation which are sustainable and compatible with ecological principles, thus increasing the overall sustainability of the city's core area and possibly extending it to the entire city. The research identifies those forms of outdoor recreation that are most applicable to the Waterloo's core area. It is thought that successful land use and program planning for outdoor recreation will likely bring more people to enjoy the natural areas, and make the city's core more vibrant and lively by means that are less invasive than anthropocentric-type recreation or entertainment—e.g. bars, clubs, theatres, restaurants, or golf clubs and arenas. In this respect, outdoor recreation planning could facilitate revitalization efforts and environmental protection at the same time. The research also investigates the function of outdoor recreation within the urban environment, specifically in the core area. The value of the natural environment, as identified by the Waterloo residents, may hold potential implications to the core revitalization efforts and to the outdoor recreation program planning, alike. Sustainable ways of maintaining the urban natural environments, especially those in urban cores undergoing revitalization, may be particularly significant and applicable.

Furthermore, the importance of this research is reflected in the Waterloo Community-University Research Alliance's (CURA) issue of greening core areas through ecological planning, and more specifically, through design studies associated with recreational public spaces and parks (Haldenby, 2000). The Waterloo CURA's proposed initiative on green core areas promotes sustainability, better integration of green spaces and natural features, and more efficient and effective use of former industrial and rail lands in the inner city which are unused or

under-used (Haldenby, 2000). The significance of this research is also addressed by the Waterloo community through the official vision statements, which recognize the need for better integration of the natural environment in the core area of the City (Haldenby, 2000: 9). As a result of this research, a number of significant outcomes may be initiated including policy development, program development (for outdoor recreation), further research directions, pilot studies, ecological management planning, volunteering/community projects, landscaping and design, and community involvement and participation.

THESIS ORGANIZATION

This thesis is organized into six chapters. Chapter One introduced the research topics and explained why they are of interest generally and specifically in the context of City of Waterloo. It also introduced the research questions generally and issues associated with outdoor recreation and ecological planning in an urban setting.

Chapter Two introduces the methodology used to conduct this research. It explains in detail the three research themes and the research questions. The chapter further explains and justifies the use of data collection methods, such as the literature review, document analysis conducted on the City of Waterloo core as the study area, and the structured interviews. The section on structured interviews provides a summary of the participants involved in this research. Data analysis methods, such as the qualitative approach and the operational coding system, are also explained.

Chapter Three is a literature review set in the context of ecological approaches to recreation planning. It describes the concept of traditional recreation planning, both its current and anticipated approaches. The chapter then compares those approaches with ecological planning, and further explores the intersection of recreation planning, ecological management

and urban planning. Planning for core areas is explored in this chapter, in particular the role (or absence) of recreation amenities and planning. The role of planning and other legislation is also outlined as it pertains to ecologically compatible approaches.

Chapter Four comprises a document analysis of written material associated with Waterloo's core area. The chapter examines the context of outdoor recreation planning through document analysis of the City's Recreation and Leisure Services Master Plan, and its Community Trails and Bikeways Master Plan Study. The chapter further analyses ecologically compatible forms of recreation planning through various documents related to core area parks and green spaces, and the City's Environmental Strategic Plan. Finally, the chapter explores planning policy and legislation, which are expressed through the Regional Official Policy Plan, the City's Official Plan, and other documents related to core area planning. The development of the research themes and research questions is explained here, and further discussed in Chapter Five.

Chapter Five provides a discussion targeting ecologically compatible recreation planning. The two research themes of *Theory Versus Practice,* and *Gaps and Insufficiencies in Theory and Practice,* and the *Research Questions* are discussed here in detail. The chapter incorporates research findings from the structured interviews.

Chapter Six presents conclusions and reflections. Lessons learned from the document analysis and from the three research questions are presented here. Solutions to discussed issues are proposed and mapped or depicted in other graphic forms to illustrate how the improved system would look. All ideas and perspectives are brought to life in this chapter demonstrating how the new approach would improve matters. In particular, this chapter puts forward reflections on ecologically compatible recreation and the core areas. The theory and practice of recreation

planning in core areas is summarized here. Limitations of this research and recommendations for future research are also discussed in this chapter. Projects to be undertaken are presented here.

2. METHODOLOGY

INTRODUCTION

The purpose of this research is to identify and analyze ecologically compatible solutions to planning for outdoor recreation as one means of revitalizing the core area of the City of Waterloo. Because this research is exploratory in nature, it is appropriate to use qualitative research methods. Initial research consisted of a literature review of theory versus practice in the three sub topic research areas (urban planning, outdoor recreation planning and ecology planning), including a document analysis for the core area of City of Waterloo. The document analysis comprised an examination of main documents from the City that incorporate outdoor recreation into ecology planning and urban planning, as well as the selective use of "green" areas or compatible forms of outdoor recreation. The literature review and the document analysis helped me to design the research themes and research questions, and to understand the implications of the research questions.

Further research consisted of structured personal interviews with a participant group of fourteen "academics" and "practitioners" associated with the areas of urban planning, outdoor recreation planning, and ecology planning. For the purpose of this study, "academics" are defined as those working as Professors in a University setting, whereas "practitioners" are defined as those working as municipal or regional staff members in various City departments and at different government levels. The differences between the two participant groups lie in their various loyalties (i.e. academic institution and students versus residents of the City of Waterloo), the organizational structure, their day-to-day responsibilities, their amount of freedom (i.e. free thinkers versus responsive decision-makers), and their educational backgrounds (i.e. expertise versus experience). The similarities between the "academic" and the "practitioner" participant

groups lie in their educational background—e.g. a number of City staff members have received graduate academic degrees. Although the two groups seem to be similar in this fashion, especially evident in some of their responses, these two groups truly represented their professions and both commented on the lack of integration between the academic and the practitioner community. For this reason, the academics are associated with and represent theory and the practitioners are associated with and represent practice.

The structured interview format was pre-tested to ensure validity and reliability. Moreover, triangulation of methods of literature review, document analysis, and structured interviews further ensured consistency and validity of responses. This Chapter explains in detail the research themes and research questions, the pros and cons of data collection methods used, and the data analysis process.

RESEARCH THEMES & RESEARCH QUESTIONS

To explore the research question, this thesis addresses two themes: 1) *Theory Versus Practice*; and 2) *Gaps and Insufficiencies in Theory and Practice*. The thesis also addresses three *Research Questions*: 1) What is the role of outdoor recreation in core area revitalization?; 2) How might sustainable and vibrant core areas be achieved through appropriate forms of outdoor recreation planning?; and finally 3) What is the working relationship between urban planning, outdoor recreation planning, and ecological planning?

The first theme examines whether there are differences between theoretical and practical approaches in the areas of urban planning, outdoor recreation planning and ecology planning. While almost every discipline strives to bridge theory and practice, practical solutions to problems such as the revitalization of core areas are seldom approached by combining several disciplines. This is often due to time constraints and associated costs. The theme of *Theory*

Versus Practice is investigated through the methods of literature review and document analysis for Waterloo's core area, followed by a structured interview. (See **Table 2.1** for Methodology Matrix).

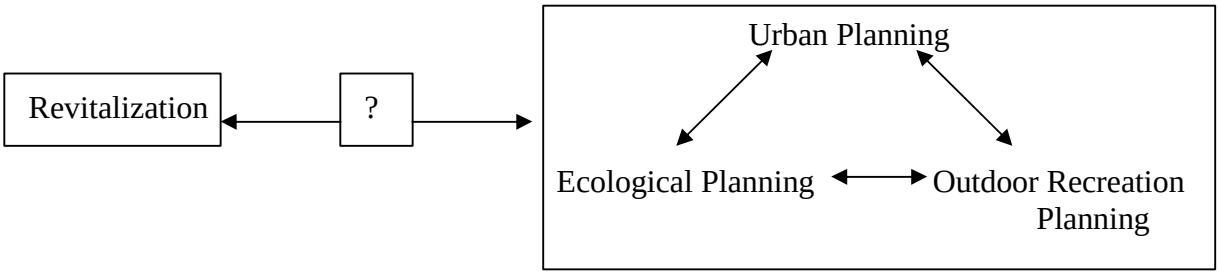

Figure 2.1 Conceptual Framework: Black box between revitalization and the interaction between urban planning, outdoor recreation planning, and ecological planning.

The second research theme identifies possible gaps and insufficiencies in the theoretical and practical approaches within the areas of urban planning, outdoor recreation planning and ecology planning. This stage compares theoretical and practical approaches, but also addresses these gaps and provides possible solutions to current problems and recommendations for improvements. Similar to the first theme, the theme of *Gaps and Insufficiencies in Theory and Practice* is investigated through the methods of document analysis for Waterloo's core area, as well as through structured interviews.

Table 2.1 Research Matrix Representation: Methodology Matrix.

Themes	Methods		
	Literature Review	Document Analysis	Structured Interview
Theory Versus Practice	X	X	X
Gaps & Insufficiencies in Theory & Practice		X	X
Research Questions	X		X

With respect to the *Research Questions*, the first question (what is the role of outdoor recreation in core area revitalization?) investigates the role of outdoor recreation in Waterloo's core area revitalization efforts. Revitalization efforts led by urban planners can be enhanced by incorporating solutions from outdoor recreation. For instance, urban enhancement policies help to realize the recreational potential of abandoned land areas, such as the pedestrianisation of town centres (Williams, 1995).

Table 2.2 Research Matrix Representation: Research Questions Matrix.

Research Questions	Methods		
	Literature Review	Document Analysis	Structured Interview
1) What is the role of outdoor recreation in the core area revitalization?	X	X	X
2) How might sustainable & vibrant core areas be achieved through appropriate forms of outdoor recreation planning?	X		X
3) What is the working relationship between land use planning (core area), outdoor recreation, and urban ecology?	X		X

The second research question (how might sustainable and vibrant core areas be achieved through appropriate forms of outdoor recreation planning?) considers the importance of outdoor recreation in an urban setting, especially since much research focuses on recreation in rural areas, social context of leisure and open spaces (Williams, 1995). Regarding the issue of sustainability and appropriateness of outdoor recreation, for example, several authors challenge the typical multiple use approach in recreation. Whereas some architects criticize the single uses of monofunctional zoning in urban areas (Harvey, 1989), such zoning may be most appropriate for outdoor recreation planning. Selective recreation activities may be most appropriate and least

intrusive to a particular area (Hammitt & Cole, 1987), and at the same time a number of complementary recreation activities may prevent undesired interaction between various recreationist groups (Payne & Graham, 1993; Wall, 1989).

The third research question (what is the working relationship between urban planning, outdoor recreation planning, and ecology planning?) examines the working relationship between urban planning, outdoor recreation planning and ecology planning. The literature review addresses the practical and theoretical examples of relationships between the three topic areas; however, it is the structured interview which really provides insights from both academics and practitioners who are experts in these topic areas. The three research questions will be investigated through the initial methods of literature review and some through document analysis for the Waterloo core area, followed by structured interviews.

DATA COLLECTION CONSIDERATIONS

To conduct this research, several approaches were employed in order to collect the appropriate data. I needed to understand the role of outdoor recreation in the revitalization process of the core area. Furthermore, I needed to identify appropriate forms of outdoor recreation that would increase user satisfaction, decrease conflicts between different recreationist groups, and establish a harmonious relationship between outdoor recreation activities and the natural environment in which it takes place. Finally, I needed to understand the working relationship between the area of urban planning, outdoor recreation planning and ecology planning, both in terms of what it could be from international examples, and the experience in the city of Waterloo. In order to gather all of this information three methods were employed: literature review, document analysis, and structured interview.

Literature Review

The literature review was approached as an initial part of the primary research; for several reasons. First, it helped me to design the research themes and research questions, and to understand the implications of the research questions. Mertens (1998) notes that the literature review is the foundation for shaping research questions. Further, Hedrick et al. (1993) states that research questions operationalize the objectives of proposed research by focusing hypotheses and guiding the context, methods, sources and conditions of information to be collected. Second, the literature review was used to compare theoretical and practical approaches within the three topic areas of urban planning, outdoor recreation planning and ecology planning, including best current international practices. Finally, the literature review identified gaps and inconsistencies within the three topic areas.

The assumption of a literature review is that knowledge accumulates over time and that we learn from and build on previous studies (Neuman, 1997). This is a collective effort of many researchers who share their results and who pursue knowledge as an academic community. Studies are read for comparison, replication, or criticism. Neuman (1997) lists four goals of a literature review: 1) to demonstrate familiarity with a particular body of knowledge and establish credibility; 2) to show the path of a previous research and its connection to the present study; 3) to integrate and summarize the body of knowledge in a particular area; and 4) to learn from others and by doing so, stimulate new questions and ideas. A good review points out disagreements and gaps alongside commonly accepted theories, and indicates directions for future research.

Neuman (1997) lists six types of literature reviews: self-study, context, historical, theoretical, methodological, and integrative reviews. Three of these types combined into one

literature review were used in this thesis. Self-study review helps to increase both the researcher's and the reader's confidence in a particular area of study. This type of review demonstrates familiarity with an area and builds the researcher's self-confidence, particularly if approaching a new area of study (Neuman, 1997; Leedy, 1997; Berg, 1998). Context review places a specific project in the big picture by creating links to a developing body of knowledge, and establishes the relevance of the research questions. It addresses implications for a field of knowledge, whether continuing to develop a line of thought or pointing to an unresolved conflict in prior research (Neuman, 1997; Leedy, 1997; Berg, 1998). Theoretical review presents and evaluates different theories that guide a particular subject matter. It examines the consistency of predictions with findings, compares different theories for the soundness of their assumptions, logical consistency, or the scope of explanation. This type of review also serves as a means to integrate some theories or to extend a given theory to new findings uncovered by new research (Neuman, 1997; Leedy, 1997; Berg, 1998).

Document Analysis

Document analysis was employed as the second initial method of the primary research in order to determine whether and how policies support good ecology planning and management. Similar to the literature review, this method also helped me design the research themes and research questions, and to understand the implications of the research questions at the scale of Waterloo's core area. In addition, document analysis was used to examine the topics of urban planning, outdoor recreation planning and ecology planning through theoretical and practical solutions targeted at Waterloo's core area. Finally, this method was used to address possible gaps and insufficiencies in the three topic areas listed above, concentrating on local barriers and opportunities rather than international examples.

Marshall and Rossman (1997) argue that this type of document review is unobtrusive and successful in developing an understanding of the setting or the participant group. The first types of consulted documentation included government publications from the scale of the Province to that of the Municipality, including the Ontario Planning Act, the Regional Official Policy Plan, and the City's Official Plan. This first step was taken in order to understand the policy framework within which the areas of urban planning, outdoor recreation planning and ecology planning currently exist and interact. In addition, I conducted a review of other policy documents, core area studies and proposal plans related to revitalization efforts, such as the City of Waterloo's Open Space Master Plan Study, Height and Density Study, Pedestrian Intercept Survey, Future Direction for Uptown Strategy and Work Program, Central Residential District Plan, Imagine Waterloo Community Vision, and Nations in Bloom. Furthermore, specific documents related to the area of outdoor recreation planning, such as the City of Waterloo's Community Trails and Bikeways Master Plan Study, and the Recreation and Leisure Services Master Plan, or to the area of ecology planning, such as the Environmental Strategic Plan, were also examined. In particular, I examined whether these documents addressed outdoor recreation planning and its function within the scope of core area revitalization efforts, and further whether these efforts would be compatible with ecological principles.

Throughout the analysis of the above documents, I examined urban planning documents and new policies, such as mixed use or Smart Growth, in order to understand how the core area could be planned from an outdoor recreation perspective. It was important to identify constraints of current policies and frameworks, and potentials to be realized within proposed plans for the core. I also examined documents such as the Survey on the Importance of Nature to Canadians, the Regional and Municipal Growth Management Strategy, the Statistical Profile of the Region

and the City of Waterloo, and the City's Community Review, in order to understand the city's demographics, future developments, what users and uses it plans for, and what seem to be future trends. This should further help to identify whether the ecological integrity of the city core is likely to be compromised by such trends and developments.

Structured Interview

The purpose of the structured interview is three-fold. First, the interview was designed to compare definitions between the academic community and the practitioners, and to identify which definitions are more widely used in practical terms. Second, the interview was designed to explore if any gaps or insufficiencies exist in the area of urban planning, outdoor recreation planning, and ecology planning. Finally, it was designed to provide insights into the three research questions from practicing academics and practitioners. It was hoped that the structured interview format would help to confirm the interpretation of document synthesis and provide a view of the everyday struggles and issues.

The structured interview incorporated a formally structured schedule of interview questions to offer each respondent the same stimulus to ensure uniformity and comparability of responses (Berg, 1998). Researchers using this method have a clear sense of study-related issues and what they want to uncover during the interview, such as how outdoor recreation could help revitalize a city core. This method encompasses several data collection choices; however, a personal interview approach is closely related to the purpose of the survey, the nature of collected data, and the size and characteristics of the sample. The high cost of the personal interview format, due to time commitment, training, travel and supervision, is the biggest disadvantage of this method. In addition, interviewer bias can be significant in the personal approach, where the researcher's appearance, tone of voice and wording may affect the

respondent and skew the results (Neuman, 1997). However, the personal approach generates many advantages among which are the flexibility in structure, more conversational style, greater opportunity for trust building, more extensive probes for clarification and additional information, permission for longer questionnaires, and most importantly, the highest response rates (Mertens, 1998; Neuman, 1997). In addition, the interviewer can observe the surroundings, and use non-verbal communication and visual aids.

Table 2.3 Research Matrix Representation: Survey Matrix.

Structured Interview Questions	Themes		
Questions	Theory Versus Practice	Gaps in the 3 Subtopic Areas	Research Questions
Q 1	X		
Q 2	X	X	
Q 3	X	X	
Q 4	X	X	
Q 5	X	X	
Q 6	X	X	
Q 7	X	X	
Q 8	X		RQ 1
Q 9	X		RQ 1
Q 10	X		RQ 2
Q 11	X		RQ 2
Q 12	X		RQ 2
Q 13	X		RQ 3
Q 14	X		RQ 3
Q 15	X		RQ 3
Q 16	X		RQ 3

The main types of questions included in the interview were knowledge and attitude questions, as well as some general demographic questions to gain insight on participant characteristics. The structured interview consisted of two research themes: 1) *Theory versus Practice*, designed to compare definitions between academics and practitioners, and to identify which definitions are more widely used in practice; 2) *Gaps and Insufficiencies* in the three topic

areas: urban planning, outdoor recreation planning and ecology planning designed to identify gaps and insufficiencies in theory and practice, as well as point to best practices that may be easily applicable to the City of Waterloo; and three *Research Questions*, designed to address the research questions and understand their implications. (See **Appendix 1** for a list of all interview questions). All interviews were tape-recorded and transcribed, and the gathered textual information was manually analyzed and coded by the researcher. (See **Table 2.3** for Survey Matrix).

The sample of 14 key informants was purposefully selected, based on their areas of expertise and the agency of employment. Furthermore, two participants were referred by the key informants through a snowball sampling method. I used judgment in selecting cases with a specific purpose in mind, as is appropriate in exploratory research (Neuman, 1997). Consistent with Neuman's (1997) recommendations, I used purposive sampling to select unique participants who are especially informative, to select members of specialized population, and to gain a deeper understanding of groups and subgroups (i.e. urban planning, outdoor recreation planning, and ecology planning; academics and practitioners) as opposed to generalize to a larger population. Key informants were recruited from the University of Waterloo's School of Planning, Department of Recreation and Leisure Studies, and Department of Environment and Resource Studies, as well as from the City of Waterloo's Development Services, and Recreation and Leisure Services; Albert McCormick Community Centre; RIM Park; the Regional Municipality of Waterloo Department of Planning, Housing and Community Services; and Ecoplans Consulting Firm. **Table 2.4** illustrates the types of key informants who participated in the study. All participants were sent an Information Letter and a Feedback Letter (see **Appendix 2**) and had to sign two Consent Forms (see **Appendix 3**) before the interview.

Table 2.4 Interview Participants.

1. Planning	2. Recreation	3. Ecology
Academics:	*Academics:*	*Academics:*
University of Waterloo School of Planning 2 male	University of Waterloo Recreation & Leisure Studies 2 male	University of Waterloo Environment & Resource 2 male
Practitioners:	*Practitioners:*	*Practitioners:*
City of Waterloo 1 female 2 male	City of Waterloo 1 female 2 male	Waterloo Consulting Firm & City of Waterloo 2 male

According to Neuman (1997), the small sample size of 14 key informants was sufficient for this study since less accuracy was acceptable, the population was homogeneous within the three subgroups (urban planning, outdoor recreation planning and ecology planning), and only a few variables were examined at a time. Mertens (1998) suggests that the importance of matching the interviewer and interviewee (i.e. gender, professional background, disability) relates to the subject matter of the interview. Similarly, my position as a student was likely perceived by all three subgroups as less threatening and more objective than an expert of any particular discipline. The questionnaire used in the structured interview was pilot tested with a small sample similar to the intended group of respondents, in which respondents were encouraged to evaluate both the process and the questions. Pre-testing the interview schedule ensured validity of responses and saves time and cost in the long run, and further assessed the effectiveness of the interview in that it collects desired data (Berg, 1998).

Triangulation was restricted to the use of multiple data gathering techniques, such as the literature review, document analysis and the structured interview to investigate the same phenomenon. Several authors interpret this as means of mutual confirmation of measures and validation of findings (Webb et al., 1981; Jick, 1983; Mitchell, 1986; Sohier, 1988; Knafl &

Breitmayer, 1989; Leedy, 1993; Berg, 1998), whereas Denzin (1978) states that multiple data collection techniques as one of the "lines of action" represent the generic form of triangulation.

DATA ANALYSIS

Qualitative Approach

This research reflects a qualitative orientation, which is characterized by an inductive approach to data, reliance on non-positivist perspectives to science, greater use of logic in practice, and a more cyclical and disorganized research path (Neuman, 1997). Accordingly, I was immersed in data to freely generate codes and patterns. However, I adopted a deductive approach to data by interpreting data according to the research themes and research questions under investigation. The qualitative research approach values its data and orients itself around theorizing, collecting, and analyzing qualitative data. Similar to the quantitative approach, qualitative data are empirical because they document real events and concrete aspects of the world. The main departure is that qualitative research relies largely on the interpretive approach, where the researcher focuses on subjective meanings and descriptions of specific participants, and attempts to capture aspects of the social world, which would be impossible to represent as numbers. Neuman (1997) points out that unlike in quantitative research, replication in qualitative approach is very rare because research procedures are particular.

Qualitative research also uses what is termed "logic in practice," meaning a logic of how a research is carried out in reality (Neuman, 1997). It has fewer set rules, more ambiguity, is more messy, is tied to specific cases, and it is oriented toward a practical approach. Related to this logic in practice is the cyclical research path of qualitative research. Rather than being linear, the cyclical approach makes successive passes through steps, at times moving backwards or in several directions at once. Neuman (1997) compares this path to a slowly moving up spiral,

where the researcher collects new data and gains new ideas with each cycle. Qualitative researchers need to collect these data in a social context to be able to understand social phenomena, since the meaning of an action or a statement depends on the context in which it appears. In other words, when a researcher removes the collected data from a social context, the social meaning and significance are distorted (Neuman, 1997).

Mertens (1998) points out that "Qualitative research is multimethod in focus, involving an interpretive, naturalistic approach to its subject matter" (159). Mainly, this freedom of choice, the variety of methods, and the inductive approach were the main attractors in choosing a qualitative methodology. The inductive approach guides the researcher to make sense of a particular subject under investigation without imposing preexisting biases and values. Therefore, the reasons for choosing the qualitative methodology are associated with the nature of such methods, and further with the nature of the research questions. Patton (in Mertens, 1998) identified several types of research questions that would qualify for qualitative methods, and those investigated in this study in particular: the research focus is on the process, implementation, or development of a program or its participants; the program promotes individualized results; detailed, in-depth information is required; the focus is on diversity among individuals and the areas of expertise that they represent; and the intent is to understand the participants' beliefs about the problem, their actions, and the outcomes.

Observational Coding System

As coding is central to the qualitative research, it is conceived as a process of analyzing data rather than simply attaching keywords to text segments (Kelle et al., 1995). Coding could be misinterpreted or used in two ways, mainly as a conceptual label of a category or a relation among two or more categories (Kelle et al., 1995). Three modes of coding include "open,"

"axial" and "selective" coding. The main aim of open coding is to freely generate new categories and specify their properties, dimensions and relationships (Kelle et al., 1995). Axial coding means working intensively with one category, by making connections between a category and its subcategories or between different categories (Kelle et al., 1995). Open and axial coding are two different modes between which the researcher is continually switching. These two modes of coding were used in this study, where full phrases are analyzed and coded as opposed to single words, in order to capture full meaning of the responses.

CONCLUSION

In summary, the use of the qualitative methodology was the most appropriate approach for this research. Based on the methods of document analysis and structured interviews the results of this study are believed to be comprehensive. Chapter Five discusses the findings of this research in detail, where participants of this study provide practical and academic insight on issues under investigation. Comparison of results from the document analysis and the structured interviews help generate several categories of recommendations that address improved planning for outdoor recreation in core areas, which is carried out in ecologically compatible fashion.

3. LITERATURE REVIEW—ECOLOGICAL APPROACHES TO RECREATION PLANNING

INTRODUCTION

This research explores the theoretical and practical implications behind ecological approaches to outdoor recreation planning as one means of core area revitalization in the City of Waterloo, Ontario. The thesis examines various research sources to evaluate the success and innovation of outdoor recreation planning approaches applied to urban areas. In particular, it outlines issues pertinent to the revitalization efforts directed at urban core areas and proposes solutions to strengthen them.

This chapter provides background to the study based on theoretical and practical approaches experienced internationally. The areas of outdoor recreation planning, ecological planning, and urban planning for core areas are introduced and defined. Implications for and parallels of the literature with the Waterloo's core area are examined. The role of urban planning and legislation is also discussed. Following this, a theoretical and practical connection between outdoor recreation planning, ecological management and urban planning is discussed. The chapter presents an overview of the most successful and applicable approaches to outdoor recreation planning that would be carried out in an ecologically appropriate fashion. Chapter Four provides a more focused and localized background to this study based on document analysis employed to better understand issues pertaining to Waterloo's core area.

RECREATION PLANNING APPROACHES

The definitions of outdoor recreation are numerous and diverse. First of all, *recreation* is defined as "the action and activities of people engaging in constructive and personally pleasurable use of leisure time, [and] may include passive or active participation in individual or group [activities]" (National Tourism Policy Study, in McIntosh et al., 1995: 16). *Outdoor*

recreation encompasses “the organized free-time activities that are participated in for their own sake and where there is an interaction between the participant and an element of nature” (Ibrahim & Cordes, 1993: 4). Contrary to the activity-based approach, Manning (1999) suggests, “outdoor recreation is most appropriately defined in terms of motivations and benefits rather than participation in activities” (280). Similarly, Williams (1995) states that in the case of outdoor recreation in an urban setting, researchers should look beyond the activities towards the meanings and values assigned by participants. Recreation differs from both play and leisure because it is organized and mainly occurs in groups (Ibrahim & Cordes, 1993). In addition to being easily confused with other ways of spending free time, such as sports or play, outdoor recreation is further complicated by activities that take place in both indoor and outdoor settings—i.e. swimming or ice-skating. Not surprisingly, there is much confusion amongst the terms. For the purpose of this research, *outdoor recreation* is defined as passive or active participation in any leisure activity that occurs outdoors, both in the wilderness and in the urban environment—e.g. street shopping, or walking between cultural points of interests.

Outdoor recreation research is continually developing. Research suggests several insights on managing recreation conflict. Zoning or separating recreation groups or activities can be effective where goal interference is related to direct or interpersonal contact—e.g. selective use of resources (Manning, 1999). Whereas some architects criticize the single uses of monofunctional zoning in urban areas (Harvey, 1989), such zoning may be most appropriate for outdoor recreation planning. Selective recreation activities may be most appropriate and least intrusive to a particular area (Hammitt & Cole, 1987), and at the same time a number of complementary recreation activities may prevent undesired interaction between various recreationist groups (Payne & Graham, 1993; Wall, 1989). Among the strategies for managing

various user groups are the development of effective codes of ethics (more than management and interpretive signage), implementation of impact studies (compatibility of outdoor recreational activities and wildlife), and management of visitor use levels (See Malloy & Fennell, 1998; Cassell et al., 1990; Sims, 1991; Adams et al., 2001; Weaver, 1995; Fennell, 1999). In relation to outdoor recreation in the urban environment, and especially within the local realm, studies are limited and few, usually dealing with particular activities or resources (Williams, 1995).

Both ecologically healthy and human-modified areas are important for outdoor recreation—e.g. public forests to appreciate and respect nature versus "adventure parks" to satisfy an adrenalin rush (Pigram & Jenkins, 1999). A variety of recreation resources are likely to decrease the demand on wilderness areas and to prevent conflicts between different recreationist groups. With regard to site planning for recreation and leisure, Lynch and Hack (1993) state that a good setting is one which supports purposeful behavior, meaning it complements and promotes user actions. Hammitt and Cole (1987), in their examination of impacts on recreation sites, confirmed that the heaviest impact to a site occurs during the first few years and subsides over time. In order to minimize the amount of disruption to the resource base, recent research (Fennell, 1999) provides strong evidence to suggest that areas currently in use should be planned to accommodate future, compatible uses instead of developing new areas. However, some authors see problems with program-oriented recreation spaces being converted from landscaped public parks for strolling and walking (Arriola et al., 1995).

Particularly within cities and their core areas, parks often serve as the main natural resource for people's outdoor recreation needs. The City of Waterloo differentiates between the types and uses of its green areas, listing eight types of parks in its Official Plan and thus offering a variety of recreation opportunities (City of Waterloo, 2002a). Specific to the domain of public

recreation, Ibrahim and Cordes (1993) list several types of fees and charges that may be applied to support recreation services. However, research confirms that other non-price variables are an important determinant in the demand for recreation goods and services. Among the non-price variables are: 1) socioeconomic characteristics of the consumer, 2) attractiveness and quality of the recreation site, 3) availability of substitute service, 4) travel time, 5) congestion or crowding, and 6) taste and preference of the consumer. These variables should be incorporated into the recreation planning process. Decline and fragmentation of economy and society within cities are not only a challenge in themselves, but also problems for successful development of outdoor recreation in urban areas.

On a positive note, urban enhancement policies help to realize the recreational potential of abandoned land areas, such as the pedestrianisation of town centres (Williams, 1995). Much attention has been given to restructuring processes such as inner city renewal, policies of urban enhancement such as the "green city," and traffic calming. This physical restructuring of cities creates new opportunities for recreation provision, especially since urban populations engage in most of their leisure activities within their area of residence (Williams, 1995). Similarly, in many planning approaches, whether as part of the statutory local plan or as developments steered by strategic service plan, manipulation and enhancement of the urban environment is part of the process of creating opportunity for outdoor recreation. Williams (1995) addresses the potential of streets, both as functional and recreational places, possibly combining pedestrian and bicycle networks with green networks, where urban policy must address the following issues: taming the car, new provision for walking and cycling, rethinking urban design quality, and sustaining living streets. As such, the City of Waterloo and its urban policy in many ways resemble some of the successful European city centres.

