

THE ROLE OF MUNICIPAL DEVELOPMENT PLANS IN THE PROMOTION OF ‘NATURE-FIRST URBAN GREEN SPACES’

Submitted by

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ABSTRACT

An opportunity exists to better integrate nature into our cities and towns. As humans we are hardwired to need nature and for most of us, this nature comes in the form of urban nature, or green spaces. Green spaces provide the opportunity for city dwellers to interact with and have a relationship with nature. Yet, reliance on the typical urban green space can no longer provide sufficient amounts of nature to foster the benefits which nature provides. The premise of this research is that changes in how green spaces are planned in suburban greenfield developments must occur to better protect and enhance the presence of nature in the built environment. In doing so, increased opportunities for urban dwellers to foster a relationship with nature are provided. In exploring the proposition labeled here as ‘nature-first urban green spaces’, the research methodology followed a qualitative case study of green space planning practices in Winnipeg, which included an analysis of municipal development plans and green space policies as well as informant interviews. Seven recommendations aim to enhance the presence of nature in Winnipeg and to increase opportunities for urban dwellers to foster a relationship with nature. The recommendations provide guidance to overcome existing green space planning challenges such as competing demand for land use and financial constraints, aim to strengthen the authority and effectiveness of green space policies, identify opportunities to further advance green space planning in Winnipeg, and encourage green space dialogue to promote nature-first urban green spaces. If applied, the seven recommendations can contribute to the planning and design of urban green spaces in Winnipeg to better reflect nature-first urban green spaces.

Keywords: City planning, green space, policy, municipal development plan, Winnipeg

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CHAPTER 1 INTRODUCTION

Since the 19th century, a firm belief has existed in the fundamental role of urban green spaces to enhance the quality of the urban environment for people. Urban green spaces are generally defined as public spaces within the built environment primarily covered by vegetation and provided as a space for recreational opportunities and passive entertainment, to foster a relationship between nature and humankind (Spirn, 1984; LeGates & Stout, 1998; Tate, 2001). Given the accelerating rate of urbanization, urban green spaces are also recognized for maintaining the interrelationships and interconnections of dynamic ecological processes in addition to the habitat they provide for plants and animals (Perlman & Milder, 2005). As North American cities become increasingly urbanized the role of urban green space is elevated as current patterns of urban planning and city building can lead to weak relationships between nature and humankind (Newman & Dale, 2009; Beatley, 2011).

Urban planning practices do not always provide opportunities for urban dwellers to interact with natural, wild environments. An increasing number of examples to realize the integration of wild landscapes into the built environment are reported in planning and design literature, yet they are isolated and too few. This research explores the proposition labeled here as ‘nature-first planning’. A review of the literature will indicate that the term ‘nature-first’ is not common. Beatley (2011) uses the phrase nature-first to describe how the features and characteristics of natural landscapes can and should guide planning decisions. The term nature-first is used throughout this research to describe how the features and characteristics of natural, wild landscapes must become a primary factor in the planning and design of urban green spaces. Nature-first planning is a planning process for green spaces that is steered not by economic or social utility, but rather by what is

best to support nature in the built environment. The term ‘nature-first urban green space’ is also used throughout the research. Nature-first urban green spaces are defined as spaces that through its vegetation and structure display the distinctive features and characteristics of natural, wild landscapes found in the absence of human habitation and other human related influences. By putting nature first and elevating its importance in the planning, design, and management of urban green spaces, the possibility of restoring and better integrating nature into the built environment is more likely so that an urban dweller can have daily contact with it.

The recognition of the benefits that urban green spaces bring to a city is demonstrated through historical wide spread preservation of and dedication to urban green spaces (Cranz, 1982). The purpose and public benefits of nature in the built environment are well established. So much so, that legislation concerning community planning mandates local governments to make provisions for urban green space (Schlesiger, 2001). Urban green space standards are established through municipal development plans. Municipal development plans are produced at different geographic scales to address long-term land use planning strategies and are considered to be one of the more important tools for planners and planning processes (Talen, 1996). The form and function of urban green spaces that result from municipal development plans are predominately green spaces for recreation and leisure, rather than as a place to further an urban dweller’s relationship with nature.

By exploring the application of nature-first planning practices in the City of Winnipeg, the research will discuss how the City’s municipal development plan, *OurWinnipeg*, and accompanying planning documents, support, or can support, *nature-first urban green spaces*.