Corresponding to the resources and the structure of Waterloo City, the 1991 Duisburg Plan created a network of parks and promenades on railroad tracks, which make every part of the network accessible. Deserted industrial areas and railroad yards are potential sites to create eco-parks, most having already spontaneously emerging vegetation. Another example from Duisburg would be rejuvenating the region by cleaning the Emscher canal waters, and so opening it to people for use and enjoyment. Also similar to that example, the City of Leicester has taken extensive actions to restore the river corridor that runs through the City. In the Waterloo context, we can point to the potential for restoration of Laurel Creek in Waterloo's core area. Due to actions under the Leicester Ecology Strategy, that city's Riverside Park has become one of its most important ecological and recreational resources (Beatley, 2000).

With regard to the re-establishment of nature in urban areas, if natural areas are to be sustainable and make a positive contribution to the quality of urban life, they must be integrated, wherever possible, with other land uses. New forms of open space include greenways and linear parks (including network of cycling routes, restored rail routes and green corridors); water space created from industrial reservoirs and ponds; and activity sites, such as skateboard or BMX cycle parks, climbing walls, or dry-ski slopes (Williams, 1995). Outdoor recreation could also promote environmental protection. For example, research conducted by Statistics Canada in the year 1996 on the Importance of Nature to Canadians, indicated that the natural environment enhances the daily lives of Ontario residents—both in natural and residential areas—and that the expenditures by participants of nature-based recreation activities result in vast economic impacts.

Specifically, an estimated 84.8% Ontario residents (aged 15 years and over) participated in a wide range of nature-related activities, of which 42.8% participated in residential wildlife-related activities. Not surprisingly, participants in residential areas spent more days on their

recreation activities (average of 145 days/participant) than in natural areas (average of 15 days/participant), having to take trips to the natural areas (average of 12 trips/participant). With regard to the local economic impact, most Ontario residents invested in equipment (26.5%) that would allow them to participate in their chosen nature-related activity, whereas 23.2% invested in transportation. Furthermore, the enjoyment of nature-related recreation was worth an estimated $807.1 million since participants stated they would be willing to increase their expenditures before taking part in their chosen activities. The information on socio-economic benefits from a survey such as this could be used by the City to devise and justify policies and programs that would incorporate outdoor recreation into the planning process.

Planning for outdoor recreation should be an integral element in local land use planning, especially since areas can often serve several purposes in addition to recreation. A marsh, for example, can serve the function of flood protection, a wild life sanctuary, a place for nature study, and a visual contrast to congested areas. Preservation of watercourses can provide valuable recreation areas. There is constant pressure for the most efficient use of resources and the multiple use of land and water resources, which often creates conflicts between different groups of recreationists and may not be an effective means of protecting a natural resource or wildlife. *Multiple use* has been defined as “the planned shared use of a facility or area by several different activities and interests” (Countryside Recreation Research Advisory Group, in Seeley, 1973: 34).

Planning for a successful outdoor recreation experience within an ecologically healthy environment, if not a paradox in itself, is a challenging goal to achieve. As often seen in the dual mandate of national parks to accommodate visitors and the natural integrity of an area, problems may arise because of unrealistic or contradictory objectives (Swinnerton, 1999). In the case of

the urban environment, there is another kind of paradox. Problems associated with suburban sprawl tend to be addressed by revitalization and intensification efforts, whereas the scattered form of urban areas may be best suited for the natural habitats within the cities (Ouellet, 1996). Unfortunately, although there is an extensive literature on specific techniques for protecting and managing the natural character of parks and wilderness areas while maintaining a quality of visitor experiences—e.g. Recreation Opportunity Spectrum (ROS), Limits of Acceptable Change (LAC), Visitor Experience and Resource Protection (VERP), Visitor Impact Management (VIM), Visitor Activity Management Process (VAMP)—there is a lack of such measures in the realm of urban areas (Payne & Graham, 1993; Jackson & Burton, 1999; Swinnerton, 1999).

Basic strategies for outdoor recreation management within an urban area include increasing the supply of recreation opportunities, limiting recreation use, reducing the impacts of existing use, and increasing the durability of the resource. Other categories of recreation management practices include rules and regulations, law enforcement, zoning, and site design and management. Only limited research has assessed the potential effectiveness of these practices (Manning, 1999).

Urban recreation needs are distinct from other areas of recreation experience and should be considered as such. Williams (1995) explains that recreation must be fitted into the complex system of land uses over which recreation activity must be superimposed. In addition, the needs of the urban population change analogous to the various city processes and periods. The "formation" phase of urban recreation in the nineteenth century recognized the need for outdoor recreation provision in cities, the result of which was an emergence of town planning, social patterning and urban design strategies all leading to increased local availability of space. The "consolidation" phase of 1918-1939 helped to further establish present recreation trends while

filling some gaps in outdoor recreation resources with new initiatives. Finally, the "expansion" phase after 1945 reflected a dramatic growth of demand for leisure augmented by diversity and flexibility, which gave support to the recreation profession, placing it as an item on the statutory planning agenda. This distinction has further secured an extensive amount of space within cities, where recreation has benefited from the wider environmental improvement (Williams, 1995).

PLANNING IN ECOLOGICALLY APPROPRIATE FASHION

> Ecological city planning involves land use planners and engineers in co-coordinating the flow of resources with the needs of consumers, and the localized industrial strategy. Like a natural ecology, an urban-industrial ecology should be designed to create no waste (The Sheltair Group, 2001: 39).

The character of natural processes is multi-faceted and incorporates various disciplines from the natural and social sciences to politics and planning, and from philosophies to values and ethics. The definition of realm is therefore much more complex. *Urban Ecology* "reflects the reality that towns and cities as they have developed through history, represent not only important forms of human coexistence, but also of relationships between [people] and nature" (Štepánek, 2000: 110). As such, urban ecology encompasses ecological research in towns and cities, and is a "diverse field of research that forms a continuum from 'pure' ecology in the urban setting to a combination of ecology and social sciences to examine urban systems" (Niemelä, 2000: 59).

An ecological planning approach involves treating units of landscape as ecosystems. The approach supports the wholeness and functioning of ecosystems, and the network of processes and relationships between the living and non-living parts (Bradshaw, 1982). This integrated system is based on considerable interdependence among all components, and also on physical movement of crucial elements from one component of the ecosystem to another (Bradshaw, 1982). Conserving the integrity of natural systems demands a shift in policy from species to

habitats, from sites to ecosystems, and from national to global measures (Swinnerton, 1999). Aspects of sustainability in cities mostly relate to how the urban system fits into its local ecosystem. All related issues are linked by the need for a city to fit closely into the natural cycles of the bioregion in which it is located (Newman & Kenworthy, 1999).

Ecological strategies should also focus on diverse levels of scale and account for consistency between measures at different levels. As an example of this approach, an OECD report provides policy guidelines for action at the local, national and international levels, following a description of innovative and successful approaches of environmental policies related to cities (Vegt et al., 1994). For instance the "sandwich strategy" guiding model is conceived to guide the making of environmental policy plans at different levels, exploring what conditions must be present or created at higher levels of scale in order to make ecologically sound behaviour possible at the lower levels of scale (Vegt et al., 1994). As such, Waterloo Park should be examined according to "complex systems" thinking (Kay, 1994), first within the scale of the Laurel Creek sub-watershed and following by the Grand River watershed.

All living systems are self-organizing, therefore our challenge is to promote the capability to self-organize while at the same time sustain our biological needs (Kay, 1994). The premise of the self-organizing system is generally human activity management rather than direct intervention in the system (Kay et al., 1999; Kay, 1994). The authors state that ecosystem management is simply an oxymoron—it is human interactions with ecosystems that need management. Management must further focus on facilitating and directing change and not attaining some fixed state and maintaining it for all time. Differences between how the future actually unfolds and how it was anticipated to unfold are seen as opportunities for learning. Holling's Figure 8 model of ecosystem dynamics is a much richer version of ecosystem

behavior, which eliminates the notion that ecosystem management is about maintaining an ecosystem in a stable, stationary state (Kay, 1994; Kay et al., 1999).

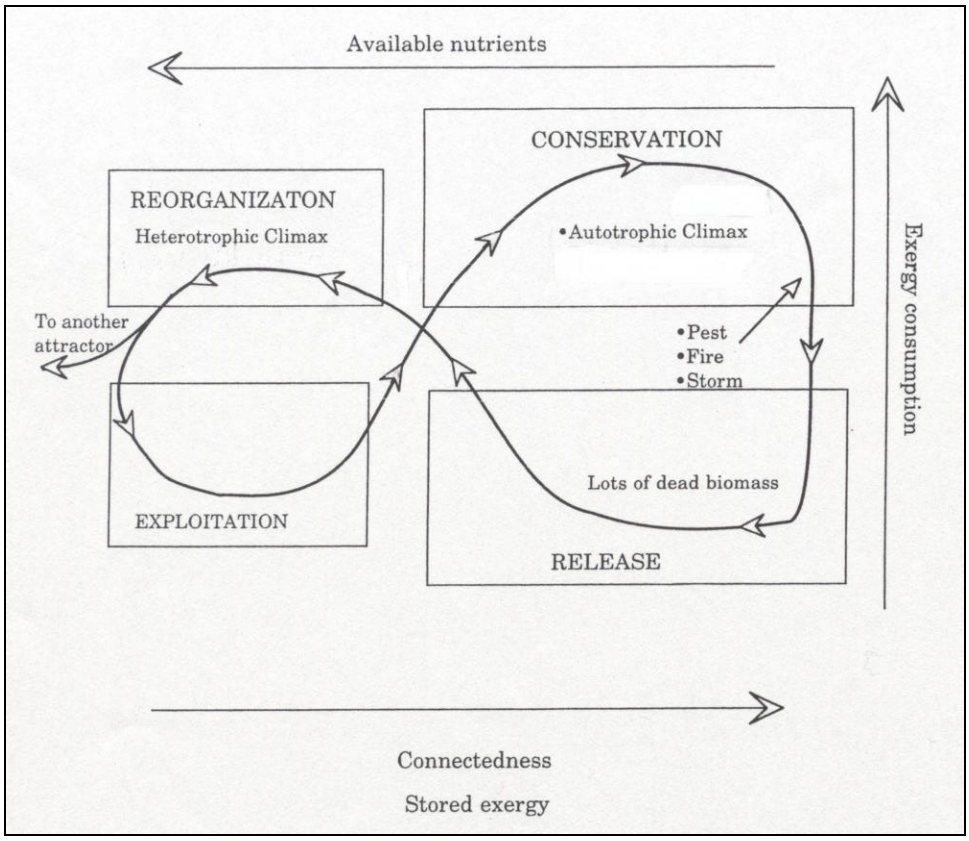

Figure 3.1 Holling's Figure-8 Model of Ecosystem Dynamics. Adapted from: Kay et al., 1999.

A Self-Organizing Holarchic Open-ended ecosystem (SOHO) is representative of the system's integrity, which has to do with its ability to maintain its organization and continue the process of self-organization (Kay, 1994). Integrity encompasses the system's ability to cope with stress created by changing environmental conditions, as well as the ability to continue the process of self-organization—i.e. evolution, development, and the renewal cycle of birth, growth and death represented in Holling's Figure 8 model—on a continuous basis. The scientific background on energetics promotes well-organized ecosystems, which are more effective at

capturing solar energy (Kay, 1994). On the contrary, cities are urban heat islands that lack complex ways of storing high quality sun energy, which is normally stored by flora to be released in cycles. The cooler the surface temperature, the more thoroughly the ecosystem has utilized the energy, and the more organized and usually older the ecosystem (Kay, 1994).

Consistent with this understanding of energy utilization, more nations and communities are increasingly planning for green infrastructure (Green Infrastructure Net, 2002; Sheltair Group, 2001). Benedict and McMahon (2000) define *green infrastructure* as "interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations" (5). The authors promote the view that this infrastructure is the ecological framework needed for environmental, social and economic sustainability, otherwise the natural life-sustaining system. The Green Infrastructure Net (2002) exemplifies the true significance of the green infrastructure, defining it as "the Nation's natural life support system … [which] contributes to the health and quality of life for … people."

Although anthropocentric in nature, this approach differs from other open space planning since it looks at conservation issues in concert with land development, growth management, and built infrastructure planning, whereas other conservation approaches are typically undertaken in isolation from development (Benedict & McMahon, 2000). As infrastructure systems evolve into "ecological" forms that are more effective at looping scarce resources and cascading energy flows through multiple end uses, more governments—especially those in Europe—begin educating public to encourage support for these systems (see Sheltair Group, 2001; Sandström, 2002). In general, land use planning guidelines should reflect the following principles: large habitat blocks are superior to small, decrease in edge habitat enhances circularity, habitat areas

are better close together, and corridors function better when they resemble the blocks they connect—with locally occurring species (Friesen, 1995).

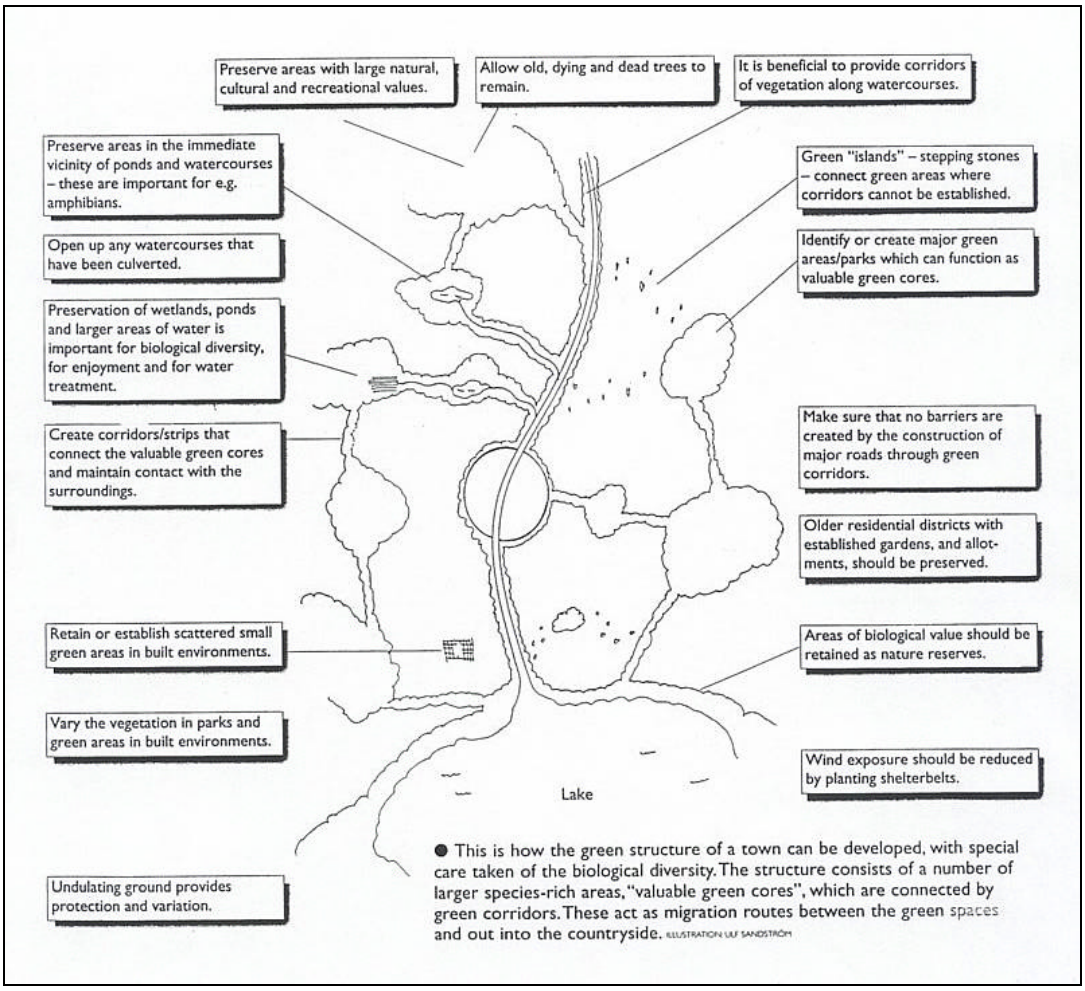

Figure 3.2 Green Infrastructure Framework. Adapted from: Sandström, 2002.

For cities to be ecologically viable or "biogenic," their functioning needs to be organized according to "circular metabolism" where every output is also used as an input into the production system (Girardet, 1992). The city that uses circular processes has impact over a small area since its needs are met by itself and its immediate surrounding area. Unfortunately, most modern cities on a global scale are "biocidic," characterized by "linear metabolism" where inputs and outputs are unrelated, eventually undermining the city's existence (Girardet, 1992). The

presence of such a city is felt over a vast area since most resources are transported from far using extra energy and the high amounts of waste are discarded.

Cities cannot fulfill their vital functions if they fail to provide a healthy environment for their inhabitants, hence urban areas increasingly express new preventative approaches designed to create healthy living and environmental conditions. For instance, according to the "healthy city" concept, a city must "provide a clean and quiet environment, … minimize stress for normal living conditions, [and] provide easy access to green spaces" (Girardet, 1992: 135). In related fashion, the World Health Organization through its Healthy Cities Programme attempts to shift the emphasis of health care to the provision of urban environmental conditions supporting good health. Similarly, the Ottawa Charter for Health Promotion states that promotion "must advocate ways of making conditions favorable to health, enable people to reach optimal levels of health, and mediate among differing social interests to ensure that healthful alternatives predominate" (Bax & Douglas-Mills, 2000: 1). In such an expanded view of health—including the psychological, economic, geographic, and other aspects of life—urban planners have additional responsibility to provide healthy living spaces for urban residents.

The "green cities" movement, in particular, continues to be very successful in transforming the urban landscapes into natural areas, although still on a small scale (Girardet, 1992). Hence, we see the creation of urban farms and tree planting on previous wasteland, revival of allotments, formation of neighbourhood parks, transformation of unused rail lines into linear parks, and house plantations. A good example of this approach is demonstrated by Dieter Magnus, an environmental artist, whose famous Green Bridge in Mainz is a piece of urban landscape rather than simply a pedestrian bridge platform designed for people to get across a busy road (Girardet, 1992). **Figure 3.3** demonstrates the difference between a pedestrian

intersection before the construction of the Green Bridge and an uninterrupted link between residential and recreational areas after its implementation. Also, initiatives for community-based reforestation projects based on sustainable agro forestry systems are considered in European and North American cities (Girardet, 1992).

Figure 3.3 Green Bridge, Mainz, before and after construction. Adapted from: Girardet, 1992.

Interestingly, the importance of parks and urban forests includes their perceived value attached by the local residents. A study by Claude Cousineau (1985, in Recreation & Leisure Services, 1997) found that the psychological benefits of forests and various natural areas within cities are not limited to active users, but that the mere knowledge of their existence and freedom of access brings satisfaction. Cousineau (1985, in Recreation & Leisure Services, 1997) points out that traditional urban planning of green areas "when numbers warrant" is more appropriate for recreation facilities as opposed to wild habitats and landscapes near urban centres. These areas need protective policies to be appreciated and not necessarily used, and "their importance in people's lives should be measured in terms of the dissatisfaction they would produce if they were eliminated" (Cousineau, 1985, in Recreation & Leisure Services, 1997: 9).

The rehabilitation of urban wetlands and creeks is also an essential part of the greening process where public education is the key to appreciation and support of ecologically valuable

but aesthetically unpleasing areas (Vegt et al., 1994). Register (1987, in Newman & Kenworthy, 1999) demonstrated how to rehabilitate a concrete drain in Berkley, where the City drains were converted into a piece of urban ecological landscape running through a dense urban area. A similar project of Zurich's regenerated creeks converted from concrete drains is part of the open space for a high-density housing complex with agricultural allotments next to it (Newman & Kenworthy, 1999). A similar approach could be applied to Laurel Creek running through the core of the City of Waterloo, which could further be bordered by an array of restaurants, hotels, landscaped garden walkways, amphitheaters and bridges (Newman & Kenworthy, 1999).

Specifically, in terms of outdoor recreation planning, Ibrahim and Cordes (1993) suggest that all selected activities should adhere to principles, which protect the natural environment and follow an outdoor ethic. Authors such as Williams (1995) strongly promote ecological ideas while others recommend "for recreation planners to emphasize environmentalism with open corridors, green spaces, and woodlands, while de-emphasizing the building of sport and leisure centres" (Vogt, 1998).

PLANNING FOR CORE AREAS

The *inner city* can be defined as a composite of the central business district (CBD), the surrounding areas of mixed land uses, and high-density residential development (Ram et al., 1989). The *core area* is recognized to include the downtown as well as surrounding districts within approximately one mile (1.5 km) of its centre, which is usually associated with the City Hall and Cenotaph. These districts can be commercial, residential or industrial in nature (Bunting & Filion, 2001). The dispersed city seems to represent the most recent progression in Canadian urban form (Bunting & Filion, 1996). The "dispersed city form [has been] explained as a composite urban agglomeration that is spatially decentralized and held together by complex

spatial relationships between many locationally discrete, specialized activity sites" (Bunting et al., 1996: 58).

As a consequence of very competitive commercial pressures, the land and built infrastructure within the central areas of cities change most frequently (Kivell, 1993). Especially during the past three decades the major structural changes in the urban core include the decline of old manufacturing industries, technical changes in white-collar employment, intensification of private transport effects, and new retail patterns (Kivell, 1993). Interestingly, population growth alone may be no longer the main reason for city expansion, but increased living standards, growing demand for housing and other land-using activities such as recreation (Kivell, 1993). The inner city or the core area is most identified with change, usually symptomatic of decline and revival (Ram et al., 1989; Bunting & Filion, 1988). This change, however, is mostly analyzed from an economical, social or residential approach rather than ecological or recreational approaches (Filion, 1995; Couch & Dennemann, 2000).

The urban core is said to be the most challenging in terms of dealing with environmental problems (Oosterveld, 1999). There are several reasons. Many environmental problems lack urgency in the minds of politicians and decision-makers. Also, since the core is commercially oriented, its environmental health is determined by its economic vitality, thus the priority of natural environment in renewal efforts is non-existent. Lastly, because the density of built structures within the core area is high, people who visit or live in such an area are disconnected from the natural environment and often feel apathetic towards their perceived impact within the urban core (Oosterveld, 1999).

Successful city centres include not only economic functions, but also equally important stable residential areas (Carmon, 1999), and thus green infrastructure that would support these

areas. As stability of residential areas suggests a high quality of life for its residents, all city conditions need to be examined and optimized. In such instances, natural areas play health-related (physical, psychological and spiritual), functional (buffer zones, habitat and species protection, air and soil filtration, heat reduction), recreational, social, educational, and aesthetic roles. Unfortunately, the green infrastructure is scattered and less available within the urban core than within the rest of the City. The scarcity of outdoor recreation amenities could hinder the well being of urban population.

Although outdoor recreation planning in the urban core is often approached through revitalization efforts, most existing theoretical approaches to city revitalization focus on "capitalist patterns of development, structural economic change, and demographic structures" and not on ecological principles (Broadway, 1995: 4; Ley, 1991; Davies, 2000). Davies (2000), however, suggests that revitalization through outdoor recreation amenities and community trails is a strong force within the industrial and retail sectors of the city core. Similarly, Benedict and McMahon (2000) state that revitalization through green infrastructure efforts is compatible with both land conservation and land use planning, and therefore that an integrated planning and design should connect green and gray infrastructure in a more effective, economic and sustainable network. These authors emphasize, "green infrastructure planning should be the first step in the land use planning and design process" (Benedict & McMahon, 2000: 15).

In particular, brownfield development can be an efficient land recycling approach within the dense core areas. Whereas brownfield development includes the cost of land decontamination and improvement of rebuilding infrastructure to new standards, greenfield development often includes the cost of building infrastructure in the suburbs, economic and social costs of declining client base and under investment, foreclosing of options for inner-city residents, health costs of

air pollution and global warming if development is car-dependent, and loss of prime agricultural land (Carley & Kirk, 1998). There are also many left over or wasted spaces like vacant lots, railway yards, edges of freeways, streets that could be closed, road medians, and watercourses.

Trails and greenway corridors present another opportunity to preserve the integrity of the natural environment and increase opportunities for outdoor recreation. However, landscape-oriented studies support the notion that our knowledge about the interaction of patches, the green networks, and the role of the larger landscape within which they are located is still relatively limited (Golley, 1989), and that there is a shortage of scientific evidence to advocate corridors (Simberloff et al., 1992). Merriam (1990) suggests that natural corridors may have disadvantages by being barriers to dispersal, while other researchers extend this concern to corridors providing access into all linked areas for disease and disturbance (Simberloff et al, 1992).

Although urban regeneration and the dense form of a city are consistent with the policies of most western governments, it is crucial that in reality cities offer the same quality of life as their rural and suburban competitors, to both stop the urban sprawl and offer healthy living conditions (Crookston et al., 1996). Therefore, among the quality of services and facilities offered by cities—i.e. cultural and recreational—we need to acknowledge the links between the quality of open space and urban life (Crookston et al., 1996). Urban areas such as Waterloo will face different and relatively more severe revitalization problems than metropolitan cities, which have diverse economy and linkages that span the nation; therefore can better withstand economic and demographic changes. Waterloo's status as a mid-size city makes it more difficult to absorb shifts in household or job composition and income levels, and means the city has a much smaller budget for outdoor recreation amenities.

As excessive vehicle dependency often creates problems that are compounded in the core areas, revitalization efforts have concentrated on solving traffic-related issues and pedestrianization. On an international scale, the value of streets as social centres is being rediscovered, especially in mixed-use areas, which have much potential for social life (Girardet, 1992). Also, closing off a street directly adjacent to a city park could offer all sorts of opportunities and can revolutionize the use and appearance of the park. Governments may rely on various indicators to encourage the vitality of their urban areas and on policy to reshape the harmful public travel behavior. However, attitudinal studies show more support for policies that include a variety of transportation modes rather than for policies that restrict personal use of the vehicle, such as pricing for the use of particular roads (Which, 1990; Hallett, 1990; Pharoah, 1992, in Evans, 1997).

Whereas the term green space is viewed as amenity, the term green infrastructure implies necessity. Likewise, the "green cities" movement does not consider nature in the city as an expensive luxury, but a functional necessity (Girardet, 1992). Most growing communities, including Waterloo, have long-range plans and growth management strategies addressing their transportation, storm water facilities and core areas. However, they often do not have a plan to preserve and enhance their life-sustaining green infrastructure, understood in all forms and not limited to ESPA's or community parks.

Urban open space is often a landscape of manicured parkland and a standard set of playground equipment, irrespective of social needs or the biophysical demands of the site. In most part, this is due to the legacy of Victorian parks inherited from 19th century, which satisfy only limited recreation requirements and are biologically sterile (Bradley, 1982). A new approach to urban open space applies the science of ecology to planning, design, and

management of these spaces (Ruff, 1982). In comparison, “natural” landscapes of the city display spontaneity both in natural elements and in people’s behavior, and are able to provide a great range of opportunities and serve as visual indicators of a healthy environmental ethic (Ruff, 1982). (See **Figure 3.4** for variety of urban green space). Ruff (1982) advocates that the natural landscape in the core of urban centre has much potential to serve a whole range of important ecological and recreational functions in the home environment. Similarly, Bradshaw (1982) promotes the wild landscapes as usable space for everyday leisure and outdoor recreation, especially for children’s creative and adventure play. Nature is further promoted as a spiritual retreat, a dynamic outdoor art form, a social catalyst, and an environmental education setting (Bradshaw, 1982).

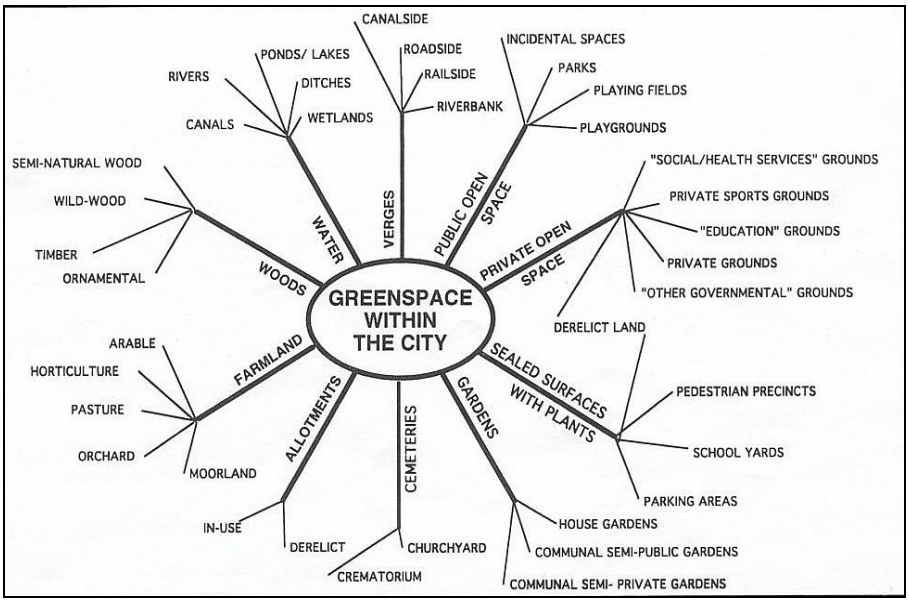

Figure 3.4 Urban Green Space. Adapted from: Sandström, 2002.

Such natural landscapes contain several characteristics as identified by Ruff (1982), although Ruff does not consider these landscapes as already disturbed, as in the case of urban centres. First, there must be an attempt not to disturb the natural processes and cycles present on

the site, and further to allow such to determine the ultimate design. The site should be enriched through its natural complexity, such as a varied topography and biological arrangement. The landscape should slowly evolve and be flexible to new developments so that it is capable of responding to changing social needs and biological requirements. Creativity should be encouraged through spontaneous work on-site carried out by delegated parties. Open space should be the result of joint discussion with various user groups who will use this space rather than the sole responsibility of the designer. Finally, after the initial labour-intensive establishment stage, maintenance of certain urban green areas should be reduced to create a natural look rather than what is perceived to be aesthetically pleasing.

Egan (in Hierlihy, 1991) noted that "natural experience versus the recreational experience" is a classic conflict in parks. The passive recreation experience is often ignored in these debates. In wanting more activities, communities often ask for facilities rather than parks and open spaces. Hierlihy (1991) notes that complete integration of the desires of users into the planning process for parks is the key to how well a park is used. Therefore, specific types of parks or perhaps specific zones within those parks can be geared towards specific needs of communities. For instance, Seeley (1973) classifies town parks in three following ways: 1) by the type of visitor the park caters to, 2) by the location of the facility and the scope of surrounding areas that the park caters to, and 3) by the form of arrangement of the park (wild versus cultivated).

In many respects—historical, cultural and economic—European cities represent unusual opportunities for learning. Historically, European cities have been more compact than cities in North America, have relied less on automobile mobility, and have had distinct separation between urban and rural areas (Beatley, 2000). While Canadian cities consume land and grow

spatially at a much faster rate than population growth, European cities have tended to grow more compactly, at higher densities, and with greater emphasis on the redevelopment and reuse of land within existing urbanized areas.

Especially impressive in the European cities is the attention paid to streetscapes and public space. In addition to pedestrian-only streets, there are numerous street enhancement efforts, such as extensive tree planting, increased places to sit, public sculptures and other forms of art. Beginning in the 1960s, many European cities have been gradually pedestrianizing parts of their city centres by taking space away from cars and parking, and returning it to pedestrians (Beatley, 2000). This has not only helped to control the automobile, but has also created city centers and downtown areas that are safer and much more inviting places to visit and shop. Examples of pedestrianized urban spaces in the US are few, an example being the Pearl Street Mall in Boulder, Colorado, which is the centrepiece of a vibrant walking district of shops, restaurants, and offices (Beatley, 2000).

European cities offer a number of positive examples and efforts to incorporate green features and nature into the design of the built environment. One of the key notions behind urban green strategies is compensation for the loss of green space due to urban buildings and development. The idea of the West European green roofs could easily be extended to bridges, shopping malls, roofed parking lots, and so forth. Although such an approach may seem insignificant in comparison to vast protected areas, German studies have demonstrated significant biodiversity in such limited environments (see Mann, in Beatley, 2000). The early advocate of this kind of ecological compensation through green buildings was an Austrian ecological architect and artist Friedensreich Hundertwasser, in whose opinion “Everything horizontal under the sun, under the open sky belongs to nature. Roads and roofs should be

planted with trees. It must be possible to breathe forest air in the city again…" (Beatley, 2000: 204).

THE ROLE OF PLANNING AND LEGISLATION

In Canada, the provincial government plays the primary role in holding the planning powers (the Ontario Planning Act), whereas the municipal government holds a decision-making authority and accountability for local planning decisions. The main justification for a planning system is to plan land uses in a manner that contributes to coordinated development, the efficient use of services and resources, and enhances the quality of life for city residents (Kaiser & Godschalk, 1995; Jenhs et al., 1996). Kivell (1993) states that planning also resolves competing claims over the use of resources, land in particular, in the attempt to balance an uneven distribution of power and to protect the interests of weaker groups. The particular nature of urban land is unlike most other commodities. It is considered to be in fixed supply, each plot of land is unique and irreplaceable, it is immobile, and it is permanent in spite of alteration and damage (Kivell, 1993). As a result and alongside the legal, social and political structures developed by various societies, the use and ownership of land entails complex relationships of interests and rights.

The concept of land ownership has additional implications for urban development. The size and configuration of land holdings greatly affects urban morphology. The timing of land sales affects the nature of urban development. Land ownership bestows power and significant influence, which may be exercised over urban planning policies. Land ownership is also a crucial part of both national and local economies related to the production and consumption sector. If land ownership is a social construct, such consideration is important in terms of what it reveals about the nature of society (Kivell, 1993). All governments intervene to some degree in the land

market and in the process of its development, mainly to reduce inefficiency and improve equity. Although economic factors are most powerful in shaping the structure and land use of cities, the social choices made by people in affluent societies become more significant alongside the economic influences. One trend, which has a significant impact upon the urban form and land patterns, is growing public concern for the natural environment (Briassoulis, 1989; Skelton et al., 1995; Leitman, 1999).

Many federal, provincial and local government laws affect land use planning, making it increasingly complex for effective and efficient improvements. (See **Figure 3.5** for major organizations involved in land use planning and regulation). Legally, responsibility for municipal land use planning rests with the province, although in practice the responsibility for urban, suburban and rural land use planning is delegated to local governments through the Ontario Planning Act. Hence, the local government, referring to both municipalities and regional districts, most closely affects urban growth and development.

Some authors suggest modifying the existing tax structure in order to encourage redevelopment efforts. Compared with many European countries, the US and Canada have a much less centralized system of raising revenue, as well as much greater reliance on property taxes (Beatley, 2000). Heavy reliance on property taxes to pay for infrastructure and services has tended to encourage competition at local government level for tax base, and tended to promote land speculation and low-density development. A number of European countries have also taken important steps to shift tax burdens to green or ecological taxes on pollution, waste, and energy consumption. It could be argued that the more laissez-faire Canadian approach to land use planning seems to have made compact urban form more difficult to realize.

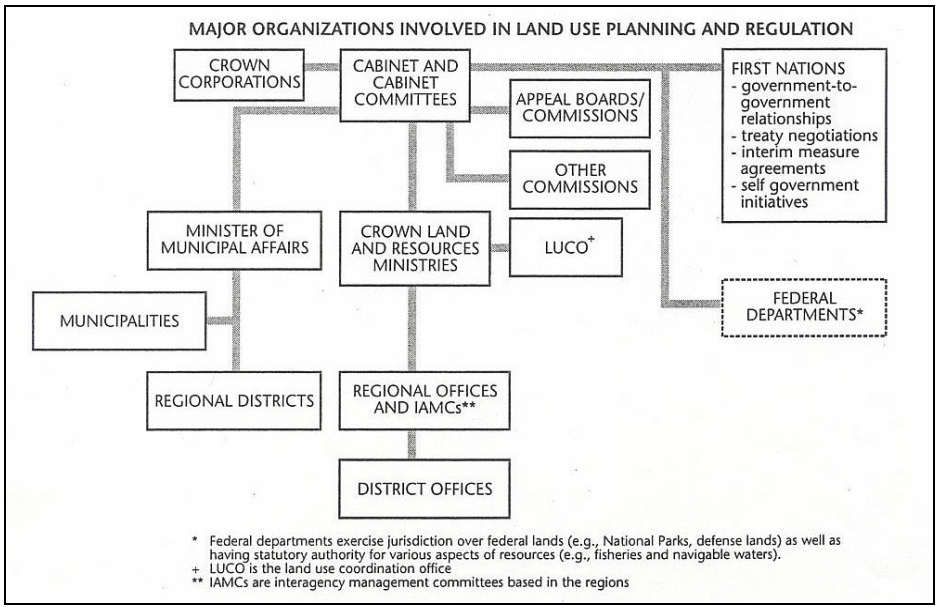

Figure 3.5 Major organizations involved in land use planning and regulation. Adapted from: Nowlan et al., 2001

The value of legal tools is realized by protecting ecological features in the urban areas, such as riparian buffer zones or habitat areas for endangered species. (See **Table 3.1** for list of legal tools in Waterloo's urban green space protection). For instance, stewardship bylaws are one option to protect the urban green spaces, where more specific bylaws may be used in already developed areas. In such areas, green space may also be protected by creating parks, using legal tools to protect privately owned land—e.g. conservation covenants—or ensuring densities that would allow continued availability of green space for legal protection in the public interest (Nowlan et al., 2001). As a growth management strategy, Smart Growth is increasingly applied by governments to use land more efficiently, limit urban sprawl, incorporate nature into development, preserve agricultural and ecologically sensitive land, provide wide range of housing options, increase the sense of community, and reduce dependency on car use. Smart Growth encompasses strategies such as greenway protection, nodal development, demand management, industrial ecology, and community partnerships (Nowlan et al., 2001).

Table 3.1 Legal tools in Waterloo's urban green space protection. Adapted from: Nowlan et al., 2001; City of Waterloo, 2001c; 2002h; 2002f.

Goal	Legal Tools
Protection of Environment	Environment First Policy
Protection of Environmentally Sensitive Areas	Designation of Environmental Constraint Areas Environmental Lands Acquisition Program Municipal or Regional Parks Conservation Covenants
Park Creation	Open Space Designation Parks Planning Policy Reservation or Dedication of Land Owned by Municipality Additional Parkland Through Renewal or Redevelopment Development Cost Charges Dedication upon Subdivision Petitions for Regional Park or Local Service Area Park Donation of Land
Protection of Trees	Tree Protection Bylaw Urban Forestry Policy Woodland Improvement Act Regional Tree Cutting Bylaw
Creation of Greenways	Linear Parks and Community Trail/Access Link System Utility Easements Conservation Covenants
Stormwater Management	Stormwater Management Areas Designation Urban Storm Drainage Policy Liquid Waste Management Plans Groundwater Protection
Protection of Riparian Areas	Water Resource Protection Strategy Designation of Stream Corridor Buffer Areas Watershed Planning Municipal or Regional Parks

In terms of the planning profession, several authors identify a paradigm shift. For instance, in a thirty-year period case study of downtown revitalization planning of the City of Kitchener, Filion (1993) notes a shift from expert-based to participatory planning. Similarly, Shipley (2000) reflects this idea in a visioning process currently in popularity among planners, which is employed as an applied research tool in the initial stages of developing a vision and a plan for an area, where all groups of a community are actively involved—e.g. Imagine Waterloo

(City of Waterloo, 2001a). Regarding the urban form debate, Yiftachel (1989) states that the dominant paradigm has shifted to urban sustainability (see Newman, 1986), "with a strong emphasis on environmental protection, energy efficiency, and urban consolidation" (34). Debate about urban form renewal include the clearance/redevelopment versus conservation/ rehabilitation emphasis, urban centralization versus decentralization, and metropolitan containment versus indefinite expansion (Yiftachel, 1989).

For example, architect Leon Krier—one of Prince Charles's "kitchen cabinet" advisors on architectural and urban design matters—disapproved of the modernist urban planning practice of mono-functional zoning where the movement of people by street grid patterns and not the ecological integrity of a city is the main preoccupation of the planner (Harvey, 1989).

> The *symbolic poverty* of current architecture and townscape is a direct result and expression of functionalist monotony as legislated by functional zoning practices. The principal modern building types and planning models such as the Skyscraper, the Groundscraper, the Central Business District, the Commercial Strip, the Office [now Business] Park, the Residential Suburb, etc. are invariably horizontal or vertical *over*concentrations of single uses in one urban zone, in one building programme, or under one roof (Harvey, 1989: 67).

He contrasts this situation with a "good city" based on ecological planning, where most urban functions are accessible within enjoyable walking distances. Today's planning identifies the city in its public spaces, which have always constituted the centrality of the urban realm. Public spaces represent the city itself and produce the "city effect," however; these spaces must be used as strategic tools to create new opportunities for centralities (Archibugi, 1997).

In meeting needs for outdoor recreation in urban places, the public sector is an important actor. It may exert indirect controls over at least some of the actions of the private and voluntary sectors through local authority regulation of the statutory planning process (Williams, 1995). The basic objective in local authority planning for outdoor recreation is to establish the physical

requirements necessary to support the urban population's recreation needs and to facilitate those activities through program planning (Williams, 1995). The pattern of outdoor recreation provision is shaped and guided by statutory planning process—legal control of physical development as regulated by local authority planning departments—while service planning guides the work of the recreation and leisure services. It appears that the Waterloo classifies outdoor recreation as land use, since the City of Waterloo's Official Plan does not place recreation in a discrete section within the local plan, but within the parks and open space policy, bikeways and trails policy, or environmental policy (City of Waterloo, 2002a).

Outdoor pursuits can make significant demands for land. Stankey et al. (1999) advise that no specific standard of land to population or similar people-based standard should be imposed for ecological and environmental open space uses, yet the City of Waterloo Official Plan provides guidelines for open space according to park type, accessibility per distance, and size in hectares per 1,000 population (City of Waterloo, 2002a: 3.7). The permissible uses of such areas must be governed by the physical and ecological characteristics of each site and cannot be counted upon to meet any particular level of recreational need (Stankey et al., 1999). In planning for outdoor recreation, the planner must know the needs of recreationists and the capacity of local land and water resources.

Analogous to the case of recreation, the importance of ecological integrity and environmental health of urban and natural areas is often on the margins of political consideration, if not altogether neglected. Ideas which emerge from international agencies that are concerned with people's quality of life and environmental integrity, such as Agenda 21 or Healthy Cities, often become secondary considerations in the strategic planning of cities instead of being their central guidelines (Stephens, 1999). This is in spite of increased understanding of

the connection between urban environmental conditions and health in cities. Numerous research findings point to the conclusion that urban health is compromised for a majority of people internationally, with little evidence that current strategies are beneficial (Bradley et al., 1992; Stephens et al., 1996; Songsore & McGranahan, 1998), even though the objective of economic development is to improve people's quality of life (UNDP, 1997). Urban economic policy fails to be based primarily on people's health. A parallel movement led by health professionals is that of Healthy Cities and Health For All, however, neither has found its way into the routine process of urban planning or economic policy (Atkinson et al., 1999).

RECREATION PLANNING, ECOLOGICAL MANAGEMENT & URBAN PLANNING

To increase the quality of life, problems within the urban core need to be addressed on multiple levels, from natural sciences to aesthetics, and through interdisciplinary measures which integrate the natural and social sciences with ecology into the process of urban planning (Niemelä, 1999). Increasingly, experts of various professional backgrounds regard as fundamental the promotion of wide mix of land uses, improved overall environmental quality of public spaces, safety-conscious designs, respect for local cultural features, improved access arrangements, ecological measures and comprehensive management (Evans, 1997). Manning (1999) promotes a three-fold framework of concerns for outdoor recreation, including the natural, social and management environment. Analogous to the planning discipline, outdoor recreation shares an inherent multidisciplinary nature—particularly with ecological philosophy—and the value of such an approach has been recognized by numerous researchers (Ibrahim & Cordes, 1993; Williams, 1995; Manning, 1999; Swinnerton, 1999).

According to Brady et al. (1979), an urban ecosystem typology describing the natural, physical and structural components of the urban areas and their ecological properties, should be

incorporated into the development and planning process. As such, it could also be applied to outdoor recreation planning by matching the sensitivity of the natural area to the proposed recreational use designated for the area. This tool would also allow cities to be compared to each other based on their biological nature and associated ecological dynamics, subdividing the urban land system which is viewed as a landscape continuum into 12 land types and 18 land subtypes. The authors demonstrate this typology on a schematic map of the City of Waterloo compared with a typical urban description on a zoning map. In comparison, many maps show some cultural, recreational and natural infrastructure in the City; however, ecological processes and dynamics are easily ignored. The authors propose a variety of maps absent in most North American cities that would display different features—e.g. aesthetic or sociological—although they still dismiss an outdoor recreation map as another important tool for urban planners.

> Once … [such] mapping is made available, planners will have some basic tools for predicting, maintaining and enhancing urban environmental quality. In their absence, the usual road, servicing, topographic maps continually will reinforce the built structure of the urban fabric to the detriment of natural and social components (Brady et al., 1979: 26).

Adaptive planning, in particular, represents a philosophy of prepared responsiveness and consists of a series of successive and continuous adaptations of human activities to varying environmental and socioeconomic conditions (Briassoulis, 1989). Environmental planning becomes a continuous process of adaptive learning, where the interactions between scientists and planners, notwithstanding interested parties, make up a mechanism through which adaptation is accomplished (Briassoulis, 1989). It is not surprising that adaptive environmental planning, which fosters social responsibility, has been advocated not only by ecologists but also by political scientists and land use planners (Briassoulis, 1989).

Spatial and environmental policies are interdependent and focus on the quality of the natural environment, even though each is concerned with different aspects of quality. For example, improved environmental quality can be achieved through various approaches, such as preservation, development, prevention, or restructuring (Van Staalduine & Simons, 1999). Urban environmental researchers agree that the proper understanding of the complex phenomenon of urbanization requires an interdisciplinary approach, which can lead to the formulation of a common language or a number of comprehensive policies based on the dynamics of urban environmental processes (Atkinson et al., 1999).

Public planning, including environmental and land use planning, have distinct bureaucratic and political practices (Partidario & Voogd, 1999). It is not unusual that sectoral conflicts exist between different policies. An integrated approach should be able to deal with these sectoral conflicts, which may have a political, organizational, or social background. One way for improving the integration of sectoral policies is by developing better "horizontal" relationships—e.g. through project teams—instead of maintaining current "vertical" sectoral departmental divisions (Partidario & Voogd, 1999).

CONCLUSION

This chapter has sketched out the concept of ecological approaches to outdoor recreation planning. Such approaches are increasingly important in the face of various revitalization efforts and environmental policies, which tend to support a more compact urban form, but also mixed uses and green spaces. It would be a challenge, if not an unrealistic goal, to argue for a compact urban form and more green space at the same time. As an alternative, successful planning for both could be accomplished through more efficient and creative use of natural resources within the urban core, such as by zoning within and selective use of parks and natural areas. In order to

better understand the context of outdoor recreation, various planning approaches and legislation were examined. Most successful planning approaches, their implications and parallels to the City of Waterloo core area were presented here. The intersection of outdoor recreation planning, ecology planning, and urban planning for core areas was established to include human management, land use planning, outdoor education, policy development and implementation, and human health and ecological integrity.

Most of these approaches were taken from international examples; however, it would be valuable to establish their relevance to Waterloo's core area. As such, Chapter Four attempts to examine specific City documents within the approaches of outdoor recreation planning, ecology planning, and urban planning policy.

4. STUDY AREA – CORE AREA OF CITY OF WATERLOO, ONTARIO

INTRODUCTION

This chapter comprises an analysis of documents that incorporate outdoor recreation and ecological management into the planning process for Waterloo's core area. Selective use of the green areas and compatible forms of outdoor recreation are of particular interest. Outdoor recreation planning is analyzed by looking at the City of Waterloo's Recreation and Leisure Services Master Plan, and the Community Trails and Bikeways Master Plan Study. Ecological compatibility of recreation planning is further assessed based on the City's Environmental Strategic Plan and various documents associated with the parks and green spaces within the core area, with emphasis on Waterloo Park. Finally, the planning policies and legislation are analyzed through documents such as the Regional Official Policies Plan (ROP) and the City's Official Plan (COP), and through other documents and initiatives related to core area planning. Smart Growth principles and growth management strategy for the Region and the City are also incorporated in this section.

For the purpose of this study, the *core area* consists of the commercial, residential and recreational land uses, including Waterloo Park and excluding the Westmount Golf Club and single residential areas (marked in yellow). It is bounded by University Avenue West and East, Weber Street North and South, and the city boundary on the South. (See **Figure 4.1** for the core area of Waterloo). The study identifies the City Hall and the Cenotaph in City Centre Park as the centre of the city. The roles for Waterloo's Commercial Core are defined in the City's Official Plan and the Zoning By-Law as

> …intended to represent the City's major focus of administrative, economic and cultural activities and to that end, a broad range of uses are permitted, including commercial, office, entertainment, residential, accommodation services, institutional and public uses…[promoting] its identity as a major business and

> commercial centre in the City. …Areas surrounding the City Commercial Core…which support and complement the economic, administrative and cultural activities…may be residential areas…, non-retail commercial uses…, and institutional, recreational or open space uses (City of Waterloo, 2002e, VII, i).

Furthermore, in the context of this study, *outdoor recreation* includes both active and passive recreation opportunities that occur in the outdoors, optimally fostering an environmental ethic and appreciation for nature. In this context, *ecologically compatible* forms of recreation include both natural and human-made settings, which are coordinated to work in harmony with both the resource base and the recreational use—i.e. optimal match between recreation demand and sensitivity of the area.

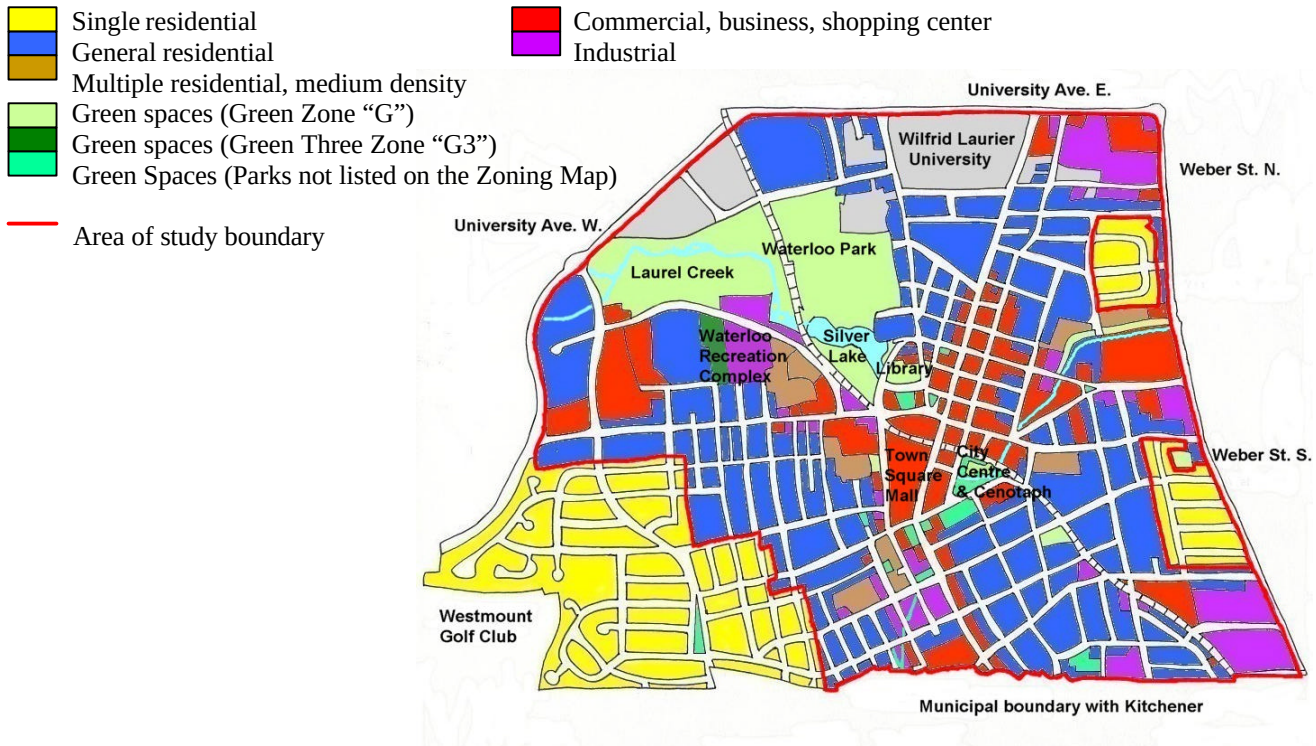

Figure 4.1 Core area of City of Waterloo—Area of study. Adapted from: City of Waterloo, 2002c.

BACKGROUND

Waterloo Region, known as the Canada's Technology Triangle, is a regional municipality comprising seven local municipalities: the three cities of Waterloo, Kitchener, and Cambridge,

and the four townships of Woolwich, Wilmot, North Dumfries, and Wellesley. (See **Figure 4.2** for a map of the Regional Municipality of Waterloo). The Region is one of the fastest growing areas in Ontario boasting a $15 billion diversified economy and the 10th largest urban area in Canada. It will likely continue to be one of the fastest growing areas in the Province, expected to have a population increase of 50% over the next 40 years (Regional Municipality of Waterloo, 2002). The Regional Municipality of Waterloo came into existence as a result of local government reform, with the City of Waterloo claiming the smallest land area of the three cities.

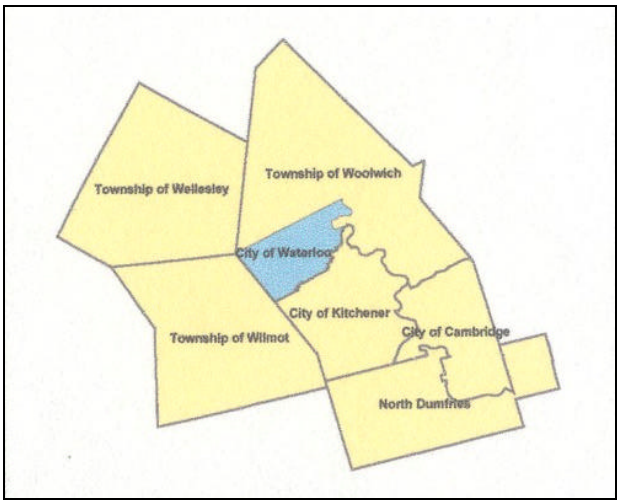

Figure 4.2 Regional Municipality of Waterloo. Adapted from: City of Waterloo, 2003.

The mid-size City of Waterloo (pop. 98,500 in the year 2002) is unique in several aspects. It is located next to the City of Kitchener and within a close proximity to the City of Cambridge, each city trying to support a distinctive urban character and culture. Furthermore, the cities of Waterloo and Kitchener are located along King Street, thus joined geographically and function as one economic unit. The internal structure of Waterloo and Kitchener takes on a linear configuration, which lacks conformity to the grid pattern standard, the core areas—Uptown and Downtown—being centred along its main street. The City of Waterloo experiences "brain gain"

as a result of a strong educational presence of the University of Waterloo and Sir Wilfrid Laurier University, Conestoga College, many successful high-technology companies, and the area's high quality of life (Hare, 2001).

Economically, Waterloo is quite diversified because it has "been moving from an industrial manufacturing-based economy to a post-industrial office, science and technology, service-based economy" (Currie, 2002: 11). In addition, since 1996, new economic growth in the city has increased employment, which has increased demand for land. With regard to labour force indicators, the city's employment rate is slightly higher than the Region's, and its unemployment rate slightly lower than Region's. However, a small percentage of the city's occupations are related to art, culture, recreation and sport, and an even smaller percentage of these occupations than in the City of Waterloo are found within the Region (Statistics Canada, 2001). (See **Table 4.1** for the City of Waterloo and the Region of Waterloo population statistics).

The City of Waterloo is much more densely populated than the Region, having the smallest land area and a higher population density than the Region's (Statistics Canada, 2001). The municipality is said to be the fastest growing in the Region, with an average annual population growth rate of 3.5% in 2000-2001 compared to 1.89% for the Region (Currie, 2002). Waterloo's population is mostly composed of married-couple families as is the Region's, with an average of one child per family and a median family income higher than the Region's (Statistics Canada, 2001). The population consists of permanent Canadian-born (77.3%), Protestant (43.1%) citizens and few visible minorities (13.5%) (Statistics Canada, 2001). The level of education for Waterloo's population is much higher than for the Region.

Table 4.1 Population Statistics for the City of Waterloo and the Region of Waterloo. Adapted from: Statistics Canada, 2001.

Characteristics	City of Waterloo	Region of Waterloo
Land area	64.09 km²	1,368.55 km²
Population density	1,350.3/ km²	320.4/ km²
Population growth rate (2000-2001)	3.5%	1.89%
Employment rate	68.4%	67.9%
Unemployment rate	5.1%	5.3%
Occupations related to art, culture, recreation & sport	3.6%	2.3%
University level of education	37.2%	21.4%
High school level of education	33.9%	35.7%
Married couples	79.4%	76.2%
Median income	$73,222	$63,703
Average value of dwelling	$193,829	$174,275
Ownership of dwelling	69.6%	67.5%
New dwelling construction (1991-2001)	22.3%	16.7%

More importantly, the composition of the population indicates a strong growth of older adults—both in the City and the Region—however; most people were at the age of 35 (Statistics Canada, 2001). Interestingly, youth programming has remained a priority to the Recreation and Leisure Services, which plans to further enhance it and include young adults in the decision-making process of the City (City of Waterloo, 2001c). Forty percent of Waterloo's adult residents participated in programs and sports whereas only 25% of children and youth (ages 5 to 14) were registered in camps and programs (City of Waterloo, 2001c). The City—both the Department of Planning and the Recreation and Leisure Services—does not consider University students as Waterloo residents and so does not tailor their services and resources to this group, which may have yet unrecognized implications for the City (Bunting & Filion, 2001). As such, these "mobile populations" may be setting a trend for today's cities and their residents—

relocating for cheaper housing, better career opportunities, healthier areas, or education. For instance, although most city residents drive to work, students use bicycling or walking as their second preferred mode of transportation, whereas the Region's population prefers carpooling (Statistics Canada, 2001). Perhaps this is because Waterloo has a large student population contained by the two Universities, which relies heavily on free modes of transportation.

Residential growth in Waterloo has been driven by the demand for low-density single and semi-detached housing (62%), while the ratio of low to high-density housing has remained consistent over the last 30 years and is projected to remain unchanged to the year 2016 (Currie, 2002). Although the average value of a dwelling within the city is higher than within the Region, more city residents own a dwelling and more new dwellings have been constructed in the city between the years of 1991 and 2001 (Statistics Canada, 2001). Regarding student housing, about 90% off-campus students find housing in Waterloo, and enrollment is projected to increase by 5,400 students from the year 2000 to 2005 (Currie, 2002).

Uptown Waterloo is perceived by many to be a quite successful core due to the stability of the low-density residential neighbourhoods adjacent to the core, which nonetheless offer opportunity for intensification (Currie, 2002). Other areas that offer such opportunities include redevelopment sites—i.e. brownfield sites of older industrial lands, the commercial area, and the industrial land within the Uptown. The Uptown also contains Waterloo Park which is the largest park in the core area. The Uptown Business Improvement Area works with the community on various community initiatives (City of Waterloo, 2002g).

Waterloo is undertaking various revitalization efforts directed at its core area, a condition that is shared by other mid-size cities such as Kitchener and Cambridge. Waterloo is medium-sized by Canadian standards (between 50,000 and 500,000 population). There are five wards in

the City of Waterloo. Ward 5, otherwise the Uptown, also comprises the core area. Current revitalization efforts and projects taking place in the city are being addressed from different perspectives by the City's Development Services Department, CURA, and the Recreation and Leisure Services Department, to name a few.

The City's Development Services Department has launched several studies targeting revitalization including demographic analysis of Uptown (Turner & Chen, 2002), housing demand survey, transportation and parking study, study of use of existing open space, analysis of change in number and types of Uptown businesses and their investment, a marketing study, and an urban design study, all organized as the *Uptown Strategy and Work Program* (City of Waterloo, 2002b; 2002d). Other efforts of the Department include Imagine Waterloo Community Vision (City of Waterloo, 2001a) and Neighbourhood Density Study (City of Waterloo, 1992).

CURA has approached several projects through the Centre for Core Area Research and Design (CCARD). These projects include the pedestrian intercept survey, visioning exercises at the local municipal level, web survey on determining the success of downtown core areas in mid-size cities across North America, developing sustainability through green housing in core areas, central transit corridor, and the Uptown residential market study (CCARD, 2002).

OUTDOOR RECREATION PLANNING

The City of Waterloo addresses the issue of outdoor recreation through several approaches and documents, such as the Recreation and Leisure Services Master Plan (1997) or the Community Trails and Bikeways Master Plan Study and Implementation Plan (2000). As well, the City's Imagine Waterloo community vision stated the importance of having a variety of choices for recreation and leisure opportunities available to all who wish to participate (City of Waterloo, 2001a). The issue of ecological integrity has been addressed to a lesser extent,

especially within the core are of the City. The planning for outdoor recreation and development of green spaces is uncoordinated and sectional in its approach. It is carried out by the Development Services Department to be later programmed for by the Recreation and Leisure Services Department and maintained by the Parks and Works Services Department.

Recreation and Leisure Services Master Plan

> The purpose of the Recreation and Leisure Services Master Plan is:
>
> To provide guidance and direction in the allocation of resources for parks, recreation facilities, recreation programs and community support for leisure related activities for a minimum period of five years; [and] to ensure delivery of the most effective and appropriate level of service to the community (Recreation & Leisure Services, 1997: 1).

The Master Plan is further organized into sections, which include the Waterloo Park Master Plan, the Parks Services Master Plan, and the Program Master Plan discussed below.

Waterloo Park Master Plan

This section is based on information provided by the City's Recreation and Leisure Services Master Plan (1997) listed in Appendix B of the Master Plan. The physical context of the Plan is the Waterloo Park encompassing Silver Lake and Laurel Creek. (See **Figure 4.4** for a map of Waterloo Park). The lands surrounding the Park are designated for a variety of uses. The North side consists of University lands, as well as high-density and single-family residential properties bordered by Seagram Drive and University Avenue. The East side consists of low and medium-density residential properties on Albert Street and high-density properties on Caroline Street. The West side is bordered by an ambulance station and gasoline bar/service station on Westmount Road and also faces high-density residential properties. Finally, the South side along Father David Bauer Drive is surrounded by the residential property of Luther Village, the

Waterloo Recreation Complex, the former Canbar industrial property (currently vacant and designed non-industrial), a municipal parking lot, Waterloo St. Jacobs Railway station, and the Perimeter Institute for Theoretical Physics.