1.1 Research Problem

Humans are hardwired to need daily contact with nature (Beatley, 2011). This innately emotional affiliation to interact with nature helps humans create meaning in life (Wilson, 1986). Contact with nature influences individual health by providing humans with “the non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences” (Millennium Ecosystem Assessment, 2005, p. 29). Urban planning practices do not always provide opportunities for urban dwellers to interact with nature. However, a shift in how urban green spaces and the built environment is designed and planned can occur to better integrate nature in our cities and towns.

As indicated by the literature (Beatley, 2011; Duerksen & Snyder, 2005; Miller, 2006) planning approaches exist to foster nature in the built environment. The intent of this research is to explore how planning processes for residential greenfield development in Winnipeg may support the application of nature-first urban green spaces. This research aims to better understand how urban green space planning policies can steer planning practices to further acknowledge the value of nature in the built environment. By assessing the City of Winnipeg’s green space planning practices there is an opportunity to gain a deeper understanding and contribute a positive influence on planning regulations for nature-first urban green spaces.

1.2 Research Objectives & Questions

The objectives of this research practicum include:

- To identify in what ways nature-first urban green spaces may be an effective strategy to enhance an urban dwellers relationship with nature.

- To explore the proposition of ‘nature-first’ within planning literature and through informant interviews to further refine its meaning.
- To identify policies, programs, and tools to support the planning of nature-first urban green spaces in residential greenfield development.
- To provide practical recommendations on planning processes that could lead to nature-first urban green space planning practices in Winnipeg.

The key research questions driving this inquiry are:

1.a What is the existing role of the City of Winnipeg’s municipal development plan towards the protection and/or development of urban green spaces in residential greenfield development?

1.b What is the potential role of the City of Winnipeg’s municipal development plan towards the protection and/or development of urban green spaces in residential greenfield development?

2.a What is the existing role of the City of Winnipeg’s municipal development plan in applying nature-first planning practices towards the protection and/or development of urban green spaces in residential greenfield development?

2.b What is the potential role of the City of Winnipeg’s municipal development plan in applying nature-first planning practices towards the protection and/or development of urban green spaces in residential greenfield development?

3. In what ways can urban planners and urban policy in Winnipeg apply lessons from other cities to support nature-first planning practices?

1.3 Significance of Research

This research highlights the ways in which urban centers can increase the presence of green spaces which reflect the features and characteristics of natural, wild landscapes. Through discussion of planning practices that support relationships between nature and humankind, this project identifies elements that can advance planning practices as well as the obstacles that may hinder the preservation, restoration, or creation

of nature in residential greenfield development. This research will contribute to the larger theory and practice of green space planning for urban green spaces.

The primary focus of this research was to evaluate the City of Winnipeg's green space planning practices applied to residential greenfield development. Informant interviews were utilized to better understand the perspectives of planners and developers in relation to green space planning in Winnipeg. Recommendations are made addressing how the planning of green spaces in Winnipeg may better reflect nature-first planning. Recommendations are based on a synthesis of best practices as indicated by the literature and informant interviews.

The findings and recommendations of this practicum can add to scholarly planning knowledge. Information is available on the importance of nature in the built environment however this study contributes new knowledge on how municipal development plans may influence a greater presence of nature in the built environment through green space planning processes. The recommendations of this study may be applied to other communities, contributing to a wider application of nature-first urban green space planning practices.

1.4 Research Approach

To address the proposed research questions, the methodology followed a qualitative case study of green space planning practices in Winnipeg, Manitoba. Research followed a fairly linear progression through a literature review, case study investigation, informant interviews, analysis and recommendations, and questionnaire. This combination of methods enabled the completion of original empirical research that will expand the range of understanding and planning practice.

The literature review served as the starting point for this research. A review of existing literature sought to understand a variety of concepts related to green spaces, providing a foundation for understanding elements for investigation in the research project. The intent of the literature review was not to simply list what scholars and researchers have published but to ideally piece together related discourse to identify trends and themes (Bui, 2014). A case study investigation of the City of Winnipeg's urban green space development policies were conducted through a content analysis of Winnipeg's municipal development plan and select planning documents. This methodology assisted in evaluating green space policy by extracting key vocabulary terms from textual data to highlight green space planning practices as well as evidence, or lack thereof, of nature-first planning practices. In addition, the content analysis helped to determine the ways in which policies support, or can support, nature-first urban green spaces. A content analysis was identified as an appropriate research method, however, as it is purely a descriptive method, describing the 'what' but not the 'why' (Yin, 2014), it was supported by informant interviews to reveal underlying motives for the observed patterns. Semi-structured interviews with planners, a developer, an academic, and a landscape architect involved in greenfield development provided a sense of how urban green spaces are currently planned and designed in Winnipeg and offered comments which would suggest how nature-first planning principles may be applied.

The literature review, content analysis, and informant interviews generated an understanding of green space planning in Winnipeg and thereby informed seven recommendations. The recommendations were aimed to address how the protection, planning and design of urban green spaces in Winnipeg may further enhance the presence of nature in the built environment and thereby create opportunities for urban dwellers to

foster a relationship with nature. To explore the challenges associated with the recommendations informants were emailed a briefing memo and questionnaire. The briefing memo and questionnaire presented an overview of the research, summary of findings, and the seven recommendations. A series of questions accompanied each recommendation. The questions were designed to seek additional comments from informants to identify approaches to implement the recommendation, areas that required refinement and further research, and in what ways planners may address the challenges associated with the recommendations. Of the seven informants, four informants indicated that they would be interested in participating but in the end only three provided responses.

1.5 Bias & Limitations

As an individual who spends time in natural, wild environments and who values having these type of landscapes in the built environment, I conducted this research with the following bias: the presence of nature within our urban environments is of value and should be valued by all. However, I recognize and the research acknowledges that opposing views exist with respect to the role of nature in the built environment. Differences lie in conflicting *conceptions* of nature and in conflicting *uses* of nature as a result of ideas regarding the degree of separation of natural landscapes from cultural landscapes (Campbell, 1996; Katz, 1997; Katz, 2000; Godschalk, 2004). The preservation movement of the 1800's was largely founded on the belief that nature and culture dwell in separate realms (Newman & Dale, 2009). As a result of this notion, natural landscapes were and continue to be protected from humans as a means to preserve 'untouched, wild landscapes'. Opposing this view is the belief that natural landscapes and cultural landscapes are inseparable and because of this, the notion of wild landscapes is a myth as

humans have either directly or indirectly impacted all landscapes. Since a wide range of beliefs exists in what is ‘nature’ or ‘natural’, decisions regarding the preservation of urban nature can be challenging because the degree of “naturalness” within a landscape is interpreted differently. Such views are reflected in the research to ensure that personal biases did not influence the research outcomes.

Prior to completion of this practicum, I accepted employment with a consulting firm who was interviewed as part of the research. My relationship with this firm has not compromised the rigour of this research or influenced the outcome of the research process.

Specific individuals were targeted for informant interviews. While the individuals were selected to represent a mix of opinions on green space planning issues in Winnipeg, the selection of these participants required my personal discretion and could represent a degree of bias.

I recognize that planning processes for urban green spaces occur at different scales and under different contexts, however the proposed research is limited to the development and/or protection of urban green spaces in a suburban greenfield development context, specifically to the City of Winnipeg’s New Communities as identified in *OurWinnipeg*. Planning processes for green spaces at different scales will inform the research but will not be explicitly assessed.

Green space policies and planning practices from Milwaukee, Ottawa, and Calgary are considered precedents informing the research. The three cities were selected because of evidence suggesting advanced practices of enhancing the presence of nature in the built environment. The existence of particular policies and practices within municipal development plans indicate examples of advanced green space planning. Although

precedents from Milwaukee, Ottawa, and Calgary identify various approaches taken by other municipalities towards increasing nature in the built environment, the extent to which the precedent informs the research is limited. Since interviewing individuals involved in green space planning in Milwaukee, Ottawa, and Calgary was beyond the scope of this research, it was difficult to identify the degree to which advanced green space planning policies have actually influenced or will influence green space planning.

A content analysis was used to assess the degree to which Winnipeg's municipal development plans support, or may support nature-first urban green spaces. A limitation exists in this methodology in which as the sole researcher, I coded all documents myself; researchers recommend that multiple individuals conduct the analysis to ensure that reliable data is generated. Attention was dedicated throughout the content analysis process to provide consistent data, despite this limitation.

1.6 Document Organization

This document is organized into six chapters. Chapter One introduces the research topic whereby details of the research problem, objectives, approach and significance are discussed. Chapter Two explores the literature on nature in the built environment and the influence of municipal development plans in green space planning. Specific topics in the literature review explore the questions of: what are the benefits of nature in the built environment; what is the role of municipal development plans in guiding land use; and in what ways can planning processes support the creation of nature-first urban green spaces. Chapter Three discusses green space planning processes in Winnipeg. An assessment of Winnipeg's municipal development plan and select planning documents in Winnipeg was conducted. Key clauses and objectives from select municipal development plans are identified and used to establish theme areas relating to green space planning in Winnipeg.