Specific to outdoor recreation program planning, the Waterloo Park Master Plan (1997) states that the demand for active sports facilities should begin to decline after the peak in the year 2002, and that the population group over the age of 45 will become the largest segment making up 42% in the year 2016. As a result of these demographic changes, recreation activities are expected to move towards less physically strenuous activities, such as walking and cycling versus running and cross-country skiing. Specific to ecological planning, the Plan also supports preservation of natural areas to benefit growing leisure activities, such as bird watching or photography. Given the City's Environment First Policy, the Waterloo Park Committee prioritizes environmental enhancements within the Park—i.e. preserving the existing natural areas within, while limiting vehicular traffic and parking developments. The main function of Waterloo Park is to offer an array of passive or unstructured uses of its natural features. However, the Park also supports a wide variety of recreational, social, and cultural uses. While the Waterloo Park Committee desires to maintain a balance between the structured and unstructured uses of the Park, it is silent on the topic of selective use and leans towards a multiple use approach (Recreation & Leisure Services, 1997).

Under programming recommendations for the Park, the Waterloo Park Committee supports the Park's role as an educational facility through its natural areas and educational programs, such as the Eby Farm Zoo, Victorian Gardens, Earth Day activities, Parks Week, and History Walk (Recreation & Leisure Services, 1997). Furthermore, the Waterloo Park Master Plan (1997) mentions tree planting and reforestation projects targeted at the Park, although it is

not specific whether the tree species are native to the region—the area could be naturalized or simply landscaped.

Parks Services Master Plan

This section is based on information provided by the City's Recreation and Leisure Services Department (1997) listed in Appendix D of the Master Plan. The Parks Services Master Plan Committee is responsible for both passive and active-use park areas, and strives to protect the natural areas and instill environmental awareness. However, there is no mention of naturalization efforts or ecological planning among the roles undertaken by the Committee. Also, while the staff of Parks Services is dedicated to the creation and protection of natural areas and open spaces, Uptown Waterloo receives mostly beautification efforts through horticulture, such as hanging baskets and landscaping. This Master Plan is also directly related to the 1997 Parks Services Business Plan, of which the Parks Services Group is charged with the responsibility of "protecting, developing, and enhancing the city's recreational areas and natural features" (Recreation and Leisure Services, 1997: 2).

The Parks Services Committee reports that from 1990 to 1996, the greenspace in Waterloo increased by 48.1% (from 768 to 1137 acres) (Recreation and Leisure Services, 1997). It is both encouraging and consistent with projected demographic trends, that most growth of these green areas has been identified in parks as opposed to sports fields, although sports fields are often in parks. The report states that along with increased greenspace, Parks Services also reduced maintenance costs by 39.8% from $2,355 to $1,417 per acre, due to the implementation of "innovative best practices" (Recreation and Leisure Services, 1997). Although these practices indicate improved efficiency at maintaining green spaces, according to the SOHO model the maintenance could be minimized if the area was more naturalized to promote self-organization.

Similar to the findings of Waterloo Park Master Plan, the desired recreational activities indicated by demographics and market research in Waterloo lean towards individualized low-impact recreation in parks and open spaces—i.e. walking and nature appreciation. These activities are projected to be more individualized and take place in parks and open spaces, of which walking was most popular among all age groups (18 to 65 years and over) as reported in the year 1995 (Recreation and Leisure Services, 1997). The participants were satisfied with the combination of naturalized areas and active parks, while they expressed strong concern over the decline of services and the parks. The survey conducted in the Parks Services Master Plan, however, represented Waterloo as a whole and was not specific to its core area. In addition, the Facility Services discussion paper listed in Appendix E of the Master Plan seems to concentrate on indoor facilities, and so provides no data on outdoor recreation and leisure users and the inventory of open spaces within the city.

Similarly, a survey of five neighbourhood parks of different sizes and classifications, one of which was Waterloo Park, indicated that walking and jogging were the most popular activities (73.7%), followed by relaxation (47.4%) and nature appreciation (39.5%). Consistently, the majority of respondents (58%) participated in unprogrammed activities in the parks. In addition, 95% of respondents valued the park as an asset to their neighbourhood, 77% for its recreational opportunities, 54% for its aesthetic value, and 54% for the increased value of dwellings (Recreation and Leisure Services, 1997). Unfortunately, these results are not specific to the Waterloo Park alone or to the core area; however, people seemed to recognize the value of the different park types.

Program Master Plan

This section is based on information provided by the City's Recreation and Leisure Services Department (1997) listed in Appendix F of the Master Plan. Shortest of the three, the Program Master Plan examines trends and issues in programming and makes recommendations that will be incorporated into the Recreation and Leisure Services Master Plan in the next five years. To reach its objectives, the Committee relied on two research sources, mainly a *Vision 2000 Search Conference* and a survey of other municipalities in Ontario. The Conference included various groups from Waterloo, whereas the applicability of other municipalities in the survey to that of Waterloo is questionable. Each municipality may have very specific trends and issues that need to be addressed on an individual basis.

The Committee reports that there is a shift from direct to indirect programming, where various organizations other than the municipality take responsibility for the delivery of programs. It recommended that such community organizations be strengthened, which may expand the recreation and outdoor recreation businesses and services in the community. Another issue is the demand for more family-oriented activities, especially since more young families continue to move into the City. The Committee recommended expanding the Waterloo Recreation Facilities Complex to accommodate this growing concern, yet in its facility-oriented approach, the value of other outdoor resources is completely omitted.

Similarly, the Committee expressed a need for a stronger partnership between the City and the various community groups, and a stronger integration of programs between the Cities of Kitchener and Waterloo. The Committee recommended a *Joint Use of Facilities Agreement* with the Waterloo Board of Education and the Separate School Board, in addition to operating partnerships with various community organizations. Perhaps this Agreement could be expanded

to all green spaces in order to maximize outdoor recreation opportunities and expand the mainstream recreation services. Not surprisingly, respondents to both surveys identified the importance of recreation programs. Accordingly, the Committee recommended that staff, programs, and facilities should be moved closer to the neighbourhoods while still maintaining a strong central core. This approach is both problematic and unrealistic because building more facilities demands more open space and so less room for outdoor recreation. Perhaps developing and marketing new creative services to the public and maximizing the existent open spaces and trails passing through the neighbourhoods is a more realistic option.

Lastly, members of the community expressed their satisfaction with the existent trails system within the city, however, they also expressed a desire for these trails to be connected and be multiple use. Consequently, the Committee recommended the improvement of such trails system in collaboration with Parks Services, in order to accommodate the various user groups. The connection of trail networks may not be as problematic as the multiple uses of these trails. Some trails or portions of trails may pass through cultural heritage or ecologically sensitive areas, and so may not be appropriate for all recreation uses. In general, however, having a multiple use space encourages conflicts between the different recreationist groups—the more groups and the larger the differences between those groups, the higher potential for conflict (Payne & Graham, 1993). Perhaps incorporating buffer zones and designing parallel trails or looping sections of trails to separate the incompatible recreation users—i.e. birdwatchers versus rollerbladers—could diminish the anticipated conflicts between them.

In its improvement of the trails system, the Plan strives to enhance public knowledge of green spaces. As such, it is consistent with the research of Cousineau (1985, in Recreation and Leisure Services, 1997) on the psychological benefits derived by local residents surrounding a

small urban park. His study found that the psychological benefits of natural areas within cities are not limited to people who frequent them, but that "the mere knowledge of their existence … seems to bring peace of mind and satisfaction" (Recreation and Leisure Services, 1997: 9). Improved marketing of all natural resources in the core and the city would at least increase public knowledge, if not the use of these areas, and so raise people's satisfaction.

Community Trails and Bikeways Master Plan Study

The Waterloo Community Trails and Bikeways Master Plan Study and Implementation Plan aims to develop an integrated community trails and bikeway system within Waterloo and linking it to other neighbouring municipalities in order to expand the recreational and commuter opportunities for its residents (ESG International and Stantec Consulting, 2000). (See **Figure 4.3** for a map of community trails and bikeways). Various trends in recreation, tourism and transportation supporting the Master Plan include a return to neo-traditional values; an interest in local cultural heritage; an increased popularity of certain types of recreational activities—both active and passive; an increased interest in personal health and environmental consciousness; a shift to learning vacations (see Tremble, 2000 for Toronto urban ecotourism); and a shift towards an alternative modes of local transportation.

The City has an established strategy consisting of pre-planning of the community trails system at the District Plan level, which is an integrated part of the land development process. This ensures a more comprehensive and connected network of recreation and transportation routes. Among the City's goals and objectives for the trail network are aims to increase the quality, accessibility and variety of routes; to strengthen user awareness and appreciation of trails; and to promote their responsible use (ESG International and Stantec Consulting, 2000). The needs expressed by the trail and bikeway users include the opportunity to enjoy scenery and

nature, to learn about the natural heritage, to access remote places and experience solitude, and to reduce the reliance on the vehicle (ESG International and Stantec Consulting, 2000). Interestingly, analogous to the green spaces, a specific trail will not meet the needs of all trail users but a certain type of trail or bikeway must be designed in accordance with its location and use.

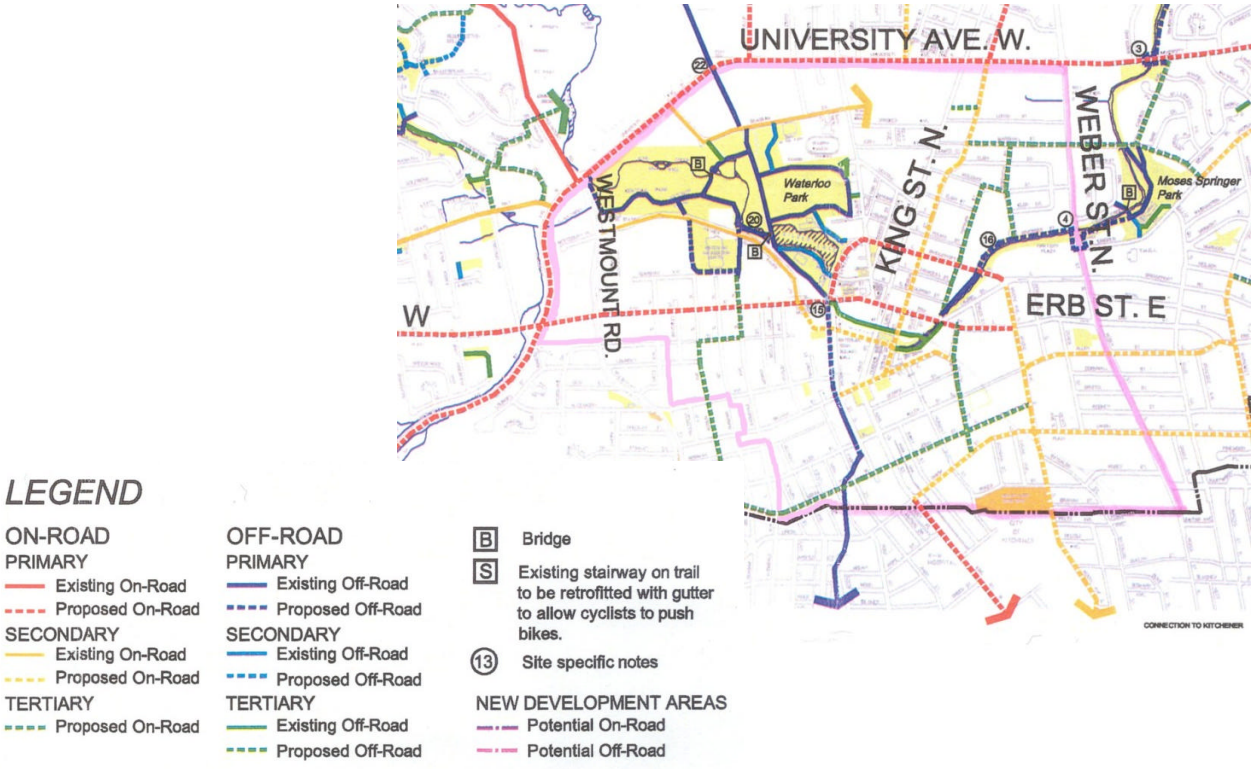

Figure 4.3 Waterloo community trail and bikeway network. Adapted from: ESG International & Stantec Consulting, 2000.

The promotion of trail and bikeway use has tremendous individual, societal, environmental, and economic benefits. The Plan points to a shift in thinking about health from protecting people from environmental hazards to developing healthy environments for people to live in, especially in dense core areas. Cycling, in particular, is the most efficient, affordable and accessible means of transportation that is non-polluting, thus it is highly compatible with core

areas; for distances up to 10 km in the core areas, cycling is the fastest of all modes (ESG International and Stantec Consulting, 2000). Lastly, well-established popular trails and bikeways have a potential for strengthening the local economy by being tourist attractions, creating alternative opportunities for outdoor recreation, and encouraging the bicycle-oriented market. For instance, the economic contribution of a traveling cyclist is equivalent to five people traveling in a vehicle (ESG International and Stantec Consulting, 2000).

While the Plan promotes a variety of uses, otherwise a multiple use approach, it also anticipates conflicts between incompatible user groups, particularly between passive and active recreation pursuits. Furthermore, the Plan does not mention any low-impact activities that would be more ecologically compatible, such as wildlife viewing (ESG International and Stantec Consulting, 2000).

The Plan identifies evaluation criteria as means of assessing the suitability of potential passageways for the development of trail and bikeway networks. Sadly, potential impacts upon the natural systems are overly simplistic, including only vegetation, terrestrial and aquatic aspects for evaluation (ESG International and Stantec Consulting, 2000). This is inconsistent with the systems thinking of ecological planning, which takes into account complex interactions and interdependencies between organisms and their habitats. The quality of the recreation experience is another criterion for evaluation. “The intent is to create a variety of consistent trail and bikeway types for the different modes of activity, levels of user experience, and geographic settings though which elements of the network may pass” (ESG International and Stantec Consulting, 2000: 15). Similarly, in planning for the trail network, decisions will be based on several factors, including “achieving a balance between providing access to and protecting

sensitive natural areas and cultural features" (ESG International and Stantec Consulting, 2000: 20).

The proposed Master Plan introduces a hierarchy consisting of primary, secondary and tertiary level on-road and off-road trails. Interestingly, the Master Plan introduces "special purpose" routes that may include neighbourhood interpretive trails, equestrian trails, and even "single purpose" trails—in other words selective use trails—designed specifically for a particular recreation activity (ESG International and Stantec Consulting, 2000: 21-2). All three levels of trails are provided more plentifully off the road—57.3 km versus 10.3 km on-road—and less within the core area (ESG International and Stantec Consulting, 2000: 15). Unfortunately, according to the Plan, only the most Northwestern part of the core area near Waterloo Park consists of some secondary level on-road trails. Most plentiful primary and secondary-level off-road trails are found within the Waterloo Park, and some tertiary-level trails surrounding the city centre. Interestingly, suburban trail maintenance costs from $25/km per year to $340/km per year for highly maintained urban trails (ESG International and Stantec Consulting, 2000: 30). All three systems are connected and the proposed trail sections help further establish the core area and facilitate movement within.

The Master Plan mentions education as the key component, including user etiquette and environmental ethics. Among the opportunities for public involvement is the Parks Patrol program for the off-road network, whose ambassadors are available to the public to educate about proper trail etiquette or to gather data on user satisfaction. Another educational approach that would give an opportunity for public input could be through the design of an interactive website of the trail and bikeway system. This virtual tour of the trail system could include both GIS elements and photographs in order to foster user appreciation. In addition, the website could

be designed with a number of links where the public could write comments and participate in surveys posted by the City.

ECOLOGICALLY COMPATIBLE FORMS OF RECREATION PLANNING

Ecological compatibility with outdoor recreation planning carried out in the City of Waterloo and its core area is addressed by several approaches and documents, such as the core area parks and green spaces, and the Environmental Strategic Plan. With the direction of the Trails Advisory Committee and the Trails & Bikeways Master Plan (2001), the City has developed a multi-use network of over 100 km of community trails and bikeways including the Trans Canada Trail, which passes through the Uptown core and forms a spine of the local trail network (City of Waterloo, 2002g). In terms of parks, the Silver Lake in Waterloo Park was rehabilitated through the Silver Lake Round Table—a volunteer committee concerned about the cultural heritage of the lake and driven to establish a balance between habitat restoration and recreational enhancement (City of Waterloo, 2002g).

Among the City's environmental accomplishments, and especially those related to urban outdoor recreation, are the following:

1) Environment First Policy (1989) through which the environmental impacts are considered in all municipal services and programs
2) Urban Forestry Practices (1990) having a digital street tree inventory of 26,000 trees, policy outlining appropriate native species and number of trees, a 5% park designation for each subdivision, and tree saving plan for new developments
3) Community Trails and Bikeways outlining a Master Plan to identify alternative transportation corridors, strategically placed trails to preserve environmentally sensitive areas, and interpretive and educational signage along the trails
4) Education of the public through distribution of educational brochures and through organization of events such as the Earth Day, Pitch-in-Canada Week or Community Parks Week

5) Parkland Naturalization and Rehabilitation where areas are allowed to go back to their natural state or are rehabilitated through planting projects carried out by volunteers, and are designated to have buffer zones along all streams (City of Waterloo, 2002f; 2002g).

Core Area Parks and Greenspaces

The City of Waterloo has stated its commitment to naturalization efforts since the mid-80s, beginning with the creation of a natural area in Waterloo Park, and continuing with naturalization projects in all of the city's parks and green links. The City defines *naturalization* as "an approach which uses native species of trees and plants to create or restore an area to a condition representative of the native landscape" (City of Waterloo, 2002e). In particular, Project 2007 (A Vision for Uptown) created on June 17, 1999, advocates several goals for an environmentally friendly and green city core:

> 3.1.1. All aspects of the natural environment should be enhanced to add to the attractiveness and comfort of the Uptown core;
> 3.1.2. More effort should be made to integrate Waterloo Park and its environment into the daily life of the Uptown area;
> 3.1.3. In general, a 'greening' of the urban core needs to occur such as more trees, more open green spaces and a vista to Waterloo Park, enhanced use of our aquatic resources (Laurel Creek), and increased opportunity for outdoor activities (City of Waterloo, 2002b).

Integral to outdoor recreation planning and management, the City of Waterloo ranks its land's capability for outdoor recreation as class 5 or moderately low capability, where "lands have natural capability to engender and sustain moderately low total annual use based on dispersed activities" (Department of Regional Economic Expansion, n.d.). Dispersed-use planning and management should be implemented by the Recreation and Leisure Services that manage the City parks and community recreation programs (City of Waterloo, 2001c).

There are 137 green spaces within the city which tend to follow natural watercourses including parks, woodlots, ponds, links, parkettes, and corridors; an additional 24 public, private,

government and industrial green spaces, such as the Waterloo Recreation Complex, City Hall, cemeteries, and service stations; and 28 green spaces surrounding schools and universities (City of Waterloo, 2001b). Altogether, there are 189 green spaces within Waterloo, but only 29 greenspaces (all inclusive) within the core area of study where Waterloo Park is the largest park in the Uptown (City of Waterloo, 2001b). The Uptown area does contain several schools, stadiums and arenas, all of which add to the quantity of the green spaces. However, these offer mainly active recreational pursuits and they are not connected or linked to a trail network to provide opportunity for moving within the Uptown and beyond. Although the Trans Canada Trail route runs through the Uptown, the maps of the Waterloo Community Trails and Bikeway Study and Implementation Plan clearly show that there are very small portions of green spaces that the route actually passes through, one of the largest portions of land being the Waterloo Park (ESG International & Stantec Consulting, 2000).

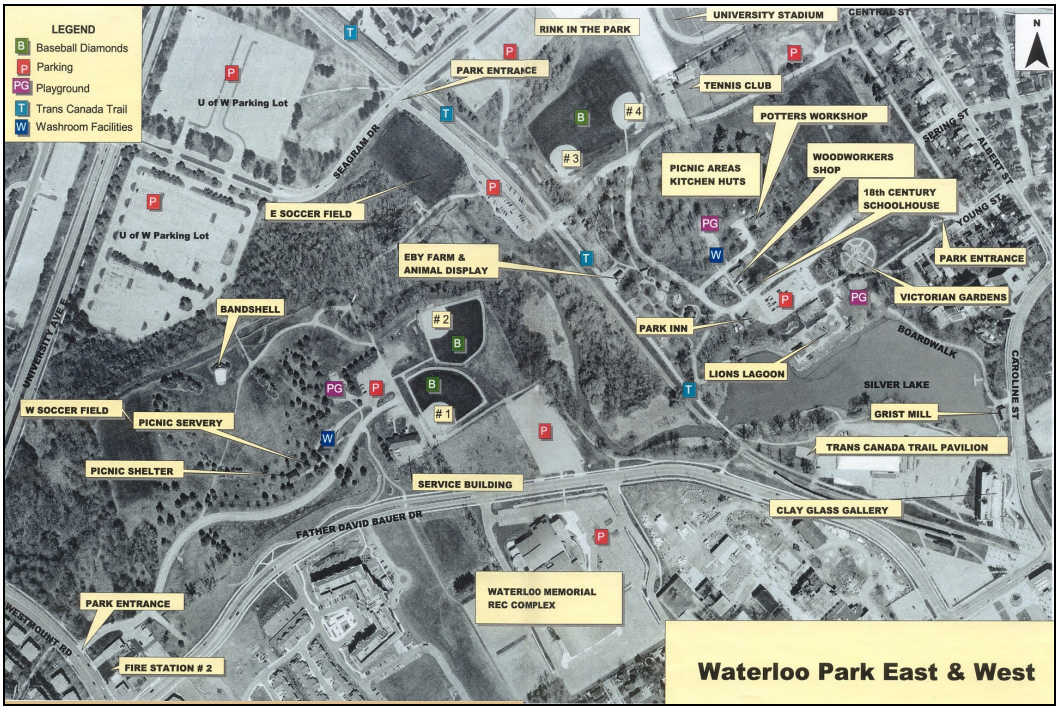

Figure 4.4 Waterloo Park interior layout. Adapted from: Recreation & Parks, 2002.

Located in the Uptown core of City of Waterloo, Waterloo Park is the oldest and largest park in the City purchased in the late 1800s (City of Waterloo, 2002g). It comprises 111 acres of prime parkland with facilities for active and passive recreation and encompasses Silver Lake and Laurel Creek (City of Waterloo, 2002e). The park referred to as the "jewel of the city" has a mix of natural and historical features providing a variety of recreational opportunities to all participants. Among its historic landmarks are: the city's first school house, an original farm house, a replica of the Abraham Erb Grist Mill, Eby Farm and animal display, and Victorian Gardens, all preserved to educate visitors about the local heritage (City of Waterloo, 2002e). The park also hosts a number of summer attractions including the Royal Medieval Faire, the Dandelion Festival or the Wonders of Winter. Silver Lake within the Park is an urban water reservoir created on Laurel Creek, which has been environmentally rehabilitated and enhanced to provide passive recreational opportunities including interpretive walk on the boardwalk or waterfowl viewing. Waterloo Park is also strongly oriented towards active recreation pursuits, the area consisting of many sports and entertainment facilities (Recreation and Parks, 2002).

Although wildlife resources of Waterloo Park do not consist of flora and fauna ecologically inherent to the region, research has revealed that there exists a variety of natural habitats and wildlife, which are rare in an urban environment and which persist despite the recreational use of the Park (Brenner, 1976). However, there is a lack of recent documents—in spite of the Waterloo Park Master Plan—outlining the ecological composition of the Park. Important plant communities in the Park such as aspen lowland, mature maple-beech upland, wetland forest and cattail marsh, together form an environment which is both essential for wildlife and attractive to people (Brenner, 1976).

Friesen (1995) suggests that urban planning should incorporate even small areas of green land as these are important in maximizing plant species diversity—e.g. size requirement for a self-sustaining maple-beech forest is only 4 ha (Levenson, 1981) and only 2 ha for a prairie (Tans, 1974). Brenner (1976) suggests that a multi-species plant and animal community is better adapted to sustain itself in the face of internal and external stresses. Although Brenner (1976) promotes high diversity to encourage stability of the system, Waterloo Park is structured and its ecological functioning has been disrupted, thus it is maintained mostly by extensive input of energy—i.e. mowing, fertilizing, and planting—and capital—i.e. maintenance crew, tools and materials. Although self-organization is non-existent within Waterloo Park, at least in terms of a SOHO narrative, the system does react to human-imposed changes and interacts with existent system components. Recreation and Leisure Services offered by the City are limited in scope and program. The City offers limited programs for outdoor recreation, mostly outside of the core area (e.g. cross country skiing), and further does not provide a category for University students—only for children and youth (under 16 years of age), adults (between 16 and 55 years of age), and lifestyle (55+ years of age) (City of Waterloo, 2002e). The University of Waterloo and the Wilfrid Laurier University are located fairly close to the city core and so attending students should be given an opportunity for interaction with the Uptown and its outdoor recreation resources.

Environmental Strategic Plan

The Environmental Strategic Plan initiated by the City of Waterloo is designed to build upon the City's Environment First Policy by identifying new planned actions for environmental management that would be consistent with the Imagine Waterloo community vision (City of Waterloo, 2002f). Phase One of the Plan lists actions that can be easily implemented in view of

the existing City initiatives, providing an immediate benefit to a given area. Among the six directions for Phase One, three are closely related to ecological planning for recreation, mainly: Planning & Growth, Environmental Awareness, and Greenspace. To ensure that the natural environment is considered during the planning for and growth of the City, the Mayor's Environmental Task Force recommends that the existing policies to protect the natural environment be improved and studied on a wider geographic and watershed scale—i.e. Laurel Creek and Grand River Watersheds. To ensure that environmental awareness is increased, the Task Force suggests that the City should help its residents through education, mentoring, enforcement of environmental by-laws, and provision of incentives to live more sustainable lifestyles. Finally, to ensure that the greening of City of Waterloo is accomplished, the Task Force recommends focusing on the natural landscapes to establish an ecologically healthy and aesthetically pleasant environment (City of Waterloo, 2002f).

The Strategic Plan outlines directions initiated by the City, which portray Waterloo as a proactive municipality—e.g. Environmental Impact Studies are carried out before new development. More holistic practices could be accomplished through renewing policy positions to ensure that natural environment is considered at the outset of the planning process. Waterloo boasts a stable size of woodlands, wetlands and riparian areas since the year 1997 when it first established monitoring of its terrestrial resources. Consistent with the linkages theory (Friesen, 1995), the City supports the protection and restoration of connections between natural habitats, and has acquired approximately 160 hectares of environmental lands to date. Private sector organizations have recently adopted new methods for evaluating their environmental management capabilities collectively termed Environmental Management Systems, which provide a systematic way to evaluate environmental improvements. An area of improvement for

the City lies in various opportunities for new environmental technology in urban design, such as rooftop gardens and "green" buildings, solar energy and heating, and alternatives to pavement and concrete surfaces, all of which could be incorporated into outdoor recreation planning and programming through outdoor education and design.

Although outdoor recreation needs open spaces as its resource base, the focus of the Plan seems to be on greenspace enhancement and management. As such, outdoor recreation itself is completely omitted. This is especially visible in the designation of Phase One strategic actions to the different primary business units and teams, such as the Development Services or Parks Services. Nowhere in this designation is there a mention of Recreation and Leisure Services. Within the rather narrow focus of the Plan, the document states, "continuous effort is needed to ensure that existing green spaces are protected from incompatible forms of development" (City of Waterloo, 2002f: 50), however, these spaces should be also protected from incompatible forms of outdoor recreation. Consistent with the ecological typology for the urban ecosystem (Brady et al., 1979), the Plan identifies that an inventory of all greenspace areas in the City would be very beneficial to environmental planning and monitoring of the terrestrial resources. The City of Waterloo has an extensive digital inventory of all street trees, and it began developing a Woodland Management Plan for all of the wooded areas owned by the municipality, currently totaling about 14% of the Regional landscape (Friesen, 1995).

With respect to economic growth management, research conducted by the City suggests that the demand for all types of land use will be high in the future, as will growth among the residential and high technology sectors of the economy (City of Waterloo, 2002f). These trends pose danger for the City of Waterloo to be able to secure adequate land resources for a variety of outdoor recreation opportunities.

> In addition to environmental protection, recreation activities and human enjoyment of the environment should also be fostered, and a balance must be found between the two (City of Waterloo, 2002f: 49).

URBAN PLANNING POLICY AND ACTIONS

This section examines planning policies and describes various projects through documents such as the Regional Official Policies Plan (ROPP) and the City's Official Plan (COP), and through other documents and initiatives related to the planning of Waterloo core area. The Region's role is to develop broad policies that provide general direction for local municipalities, and to exercise approval authority delegated by the Province to ensure efficient integration of planning and policy interests. Recently the Region of Waterloo adopted responsibility for transit and affordable housing handed from the Province, which indicates the Region's interest in Waterloo's land use and urban form related to these two issues (Hare, 2001).

Area municipalities are responsible for developing more detailed policies and land use plans that are appropriate to accommodate their unique character. Community and business groups are required to work together with this level of government to help make decisions and take actions that support and promote sustainability (Regional Municipality of Waterloo, 1998). Through its sub watershed planning approach, the City has made a requirement for sub watershed studies in any proposed development, where study recommendations are implemented through the district plan and zoning provisions (City of Waterloo, 2002a).

Regional Official Policies Plan

Recognized for its innovative and progressive approach to growth management grounded in the Environment First Policy, the Region is developing a Growth Management Strategy that proposes choices for planning to the year 2040. Phase one of the strategy showed stakeholder

support for balanced urban growth concepts that stress redevelopment of existing urban areas—i.e. along the Central Transit Corridor and core areas as means of reducing automobile dependency and promoting revitalization of city centres—and selective greenfield development outside the urban edges in appropriate focused locations. The ROPP embraces Smart Growth principles through its Vision for a Sustainable Regional Community (Regional Municipality of Waterloo, 2002).

The ROPP for the City of Waterloo envisions a sustainable regional community—including the Mennonite population—that works in harmony with the environment and strives to manage it through proactive policies and appropriate growth. The vision further states that this growth must not undermine the environment or the resource base, and at the same time it must not compromise the quality of life or development prospects for the future (Regional Municipality of Waterloo, 1998). These competing goals are still on the Regional and Municipal planning agendas today (City of Waterloo, 2001a; 2001c; 2002a; 2002h; Regional Municipality of Waterloo, 2002). Conversely, a study conducted on woodlots in Waterloo Region showed that development-guiding policies are not always effective—e.g. development outside woodlots can have a significant impact on the forest bird community regardless of woodlot size (Friesen et al., 1995).

The ROPP is silent on the topic of specific policies related to the core area, particularly in relation to ecological planning or outdoor recreation—the incorporation of outdoor recreation into the ROPP was abandoned in the mid 1970s. (See **Appendix 4** for a table with direct quotes from the ROPP). The ROPP addresses community core areas in terms of the regional settlement patterns; however, it does not mention the green infrastructure in its objectives of Regional interest, as these relate to area municipalities and their core area land uses. With regard to

transportation opportunities, the ROPP indirectly deals with the outdoor recreation opportunities, mainly through the enhancement of transportation opportunities that support pedestrian and bicycle traffic in the community core areas. In terms of environmental planning, the ROPP promotes the view of land use planning and infrastructure development as an opportunity to enhance previously degraded natural areas. Yet, land stewardship is the only section that mentions recreationists. Also, no policy ensures the existence of ample amount of green infrastructure throughout the core area for life-supporting purposes or recreational use.

With regard to heritage conservation, the ROPP has much potential for both ecology planning and outdoor recreation planning. It involves both natural and cultural components, gives people a sense of place and community, and provides an important means of defining a Regional or City identity.

City Official Plan

Shared roles of local and regional government have fostered supportive relationships in regards to growth management and environmental policy; however, the main challenge is planning for the growth of each individual community in the Region. The application of environmental policies has led to more intensified use of developed land and has increased the up-front costs of development, but it has not decreased land consumption. The City's Growth Management Strategy determined an annual increase of 750 dwellings to be sustainable, yet exceeded this target by 300 dwellings to about 1,050 units (Hare, 2001). Nevertheless, through the City's Growth Management Strategy, a more flexible approach to zoning has been applied to residential districts allowing for a range of low to medium-density housing (Hare, 2001).

The City of Waterloo's Official Plan (COP) "is a statement of goals, objectives, and policies designed to direct the form, extent, nature and rate of growth and change within the

municipality [to the year 2011]" (City of Waterloo, 2002a: 1.1.1). The COP has legislative status based on the provisions of the Ontario Planning Act and requires the Municipality to conform to its Official Plan. The COP addresses the core area through a number of policies; however, most of them deal with its economic and residential well being rather than ecology planning or outdoor recreation planning (City of Waterloo, 2002a). (See **Appendix 4** for a table with direct quotes from the COP). Yet, more concentrated commercial core will likely leave less space for green infrastructure, which may be made functional through outdoor recreation planning.

The COP contains a number of policies supportive of an environmental planning approach for the Uptown area—e.g. the reduction of parking areas and asphalt, efforts to "green" the urban landscape, protection and management of the natural plant and wildlife resources, and watershed planning. However, the ecological integrity of Laurel Creek within the Waterloo Park is not integrated with the Laurel Creek sub-watershed. Indirectly, the COP states that the City's major economic base is within the service sector, which could include outdoor recreation services such as training courses and guided trips.

Several policies of the COP also support an outdoor recreation planning approach—i.e. the integration of linear parks and open space systems into subdivision designs and redevelopment proposals. Furthermore, parks are to be provided in central areas in order to maximize their accessibility for active and passive recreation (City of Waterloo, 2002a). A better management framework that would encourage compatible forms of outdoor recreation and selective use of green spaces is needed to achieve these goals. The COP supports the goal to provide recreational opportunities for existing and future residents. It seems that to accomplish this goal, the City would need to maintain a surplus of green spaces to be used for the future, or adopt creative and very efficient land redevelopment practices. In addition, the City would also

need to survey various recreationist groups as user trends often change in demand for different opportunities.

Council supports the development of a system of parks in a linear form, which creates the spatial setting for the Access Link/Community Trail System, developed by the City (City of Waterloo, 2002a). Council also encourages the participation of other agencies in the development of a linear open space system, using lands such as the Hydro Electric Power Corridors and school lands through easements and rights-of-way. The COP supports the development of an open space corridor from Waterloo Park through the lands of University of Waterloo and the Laurel Creek Conservation Area (LCCA), although to satisfy Uptown residents this corridor would need to be linked with the commercial core.

Furthermore, the COP supports the incorporation of stream corridors with the adjacent cultural, recreational and visual amenities, although they are very limited within the city core. Similarly, the COP mentions the development of parks and recreation to satisfy the diverse needs of the population. Yet, the City offers little programming for outdoor recreation, and limited diversity of natural resources within the Uptown area. The goal to promote revitalization of the city core and improve its identity as the major business centre could perhaps be best accomplished through the means of outdoor recreation planning. Finally, while the COP supports the goal to protect pedestrians from the wind impacts caused by inappropriate placement or design of buildings within the core, it is silent on adequate provision of green infrastructure within the Uptown area to reduce the island heat effect.

Core Area Planning

The City of Waterloo is consistent in defining its core area, such as in the Uptown Strategy and Work Program (City of Waterloo, 2002b, 2002d) or the Central Residential District

Implementation Plan (City of Waterloo, 1992). Whereas the Uptown Strategy and Work Program study distinguishes a commercial core within its core area of study, the Central Residential District Plan discerns the industrial, institutional, open space and residential areas within its Uptown area of study, in addition to the commercial core (City of Waterloo, 1992). Due to local concerns regarding the scale and density of residential uses permitted in the core area, a Neighbourhood Density Study was initiated in the 1991 to establish specific land use policies for the Central Residential District (City of Waterloo, 1992).

Open space policies for the Central Residential District relate directly to Waterloo Park. Except for the Park, the standards for open space (per 1,000 persons) outlined in the City Official Plan are not met (City of Waterloo, 1992). The City is considering purchasing land for the development of small neighbourhood parkettes for active and passive recreation, for the exchange of higher residential density in the specific policy areas situated within the purchase areas (City of Waterloo, 1992, Map 3). The dedication of parkland would be beyond the normal 5% requirement dictated by the Planning Act. Unfortunately, the purchased land would not be linked with the Uptown, but it would be located adjacent to the Waterloo Park. The Residential Development Concept Plan promotes a high-density residential development adjacent to Waterloo Park, which could further increase the usage of the Park and perhaps overwhelm its natural processes (City of Waterloo, 1992).

Fortunately, some studies approach public open space within the core area foremost, but still integrated with other land uses. As an example, the Open Space Master Plan study investigates the content and meaning of open space and further strives to provide a future direction for open space in the Central Residential District. Similarly, the Uptown Strategy and Work Program section on open space and urban design strives “to determine the best way[s] to

provide, design, and link built forms with the open space and public space in and around the Uptown" (City of Waterloo, 2002b). Study of core areas suggests that successful city cores share distinctive environmental and urban design features that are attractive to their visitors (City of Waterloo, 2002b).

In particular, the Centre for Core Area Research and Design (CCARD) was established through Waterloo CURA to approach pressing issues within the core areas of Cambridge, Kitchener and Waterloo. Among the projects undertaken by the Centre, some are related to ecological or outdoor recreational planning. The Pedestrian Intercept Survey attempts to determine pedestrian perceptions of the downtown core, what works in promoting pedestrian-based activity, and to develop base-line measurements for impact of future change (CCARD, 2002). The survey suggests that Waterloo residents want more green areas in the core of their City (Bunting, 2002). The web survey on Determining the Success of Downtown Core Areas in Mid-Sized Cities across North America examines the core areas of mid-size cities to identify those that are successful and the reasons behind their success. Finally, the Uptown Residential Market Study examines the supply of and demand for housing in core areas by identifying sub-market groups and types of attractive housing options, including recreation and leisure opportunities (CCARD, 2002).

Efforts directed at the improvement and expansion of open space within the core area are hindered by large projects and investments that are least compatible with these land uses. This situation is compounded by opening up additional areas to be redeveloped in accordance with the City's commitment to revitalization efforts directed at its core area. To manage all revitalization efforts directed at the core area, the City established the Uptown Community Improvement Plan designed to coordinate 57 municipal projects over the next few years (City of Waterloo, 2001c).

In addition, the Economic Development and Marketing Team facilitates a number of major developments such as the Perimeter Institute for Theoretical Physics, Uptown Redevelopment projects, and the Research Park at the University of Waterloo (City of Waterloo, 2001c).

At the municipal level, the Height and Density Policy Study Discussion Paper proposes options for more intensive urban development, also consistent with the principles of Smart Growth (Currie, 2002). Since Waterloo is quickly approaching its settlement boundaries, this study explores options for more height and density and further determines appropriate locations as means of more intensive land use and the extension of its land supply (Currie, 2002). Among various strategies to resolve this issue, the public recommended to use open space areas effectively and efficiently for the development of green space (Currie, 2002). Mixed-use developments and an improved transit system were among the options for increasing density. Main constraints to urban intensification stem from individual preferences related to single detached housing, automobile transportation, and convenient and ample parking, which require a change in attitudes and preferences.

It will be particularly interesting to learn how the City will resolve the contradictory issues of increasing both density and green spaces. The Ontario Planning Act authorizes the Council for "increases in the height and density of development" (section 37. (1), Province of Ontario, 2002) and for conveyance of land for park and public recreation purposes "as a condition of development or redevelopment of land…for commercial or industrial purposes [in the amount of] 2 [or] 5 per cent" (section 42. (1), Province of Ontario, 2002). Yet, some authors state that the Planning Act is "silent on the subject of environmental priorities and overall land use principles and philosophy" (Friesen, 1995: 29).

CONCLUSION

This chapter focused on the core area of Waterloo as the study area. It examined the urban core through document analysis of various documents in the context of outdoor recreation planning, ecological management, and planning policy and legislation. It further set the economic, socio-cultural and physical context to describe the nature of the city and its core area, as well as its strengths and weaknesses from a recreation planning perspective. Reasons for and barriers to ecologically compatible forms of outdoor recreation planning have been outlined here. In addition, the facilitative elements that might help achieve ecologically compatible recreation planning have been explored in this context. Planning policy and legislative context have been described in the same fashion, as well as other factors that should be considered in planning for core areas.

Three research themes and research questions were developed as a result of the literature review and the document analysis of Waterloo's core area as the area of study. Based on inconsistencies in defining various phenomena in outdoor recreation planning, ecology planning, and urban planning, as well as differences in approaches between the city and other entities, the themes of *Theory Versus Practice, Gaps and Insufficiencies in Theory and Practice*, and *Research Questions* were developed. The research questions were constructed based on several issues, which surfaced from the literature and the document analysis. The role of outdoor recreation in planning and core area revitalization was non-existent. Furthermore, the outdoor recreation planning approaches had very limited focus, especially in terms of their ecological compatibility. Finally, the working relationship between urban planning, outdoor recreation planning, and ecology planning seemed uncoordinated, having the areas of urban planning and

ecology planning more integrated and outdoor recreation planning exempted from the planning process.

5. TOWARDS ECOLOGICALLY COMPATIBLE RECREATION PLANNING

INTRODUCTION

This chapter incorporates research findings from the structured interviews into discussion on ecologically compatible approaches of outdoor recreation planning. The two research themes of *Theory Versus Practice*, and *Gaps and Insufficiencies in Theory and Practice*, and the *Research Questions* are discussed here in detail. Chapter 6 presents conclusions and final reflections from learned lessons, proposes areas for future research, offers reflections and recommends pilot projects to be undertaken.

RESEARCH FINDINGS

Theme 1: Theory Versus Practice

The research first examined the extent to which the definitional consistency was encountered between academics (representing theory) and practitioners (representing practice), and further within the areas of urban planning, outdoor recreation planning, and ecology planning. The survey participants were asked to provide their definitions for several terms identified by the researcher as relevant to the study to assess whether there is a difference between theoretical and practical approaches in the areas of urban planning, outdoor recreation planning, and ecology planning. All responses were classified into repeated themes and differences between the practitioners and the academics through open and axial coding. (See **Appendix 5** for the table representing *Theme 1: Theory Versus Practice*).

Within the study area of urban planning, respondents were asked to provide their definitions for the following terms: *core area*, *revitalization*, *urban planning*, and *sustainability*. The majority of academics and practitioners defined the *core area* in a similar fashion. Few differences were found where the academics defined the term with “stability,” whereas the

practitioners saw it also as “density-governed” and having a “definition issue”. Responses from the recreation and the ecology academic groups also indicated a majority of repeated themes, and their differences in defining the *core area* indicated that they saw it in terms of “geographical scope”. More differences between theory and practice were found in defining *city revitalization*. Planning practitioners differed the most in how they chose to define the term, whereas repeated themes between academics and practitioners indicated that respondents understood the term as being able to “attract people” and having “vitality”. Responses from the recreation academic group also demonstrated more differences between theory and practice, whereas definitions provided by the ecology academic group illustrated more similarities in how the planning practitioners and academics chose to define the term.

There were differences between theory and practice in defining *urban planning*, and “management of change” was the only common theme. Responses from the recreation and the ecology academic groups also indicated most differences (two themes each) between theory and practice. Finally, the majority of academics and practitioners defined *sustainability* in a similar fashion. However, responses provided by the recreation and the ecology academic groups indicated differences in how these groups chose to define the term. Other terms indicated by the academics as important included *smart growth, sense of place,* and *streetscape*, and those indicated by practitioners included core area versus *inner city*.

Within the study area of outdoor recreation planning, respondents were asked to provide their definitions for the following terms *outdoor recreation, sustainability, program planning,* and *selective use.* Interestingly, the survey displayed an equal number of similarities and differences among recreation practitioners in defining *outdoor recreation*. On the contrary, responses provided by the ecology academics and the planning practitioners indicated no

differences between theory and practice on how these groups chose to define this term. Perhaps this duality in responses within the recreation group was due to some confusion with regard to the urban outdoor recreation activities, as illustrated in the quotation below. “What’s the difference between [the skating rink at Kitchener] and going skating at Laurel Creek? Same activity, same end result.” Whereas the activity itself may be the same, the outdoors experience differs in that the recreation participant relates to an element of nature. There were differences between theory and practice in defining *sustainability, program planning,* and *selective use.* Practitioners differed most in how they chose to define these terms. Conversely, responses provided by the ecology academic group indicated similarities between theory and practice in defining *program planning*, and differences in defining *selective use*. Other terms that were indicated by the respondents as important included *economic planning* and *accessibility*.

Finally, within the area of ecology planning, respondents were asked to provide their definitions for the following terms: *urban ecology, ecological planning, sustainability,* and *naturalization*. Similar to the area of recreation, the survey displayed an equal amount of similarities and differences among ecology academics in defining *urban ecology*. On the contrary, responses provided by the recreation academic group indicated similarity between theory and practice on how this group chose to define the term. There were differences between theory and practice in defining *ecological planning*, both from the ecology and the recreation academic groups. A majority of both academics and practitioners defined *sustainability* in similar fashion, whereas responses from the recreation academic group displayed an equal amount of similarities and differences in how they chose to define the term. Similarly, a majority of academics and practitioners defined *naturalization* in a similar fashion, as did the recreation academic group. One difference was found among the practitioners who defined the term as

having financial and ecological "efficiency." Other terms indicated by the academics were: *community involvement* and *rehabilitation* versus *restoration*, and those indicated by the practitioners were: *environmental constraint areas* and *restoration ecology*.

The definition of *sustainability* so often encountered in urban planning documents and policies, was approached from all angles in order to identify whether different professional areas within the practical and theoretical fields understand and use the term differently. The research found that there were similarities between theory and practice in defining *sustainability*, and differences between the areas of planning, recreation and ecology. The similarities were found in the area of planning and ecology, whereas differences between theory and practice were found in the area of recreation and mostly among practitioners. In addition, the areas of planning, recreation, and ecology differed greatly in how these groups chose to define the term. Repeated themes that occurred across the three professional areas include: "long-term approach" and "preventive approach."

In summary, this section of the survey demonstrated a theoretical relationship between urban planning and ecology planning, and between outdoor recreation planning and ecology planning by how the respondents chose to define various terms. It appears that the area of ecology planning is most versatile whereas the areas of urban planning and outdoor recreation planning seem disconnected.

Theme 2: Gaps & Insufficiencies in Theory & Practice

As a secondary issue, the study identified possible gaps and insufficiencies in theory and practice within the areas of urban planning, outdoor recreation planning and ecology planning. The study compared the theoretical and the practical approaches within each of the three professional areas, and further between the three areas. Respondents were asked to identify gaps

and insufficiencies in the realms of urban planning, outdoor recreation planning, and ecology planning, separately in theory and in practice. All responses were classified into themes that were different for practice and for theory, and into repeated themes between theory and practice, through open and axial coding. This section of the interview did not compare academics with practitioners, as did the previous section. Also, themes were more detailed in this section in order to address particular gaps and challenges, whereas the earlier section contained broader themes to allow generalizations. (See **Appendix 5** for the table representing *Theme 2: Gaps and Insufficiencies in Theory and Practice*).

Within the area of urban planning, most themes were found within the practice realm. Repeated themes between theory and practice were identified with "applied research," "mid-size cities," "implications of natural heritage," and "revitalization." Most frequent theme was that of theory versus practice (or the common theme of "applied research"), as illustrated by the quotations below:

> [The] gap is not necessarily between theory and practice as much as the research and practice. But borrowing these theories without testing them, to me that's the gap there. The gap may be in a theory on any one area of medium size city as a specific type of urban form as opposed to just core area in general.
>
> …People latch onto these trends and they don't really test them out…it becomes very popularized by a few case studies where it works and everybody grabs onto it and it tends to be a cookie cutter throughout developments throughout North America. …there is a gap maybe between the research that's being done that recommends these physical attributes compared to what the end goal is.
>
> I don't think we've done enough work yet on separating the Canadian context from the American and European context.

Interestingly, respondents distinguished between research and practice as opposed to theory and practice, thus viewing research as something dissociated with practice. The respondents rightfully pointed to borrowing theories without really understanding them. This may be a

dysfunction of the City's current organizational structure due to the lack of professional requirements such as related educational backgrounds from City employees working in various departments. This may also be a function of the City's philosophy being supportive of employing generic managers as opposed to those formally educated in the related disciplines. As expectations of "all-knowing employees" are unrealistic, it may be more effective to require related educational backgrounds for specific employment positions, and integrate expertise from various disciplines on selected projects by having various departments work together.

Within the area of outdoor recreation planning, an equal amount of themes was found between the theoretical and the practical approaches. Common themes between theory and practice were identified with the "financial resources," "meeting demand," and "demographic change," illustrated by the quotations below:

> Theoretically, it would be wonderful for me to be able to provide comprehensively barrier-free accessibility to any program for outdoor recreational opportunity in the City of Waterloo. Practically, it would cost a lot of money…so I have resource issues, financially as well as human.

> We have issues around the limited number of resources. …It costs a lot of money to build them. On the other hand to take a look at the demographic profile, do we need as many as we have now? Depends on how they want to use them and when they want to use them.

> …Not enough financial resources that are available to develop, and it's difficult to keep up to the needs of the public and the growth in the areas…it takes a lot of money to develop these areas and the biggest gap is catching up to the demand. I think we have more people willing to participate than sometimes we have space available to accommodate everyone.

> The biggest gap in outdoor recreation is that there's more users than space. There's more participants willing to use the space than there's space available and there's more need than there's resources.

> …The only gap or insufficiency in outdoor recreation theory as it relates to planning green spaces would be relating to the changing demographics and growth of the City, and just keeping up with the speed of that growth.

> …Our funding is based on service level standard that's been accepted and approved by our Council, but there's constant pressure, and probably related to the changing demographics of the City to increase those service level standards. …One of the pressures that we have is funding to be able to meet the changing and increasing demands of the public.

The issues of financial resources, meeting demand, and demographic change were extended to accessibility in recreation programs and resources. The challenge of improving accessibility seems to be associated with staff and resources, as well as with demographic changes and growth of the City. Meeting the gaps and insufficiencies associated with financial resources is a complex issue. In the case that the City is unable to gather enough financial resources to support the recreational demand expressed by its residents, various private businesses and corporations are often approached for project sponsorship and financial support. Aware of the potential problems, one respondent stated:

> There's a lot of corporate pressure on planners nowadays I think, park planners in particular. …The literature says virtually nothing about…corporate sponsorship and public parks. The sponsorship literature that's out there today basically talks about what's in it for the company and what's in it for the agency. …There's a bit of evidence now…suggesting people don't want their parks named after businesses in general, but also there are issues related to equity, the recognition. Is this consistent with the level of support?

In addition, there may be some red tape obstacles to achieving financial support and meeting recreational demand placed by the bureaucratic system, which presents difficulties to efficient utilization of new ideas. One respondent expressed distaste with the present system:

> Biggest problem in practice is government bureaucracy. …The red tape and the bureaucracy and the absolutely incredibly stupid rules and regulations that they create at government level is mind-boggling. It's much easier to buy a chunk of land out in the middle of nowhere and create a subdivision…than is to create the same type of thing inside the city, because there's more red tape inside the city. And if government realized that they were there to help people as opposed to putting roadblocks when they're in need of ideas, it'd be a lot better.

These insufficiencies in meeting the outdoor recreation demand in urban areas with ample financial and land resources is perhaps due to the philosophical context of the current planning profession. It may also be due to the philosophical context of the recreation profession, since it neglects the outdoors component, especially in the context of urban recreation. One respondent stated:

> I'm thinking recreation is the most important part of urban lifestyle, so why you're leaving it to be such a minor part? I think that's the key area missing the theory, because I don't think recreation departments in North America really address urban planning to a great degree. Recreation in most situations has been what outdoor recreation emphasis has been, not urban outdoor recreation.

One of the largest gaps identified in planning for outdoor recreation was that recreation professionals are excluded from the planning process until the land designated for an open space is developed and given to a department to be maintained and "sold" to the public. One respondent did not support the exclusive planning practice:

> It's probably not the right way to do it, but the initial development of space is done between developers and the planning departments.

Finally, within the area of ecology planning (as within urban planning), a majority of themes was found in the practical approach. Common theme between theory and practice was identified with "linkages." Much more than linkages, most respondents addressed the importance of natural areas and ecological planning in the core, and the difficulties in attaining those. These comments are illustrated by the quotations below:

> …[Waterloo community was] very interested in maintaining…natural areas, not necessarily naturalized… Environment was the most important to the citizens of Waterloo.

> …One thing we're fairly proud of is changing the old industrial landscape into something with a little bit lower impact environmentally… And then through that process trying to improve the physical appearance of the site, trying to maintain a bit more green space, add some parkland, trails.

> …We have a body of literature dealing with corridors theory and we don't have a really good idea of how it applies to the revitalization or the downtown concept. And even if we would promote it fundamentally, should we be applying this type of theory in the urban area? …So there is a lack of theory, but I think some of these concepts are being pushed to be implemented by people who don't understand them.
>
> The gap there is what they're trying to do in terms of ecological planning. You're not going to be able to restore in the scale of any type of a natural system in any urban area. You have to recognize that. And the gap is more perceptual in trying to understand what degree of ecological restoration, ecological planning, is possible in that area.
>
> You don't see a lot of correct ecological restoration going on in core areas. …Education process is lacking and the City still has a lot of manicured parklands.
>
> Trees! It's a god awful desert at the moment! It's gray! It's paved; it's hot or cold, never in between!

Among the quotations above, some respondents rightfully addressed the problem of various theories being misapplied to urban settings, for which they were not originally designed. Once again, this reoccurring issue of misapplication and lack of understanding may be due to non-specialists managing various city departments. With regard to naturalization of the core area, the Environmental Strategic Plan states that "native plants will survive better in [the urban] climate and require less care" (City of Waterloo, 2002f: 50), although some interview participants stated opposite views. Even within the area of ecology planning, practitioners did not share the same beliefs, as did the academics. For example, the practitioners believed that certain theories (Corridors, Linkages, Habitat Sink, Restoration) were being misapplied in the urban context whereas the academics supported the City in its view of the native species. This issue was explained by a practitioner:

> …You may want to use species that thrive in the urban environment. Many native species don't. So you may go to exotic species just because they do better in that area. They may look better in that area. So you don't forget the ecological principles, but you consciously may say, "they don't apply here." So in that sense it's ecological planning because you go through the exercise of thinking about it, but you may not be able to do it in this context…

Compared to a comment of an academic:

> …The next step is, let's try to replace [grass] with natural communities, like natural ecosystems instead of using a bunch of unrelated species all in a mix that doesn't have a connection to the native animal life.

At last, common themes found within the areas of urban planning, outdoor recreation planning, and ecology planning indicate that all areas identified common gaps and insufficiencies in theory and in practice. Because of the very specific nature of responses, these themes were classified into broader categories of:

1) Transportation Systems ("on-road bikeways," and "management of densities")
2) Ecological Ethics ("ecological planning," "community resistance to change," "input from community," "support of ecological values," "natural ecosystem ecology," "ecological restoration," "education," "access to information," and "ecocentric/anthropocentric philosophy")
3) Urban Planning ("urban planning theory," "Canadian urban planning," "recreation role in urban planning," "urban misapplications of theories," and "planning profession")
4) Barriers to Development ("development industry," "government bureaucracy," and "development roadblocks inside city"), and
5) Financial Support ("corporate sponsorship literature," "public parks sponsorship," "financial resources," and "expenses").

Questions 3 to 6 of this section generated poor responses in that the answers were too broad, too philosophical, and too idealistic in nature, and the respondents were very passionate and opinionated. This weakness is demonstrated by the quotations below:

> I'm not a big advocate of government. And I think that governments really should be there to enable and enhance, not to become bigger. That doesn't do anybody any good. I think the whole issue of bloating of governments is very negative.

> Are they where I would like to see them? They're nowhere close. And there are a lot of political and financial reasons why it would be very difficult for them to get there.
>
> Ignorance, self-interest, and the market economy and centrally planned economies, both of them are failing ecologically.
>
> Kyoto Protocol is a joke. You know, we need to cut emissions much more than that; I mean this won't get us anywhere. We need to essentially change the way we live. …But most people would turn that down. They think that a quality of life is a source to sports utility vehicle, freedom to do whatever they want whenever they want to.
>
> [The City of Waterloo is] a big time lip service. They say they're for a whole bunch of things, whereas in reality look at the kind of development that goes on the outskirts.

Regardless of their weaknesses, these responses point to several important observations and trends. Respondents identified the ineffectiveness of governments—both local and provincial—as one of the reasons for and challenges associated with gaps and insufficiencies. Besides political and financial reasons, some respondents commented on issues beyond those of the government, related to the ethics of the market economy and the Kyoto Protocol. The scale of addressed issues varies tremendously from small to global; however, all issues are rooted in political power and control.

Nevertheless, these questions were analyzed and coded, first by comparing the theoretical and the practical approaches within the area of urban planning, ecological planning, and outdoor recreation planning, and further between the three areas. Questions three and four were combined into "reasons for and challenges associated with gaps and insufficiencies." Questions five and six were combined into "challenges addressed by the City now and in the future." All responses were classified into themes that were different for practice and for theory, and into repeated themes between theory and practice, through open and axial coding.

Within the area of urban planning, addressing reasons for and challenges associated with gaps and insufficiencies, majority of responses were found in the repeated themes between theory and practice. Common themes were identified with “inertia,” “unchanged view of core,” “preferences & attitudes,” “stakeholder control,” “monitoring & evaluation,” “lack of time/ resources,” “constraints on planners,” “anthropocentric philosophy,” “applied research,” “resistance to change,” “education,” “political constraints,” “limited practical options,” “competing built and natural land use,” and “change-governed approach,” as illustrated by the quotations below:

> We rely in the large part on general community attitudes and long standing planning doctrine and assumptions saying that downtown should be the heart of the community, but downtowns are emerging into something different from what they were historically.
>
> People are very keen on environmental issues but they don’t do much about it. They’re not willing to modify their lives to accommodate environmental needs.
>
> Academics don’t recognize the significance that existing stakeholders play, the dollars of the development industry, the lack of power of planners and politicians.
>
> The test in itself is worth implementing things without doing the research and it often fails, but when it succeeds we don’t know why without monitoring achievement and the way the city has developed.
>
> Getting the academics to realize that much of the academic work is of no use to us since we can’t apply it.
>
> People tend to be resistant to change in the existing developed areas.
>
> Try to educate community, politicians, and practicing planners to think in a broader and more challenging framework.
>
> With regard to larger portions of land and linked open space systems these initiatives will be directly up against other kinds of built form opportunities.

Interestingly, one respondent introduced an idea that challenges the present philosophy of centeredness in urban areas, which is currently governing the planning discipline. Perhaps urban

centres do go through a process of evolution independent of the planning principles placed upon them. Another important point addressed by several respondents is that of environmental education and the willingness of public to compromise and fully participate in principles, which they support inherently. Several respondents commented on the lack of power held by planners and politicians, and the misunderstood expectations associated with each position. They also pointed to the disconnection of work between academics and practitioners, and the lack of understanding and appreciation for each.

Within the area of outdoor recreation planning, addressing reasons for and challenges associated with gaps and insufficiencies, most themes were found in the theoretical realm. Common themes between theory and practice were identified with "constraints on planners," "preferences & attitudes," "government inefficiency," and "political/financial constraints," as identified by the following quotations:

> Urban planners are predisposed to do a better job with things like urban bike lanes and trails, but unless they're the ones who are making the budgetary decisions they will be the voice but they won't necessarily be the final word.
>
> North Americans have suburban mindsets so it's psychological image type of question; how do you get people to change that.
>
> Governments really should be there to enable and enhance not to become bigger; the whole issue of bloating of governments is very negative.
>
> There are an awful lot of things that have to happen with everybody's tax dollar beyond recreation. It's a case of justifying the need to spend that money, which is difficult when you're trying to manage such a wide variety of activities.
>
> Too much turf to protect: if you want something done you have to satisfy the Region, you have to satisfy the Provincial government, then you have to satisfy the sub-committees of all these groups.

The responses above point to several issues associated with various levels of government as well as with the planning profession and the public. Various espondents addressed the limitations of

urban planners—both in the political arena and dealing with public attitudes. The ineffectiveness of the governmental structure was associated with bureaucracy and red tape present in all levels of government, from local to Regional and Provincial with all of their sub-committees. Additional pressure was said to be placed upon the recreation profession, which is in competition for the public tax dollar with numerous other public goods and services.

Finally, within the area of ecological planning, addressing reasons for and challenges associated with gaps and insufficiencies, majority of themes were found in the practical approach. Common themes between theory and practice were identified with "education," "stakeholder control," "professional expertise," "preferences & attitudes," and "public perception," identified by the quotations below:

> Now that there's a recognition and more respect for the natural world and expressed desire by environmentalists to have nature in the city, people have to be trained to think what nature is and how it can get in there.
>
> Cities don't have enough power to control the process of development in the downtown sufficiently.
>
> Concepts are taken from pure ecological studies done by ecologists and often people reading them cherry pick the conclusions they want and apply the principles into an urban planning context, but there isn't a direct transference of knowledge or understanding.
>
> People haven't been trained to think natural environment in the urban core. The natural environment is always traditionally thought of as something outside the city.
>
> Waterloo Park, there have been attempts to naturalize that area but they have run into a brick wall of public perception; they stopped mowing in some areas to allow it to go back to the weed meadow concept and the public reaction was that it's messy.

Comments expressed by several interview respondents in the quotations above range from broad philosophical issues to very specific examples, such as Waterloo Park. Interestingly, the idea of nature in the city was related both to environmental education and to misapplication of

environmental principles in the context of urban planning. Consistent with comments in previous paragraphs, some respondents expressed that cities as well as planners lack power in influencing the development process. Finally, the issue of naturalization of Waterloo Park was once again linked with environmental education in order to improve public perception and understanding of naturalized areas.

Subsequently, questions five and six exploring the challenges addressed by the City now and in the future were analyzed separately where the City was not effective in addressing these challenges, and where the City was effective. Within the area of urban planning, where the City was not effective in addressing the challenges now and in the future, majority of themes were found in theory. Common themes between the realm of theory and practice were identified with "transit system," "unique core experiences," and "decision-making process," as identified by the quotations below:

> Recognizing the opportunity presented by a higher order transit as a way to move people efficiently and comfortably to the downtown.
>
> Whatever you put within the downtown site, make the environment and the experiences such that will make it worthwhile for people to come even if they have to pay for parking or take a bus.
>
> The quality of thought in the decision-making could be improved … Council and decision makers base decisions on the ideal without knowing the repercussions of it.

Various respondents pointed to developing a transit system in the Region, which would facilitate an efficient transportation of larger numbers of people. Some also stated that downtown experiences would have to be worthwhile and unique in order to attract people, regardless of the improved modes of transportation. While some respondents commented on the need to improve quality in decision-making, they have not acknowledged the constraints existent within the political structure and the planning system, as was the case in previous sections. However, one

respondent made contradictory claims in the last quotation, first making assumptions that decisions are based on an ideal and second that the quality of decision making needs to be improved. Poor quality in decision-making may in fact be due to the lack of specialized educational background among politicians and decision makers.