A discussion of the three themes concludes Chapter Three. Chapter Four explores themes of green space planning which emerged from informant interviews. A series of questions were posed to informants to gain their perspective on how planning processes may support the application of nature-first urban green spaces. Responses from informants are presented and discussed. Chapter Five focuses the research findings from the literature review, analysis of Winnipeg's municipal development plans relevant to green space planning, and informant interviews into the following seven recommendations: (1) conduct an in depth assessment of current green space planning processes; (2) engage in green space dialogue to promote nature-first urban green spaces; (3) strengthen the role of the *Ecologically Significant Natural Lands Strategy*; (4) review and update the *City of Winnipeg Development Agreement Parameters*; (5) develop and adopt a green space master plan for Winnipeg; (6) produce a green space planning and design handbook; and (7) continue to seek a supportive political climate for green space planning. If applied, the recommendations could contribute to the planning of green spaces in residential greenfield developments in Winnipeg to better reflect nature-first urban green spaces. Chapter Six discusses feedback from informants on the seven recommendations and concludes with the role of planners in moving forward towards the application of nature-first planning.

CHAPTER 2 ENHANCING NATURE IN THE BUILT ENVIRONMENT

2.1 Introduction

As Hough (2004) identifies, “most of us know more about nature in the countryside than in the places where we mostly live” (p. 162) and yet the nature within the built environment is most often the nature North Americans experience throughout their lives (Perlman & Milder, 2005). Four out of five Canadians live in major cities or suburbs, far from natural, wild landscapes (Newman & Dale, 2009). Furthermore, many Canadians can not access nature outside of major cities due to economic, social or cultural barriers. To maintain the benefits that living a life close to nature brings, planning and design solutions can be implemented to foster a connection between individuals and natural features (Hough, 2004; Turner, Nakamura, & Dinetti, 2004).

The literature reveals two broad principles on how to reverse estrangement from the natural world: encourage people to move to more remote locations where ongoing contact with biologically rich environments is more likely; or, enhance the possibility where people live (Kaplan & Kaplan, 2011; Miller, 2006; Paquot, 2005; Sager, 2009). It is of the belief that the first option is unlikely to produce a favourable outcome for biodiversity as current patterns of exurban and suburban development have already contributed to an increasing disconnection to nature (Beatley, 2011; Hough, 2004). Therefore, encouraging people to move to more remote locations may do more harm than good. Enhancing the possibility of ongoing contact with biologically rich environments in urban areas is more likely and can be supported by purposeful planning practices.

Humans are hardwired to need nature and as city dwellers this nature comes in the form of urban nature. Urban nature exists in various forms: pockets of preserved natural landscapes, human intervened green spaces recreating or rehabilitate the existing

ecosystem, and when naturalized options are unavailable, open space “manicured” environments. Although urban nature can at times appear wild or untouched, urban nature is inherently impacted and influenced by humans and is not the distant or pristine wilderness one may associate it with. Urban nature is nearby and nuanced and defined by its resilience and persistence in the face of urban pressures (Beatley, 2011). In spite of this, a growing body of research is confirming the power of urban nature to foster deep connections and daily contact with the natural world. This research examines the use of municipal development plans to support *nature-first urban green spaces* as an effective strategy to further an urban dwellers relationship with nature in the built environment.

As demonstrated by a review of current literature, the proposition ‘nature-first’ is not a common term used to describe urban green spaces. In his 2011 book, *Biophilic Cities*, Timothy Beatley uses the phrase ‘nature first’ to define a biophilic city:

Exactly what is a biophilic city, what are its key features and qualities? The simplest answer is that it is a city that puts *nature first* in its design, planning, and management. (p.45)

Beatley’s (2011) use of the phrase ‘nature first’ refers to how the built environment should elevate the importance and priority of nature in planning and design decisions. In the context of this research, the phrase ‘nature-first’ is applied to planning processes for urban green spaces. Nature-first urban green spaces propose that green space planning decisions be steered not solely by economic or social utility, but rather by what is best to support nature in the built environment. By putting nature first and elevating its importance in the design, planning, and management of urban green spaces, the possibility of protecting, restoring, growing, and better integrating nature into the built environment so that an urban dweller can have daily contact with biologically rich environments may become more likely.

Nature-first urban green spaces are defined herein as green spaces that through its vegetation and structure display the distinctive features and characteristics of nature found in the absence of human habitation and other human related influences. This definition acknowledges that despite appearing wild, and untouched by humans, the nature found in nature-first urban green spaces is inherently impacted by humans. This definition is informed by Beatley (2011), Henne (2005), Rink (2009), and Vicenzotti and Trepl (2009) and their discussions in defining nature in the built environment and is influenced by the theories of integrated design (Herrington, 2010; McHarg, 1969), landscape ecology (Fraser, 2009; Nassauer, 1997; Tuner, Gardner, & O'Neil, 2001), green urbanism (Beatley, 2000; Gordon, 1990), and biophilic planning (Beatley, 2011).