Within the same area and where the City was effective in addressing the challenges now and in the future, most themes were found in practice. Common themes between theory and practice were identified with "academic partnerships" and "ecological planning," as identified by the following quotations:

> CURA and Mid-Size City Research Centre being great initiatives to help the City overcome some gaps… City is actively trying to form partnerships and link themselves with the academic community.

> In terms of ecology, most of our work is related to mitigation of subdivision applications, watershed planning, defining impacts of proposals.

Within the area of outdoor recreation planning, where the City was not effective in addressing the challenges now and in the future, most themes were found in practical realm. Common themes between theory and practice were identified with "government-imposed barriers," "service distribution," and "enticing public to live Uptown," as demonstrated by the quotations below:

> They should examine the whole process of how they deliver their services and what the role is in terms of controlling and enabling development.

> They fall short in a lot of ways at distributing their services and making them convenient for people.

> I think the City should be trying some smaller projects in enticing population to move towards the city as opposed to the suburbs. The way to revitalize is to move people downtown then everything falls into place.

Several respondents addressed the issue of improved service delivery as it pertains to convenience. Interestingly, service delivery was seen as being closely related to the City's role in

controlling and enabling development, thus affecting the resident population within the core area. For instance, if the City improved its service delivery to developers enabling them to build more residential buildings in the core, that on its own may not be a successful mechanism to entice people to move and live Uptown. Instead, the City would need complementary recreation and other services to crate attractive living settings. However, outdoor recreation service delivery might be in conflict with development service delivery if both compete for the same open spaces but not for the same resident population.

Within the same area and where the City was effective in addressing the challenges now and in the future, majority of themes were found in the practical approach. Common themes between theory and practice were identified with "applied research," as illustrated by the following citation:

> You can say: this is what we've got, this is what we can afford, these are the priorities based on need and trend analysis and demographics and anything else that may be thrown into the mix.

Finally, within the area of ecological planning, where the City was not effective in addressing the current and future challenges, most themes were found in practice. Common themes between the practical and theoretical approach were identified with "natural systems promotion," "linkage strategy," "common interest with developers," "benign building materials," "stakeholder control," "professional expertise," and "policy limitations," as illustrated by the quotations below:

> The "greening of the cities" and the "cities in bloom" thing is fine but it's still perceived from a general popular horticultural sense.

> There should be easements sought to create linkages; properties can be bought, they can tear down houses to create natural linkages and open up creeks.

> They have to find a way to have a common interest with developers because they rely on a capital to change and to make the city adapt. They have to persuade

> developers to adopt different forms of development, to make some economic concessions, to get them to do things right.
>
> Second approach would be the parking issue, building parking lots that are more benign because of the infiltration and runoff, which must be worked out with engineers to design new systems of paving, i.e. new systems in Germany that do that; and building car parks under buildings but it's just custom.
>
> The City has turned over the initiative in the downtown to individual developers; they do not see an ecological mandate as their mandate.
>
> In many cases they're environmental planners but they're not field scientists; they see a wetland but they don't have a level of sophistication to understand how it works, or a forest or meadow.
>
> They get hanged up on what the policy says … Quite often policy has a hard number attached to it.

Some respondents addressed the greening of cities—mostly being a horticultural perspective—to include natural linkages and cooperation with developers to persuade them into adopting ecological practices, such as incorporating innovative building materials into and improving the design of parking lots. At the same time, one respondent criticized the competence level of environmental planners working for the City, comparing them to field scientists.

Within the same area and where the City was effective in addressing the challenges now and in the future, majority of themes were found in the theoretical approach. Common themes between theory and practice were identified with "environmental initiatives" and "Environment First Policy," as illustrated by the following quotations:

> The City supports things like "cities in bloom" and they have active control of invasive species, monitoring and in some cases eradication, tree monitoring program.
>
> Waterloo is exemplary with the Environment First program.

Exemplary in differences of opinions, the first quotation expressed full support of the "cities in bloom" initiative, whereas the first quotation in previous section expressed criticism based on the

horticultural approach. Perhaps each of the two respondents commits to a different philosophy, which may be a function of the respondent's educational background, area of expertise, or personal values and attitudes.

In summary, urban planning and ecology planning appear more related than outdoor recreation planning in that most gaps and insufficiencies were found in practice, whereas the recreation profession addressed gaps equally within theory and within practice. With regard to reasons for and challenges associated with gaps and insufficiencies, the area of urban planning emerge as most integrated between theory and practice, whereas the area of outdoor recreation planning demonstrated the least integration between the practical and theoretical approaches. Finally, with regard to the challenges addressed by the City at present and in the future, the area of ecology planning appeared most integrated between theory and practice in terms of the City's ineffective efforts.

Research Questions

As a final issue, the study identified three research questions to investigate the role of ecologically compatible forms of outdoor recreation planning as means of core area revitalization. These questions were examined within the areas of urban planning, outdoor recreation planning, and ecology planning. All coded responses were compared between the three areas for each research question, separately among academics and among practitioners, in order to gain a perspective on the relationship among these different professional disciplines. In addition, all responses were also compared within each of the three areas between academics and practitioners, in order to gain a deeper understanding of each area. Open and axial coding was applied to classify themes.

Research Question 1: What is the role of outdoor recreation in the core area revitalization?

The first research question addressed interview questions 8 and 9. All respondents were asked if outdoor recreation was incorporated into the revitalization process of Waterloo core area, and the potential role of outdoor recreation in such a process. The research question investigated the role of outdoor recreation in the revitalization efforts targeted at the Waterloo core area. All responses were classified into two categories, one where outdoor recreation was incorporated and another where it was not incorporated into the core area revitalization. In case where respondents identified that outdoor recreation was not incorporated into revitalization efforts, they often offered their critique and recommendations. (See **Appendix 5** for a summary table with quotations representing *Research Question 1*).

As a preliminary issue, the study compared the areas of urban planning, outdoor recreation planning, and ecology planning, separately among academics and among practitioners. Within the category of those who believed outdoor recreation was not incorporated into core area revitalization and among the academic community, the majority of common themes was found in planning and ecology. These themes were translated into suggestions to "connect recreation with core," and "designate central space." Furthermore, respondents in the planning and the recreation areas shared their critique of the "Waterloo Park," whereas those in the recreation and the ecology professions also made suggestions to "incorporate natural spaces." Among practitioners, "recreation provision" was a common theme across the three areas, whereas "development process" was a theme shared by respondents in the planning and the ecology areas. These themes are illustrated by the quotations below:

> In Kitchener it works because you have the ice skating rink there, it's right on the main street and they are connecting to Victoria Park, visually aesthetically with trails and connections, and that would have to be done in Waterloo.

> If the City had a definable center it would be a place where more recreation would happen. Place where you might close off the street and have the stage for music presentation or protest rally. Outdoor recreation would take place in that place and people would gather there just to socialize.
>
> There's a bit of green space behind that block associated with the City Hall but it's a sterile green space.
>
> …Identified need for a skateboard park that staff would like to see downtown; It is in the capital budget; not for several years, but if we could find a willing partner to help us with funding it, it would go ahead a lot quicker.

Within the category where outdoor recreation was incorporated into core area revitalization and among the academic community, the majority of common themes was found in planning and recreation. These themes included "recreation provision," and "Waterloo Park," as well as "trail systems," which was also identified by respondents in the ecology area. Practitioners across the three areas identified "recreation provision" as one role of outdoor recreation in the core area revitalization. The theme "trail systems" was common to respondents in the areas of planning and ecology, "development process" was shared between respondents in planning and recreation, and the suggestion to "incorporate public values" was found among respondents in recreation and ecology. These themes are depicted by the following quotations:

> Recreation has the ability of drawing people to the core such as events in Waterloo Park.
>
> Typically the developers will have their planners and landscape architects design the park and those plans will come through the City and our Development Services Department, through Forestry Department, through Parks Department and there's some dialogue back and forth to adjust and bring it to our standard, which is generally a pretty easy process.
>
> Trails (pedestrians and cycling) incorporated into the work for Uptown Waterloo, because they provide recreational opportunities for residents in and around the core and bring people into the core.
>
> Open space, outdoor recreation and that type of thing are really held up as a strong need important to the City.

In summary, the first research question generated contradictory responses from the participants. Some of the academics in planning and in ecology indicated that the role of outdoor recreation was not incorporated in the core area revitalization, and that it should be done by connecting recreation with the core and by designating central space. On the contrary, the remainder of academics in planning and recreation indicated that the role of outdoor recreation was incorporated in the revitalization process through the City's trail systems, recreation provision, and opportunities offered by the Waterloo Park. In comparison, some of the practicing professionals in planning and ecology expressed that the role of outdoor recreation was not incorporated and that it should be done through the development process and through recreation provision. Interestingly, other practitioners in the three areas equally indicated that outdoor recreation was incorporated through the City's trail systems and development process, and by providing various recreation opportunities and incorporating public values. In this regard, the areas of recreation and ecology were most versatile with planning in that they shared common responses across the three disciplines.

As a secondary issue, all responses were compared within each of the three areas between academics and practitioners. Within the area of planning, practitioners provided most responses indicating that outdoor recreation was not incorporated into the revitalization of Waterloo core area. They further suggested that such role should be incorporated through the provision of recreation, incorporation of public values, integration of natural spaces, design of compatible activities, and development process. Both academics and practitioners shared the view that the role of outdoor recreation should be further incorporated by designating central space. Planning academics and practitioners also provided most responses indicating that outdoor recreation was

incorporated into the core area revitalization through the City's trail systems, various opportunities offered by Waterloo Park, and recreation provision in general.

Within the area of recreation, academic professionals provided most responses indicating that outdoor recreation was not incorporated into the revitalization process of Waterloo's core area. They suggested that outdoor recreation's role may be extended by adopting a common definition approach, expanding the opportunities at Waterloo Park, and incorporating natural spaces. On the other hand, responses from the same group indicated that outdoor recreation was incorporated into the revitalization process through the trail systems, as well as through the natural systems and Waterloo Park, which were earlier indicated as lacking. Clearly, respondents in the academic group hold contrasting views on the role of outdoor recreation in regard to core area revitalization. While respondents provided their comments on the same topic areas or themes, they addressed various aspects of the issue.

Finally, within the area of ecology, academics provided most responses indicating that outdoor recreation was not incorporated. They suggested that this issue may be addressed by connecting recreation with the core, incorporating natural spaces and trail systems, designating central space, and offering outdoor education opportunities. In comparison, most comments provided by practitioners indicated that outdoor recreation was incorporated through recreation provision and integration of public values.

Research Question 2: How might sustainable and vibrant core areas be achieved through appropriate forms of outdoor recreation planning?

The second research question addressed interview questions 10 to 12. All respondents were asked to provide examples of how sustainable and vibrant core areas may be achieved through outdoor recreation planning. They were also asked to provide their views and

suggestions on the most appropriate outdoor recreation approach for the core area of City of Waterloo, and whether the City follows this approach. The research question addressed possible approaches in which sustainable and vibrant core areas may be achieved through appropriate forms of outdoor recreation planning, and in specific the core area of City of Waterloo. All responses addressing interview question 12 were classified into two categories, one where the City was unsuccessful at achieving a sustainable and vibrant core area through appropriate forms of outdoor recreation planning, and another where the City was successful at achieving such an outcome. (See **Appendix 5** for a summary table with quotations representing *Research Question 2*).

As a preliminary issue, the study compared views from the areas of urban planning, outdoor recreation planning, and ecology planning, separately among academics and among practitioners. Among the academic community, the majority of common themes were found between planning and ecology. Respondents in these two areas indicated that sustainable and vibrant core areas might be achieved through the implementation of "big events," "outdoor recreation opportunities," and "attractive natural features." The theme of "attractive natural features" was specified by respondents across all three areas, as exemplified by the quotations below:

> There's no doubt that the green space that's currently there has made Uptown Waterloo what it is.

> I'm thinking of a small town in Hertfordshire, England, where the stream through the middle of the downtown has been opened up and turned into a linear park with outdoor cafes and benches.

> The obvious resource is Silver Lake. If they open up the creek even through Waterloo Square had the creek open and restored as an amenity it could be very nice.

Within the responses for interview question 12, whether the City was successful following the specified approach, all academic respondents across the three areas answered disapprovingly. Respondents within the ecology area provided most examples where the City was unsuccessful, and those within planning provided the least. An academic respondent in ecology specified problems with both the natural and built components in the Waterloo core area:

> Not right in the…uptown core, no. The creek is concreted over, I mean if they open the creek up, even through Waterloo Square…[if they] had the creek open and restored as an amenity, it could be very nice. The creek is hidden, there's no trees or sitting space. …[The] City Hall is off main street. It's on a side street, tucked away. You know, who goes there?

An academic respondent within the recreation area also indicated some success:

> I think one of the things Waterloo's done very well, much better than most cities I know, is getting people to live in the Uptown area…the Seagram Lofts or the Labatt's property or the new student housing in the old factory.

Among the practitioners, the majority of common themes were found between planning and recreation. Respondents in these two areas indicated that successful core areas might be achieved through an improved "urban planning," incorporation of "public values," provision of an "attractive pedestrian environment," "trail systems," "big events" and a variety of other "outdoor recreation opportunities." Practitioners across the three areas have identified the themes of an "attractive pedestrian environment" and "outdoor recreation opportunities," illustrated by the quotations below:

> Walking is probably the main recreational activity and I'm thinking good restaurants, coffee houses, places for people to sit given our Canadian environment and the different seasons.

> The outdoor recreation aspect makes a place vibrant or spontaneous where people go, but it has to be attractive.

> Cities like London, Kingston or Vancouver all have extensive green areas and outdoor recreation opportunities associated with their waterfronts. Availability of the outdoor recreation opportunities in those areas and adjacent to them, whether in parks or private developments, they are great draws for the downtown.

Within the responses for interview question 12, whether City of Waterloo was successful in following the described approach, all practitioners across the three areas responded both positively and negatively, however, they provided more positive examples. Ecology practitioners provided most examples where the City was unsuccessful, whereas those in recreation presented most examples where the City was successful in following such an approach.

In summary, the academic professionals in planning and in ecology expressed most similar views on how a successful core area might be achieved, whereas respondents in all three areas agreed that the City was unsuccessful at reaching such a goal. In comparison, the practicing professionals in planning and recreation expressed very similar views on the issue under investigation, and the respondents in all three areas expressed that the City was both successful and unsuccessful at achieving this objective. Interestingly, the academic respondents across the three disciplines indicated that the City was unsuccessful at achieving a vibrant core area, whereas all practitioners stated a contrary opinion, although they indicated some unsuccessful approaches in each area as well. Perhaps this difference between practitioners and academics is due to the level of the practitioners' accountability to the City and the public, and the academics' liberty to be philosophical free thinkers. The practitioners tend to describe their own work while the academics are critical but not vested. This is clearly portrayed by an academic who stated: "I'm sure if you ask some of the staff, they'd say 'yes' and others would argue 'no'. My answer is 'probably not.' At least not on a widespread basis."

As a secondary issue, all responses were compared within each of the three areas between academics and practitioners. Within the area of planning, practitioners provided most responses,

some of which were also shared by the academics. Both academics and practitioners suggested that appropriate forms of outdoor recreation planning in regards to core area revitalization might include big events, varied outdoor recreation opportunities, attractive natural features, and integrating the Waterloo Park and Recreation Complex with the core area. Within the area of recreation, practitioners provided majority of responses indicating that a vibrant core area might be achieved by providing an attractive pedestrian environment, trail systems, incorporating public values, implementing big events, and offering many outdoor recreation opportunities. Finally, within the area of ecology, both academics and practitioners provided most suggestions on how to achieve the objective. They proposed that a vibrant core might be accomplished by offering various outdoor recreation opportunities, attractive natural features and pedestrian environment, and establishing connectivity.

Research Question 3: What is the working relationship between land use planning (core area), outdoor recreation, and urban ecology?

The third research question addressed interview questions 13 to 16. All respondents were asked if the areas of planning, outdoor recreation and ecology were integrated at the level of City of Waterloo, if there was room for improvement, and their suggestions for such improvement. The research question examined the working relationship between urban planning, outdoor recreation and ecology. All responses were classified into three categories, one where the working relationship between the three areas was poor or not integrated, second where it was good or integrated, and a third category where recommendations for achieving a good working relationship were provided. (See **Appendix 5** for a summary table with quotations representing *Research Question 3*).

As a preliminary issue, the study compared the areas of urban planning, outdoor recreation and ecology, separately among academics and among practitioners. Within the category where academics provided their recommendations for a good working relationship between the three areas, the repeated themes were found equally across the three disciplines. Respondents in planning and recreation identified a common theme of "theoretical implications" (i.e. encourage communication and understanding, approach solutions from different angles), respondents in planning and ecology emphasized the theme of "ecological restoration" (i.e. bring nature into Uptown, outdoor education), and those in recreation and ecology identified "institutional design" (i.e. encourage interdisciplinary approach, integrate organizations, improve community planning process). Among practitioners, the areas of planning and recreation were most closely related. Respondents in these two areas shared the themes of "ecological restoration" and "cultural implications," whereas the repeated themes "theoretical implications" and "institutional design" were also shared by respondents in the ecology area. Survey respondents illustrate these themes by the quotations below:

> They should get the water back on the surface instead of putting it through a pipe.
>
> I openly wonder whether there shouldn't be some more natural environment in the Uptown.
>
> From a cultural example, incorporate public art. We have a few pieces of public art in our core, but we don't really have a policy that pushes the public art being incorporated.
> In terms of development and urban heat islands, we should be pushing some of the theoretical research on rooftop gardens and decreasing urban heat islands.
>
> The recreational experts who are in touch with what's going to work in the community need to have a direct input in the planning stage.

Within the category where the working relationship between the three areas was poor or not integrated and among the academic community, one common theme was found in planning

and ecology. Respondents in these two areas expressed that the working relationship between planning, recreation and ecology was not integrated in terms of “ecological restoration.” Among practitioners, one common theme was found across the three disciplines. Respondents in all areas identified that the working relationship was poor or not integrated in terms of “institutional design.”

Within the category where the areas of planning, recreation and ecology were integrated and within the academic community, only those in recreation responded. They indicated that the working relationship was good based on the “political implications,” “institutional design,” and “ecological restoration.” Practitioners in recreation and ecology shared majority of themes. These respondents identified that the working relationship was good, otherwise the three areas were integrated, through “theoretical implications,” “institutional design,” “political implications,” and “ecological restoration.”

In summary, the academic professionals in all three areas provided similar recommendations for an improved working relationship between planning, recreation, and ecology. In comparison, the practicing professionals in planning and recreation shared most recommendations for an improved working relationship between the three areas. Academics in planning and ecology provided similar examples on the ways in which the three disciplines were not integrated, whereas the practitioners across all three disciplines shared their examples on the subject matter. Only recreation academics believed that the relationship between planning, recreation, and ecology was good, whereas practitioners in all three areas expressed such a view and those in recreation and ecology provided majority of common examples.

As a secondary issue, all responses were compared within each of the three areas between academics and practitioners. Within the area of planning, practitioners provided most responses

suggesting their recommendations on achieving a good working relationship between planning, recreation, and ecology. These respondents suggested achieving this relationship through institutional design—in other words, ways in which institutions are designed and operate—as well as by improving the social and cultural implications. Practitioners also expressed that this working relationship is good in terms of institutional design and political implications, whereas other practitioners argued that this relationship is poor in terms of institutional design and ecological restoration.

Within the area of recreation, both academics and practitioners provided most comments indicating that the working relationship between the three disciplines is good based on the political implications, institutional design, and ecological restoration. Also both academics and practitioners suggested most common recommendations on improving this relationship, such as through theoretical implications and institutional design. In comparison, respondents from the academic community expressed that the three disciplines were not integrated in terms of the theoretical implications, whereas the practitioners expressed this in terms of institutional design.

Finally, within the area of ecology, practitioners provided most responses indicating that the working relationship between planning, recreation, and ecology was good. They expressed that the three areas were integrated based on the institutional design, political and theoretical implications, and on ecological restoration. In comparison, both practitioners and academics made recommendations that such a relationship should be approached through improved institutional design. Respondents in the academic community stated that the three areas were poorly integrated in terms of ecological restoration; whereas those in the practical field expressed that such task should be accomplished through institutional design.

CONCLUSION

In summary, this chapter has focused on presenting findings on the two research themes and the three research questions from the structured interview. The differences and biases between theory and practice and further between the areas of urban planning, outdoor recreation planning, and ecology planning were presented in research themes one and two, and were incorporated into the research questions. The findings in Theme 1 (*Theory Versus Practice*) suggest a relationship between urban planning and ecological planning, and between outdoor recreation planning and ecological planning by how the respondents chose to define various terms. Most differences between theory and practice were found in the area of outdoor recreation planning, less in the area of urban planning, and only few differences in the area of ecological planning. The area of ecological planning was found to be most versatile, whereas the areas of urban planning and outdoor recreation planning seemed disconnected. Similarly, findings in Theme 2 (*Gaps & Insufficiencies in Theory & Practice*) suggest a relationship between urban planning and ecological planning, which appear more related than outdoor recreation planning. Most gaps and insufficiencies were found in practice within the areas of urban planning and ecological planning. Respondents in the recreation profession addressed gaps equally within theory and within practice. Common themes identified as gaps included “transportation systems,” “ecological ethics,” “urban planning,” “barriers to development,” and “financial support.”

Findings in Research Question 1 (*What is the role of outdoor recreation in the core area revitalization?*) suggest that outdoor recreation has an extensive role in the process of core area revitalization. Responses were divided between those stating that outdoor recreation was incorporated into the revitalization process and others stating that it was not incorporated. The

areas of urban planning and ecological planning were integrated in their approach, whereas the area of outdoor recreation planning was disconnected. Respondents stated that the role of outdoor recreation should be incorporated into the core area revitalization by connecting recreation opportunities and especially Waterloo Park with the core area, by designating central space such as through the development process, by providing ample supply of parkland and recreation opportunities including outdoor education and trail systems, by incorporating natural spaces including public values, by designing compatible activities, and by expanding the definition of core area to include outdoor recreation.

Findings in Research Question 2 (*How might sustainable and vibrant core areas be achieved through appropriate forms of outdoor recreation planning?*) were divided in responses between those who stated that the City was unsuccessful at achieving a vibrant core area through outdoor recreation planning, and others who believed that the City was successful. Among academics, the areas of urban planning and ecological planning were most integrated, whereas the areas of outdoor recreation planning and urban planning were most integrated among practitioners. The practitioners differed from the academics in their beliefs that the City was successful at achieving the objective, whereas the academics believed the City was unsuccessful. Respondents stated that appropriate forms of outdoor recreation planning might include big events, variety of outdoor recreation opportunities offered by Waterloo Park and the Recreation Complex, attractive natural features and pedestrian environment, community development projects, incorporation of applied research into planning for outdoor recreation, user-defined approach and incorporation of public values, connectivity with the core area, alternative modes of transportation, trail systems, and urban planning that is sustainable and has a creative non-traditional approach.

Findings in Research Question 3 (What is the working relationship between land use planning (core area), outdoor recreation, and urban ecology?) suggest that a poor working relationship exists between the areas of urban planning, outdoor recreation planning, and ecological planning. Responses were divided between those who stated there was a poor working relationship between the three disciplines, others who believed there was a good working relationship, and remainder who provided their recommendations for improving this relationship. All three disciplines were disconnected in their approaches. Several respondents in recreation made the most recommendations for improving the working relationship. They also presented most input stating that the relationship was good. Other respondents recommended that the working relationship should be strengthened by improving institutional design, through ecological restoration, theoretical and political implications, and incorporating cultural aspects.

Overall, the three areas are disconnected and uncoordinated in their various theoretical and practical approaches. The area of urban planning presents gaps and insufficiencies in translating theoretical approaches into practice, whereas the area of ecological planning seems to be more coordinated in both theoretical and practical approaches and most versatile with other disciplines. The area of outdoor recreation planning presents most challenges in addressing gaps and insufficiencies both in theory and in practice. With this in mind, findings from the research questions will be further incorporated into proposed solutions to the issues and depicted in the following chapter.

6. CONCLUSIONS AND REFLECTIONS

INTRODUCTION

This chapter incorporates findings from the literature review, the document analysis, and the structured interview including the three research questions. Lessons learned from these sources are presented here. The chapter recommends changes and solutions to discussed issues and maps these to illustrate how the improved system would look. The chapter demonstrates how the new approach would improve matters. The chapter makes recommendations for future research and discusses limitations within this study. Reflections on recommended pilot projects are presented here in detail, in coordination with findings from all sources.

OVERALL GUIDING VISION

The overall vision that serves as context for the recommendations produced by my research involves a holistic approach of Waterloo core area addressed through policies, programs and projects integrated from various political scales (Ontario Planning Act to OMB to Region to Municipality to neighbourhood) and from various disciplinary approaches (urban planning, outdoor recreation planning, ecological planning). The City of Waterloo's Official Plan will address its core area through policies related to outdoor recreation planning and ecological planning to balance economic and residential well-being. It will further broaden its definition of the commercial core to include principal and not only surrounding recreation uses. The City's Official Plan will have a separate policy section for recreation and leisure. It will address sub-watershed planning separately in the urban core and will promote creative and efficient land redevelopment practices. Lastly, the Official Plan will protect pedestrians from weather impacts—such as island heat effect—within the core by ensuring adequate mix of green infrastructure.

Most of the outdoor and indoor recreation and leisure resources will be linked through green spaces and waterways as means of facilitating pedestrian movement, and will serve as an organizational principle for developing new green spaces. Laurel Creek will be revitalized and brought up to the surface to facilitate the establishment of a linear corridor with green infrastructure and entertainment alongside the Creek and the railway corridor. Several important features and building structures in the core—such as City Centre, Recreation Complex, Waterloo Park, and Cenotaph—will be connected by "green bridges" that will further link these features through green spaces and waterways. The on-road and off-road trails and bikeways will pass through the core area of the City and beyond. Both Universities will play a major role in encouraging bicycle use by having safe bicycle paths on campus and by providing bicycle amenities such as roofed bike racks or storage rooms. All University students will be incorporated into planning for outdoor recreation and provided with all amenities that are accessible to City residents.

Certain significant buildings—such as Waterloo City Centre or Recreation Complex—will be given more attention and linked to what appears to be central and attractive to the residents of the City. Displays of public art will be encouraged throughout the city core. Further attention will be given through the introduction of green roofs on top of these buildings to give them a distinct character, to portray the City as being visionary in its approach, and to attract more people. Green roofs will be also approached for a variety of educational and recreational uses, such as outdoor education, gardening or sports.

The City will have a method for evaluating and monitoring the built and natural infrastructures—i.e. the Townscape Heritage Initiative Evaluation. City of Waterloo residents will actively participate in periodic evaluations maintained by the City staff to provide their input

into the planning process. Through various educational efforts and opportunities, the City will strive to improve public perception of natural landscaping. The issue of equity will be addressed in all recreation and leisure opportunities and programs offered by the City through pricing policies, accessibility, support services, and specialized resource and program development.

LIMITATIONS

Several limitations of this study were found in research design. In *Theme 2: Gaps & Insufficiencies in Theory and Practice*, question two was too broad addressing all areas at one time. Also, questions 3 to 6 in this section generated responses that were too broad, too philosophical, and too idealistic in nature. In addition, the respondents were very passionate and opinionated on particular issues, whereas the decisions on how to address current issues needed practical solutions. Throughout the structured interview and the research questions, the researcher's terminology was inconsistent referring to concepts of urban planning, outdoor recreation planning, and ecology planning as "land use planning" (core area revitalization), "outdoor recreation," and "urban ecology." Although the researcher pilot tested the questionnaire used in the structured interview, the pilot sample was small, consisting of only nine respondents. As a result the pilot test did not generate recommendations for changes in context and structure of the interview instrument. Finally, the sample size was small consisting of only 14 respondents due to the limited availability of City staff and academic professionals who would be knowledgeable about current issues of the City of Waterloo core area.

LESSONS LEARNED

In terms of the theory and practice of outdoor recreation planning in core areas, this research suggests that urban planning and ecology planning are coordinated in theory and practice, whereas the area of outdoor recreation planning is detached.

1. Outdoor Recreation and the Current Planning System

The Development Services Department creates a public open space in coordination with developers and landscape design teams; however, it lacks outdoor recreation experts. Once the property is approved by Council and developed, it becomes the ownership of Parks and Works Services and Recreation and Leisure Services to maintain, program, and market it to the public. These services—19 business units organized under 5 corporate businesses or services (City of Waterloo, 2002e)—have very little input in how the space was developed and have very little input into the planning process. All associated services and the local public should be involved in the early stages of planning and development.

Ontario Planning Act
↓
Ontario Municipal Board
↓
Regional Official Policies Plan
↓
City Official Plan
↓
5 Core Businesses
(Associated with outdoor recreation):
1. Corporate Services 2. Development Services
3. Parks & Works Services 4. Protective Services
5. Recreation & Leisure Services
↓
Cemetery Services, Facility Services, Community Development & Programming

Figure 6.1 City of Waterloo organizational chart.

The City of Waterloo's organizational structure associated with outdoor recreation planning and urban planning may be responsible for the lack of participation by staff members from Parks and Works Services and from Recreation and Leisure Services in the planning process for public open spaces. In this respect, the significance of non-specialists—meaning staff members with no recreation and leisure educational background—managing Recreation and Leisure Services is greatly undermined, where in fact it could help explain how decisions regarding outdoor recreation planning are made in the City of Waterloo. (See **Figure 6.1** for the City of Waterloo organizational chart).

Clearly, the role of the institutional framework within which decisions are made about land use planning and recreation planning in core areas needs to be examined beyond the Regional Official Policies Plan—which was the scope of this study—and include the Ontario Planning Act and the Ontario Municipal Board (OMB). Real barriers to successful outdoor recreation planning may lie in the structure and operation of the current planning system. The very constraints that are placed upon the Recreation and Leisure Services associated with planning for the public open spaces may be directly traced to the policies inherent in the Ontario Planning Act or the philosophy of the existing OMB. For instance, some respondents stated:

> …With the present Planning Act and the present Ontario Municipal Board, the City is captive to the system and they cannot change. They can be overridden by the OMB. Any developer can go to the OMB and basically get what they want because the OMB is pro-development. Cities don't have enough power to control the process of development in the downtown sufficiently.
>
> The cities are addicted to development and they're always trying to raise money to pay for the infrastructure to service the last development by getting another development. So they're locked into a spiral of more and more and more building development. That's the only way how they can balance the books. You cannot have a sustainable economy with the present system of land taxation.

2. Trends in Outdoor Recreation Program Planning

Second, according to the demographics and future projections for outdoor recreation trends in City of Waterloo, individualized and unstructured activities will be popular, thus attention should be moved from planning for recreation facilities to planning for outdoor recreation resources and user management. The City of Waterloo established three age groups for registered programs and camps: 1) children and youth under the age of 16, 2) adults between the ages of 16 and 55, and 3) lifestyle over the age of 55 (City of Waterloo, 2002e). These age groups are very broad and further do not account for the phenomenon of the "active old" or "well seniors" who "before and in retirement…adopt lifestyles of engagement in a variety of leisure activities and relationships" (Kelly, 1999: 59). More resources and services should be geared towards the lifestyle group in the City of Waterloo, as youth programming has remained a priority to the Recreation and Leisure Services (City of Waterloo, 2001c). In planning for adults, who at the present time compose the majority of the City's population and who are the majority of recreation service consumers (Statistics Canada, 2001), the Development Services Department and the Recreation and Leisure Services should incorporate University students into its outdoor recreation planning, Waterloo being a student town with two Universities. Further support for inclusion of the student population is based on the City of Waterloo Official Plan, which incorporates University students into its population growth rate estimates (City of Waterloo, 2002a, 1.6.2.1).

3. Public Perception of Natural Landscaping

The City should educate the public on naturalization efforts and benefits to slowly change the perception towards accepting the natural forms as more appealing and aesthetic than the current landscaping. Lessons from European countries also include creative ecological

approaches such as the green roofs and green bridges, and are based upon the pedestrianization of town centres. One respondent commented on the lack of public appreciation of such efforts:

> …A lot of people that were concerned with urban planning didn't care about integrity and the look of natural systems. They wanted the Victorian garden, the streetscape, traditional streetscape: lollypop trees and petunias, and all that crap.

4. Environmental Strategic Plan and Outdoor Recreation

In the Environmental Strategic Plan an area of improvement for the City lays in new environmental technology in urban design, such as rooftop gardens, "green" buildings, solar energy and heating, alternatives to pavement and concrete surfaces, and green bridges—all of which could be incorporated into outdoor recreation planning and programming through outdoor education and design. The area of outdoor recreation is currently missing and should be incorporated into the Environmental Strategic Plan. Similarly, a separate section for outdoor recreation should be created within the City Official Plan. The Plan supports incorporation of stream corridors (i.e. Laurel Creek) with the adjacent cultural, recreational and visual amenities (section 1.7.3.11), thus it provides support for the proposed solutions in regards to revitalizing Laurel Creek and creating several "green bridges" to connect all resources discussed in Chapter Five.

5. Waterloo Park Master Plan and Passive Outdoor Recreation

The Waterloo Park Master Plan states that the demand for active sports facilities is projected to decline after the peak in 2002. Older adults being the largest population segment interested in leisure activities and passive recreation, provide a solid base for the preservation of natural areas. The Waterloo Park Committee strives to limit vehicular traffic and parking developments, and supports the Park's role as an educational facility. The educational role of the

Park should be expanded to include naturalization projects and creative outdoor recreation and wilderness experiences. The Parks Services Master Plan also states that desired recreation activities lean towards individualized, low-impact recreation in parks and open spaces. Some participants expressed strong concern over the decline of services and the parks themselves.

6. Program Master Plan and Outdoor Recreation Program Planning

The City's Program Master Plan states there is a shift from direct to indirect programming by various local organizations besides the City. The Committee recommends that these local organizations should be strengthened to improve local businesses and expand the outdoor recreation opportunities. The demand for more family-oriented activities, reported in the Program Master Plan, should be further addressed by provision of outdoor recreation opportunities instead of facility-oriented approach, as was suggested by the Committee. The Program Master Plan reports that the community expressed a need for stronger partnership with the City and better integration of programs between Kitchener and Waterloo; however, the Joint Use of Facilities Agreement recommended by the Committee should be extended to all outdoor recreation resources.

7. Holistic Approach of Waterloo Core Area

Furthermore, this research examined the core area of City of Waterloo in a holistic manner, both in terms of the definition of the physical study area and the incorporation of various disciplines. Nevertheless, the City Official Plan and Zoning By-Law, and the Uptown Strategy and Work Program differentiate between the City Commercial Core as the major business and commercial centre in the City, and the areas surrounding the Commercial Core that support and complement all activities within (City of Waterloo, 2002b; 2002e). Especially in

regards to the outdoor recreation, the City's definition of a core area should be expanded to include outdoor recreation resources such as Waterloo Park, which is an important amenity to core area residents. Interestingly, and in spite of disagreement among some participants of this research, the study confirmed that core areas could not have the same ecological integrity as more natural areas in the wilderness. Certain flora and fauna species are particularly suited to live, and are successful, in the core area environment.

8. Outdoor Recreation and Public Art in Core Area

Specific to the Waterloo core area, the Neighbourhood Density Study confirmed the distinctness of the core and as such established specific land use policies for the Central Residential District. The Study also indicated lack of open space in the Central Residential District compared to the amount prescribed by the City Official Plan. According to the Department of Regional Economic Expansion (n.d.), the City's land capability for outdoor recreation is low and likely lower within its core area. The Department rates the City's lands as Class 6 out of seven classes. Lands within this class "lack the natural quality and significant features…but have the natural capability to engender and sustain low total annual use based on dispersed activities" (Department of Regional Economic Expansion, n.d.). The City should offer services and programs for outdoor recreation in the core and broaden its age categories for recreation participants into exclusive age groups—accounting for the phenomenon of the "active old" or "well seniors"—and separately for families (Kelly, 1999). The City should research various age classification approaches in order to determine the method that would be most appropriate in the context of the demographic characteristics of the population. In regards to public art in Uptown, no policy exists to encourage the incorporation of public art in the

revitalization process of the core area. One respondent commented on the importance of this issue:

> From a cultural example, incorporate public art. We have a few pieces of public art in our core, but we don't really have a policy that pushes the public art being incorporated. One area where development and cultural could come together a bit more to create that vibrant ideal.

9. Outdoor Recreation Resources and Trails

The issue of outdoor recreation and ecological integrity is somewhat addressed in the core area through documents such as the Recreation and Leisure Services Master Plan or Community Trails and Bikeways Master Plan Study. Trails and bikeways within the core area are still few and disconnected, although the Community Trails and Bikeways Master Plan Study would greatly improve the system if the recommendations were implemented. To draw on the limited ecological, cultural, and recreational resources within the core area, the trails network should be redesigned for selective use according to the Community Trails and Bikeways Master Plan. The Master Plan introduces "special purpose" routes that may include neighbourhood interpretive trails, equestrian trails, and even "single purpose" trails designed specifically for a particular recreation activity (ESG International & Stantec Consulting, 2000). These "special purpose" routes have a great potential to be able to separate incompatible uses. In addition, the City should raise public knowledge of existing outdoor recreation resources by employing several tools, such as various maps of trails and other outdoor recreation opportunities, GIS information on the City official website, or educational publications and brochures of local points of interest.

The Regional Official Policies Plan is silent on the topic of specific policies related to the core area, particularly on outdoor recreation or ecological planning in the core. No policy ensures

ample amount of green infrastructure throughout the core area for life-supporting purposes or recreational use, although heritage conservation offers opportunity to integrate ecology and recreation planning.

10. Outdoor Recreation Planning and Equity

The Recreation and Leisure Services addresses the issue of equity partially through the City's pricing policies, support services, and accessibility. In respect to pricing policies, the City of Waterloo developed a Fee Assistance program, which offers financial support (through deferred payment or partial subsidy) to its residents to encourage their participation in recreation and leisure programs and affiliated minor sports programs (City of Waterloo, 2002e). In comparison with other municipalities, the City of Waterloo has much more effective pricing policy in that its Fee Assistance program addresses those in financial need as opposed to those who are in certain demographic groups (i.e. seniors) regardless of their ability to pay full program fees.

In respect to support services, the City of Waterloo Recreation and Leisure Services also offers a Home Support Services program, which was designed to "…assist frail, isolated adults to continue to live safely in their own homes and to remain active in the community. This is accomplished by assisting them to access day to day services" (City of Waterloo, 2002e). The program assists adults and seniors through a variety of services from homemaking and transportation—which are fee-based—to free advocacy and Senior Outing Day program—a specialized recreational and supportive program.

In respect to accessibility, which was partially addressed in the former paragraph—i.e. reducing inaccessibility through various services—the Waterloo City Centre won the "BOMA International Office Building of the Year Award" (City of Waterloo, 2002e). While the Waterloo

City Centre is associated more with municipal services than with recreation and leisure services and programs, this award is nonetheless important in terms of the City's philosophy—the award being judged on building accessibility, among other functions and categories. Consistent with the work of Eichler (2000), the City of Waterloo is shifting its focus from achieving equity to reducing inequity, which demonstrates action and responsiveness to population demands on part of the City. The author further establishes interrelation between social equity and ecological sustainability, offering four possible forms of interaction between the two aspects—1) equitable/sustainable, 2) equitable/unsustainable, 3) inequitable/sustainable, and 4) inequitable/ unsustainable (Eichler, 2000). This important step is also recognized by a recreation practitioner:

> The mere fact that it's on their radar screen at the moment is a good thing. Beyond that we're developing plans.

Furthermore, the KW Barrier Free Advisory Committee addresses issues of accessibility for disabled persons and is comprised mostly of advocates with disabilities. Based on the Ontarians with Disabilities Act, 2001 (ODA) The KW Barrier Free Advisory Committee will liaise with newly established KW Joint Accessibility Advisory Committee (AAC) "to improve opportunities for persons with disabilities and to provide for their involvement in the identification, removal and prevention of barriers to their full participation in life" (City of Waterloo, 2002e). Although the Council approved a one-time grant of $2,500 to support the AAC in the implementation of the ODA guidelines, the issue of equitable participating in recreation and leisure opportunities remains largely omitted—i.e. nowhere in the ODA or the AAC guidelines is there mention of recreation and leisure. This dissatisfaction with the present system is evident in the quotation expressed by an interview participant.

> It's a political priority at the province, but they only put lip service to it as well because you don't see the resources they need to make their delivery of services

> and programs accessible…There are buildings that the province owns that you can't get into if you're in a wheelchair.
>
> Dollars, dollars, dollars. Changing people's minds and getting them to think very differently about accessibility. How do you make a park accessible for someone who's blind? You do it in a different way through smell and touch and other things, so you build the park with those things in mind.

RESEARCH QUESTIONS

Research Question 1: What is the role of outdoor recreation in the core area revitalization?

In terms of the research questions, this research found that outdoor recreation has quite an extensive role in the process of core area revitalization. While the responses were contradictory, divided between those stating that outdoor recreation was incorporated into the revitalization process and others stating that it was not incorporated, the areas of planning and ecology were integrated in their approach whereas the area of recreation was disconnected. There were nine common themes between the theoretical and practical approaches. Respondents stated that the role of outdoor recreation should be incorporated into the core area revitalization by connecting recreation opportunities and especially Waterloo Park with the core area, designating central space such as through the development process, providing ample supply of parkland and recreation opportunities including outdoor education and trail systems, incorporating natural spaces, including public values, designing compatible activities, and expanding the definition of core area to include outdoor recreation.

Research Question 2: How might sustainable and vibrant core areas be achieved through appropriate forms of outdoor recreation planning?

In answering the second research question, this study identified appropriate forms of outdoor recreation planning through which sustainable and vibrant core areas may be achieved. While the responses were contrasting, divided between those stating that the City was

unsuccessful at achieving a vibrant core area through its outdoor recreation planning and others stating that the City was successful, the areas of planning and ecology were most integrated in their recommendations. There were twelve common themes between the practical and theoretical approaches. However, practitioners differed greatly from the academics in that they stated the City was successful at achieving the objective, whereas the academics believed the City was unsuccessful. Respondents stated that appropriate forms of outdoor recreation planning might include big events, a variety of outdoor recreation opportunities offered by the Waterloo Park and the Recreation Complex, attractive natural features and a pedestrian environment, community development projects, incorporation of applied research into planning for outdoor recreation, user-defined approach and incorporation of public values, connectivity with the core area, alternative modes of transportation, trail systems, as well as urban planning that is sustainable and has a creative non-traditional approach.

Research Question 3: What is the working relationship between land use planning (core area), outdoor recreation, and urban ecology?

Finally, in answering the third research question, this study determined that a poor working relationship exists between planning, outdoor recreation and ecology. While the responses were divided between those stating that the working relationship between these disciplines was poor—in other words these areas were not integrated, others stating that it was good, and the remainder suggesting recommendations for improving this relationship, all three disciplines were disconnected in their approaches. However, respondents in the outdoor recreation discipline made the most recommendations for improving the working relationship, while they also presented most input stating that the relationship was good. There were eight common themes between the practical and theoretical approaches—compared to nine in the first

research question and twelve in the second research question—and as such this research question was least integrated between theory and practice. Respondents recommended that the working relationship between the three areas should be strengthened by improving theoretical and political implications, incorporating cultural implications, ecological restoration, and institutional design.

In summary, results achieved from the research questions were consistent with the literature and the document analysis. The research found that the areas of urban planning and ecology planning were integrated in most cases, whereas outdoor recreation planning was excluded from the planning process and to a lesser extent from ecology planning, although its potential is equally compatible and complementary. Furthermore, the study determined that there was a poor working relationship between the three disciplines of urban planning, outdoor recreation planning, and ecology planning.

PROPOSED SOLUTIONS

Regarding innovative and ecologically compatible planning design approaches, the City of Waterloo and the Green Roofs for Healthy Cities seems to be progressive on this initiative, having had launched a "Waterloo green roof infrastructure workshop: Exploring the benefits of green roofs," which took place on April 9, 2003. Also important to the ecological health of the community, the City is looking at transportation planning and is currently evaluating the Region's proposal for a light rail transit system in the Kitchener-Waterloo area. As arts and culture are part of both the revitalization process and recreation, a workshop launched by CURA on March 28, 2003 has examined the role of arts and artists in the context of a core area revitalization and that of a mid-size city. This also expressed by an interview respondent:

> I see lots of other cities that are using the words "vibrant" and "sustainable" cores that incorporate the public art. We don't do that here. We have public art in our core. We have a few pieces, but it's usually the donation of a benefactor and we don't really have a policy that pushes the public art being incorporated.

In its management and revitalization efforts, the City of Waterloo should investigate the Townscape Heritage Initiative Evaluation as a method for evaluating and monitoring the built and natural infrastructures, which are important to the character and identity of the City (See Townscape Research Unit, 2000). This approach was also supported by an interview respondent:

> I mean, if you use that kind of thing to measure change, and if you're trying to intervene in ways to make things better and you want to show change that's positive, then that's the technique for doing that. …I think that the City of Waterloo could use that technique to help them measure progress.

Acknowledging the City's progress within the themes identified both by the literature and by the interview respondents, the Waterloo core area could still greatly benefit from integrating an outdoor recreation approach into efforts directed at its revitalization and enhancement. Several solutions depicted on the map below were supported by the literature, the participants of this study and the City policies. (See **Figure 6.2** for proposed solutions).

First of all, the general agreement was to bring the Laurel Creek up to the surface and create a linear corridor with green infrastructure and entertainment alongside the Creek and the railway corridor. One respondent stated: "If…the Laurel Creek wasn't in a pipe, there may be some ecological principles that would be applied there." Cafes, restaurants and shops should make the area more attractive to pedestrians especially in the commercial sector of the city core, whereas the unbroken green infrastructure and watercourse should provide a variety of recreational opportunities throughout different core sectors. Similarly, Hierlihy (1991) suggested the placement of cafes and restaurants near playgrounds, thus allowing parents to enjoy themselves while supervising their children.

Another issue that was discussed in the literature and voiced by the participants of this study was the maintenance of linkages through green spaces and waterways as means of facilitating pedestrian movement and an organizational principle for developing green spaces (see sections 3.1.1. to 3.1.2. of the Project 2007: A Vision for Uptown, City of Waterloo, 2002b). In particular, participants felt that several important features and building structures in the core should be connected—i.e. the Waterloo Park with the Recreation Centre and the City Centre. One respondent stated:

> …The [Recreation] Centre…[is] not far from the downtown, but it's far enough that people won't walk there and it's not a nice walk unless you go through the park, but people won't do it. So there's no synergy, you know downtowns are all about synergy. There's not much synergy between the park and the downtown, and certainly virtually none at all between the [Recreation] Centre and the downtown. That's too bad.

Figure 6.2 Core Area of City of Waterloo—Proposed solutions. Adapted from: Regional Municipality of Waterloo Digital Orthophotos, 2000; City of Waterloo Municipal Data, 2003.

In particular, the Cenotaph is located in the City Centre Park, which is tucked away from the main street and which is not a significant place that conveys the importance of the structure as invested by the community. As such it does not attract people and many do not know of its location. More attention should be given to the place or the structure should be relocated. This issue was also expressed by an interview respondent:

> …War memorials, war monuments, statues, and typically those kinds of public objects, public art like that was placed in the focal point of the community, the centre of the community, because it was expressing the values of the community. …I give that as an example of the centre lessiness of Waterloo. There is a Cenotaph to Waterloo; they always had one. It's been moved at least once, maybe more, and it's in a middle of a parking lot, and I doubt if hardly anybody knows where it is.

With respect to the above concerns around connectivity between important built features and through green spaces and waterways, this study recommends the development of six "green bridges" (Girardet, 1992; **Figure 3.3**) linking the following:

1) Waterloo Recreation Centre with Waterloo Park on Father David Bauer Dr.
2) Waterloo Park with the Library on Dupont St. W. and Caroline St. N.
3) Waterloo Park with the Town Square Mall on Erb St. W. and E. and Caroline St. S. and N. alongside the railway corridor and the Laurel Creek
4) City Centre and Cenotaph with Town Square Mall linking back to the railway corridor and the Laurel Creek on Regina St. S.
5) Linking the City Centre with the Laurel Creek and the green corridor on Erb St. E., Laurel St. and Peppler St., and
6) Connecting the City Centre with Black Willow Link on Bridgeport Rd. E.

Participants also suggested that certain buildings—such as the City Centre or the Waterloo Recreation Centre—should be given more attention since they are separated from what appears to be central and attractive to the residents of the City. Such attention could be given through the introduction of green roofs on top of these buildings to give them a distinct character, to portray the City as being visionary in its approach, and to attract more people.

Green roofs could be approached for a variety of educational and recreational uses, such as outdoor education, gardening, or sports.

Currently there are very few and disconnected on-road and off-road trails passing through the core area of the City. Many new trails and bikeways are being proposed by the Trails and Bikeways Master Plan Study undertaken by City of Waterloo. (See **Figure 3.3** for the map of trail and bikeway network). In this regard, the railway corridor reinforced by the opening up of Laurel Creek could serve as an organizational principle for developing green spaces and enhancing outdoor recreation opportunities, including cycling and walking. At the present time, however, the system is inefficient as clearly expressed by this interview respondent:

> Probably the worst thing [the City has] done from the outdoor recreation perspective…I like to bike to work as a matter of couple issues: one, sort of ecological conscience, and I don't like to drive to work. As good as the trail system is in town, the bicycle commuting system is equally bad. So in terms of a commuter perspective the City has done virtually everything they can in my opinion to discourage me from biking to work.

In addition, University of Waterloo does not have bicycle paths on campus nor good bikeway connections with the core area, which creates dangerous environment for cyclists. Moreover, the University does not facilitate bicycle storage on campus, other than its newly created "yellow bike" program. The dissatisfaction with the present University of Waterloo bicycling policies and efforts in comparison with other places are expressed by one respondent:

> …Virginia, Oregon…unbelievable setting! Trails, both on the road, adjacent to the road, and totally separate from the road. And also they did a lot of other things that made bicycle commuting welcome. They had covered bike racks on campus, they allowed faculty and grad students who had offices to put their bicycles inside…

As suggested above, the University should encourage bicycle use by having safe bicycle paths on campus and connected to the core area, as well as by providing bicycle amenities such as roofed

bike racks or storage rooms. The City of Waterloo would need to enforce such efforts with policy and focused planning practices, in coordination with the Universities.

Closely related to the above issue, the City does not regard University students as part of its resident population, even though it is a student town that houses two Universities within its municipal boundaries. Although all University students are provided with recreation opportunities on campus, they are not provided with outdoor recreation amenities to the same extent. This is one area where the City could extend its outdoor recreation services to University students. At present, the City's plans encompassing the outdoor recreation services and resources are often insufficient and misleading. As demonstrated by the response below, some demographic information can be misapplied when narrowing the City's focus solely to its residents. In this case, Waterloo being a student town will likely experience a continuous and steady participation in cycling, regardless of its own resident population trends, since students favor this cheap and quick mode of transportation. This exemplified by one respondent:

> Certainly as the population is aging there will probably be a decline overall in the rate of cycling. I think participation in cycling tends to drop with age, whereas I think it tends to actually increase with age with regard to walking.

RECOMMENDATIONS FOR FUTURE RESEARCH

1. Current Information on Outdoor Recreation Resources and Management Options

Since Brenner's (1976) *Wildlife Habitat Improvement Plan for Waterloo Park* report was developed for the Wildlife Advisory Committee, there are no similar newer documents that explore the issues related to wildlife habitat and the natural resources of the Park. The Waterloo Park Master Plan is deficient in the scope of such issues; therefore a document addressing wildlife management should be developed. Future research should further identify all existent

sites of outdoor recreation within the core area, their ecological value (i.e. native flora and fauna) and attractiveness to users, as well as their compatible uses.

2. Inventory of Outdoor Recreation Resources, Opportunities and Users

In addition to the existent sites, potential sites for outdoor recreation should be identified which would expand the green network and recreation opportunities. The research should specifically approach the core area of Waterloo and concentrate on outdoor recreation resources and opportunities. No data currently exist on the outdoor recreation and leisure users within the core and on the inventory of green spaces. The City staff should identify the core area and design ecological mapping, where the intensity of recreation needs is mapped through geographically referenced counts.

3. Educational Resources for Outdoor Recreation Information Sharing and Planning

In particular, some kind of educational resource should be developed, such as a GIS map of all green areas and their differences in value in terms of ecological integrity and outdoor recreation preferences (i.e. grass lawns versus urban parks versus native woodlot remnants) and topography (i.e. water drainage) in the City of Waterloo core area. Such maps could guide the land use planning and resource development for outdoor recreation in terms of the core area revitalization. Similarly, no data exist on the outdoor recreation users of outdoor resources within the Waterloo core area, where University students are not considered as part of the population.

4. Outdoor Recreation Participant Input

Periodical questionnaires should be implemented targeting questions at their preferences, reasons for participation, values and ethics, etc., in order to improve program planning for outdoor recreation that is not only popular but also compatible with ecological functions of the

environment. For instance: What are the user groups of current outdoor recreation participants in the City of Waterloo core area? What are the participation patterns and outdoor recreation preferences of current Waterloo user groups? What are the outdoor recreation preferences of potential Waterloo user groups? Do University students participate in outdoor recreation within the core area?

REFLECTIONS & RECOMMENDATIONS

In all City projects, significant changes are best introduced in stages so that their impacts can be evaluated before they affect an area on a large scale. Pilot projects are valuable since "they are convenient as practical experiments, are easy to evaluate, and if they fail the damage is restricted and much can be learned from them …[;] successful projects can provide important examples and become the basis for policy on a larger scale" (Vegt et al., 1994: 37). They "are often the most effective learning tools, and are particularly well suited to green infrastructure" (The Sheltair Group, 2001: 40).

The following pilot projects are recommended to be undertaken by the City of Waterloo. These recommendations are classified into policies, programs, and projects, and discussed in the following paragraphs.

Policies

1) As Waterloo Park shows some negative impacts of recreational use (soil erosion, degradation of paths, vehicular and pedestrian interaction), the planning of all its components needs to be evaluated and managed differently. It is suggested that the management will be shifted towards user management framework (i.e. ROS) and selective use through zoning (i.e. offer more passive outdoor recreation and outdoor education opportunities). The Park should still

offer a wide variety of uses, however, controlled by selective use versus the multiple use approach in order to encourage a particular activity within a compatible area of the Park. Various areas of the Park should be separated by permitting certain uses according to the sensitivity of the area and its opportunities for recreation, education, and leisure.

2) Different trails or sections of trails should be designated for different recreation activities according to the sensitivity of the area; i.e. hiking and other passive activities such as bird watching or photography where there is more vegetation and wildlife, and where the natural areas are more sensitive. These trails and sections should be managed according to the most applicable framework, such as ROS. All trails should be further connected into a network that would pass through the City and its core area. These trails and bikeways should offer opportunities for both passive and active recreation pursuits.

3) The creation of community-developed and managed open spaces (i.e. gardens, playgrounds and parkettes) should be encouraged in urban neighbourhoods. These would fulfill the following functions: complete the link with other green areas especially in the core area of Waterloo where the Waterloo Park is surrounded mostly by residential and commercial areas; offer additional outdoor recreation and leisure opportunities scattered within the residential neighbourhoods and so more accessible to local residents; offer opportunities for self-expression and add to the character of individual neighbourhoods therefore likely to foster pride and discourage vandalism; as well as likely to foster local ownership and maintenance therefore increase people's presence and sense of safety; and finally encourage community action and land conservation (See Francis et al., 1984). Such an approach is further supported and facilitated by the Neighbourhood Density Study and the City's plan to purchase small neighbourhood parkettes for active and passive recreation.

4) Outdoor recreation could do both, help revitalize the City from a natural resource base perspective, and help stimulate the business sector by introducing small distinct services to the core. By establishing or enforcing ecological grid pattern prior to urban development, the City would likely reduce existing land use conflicts addressed in the City Official Plan.

5) For city users, there should be a wide variety of parks and open spaces for different uses from passive to active recreation (Sandström, 2002). To be more efficient, especially in the core area of a city, zoning or selective use for different recreational uses within a park should be promoted through landscape design and program planning.

6) The Planning Department, the Recreation and Leisure Services, and the Parks and Works Services should all be involved in the early stages of planning and development of City's green spaces in order to integrate different approaches and to avoid lack of ownership.

7) Supporting the premise that the City's environmental and urban planning policies should be synchronized, City officials need to incorporate outdoor recreation into the equation for the Environmental Strategic Plan to be fully successful in the long term.

Programs

1) The educational approach directed at the local residents might be strengthened through the design of an interactive website of all outdoor recreation resources within the City, including the trails and bikeways system. A virtual tour of the network could include GIS data and photographs. Through established links, the public could provide input and participate in questionnaires posted by the City or the Region.

2) Introduce University students to the City of Waterloo's outdoor recreation resources, i.e. through hiking on the City's trails during orientation week.

Projects

1) Accepting that our underlying goal is the improvement of integrity for the Waterloo Park ecosystem, a number of related pilot and long-term projects should be undertaken. Some of the pilot projects may include getting rid of the wildlife display and replacing it with native vegetation to attract birds and wildlife, and educating public on the significance of natural landscaping. Other such projects may include improving the design of the Park by separating the passive and active outdoor recreation uses of various parts of the Park. This would provide different recreational opportunities (bird watching, photography and wildlife viewing) and to a lesser degree help maintain the natural integrity of the ecosystem. Some of the long-term projects should include seasonal or other based surveying of Waterloo Park users in order to provide successful programming on a continuous basis and to monitor changes and trends. Other projects may include coordinating resources for outdoor recreation with adjacent school boards and Universities, and recruiting volunteers and stewards from these sources.

2) As all issues of the Waterloo Park are linked with those of Laurel Creek and Grand River watersheds, at least to some degree, specific projects outside of the Park boundary should be investigated and pursued. The Park should coordinate stewardship and volunteer resources on the scale of Laurel Creek and Grand River, which would promote integrated understanding and increase numbers of involved parties.

3) Several creative ecological design features could be developed within the core area, such as a rooftop garden on the City Hall building. Visitors might be charged for an educational session with a guide. Other forms of ecological technology, such as “green” buildings, solar energy and heating, or alternative pavement surfaces, could be incorporated into the revitalization of the core area, or simply to attract more attention to the building and its function

in the City. Also, the development of a green bridge may facilitate the link between the City Hall and other trails and commercial sectors.

4) The context of heritage conservation could be easily expanded to include outdoor recreation, and heritage and education in order to promote the Region and the City of Waterloo, and to expand its economic prosperity through recreation and tourism. For instance, the Green Tourism Association in Toronto developed a guide to the City's greenspaces and other attractions (See Tremble, 2000). The City of Waterloo could market its natural resources and outdoor recreation opportunities in a booklet similar to that of the City of Toronto's Green Tourism.

5) Every City planning department should indicate all possible left over or wasted spaces on a map to see where linkages or new outdoor recreation uses could occur.

6) Perhaps certain parts of trails—cross sections or parallel to the main trail—could be designed and designated specifically for certain types of recreation activities according both to the sensitivity of the area and to its cultural and ecological value. For example, the trail could have a parallel "sister trail" branching off to a secluded woodlot for birdwatchers, or to a local museum for those interested in cultural heritage (see section 4.1.4 Routing and Design) (ESG International and Stantec Consulting, 2000).

7) Another option for the variety of park types could be an expansion of uses within a single park through selective design or zoning and service provision, thus encouraging a particular activity within a compatible area of the park.

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APPENDIX 1: INTERVIEW QUESTIONS

Demographics & Characteristics of Respondents

1. What is your current position?
2. What is the name of your place of employment/organization?
3. How many years have you held this position or worked at this institution?
4. Which of the following four areas would you be most familiar with: outdoor recreation, urban planning, core area revitalization, ecological planning?
5. Are you more familiar with practical experience or theory in this area, or both?
6. Have you participated in any way in the City of Waterloo efforts directed at the revitalization of the core area?
7. If so, what did your participation entail?

1) Theory versus practice.

1. Please provide your definition of the following terms:

Planning experts and practitioners - core area, city revitalization, urban planning, sustainability.
Recreation experts and practitioners - outdoor recreation, sustainability, outdoor recreation program planning, selective use.
Ecology experts and practitioners - urban ecology, ecological planning, sustainability, naturalization.

Do any other terms come to mind that you would like to define?

2) Gaps in city revitalization, outdoor recreation, ecological planning and urban planning.

Planning / Recreation / Ecology experts and practitioners:

2. Can you identify a gap/insufficiency in *theory* (general principles, assumptions, governing body of knowledge) in any of the listed areas: core area revitalization, outdoor recreation, ecological planning, and urban planning?
3. Why in your opinion is there such insufficiency?
4. What are the challenges associated with meeting this insufficiency?
5. How does the City of Waterloo address these challenges?
6. How should the City of Waterloo address these issues in the future?
7. Can you identify a gap/insufficiency in *practice* in any of the listed areas: core area revitalization, outdoor recreation, ecological planning, and urban planning? *(Follow questions 3 to 6).*

3) Research Questions

8. According to your knowledge and experience, is outdoor recreation incorporated in any way into the revitalization efforts targeted at Waterloo core area?
9. What could be the role of outdoor recreation in the revitalization process of the City?
10. Please give examples of how sustainable and vibrant core areas could be achieved through outdoor recreation planning.
11. What might be the most appropriate outdoor recreation planning approach for the core area of Waterloo?
12. Does the City of Waterloo follow this approach?
13. Are the three areas (land use planning (core area revitalization), outdoor recreation and urban ecology) integrated at the level of City of Waterloo?
14. Is there room for improvement?
15. What would you suggest?
16. Is there anything else you would like to add?

APPENDIX 2: INFORMATION LETTER & FEEDBACK LETTER

INFORMATION LETTER

School of Planning
Faculty of Environmental Studies
University of Waterloo
Waterloo, ON, N2L 3G1

Date, 2002

Dear *(participant's name):*

This letter is an invitation to consider participating in a study conducted by myself as part of my Master's Degree in the School of Planning at the University of Waterloo under the supervision of Professor Mark Seasons. I would like to provide you with more information about this study and what your involvement would entail if you decide to take part.

Past research in the area of urban core revitalization has concentrated on the economic or sociological approach, addressed through efforts such as Smart Growth, pedestrianization or residential development. In this study, revitalization efforts targeted at the core area will be approached through the principles of ecology and outdoor recreation rather than economy, therefore increasing our understanding from a different perspective. Specifically, this study is designed to determine the role of outdoor recreation in core area revitalization; the ways in which sustainable and vibrant core areas may be achieved through appropriate forms of outdoor recreation program planning; and the working relationship between land use planning (core area planning), outdoor recreation, and urban ecology.

As this study targets various areas of expertise between theory and practice, I would like to include your input on *planning / outdoor recreation / ecology*. Based on your knowledge and experience, I believe that you are best suited to speak to the various issues, such as Smart Growth, core area revitalization, urban planning, recreation management, etc.

Participation in this study is voluntary. It will involve one structured interview of approximately 30 minutes in length and a focus group interview of about three hours to take place at separate times in a mutually agreed upon location. The questions for the structured interview will be sent to you in advance through e-mail. You may decide to withdraw from this study (or one type of interview) at any time without reprisal by advising the researcher of this decision. With your permission, all interviews will be tape-recorded to facilitate collection of information, and to be later transcribed for analysis. All information you provide is considered completely confidential and you will remain anonymous.

I will contact you via phone in five days to receive your decision on participating in this study. If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me at (416) 289-7102 or by e-mail at ag_draco@sympatico.ca. You can also contact my supervisor, Professor Mark Seasons at (519) 888-4567 ext. 5922 or by e-mail mseasons@fes.uwaterloo.ca. This project has been reviewed by, and received ethics clearance through the Office of Research Ethics at the University of Waterloo. If you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes at (519) 888-4567 ext. 6005.

I trust that the results of my study will be of benefit to those organizations directly involved in the study, other institutions, as well as to the broader research community and to the general public.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours sincerely,

Agnes Nowaczek
Student Investigator

FEEDBACK LETTER

School of Planning
Faculty of Environmental Studies
University of Waterloo
Waterloo, ON, N2L 3G1

Date, 2003

Dear *(participant's name):*

I would like to thank you for your participation in this study, entitled "Planning for selective use and ecologically compatible forms of outdoor recreation: One means of core area revitalization in the City of Waterloo, Ontario." As a reminder, the purpose of this study is to determine the role of outdoor recreation in the core area revitalization; the ways in which sustainable and vibrant core areas may be achieved through appropriate forms of outdoor recreation program planning; and the working relationship between land use planning (core area planning), outdoor recreation, and urban ecology.

The data collected during the interviews will greatly contribute to a better understanding of the role of outdoor recreation and urban ecology in urban planning as it pertains to core area revitalization. Furthermore, the collected information will guide recommendations for advancing and expanding revitalization efforts in the City of Waterloo.

Please remember that any data pertaining to you, as an individual participant will be kept confidential. Only some anonymous quotations from all interviews will be incorporated in the study. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community and interested government parties through presentations, executive summaries and journal articles. If you are interested in receiving more information regarding the results of this study, or if you have any questions or concerns, please contact me at either the phone number or e-mail address listed at the bottom of this page. If you would like a summary of the results, please let me know now by providing me with your e-mail address. When the study is completed, I will send it to you.

As with all University of Waterloo projects involving human participants, this project was reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. Should you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes in the Office of Research Ethics at (519) 888-4567 ext. 6005.

Sincerely,

Agnes Nowaczek
Phone: (416) 289-7102
E-mail: ag_draco@sympatico.ca

APPENDIX 3: CONSENT FORMS

CONSENT FORM

I agree to participate in a study conducted by Agnes Nowaczek of the School of Planning, University of Waterloo under the supervision of Professor Mark Seasons. I have made this decision based on the information I have read in the Information Letter. In addition, I have had the opportunity to receive any further details about the study. I understand that I may withdraw this consent at any time without penalty by telling the researcher.

I also understand that this project has been reviewed by, and received ethics clearance from the Office of Research Ethics at the University of Waterloo, and that I may contact this office if I have any concerns or comments resulting from my involvement in the study.

Participant Name (Please print): _____

Participant Signature: _____

Witness Signature: _____

Date: _____

CONSENT FORM FOR THE USE OF ANONYMOUS QUOTATIONS

I understand that the interviews will be audio taped to facilitate the collection of information with the understanding that all information which I provide will be held in confidence and I will not be identified in the thesis, summary report, or publication. I acknowledge that I may withdraw this consent at any time by advising the researcher.

Participant Name (Please print): _____

Participant Signature: _____

Witness Name: _____

Witness Signature: _____

APPENDIX 4: DIRECT QUOTES FROM REGIONAL OFFICIAL POLICIES PLAN & CITY OFFICIAL PLAN

Specific Policy Sections	Regional Official Policies Plan
Natural Habitat Network 4.1.5	"The Region recognizes the importance of natural corridors in maintaining the ecological integrity of the Regional landscape… a) identify regionally and locally significant natural corridors through the completion of watershed studies… b) …provide for the appropriate conservation, protection or enhancement of regionally…and locally significant natural corridors."
4.1.6	"Sensitive groundwater areas related to potable water supply…will be subject to the provisions of Section 5.2…"
Grand River Corridor 6.4.1	"The Region and each affected area Municipality will jointly adopt …detailed mapping of the Grand River Corridor which identifies: a) features of natural and cultural heritage; b) features of recreational and scenic value…"
Community Core Areas 7.4.1.2	"Area municipalities will establish policies in their Official Plans to promote the vitality of the community core areas as the primary focus of their respective communities and to achieve the following objectives which are of Regional interest: a) a mix of residential, employment…, and institutional uses which enable people to live and work in close proximity; b) enhanced transportation opportunities for pedestrians, bicycles and transit; c) medium and high density developments and land use patterns supportive of transit service where available or where planned to be available; and d) the provision of a variety of housing types."
Regional Roads and Community Core Areas 11.7.2	"Where area municipalities have raised issues relating to enhancement of transportation opportunities that favour pedestrian traffic, bicycles and transit…the Region will…consider modifying the desired operating, design and road dedication standards in community core areas."
Scenic Regional Road Corridors 11.8.1	" The Region recognizes that factors such as natural features, cultural heritage, recreational opportunities, and scenery which characterizes the region, contribute to the scenic value of regional road corridors, and as such, should be present along every regional road."
11.8.4	"Area municipalities are encouraged to establish policies in their Official Plans to protect the scenic value of regional road corridors, including the view from the road to prominent heritage buildings or natural landscape features."

Specific Policy Sections	City of Waterloo Official Plan
Basis of the Plan 1.6.2.1	"The Plan anticipates a City population of 101,000 by the year 2011. This represents a compounded average annual growth rate of 2.5%. This estimate includes an off-campus student population of 10,200…"
1.6.2.4	"The Plan recognizes the City Commercial Core/Uptown Area as the main commercial focus of the community. Policies in the Plan are geared to promote the economic well-being of this commercial focus."
1.6.2.5	"Waterloo's economic base is strongest within the tertiary (service) sector…"
1.6.2.12	"The Plan recognizes the Laurel Creek Watershed Study and incorporates watershed goals, objectives and policies to guide future development and [to] protect the environment. It is recognized that watershed and sub-watershed planning are integral to the municipal planning process."
Goals of the Plan 1.7.2.2	"To provide for continued and balanced growth of shelter, employment, consumer, and recreational opportunities for existing and future residents."
1.7.2.3	"To protect, manage and enhance natural resources including land, surface water and groundwater quantity and quality, forest and wildlife."
1.7.3.11	"To rehabilitate and transform stream corridors into attractive community assets consistent with historical, recreational, visual or other cultural amenities located along stream corridors. Where appropriate, the natural vegetative canopy along streams should be maintained, restored and enhanced by maintaining the environmental continuity along stream corridors and providing open space linkages to the existing municipal open space system."
1.7.3.13	"To direct future parks and recreation development to satisfy the changing and diverse needs of the growing population and the leisure time experienced by this population."
1.7.3.36	"To promote the development and revitalization of the City Commercial Core/Uptown Area and improve its identity as the major business and commercial centre in the City."
1.7.3.38	"To reduce existing land use conflicts, where feasible."
1.7.3.41	"To protect pedestrians from the impacts of wind caused by the inappropriate placement, massing or design of buildings within City Commercial Core/Uptown Area."
City Form 2.2.8	"In addition to the creation of major park areas, Council supports the development of a system of parks which evolve in a linear form thereby creating the spatial setting for an Access Link/Community Trail System to facilitate pedestrian/bicycle movement throughout the City and provide pedestrian/bicycle access to major community facilities. This system will utilize parkland, open space and other City facilities such as local streets…"

Specific Policy Sections	City of Waterloo Official Plan
City Form 2.2.9	"Council shall promote the continuance and development of the park and institutional open space corridor which exists from Waterloo Park adjacent to the City Commercial Core/Uptown Area, through the lands owned by the University of Waterloo, and including the Laurel Creek Conservation Area."
Environmental Constraint Areas 2.3.2	"Environmental Constraint Areas shall be used primarily for the preservation and conservation of the natural environment. The policies for Environmental Constraint Areas are established to protect natural functions, to enhance recreational opportunities, to preserve scenic natural landscape features and to ensure control of permitted development and required public works in order that the impact on the natural environment is minimized."
2.3.11.1.5	"Outdoor recreation uses operated by a public authority are an appropriate use of flood plain lands."
Urban Design 2.8.2.3	"[It shall be policy of the City of Waterloo] to reduce the visual impact of parking areas and asphalt within the City Commercial Core/Uptown Area through efforts to "green" or soften the urban landscape;"
2.8.2.5	"To facilitate the integration of a linear parks and/or open space system which may include a community trail system, into subdivision design and redevelopment proposals, and where feasible, into the existing central areas of the City;"
City Commercial Core/ Uptown Area 3.2.2.1	"The City Commercial Core classification within the commercial hierarchy is generally defined as the Uptown Area of the City of Waterloo. This area represents the City's major focus of economic, cultural, and administrative activities."
Non-Conforming Properties 5.10.1.1	"Any land use existing on the date of approval of this Plan that does not conform with the land use designations as shown on Schedule 'A' and Schedule 'A1' or the policies related thereto, as a general rule, should cease to exist in the long run."

APPENDIX 5: RESEARCH FINDINGS

THEME 1: THEORY VERSUS PRACTICE

1. Planning / 'Core Area'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Stability	Geographical Scope Historical Scope Mixed Land Uses Commercial Orientation	Density-Governed Definition Issue
Perspective from Recreation Group/Academics		
Geographical Scope	Commercial Orientation Density-Governed	
Perspective from Ecology Group/Academics		
Geographical Scope	Commercial Orientation Historical Scope Mixed Land Uses Definition Issue	
1. Planning / 'City Revitalization'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Economic Vitality Built Environment	Attract People Urban Vitality	Efficient Land Use Pedestrianization Management of Change Address Urban Decay
Perspective from Recreation Group/Academics		
Economic Vitality Social Vitality		
Perspective from Ecology Group/Academics		
Built Environment	Attract People Urban Vitality Efficient Land Use	
1. Planning / 'Urban Planning'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Land Use Built Environment Urban Vitality	Management of Change	Geographical Scope Long-Term Approach Multi-Disciplinary Approach
Perspective from Recreation Group/Academics		
Urban Vitality Effectiveness		
Perspective from Ecology Group/Academics		
Mixed Land Uses Built Environment	Geographical Scope	

1. Planning / 'Sustainability'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Business Ethics Need-Specific Approach	Environmental Impact Long-Term Approach Stability	Definition Issue Effective Planning
Perspective from Recreation Group/Academics		
Integrity Economic Vitality Preventive Approach	Environmental Impact	
Perspective from Ecology Group/Academics		
Resource-Oriented Human Management Ecocentric Philosophy Anthropocentric Philosophy	Definition Issue Stability	

1. Planning / Other Terms	
Academics	*Practitioners*
Smart Growth Sense of Place Streetscape	Core Area versus Inner City

2. Recreation / 'Outdoor Recreation'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Opportunity Provision Private Sector Result-Oriented	Activity-Oriented Natural Resource Base Built Resource Base Public Sector	User-Defined Meaning Public Access Intensity of Activity Multi-Disciplinary Approach
Perspective from Ecology Group/Academics		
Pleasure-Oriented Natural History	User-Defined Meaning Natural Resource Base Activity-Oriented	Intensity of Activity
Perspective from Planning Group/ Practitioners		
	Built Resource Base Natural Resource Base	Intensity of Activity

2. Recreation / 'Sustainability'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Recreation-Oriented Social Responsibility Stability System Integrity Economic Vitality Management of Change	Long-Term Approach Effective Planning Preventive Approach	Demand-Oriented Resilience Natural Resource Base Diversity of Natural Spaces Human Management Growth-Oriented Multi-Disciplinary Approach

2. Recreation / 'Program Planning'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Activity-Oriented Benefit-Oriented Stability Participants Long-Term Approach	Service Provision Resource Dependent Effectiveness	Urban Development Business Ethics Skill Level Accessibility Natural Resource Base Natural to Urban Ratio Short-Term Approach Demand-Oriented Finance Dependent Opportunity Provision
Perspective from Ecology Group/Academics		
Benefit-Oriented	Service Provision Opportunity Provision Natural Resource Base	
2. Recreation / 'Selective Use'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Use Designation Resource Dependent Geographic Designation Participant-Specific Approach	Use-Specific Approach Human Management Choice Dependent	Recreation Trends Built Resource Base Demand-Oriented Natural Resource Base Need-Specific Approach
Perspective from Ecology Group/Academics		
Geographic Designation Preventive Approach Opportunity Provision Intensity of Use Resilience	Use-Specific Approach Human Management	
2. Recreation / Other Terms		
Academics	*Practitioners*	
Economic Planning	Accessibility	
3. Ecology / 'Urban Ecology'		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Human-Nature Interaction Scope of Activities Benefit-Oriented Human-Dependent Species Negative Impacts	Environmental Design Species Capacity Geographical Scope Environmental Management Artificial Diversity	Recovery Definition Issue
Perspective from Recreation Group/Academics		
Human-Nature Interaction	Geographical Scope Species Capacity	

3. Ecology / ‘Ecological Planning’		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Environmental Management Human Management Anthropocentric Philosophy Environmental Design	Ecocentric Philosophy Land Use Approach Human-Nature Interaction	
Perspective from Recreation Group/Academics		
Environmental Management Effectiveness Human Management Preventive Approach	Human-Nature Interaction	
3. Ecology / ‘Sustainability’		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Stability Human Management Anthropocentric Philosophy System Integrity	Resource Oriented Environmental Management Definition Issue Long-Term Approach Preventive Approach	Human-Nature Interaction Ecocentric Philosophy Environmental Planning Goal-Oriented
Perspective from Recreation Group/Academics		
System Integrity Economic Vitality Management of Change	Preventive Approach Environmental Management Goal-Oriented	
3. Ecology / ‘Naturalization’		
Academics - Differences	*Repeated Themes*	*Practitioners - Differences*
Approach Flexibility Personal Value Environmental Design Anthropocentric Philosophy	Definition Issue Environmental Management Recovery-Oriented Human-Imposed Limits Ecocentric Philosophy	Efficiency
Perspective from Recreation Group/Academics		
	Recovery-Oriented Environmental Management Ecocentric Philosophy	
3. Ecology / Other Terms		
Academics	*Practitioners*	
Community Involvement Rehabilitation versus Restoration	Environmental Constraint Areas Restoration Ecology	

THEME 2: GAPS & INSUFFICIENCIES IN THEORY & PRACTICE

1. Planning		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
Urban Planning Theory Ecological Planning Streetscape Theory Canadian Urban Planning Implications of Cultural Heritage Social Sustainability	Applied Research Mid-Size Cities Implications of Natural Heritage Revitalization	Sprawl Control On-Road Bikeways Monitoring Evaluation Catch Phrases Hierarchy of Spaces Approach Analysis Research Ownership Policy Development Timing Constraints Development Industry Community Resistance to Change
2. Recreation		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
Input from Community Corporate Sponsorship Literature Public Parks Sponsorship Recreation Role in Urban Planning Keeping Up with Growth Accessibility	Financial Resources Meeting Demand Demographic Change	On-Road Bikeways Support of Ecological Values Government Bureaucracy Development Roadblocks Inside City Service Level Standard Efficient Management of Recreation Resources
3. Ecology		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
Natural Inventory Natural Ecosystem Ecology Management of Waste Management of Densities (Transportation Systems) Implementation Tools Urban Misapplications of Theories (Corridors, Linkages, Habitat Sink, Restoration)	Linkages	Ecological Restoration Manicured Parklands Pet Regulation Education (Breeding Mosquitoes, Leaf Disposal) Planning Profession Lack of Trees in the Core Access to Information Expenses Impractical Logistics Ecocentric Philosophy Anthropocentric Philosophy

THEME 2: GAPS & INSUFFICIENCIES IN THEORY & PRACTICE

Questions 3 & 4: Reasons for and challenges associated with gaps and insufficiencies.

1. Planning		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
No research on mid-size cities Lack of cooperation Interdisciplinary interaction Project replicability Partnerships Provincial support of sprawl Density versus quality of life Research sponsorship	Inertia Unchanged view of the core Preferences & attitudes Stakeholder control Monitoring & evaluation Lack of time/resources Constraints on planners Anthropocentric philosophy Applied research Resistance to change Education Political constraints Limited practical options Competing built & natural use Change-governed approach	Non-planning governed development Human error in forecasting Short-term approach No link between core-city functioning Professional limitations Well established system Wastefulness of cities Car-based development Rail system use Recognize business sector potential Private land ownership Transparent participative process
2. Recreation		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
Transparent participative process Marketing philosophy Urban focus in recreation Competition for funding City growth Accessibility Interpretation of public input Inertia Research sponsorship Public rec. service pricing & marketing Lip service Resistance to change Recreation resources In-depth research	Constraints on planners Preferences & attitudes Government inefficiency Political/financial constraints	Stakeholder control Costs of bicycle infrastructure Multiple vested interests Changing demands Changing demographics Priorities Costs of car reliance Well established system Change-governed approach Applied research High service level provision Partnerships

3. Ecology		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
Anthropocentric philosophy Outdated market economy Evolving marketing concepts Misunderstood marketing concepts Policy conflicts Lack of cooperation Change-governed approach Government outlook System captivity Land taxation Interdisciplinary interaction	Education Stakeholder control Professional expertise Preferences & attitudes Public perception	Private land ownership Constraints on planners Monitoring Laurel Creek revitalization Inapplicable ecological-urban concepts People's rights Inclusion in decision making Balance green & built space Urban-imposed constraints Well established system Realistic solutions Wetlands-driven planning

Questions 5 & 6: Challenges addressed by the City now and in the future.

1. Planning		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
Not Effective		
Lip service Sprawling development Poor air quality Evaluation approach High density approach Townscape evaluation Waterloo Park-Uptown link Design implications Exclusive choices Monitoring	Transit system Unique core experiences Decision-making process	Bicycle access to Uptown Region-governed development Politics Open space versus built form
Effective		
New developments City initiatives Applied research Change-driven approach Research sponsorship	Academic partnerships Ecological planning	Successful outdoor recreation Culture/housing-governed revitalization Policy applicability Professional education Creative thinking Transparent participative process

2. Recreation		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
Not Effective		
Interpretation of public input Revitalization efforts Pricing policies Participative process	Government-imposed barriers Service distribution Entice public to live Uptown	Bicycle lanes Campus policy re bike storage Service level provision Funding Expectations versus reality Personality-driven approach Political agenda Short-term approach Holistic planning for growth
Effective		
Government marketing practice Consumer-driven service provision Upgrading job skills Creative thinking Recognition of accessibility issue Management of recreation problems	Applied research	New development Trail system Connectivity of open spaces Recreation facilities Participative process Academic partnerships Setting priorities Education Abandoned land use
3. Ecology		
Theory - Differences	*Repeated Themes*	*Practice - Differences*
Not Effective		
Invasive plant species Circulation of materials in core Transportation system Inventory of natural remnants Access to suburbs Land taxation Incorporate science approach	Natural systems promotion Linkage strategy Common interest with developers Benign building materials Stakeholder control Professional expertise Policy limitations	Modern subdivision planning Input from local env groups Deforestation Wetlands given total priority Media involvement Education Urban plant promotion in core Restoration of Laurel Creek
Effective		
Linkages Natural systems promotion Education Media involvement Conservation areas/greenways Public input process Academic partnerships Inter-disciplinary education	Environment First Policy Environmental initiatives	Invasive plant species Local environmental groups Information on core area Efficient use of resources Staging work over time Restoration of contaminated land

RESEARCH QUESTIONS

Research Question 1: What is the role of outdoor recreation in the core area revitalization?

1. Planning		
Category	Code	Sample Quotes
Outdoor Rec. Not Incorporated Academics	1.Connect recreation with core 2.Waterloo Park	"…combine the activities in the park with what takes place downtown and have it as continuum." "…it's not a big advantage in terms of outdoor recreation."
Practitioners	1.Recreation provision 2.Incorporate public values 3.Incorporate natural spaces 4.Design compatible activities 5.Development process	"…we have less available amenity spaces for people [in the core district] than we do out in some of the more suburban residential areas." "…bringing some of the values into play that people have identified with, trying to reduce traffic & air pollution." "…opportunity to introduce natural spaces into the downtown that will help make [it] a more welcoming environment." "…the role of shopping centers [as rec.] & I think the same argument can be made for downtown." "…we need to focus more on enhancing that on a pedestrian level for people to use as rec. space."
Academics & Practitioners	1.Designate central space	"…if the city had a definable center…out. rec. would take place in that place and where people would gather just to socialize."
Outdoor Recreation Incorporated Practitioners	1.Supply of parkland 2.Development process	"…we're pretty active on acquiring parkland and maintaining parkland." "…the Housing Survey [identified] that people chose to live uptown…because of the parks & playgrounds & the mature street trees."
Academics & Practitioners	1.Trail systems 2.Recreation provision 3.Waterloo Park	"…trails…not only provide the rec. opportunities for residents in & around the core, but bring people into the core & around the core." "…the Rec. Complex…is a large-scale facility that draws the community, but it also provides the day-to-day active rec. for the residents." "…the more we talk to people for the Uptown Study, [the more we realize] how important it is to people just as this big green space."

2. Recreation		
Category	Code	Sample Quotes
Outdoor Rec. Not Incorporated Academics	1.Waterloo Park 2.Incorporate natural spaces 3.Different definition approach	"Waterloo Park isn't necessarily a place for outdoor recreation narrowly defined." "Personally I'd like to see Laurel Creek, literally see [it] after it disappears underground through uptown Waterloo." "…to them outdoor recreation means open space."
Practitioners	1.Trail systems	"I think a better bike trail system is needed."
Academics & Practitioners	1.Recreation provision 2.Supply of parkland	"Waterloo is increasingly multicultural and for the most part leisure services are pretty European, white middle class staffed." "…one of the rules is 5% of all development land has to be dedicated to parkland."
Outdoor Recreation Incorporated Academics	1.Incorporate natural spaces 2.Trail systems 3. Waterloo Park	"The decision has been if we want to keep Silver Lake, enhance it." "The Iron Horse connects Waterloo Park with campus & Victoria Park & some other green space, so that's pretty good." "…it's a pretty valuable green space in terms of the sporting activities."
Practitioners	1.Incorporate public values	"…open space, outdoor recreation and that type of thing are really help up as a strong need important to the City."
Academics & Practitioners	1.Recreation provision 2.Development process	"What's the difference from the skating rink at Kitchener & going skating at Laurel Creek?" "…they're moving people down there to the extent that the development can be incorporated with somewhat natural greenbelt-type development."

3. Ecology		
Category	Code	Sample Quotes
Outdoor Rec. Not Incorporated	1.Connect recreation with core	"So if they had trails connecting downtown core & some of the suburbs, I bet you more people would just walk into town to go to a movie or just shop."
	2.Outdoor education	"…outdoor education centre is missing in an urban core but it could be brought into the urban core."
	3.Incorporate natural spaces	"It doesn't take much habitat to attract butterflies & maintain certain bird species & to create an aesthetic resource."
	4.Trail systems	"…it would be nice to have trails for people in the suburbs to walk in to shop. Nobody thinks about that."
	5.Designate central space	"Silver Lake in Waterloo is downtown but it's still not the center of downtown. Who really walks alongside Silver Lake?"
Academics		
	1.Recreation provision	"Long-distance walking, wildlife viewing, climbing…normally may not be the place for some of these things."
	2.Development process	"…given the context of the area you may identify it could be a fairly restricted range of activity that fits within the context of a core area design."
Practitioners		
Outdoor Recreation Incorporated	1.Incorporate public values	"…getting away from buildings & concrete, & that can lend itself to a more healthy env. in terms of people getting out, exercising, emissions are reduced."
	2.Recreation provision	"…in the uptown area there is focus on parkland, …open space, provision for things such as playing fields, the Recreation Complex, Waterloo Park."
Practitioners		
Academics & Practitioners	1.Trail systems	"There's definitely a big focus on alternative transportation & rec., so bicycles, roller blades, walking."

RESEARCH QUESTIONS

Research Question 2: How might sustainable and vibrant core areas be achieved through appropriate forms of outdoor recreation planning?

1. Planning		
Category	Code	Sample Quotes
Practitioners	1.Attractive pedestrian env.	"…study on Corridors & Nodes of Height & Density, recognizing the uptown as a node & creating design guidelines for development that would enhance the pedestrian environment."
	2.Trail systems	"…element of being able to move people around the city in different ways so that they have the opportunity to use a way that is best suited to them at any particular time of day."
	3.Urban planning	"…if the vitality of the core areas depends on the stability & vitality of residential areas around it, you got to provide the components…some [of which] is recreation opportunity."
	4.Public values	"People want comfortable places that they can enjoy."
Academics & Practitioners	1.Big events	"More of what they're doing like music festivals… but it would need a place."
	2.Outdoor Recreation opportunities	"…we need to be providing the residential areas with the appropriate rec. opportunities."
	3.Attractive natural feature	"…have extensive green areas & out. rec. opportunities associated with…waterfronts."
	4.Waterloo Park/ Recreation Complex	"Maybe advance the park right into the downtown, advance the downtown right into the park."
2. Recreation		
Category	Code	Sample Quotes
Academics	1.Creative/non traditional approach	"Rooftop parks. Why not put a park on top of City Hall?"
	2.Attractive natural feature	"…the green space that's currently there has made uptown Waterloo what it is."
	3.Community development	"…community development models have as one of their underlined goals to empower & directly involve citizens, as opposed to just hearing them."
Practitioners	1.Attractive pedestrian env.	"…outdoor area, green spaces, they make a connecting link…for pedestrians."
	2.Trail systems	"…benefits of connecting different parts of the city by using [trails] provides real value when it comes to uptown."
	3.Public values	"…the presence of green spaces brings an element to the core area that goes along with the philosophy that we have in Waterloo."

Practitioners	4.Big events	"…some of the street events…[that] draw people to the core area; they need to develop more of that."
	5.Outdoor Recreation opportunities	"…a place where people can come & do & there's something for everybody, all ages."
Academics & Practitioners	1.Sustainability	"Recreation is one in that list of many, because in the end it's your overall quality of life & that's essential for sustainability."
	2.Urban planning	"I would like to see [what's being] redeveloped… to include something other than parking lots."
	3.User-defined approach	"…knowing where your clientele is & what they want is more appropriate than simply getting a number scheme."
	4.Applied research	"…see what's needed & plan accordingly."
3. Ecology		
Category	Code	Sample Quotes
Academics	1.Big events	"…feature some interesting events that are core focused."
	2.Alternative transportation	"…have some kind of shuttle service that leaves churches or schools in suburbs that gets people downtown."
	3.Trail systems	"…have trails with washrooms & garbage bins along,…interpretive panels."
Practitioners	1.Waterloo Park	"Waterloo Park…facility [being] in the middle of an urban area [offers] various open spaces for unorganized recreation & entertainment."
	2.Sustainability	"That to me is sustainability, it's revitalization, it's returning an area to the people."
Academics & Practitioners	1.Connectivity with core	"…semi-formal rec., walking, viewing, tying in the Ceramics Museum, the Seagrams Museum."
	2.Outdoor Recreation opportunities	"…climbing wall, outdoor chess or volleyball, skating, anything that people can do & watch."
	3.Attractive natural feature	"The obvious resource is Silver Lake and the [town's] back is on [it]; it's not easy to get to from downtown."
	4. Attractive pedestrian env.	"There's no nice pedestrian connection to the park, like an off-sidewalks trail to connect to Silver Lake."

RESEARCH QUESTIONS

Research Question 3: What is the working relationship between land use planning (core area), outdoor recreation, and urban ecology?

1. Planning		
Category	Code	Sample Quotes
Poor/ Not Integrated Academics	1.N/A	"No, I don't think so."
Practitioners	1.Institutional design	"Urban planning to me always comes first. It seems to be the focus [;] lastly & most unfortunately comes the ecological aspect of things."
	2.Ecological restoration	"…there has been so much disruption within the natural env. in the core, because it's such a high density development."
Good/ Integrated Academics	1.Ecological restoration	"I see some evidence of [integration] with the Silver Creek Park, the cleanup there."
Practitioners	1.Institutional design	"…within the entire city…we're pretty integrated with more ecological areas."
	2. Political implications	"In the sense of the core, our department handles most of the issues…on directions from Council."
Recommendations Practitioners	1.Cultural implications	"…[having] policy that pushes public art in the core would be one area where development & cultural could come together a bit more to create that vibrant ideal."
	2.Institutional design	"…having more time to think things through, having more information on which to base recommendations & decisions."
	3.Social implications	"…until society changes its view things will never happen."
Academics & Practitioners	1.Theoretical implications	"Maybe working at [solutions for the core] from different angles, so the recreation angle or the ecological angle."
	2.Ecological restoration	"They should get the water back on the surface instead of putting it through a pipe."

2. Recreation		
Category	Code	Sample Quotes
Poor/ Not Integrated Academics	1.Theoretical implications	"To the satisfaction & ideals of the people who would be championing in any of those three areas, probably not."
Practitioners	1.Institutional design	"…once the open space is approved & developed …it's maintained by the Parks who have very little input in how it was developed."
Good/ Integrated	1.Theoretical implications	""It's a comprehensive review of every single facility, every single program we offer. That's my team's mandate for the next year."
Practitioners	2.Cultural implications	"…meeting with the Cultural Development Committee to provide us with the feedback, advice & help because they're experts in arts & culture."
Academics & Practitioners	1.Political implications 2.Institutional design 3.Ecological restoration	"…integrated at the highest level of planning, at the Official City Plan." "You have to integrate to a certain degree just by the mere fact that you're responsible for all the areas." "I don't think any kind of project anywhere can get out without being put under the env. microscope."
Recommendations Academics	1.Political implications	"You try over a long period of time to influence politicians."
Practitioners	1.Ecological restoration	"…if downtown could get more green space it would be nice."
Academics & Practitioners	1.Theoretical implications 2.Institutional design	"…you have to bridge the gap so that the practitioner & the theorist pretty much understand each other & do talk." "…rec. experts who are in touch with what's going to work in the community need to have direct input in the planning stage."

3. Ecology		
Category	Code	Sample Quotes
Poor/ Not Integrated Academics	1.Ecological restoration	"Waterloo has this Environment First approach which is very good, but it doesn't seem to address uptown. Waterloo"
Practitioners	1.Institutional design	"It shouldn't be that way, but in some cases some of the departments, they don't talk."
Good/ Integrated	1.Institutional design	"We have Liaison Committees & we have cross-department teams that work together on issues."
	2.Political implications	"…fortunately in Waterloo we're pretty lucky. We enjoy good relations with all the institutions that we have to deal with."
	3.Theoretical implications	"He was an env. planner…that over the period of nine years drove Waterloo along the Environment First path."
Practitioners	4.Ecological restoration	"…the City has something called the Environmental Strategic Plan which talks about environmental planning & growth."
Recommendations Academics	1.Ecological restoration	"[The City should use the] University, School of Architecture to look at creating some natural links through the campus & beyond."
Practitioners	1.Theoretical implications	"…regularly scheduled Official Plan review…to look at the existing env. land, policies & where they need to be strengthened & enhanced."
Academics & Practitioners	1.Institutional design	"I would bypass the big landowners & come up with solutions & then attract them to certain solutions."