Municipal development plans remain one of the most effective instruments of urban policy (Baer, 2007; Neuman, 2007; Norton, 2007; Talen, 1996). As a planning tool, municipal development plans can be an effective instrument shaping urban policy and a spark for urban change influencing land use and development to produce desirable outcomes (Norton, 2007). Municipal development plans and green space policies from various municipalities are highlighted, demonstrating how planning tools can support nature in the built environment. In particular, examples from Milwaukee, Ottawa, and Calgary will be discussed throughout the research. To better understand the benefits of enhancing nature in the built environment, the role of nature-first urban green spaces as a strategy to support nature in the built environment, and the potential of municipal development plans to support the promotion of nature-first urban green spaces, the following questions will be explored through a review of current literature: what are the benefits of nature in the built environment; what is the role of municipal development

plans in guiding land use; and in what ways can planning processes support the creation of nature-first urban green spaces.

2.2 The benefits of nature in the urban environment

To further understand the role of nature-first urban green spaces as an effective strategy to enhance urban dwellers relationship with nature, the following question is asked: do urban dwellers benefit by being in contact with nature, and if so, in what ways? A review of the literature indicates that urban dwellers benefit from having access to nature in the built environment in a wide variety of ways; from better health, greater social cohesion and more recreation opportunities, richer urban cultures, improved urban aesthetics, increased property values, and cleaner air and water (Beatley, 2011; Cadenasso & Pickett, 2008; Ewert, 1997; Hough, 2004; Kellert, 2012; Kollin & Schwab, 2009). Urban dwellers that have frequent contact with nature are more likely to have reduced stress, enhanced physical well-being, emotional and spiritual balance, and an improved overall quality of life (Beatley, 2011; Frumkin, 2005; Thompson, 2013). In addition, contact with nature can increase people's interest in conservation, mobilizing individual action and collective support for decisions relating to the preservation or rehabilitation of nature found in the built environment (Newman et al., 2009; Sporn, 2011). By addressing the influence of nature on individual health and well-being and in fostering responsible environmental behaviours, support can be generated for practices that enhance the role of nature in the built environment and in the daily lives of urban dwellers.

2.2.1 Individual Health

Research highlights how exposure and contact to nature positively enhances physical and psychological health and well-being (Cranz, 1982; Frumkin, 2005; LeGates

& Stout, 1998; Thompson, 2013). Research in the field of urban health provides evidence on how contact with nature shapes the physical and psychological health of urban dwellers (Bedimo-Rung, Mowen & Cohen, 2005; Frumkin, 2005). For example, research from Bedimo-Rung et al., (2005), Brymer, Cuddihy, and Sharma-Brymer (2012), and Frumkin (2005), indicates that urban dwellers who have contact with nature are less likely to suffer from chronic diseases. The research of Cohen et al. (2007) and Thompson (2013) illustrates that these health benefits are often attributed to the relationship of access to urban green space and recreation.

Research studies indicate that urban green space visitors often participate in moderate to vigorous level of physical activity (Cohen et al., 2007; Ho, Payne, Orsega-Smith & Godbey, 2003). Participation in regular physical activity can lead to weight loss, healthier cardiovascular and respiratory systems, and reduce the risks of cancers and diabetes (Bedimo-Rung et al., 2005; Brymer et al., 2005; Ho, et al., 2003). For urban dwellers to visit an urban green space, and gain the associated health benefits from being physically active, green spaces must be accessible and desirable. The research of Cohen et al. (2007) and Thompson (2013) identify that the greater the distance to an urban green space, the less likely an urban dweller is to visit. Beatley (2011) calls this “distance decay”. In locations where green space is less than 100 metres from primary residences, access is good and a high frequency of use is encouraged (Beatley, 2011). In areas where green spaces are located more than 100 metres, a smaller fraction of residents maintain high use frequencies and the majority of locals use the green space substantially less (Beatley, 2011). A scan of municipal development plans would indicate that accessibility to urban green space is deemed important yet few plans include a specific target such as a

metered distance (i.e. 700 meters) or the time it may take to reach the green space (i.e. a ten minute walk). The City of Calgary (2003) and the City of Milwaukee (2013) are two examples of cities whose municipal development plans do state specific times of 5 minutes (350 meters) and 10 minutes (700 meters), respectively, as acceptable walking distances to access green spaces.

Research also indicates that the quality of the green space corresponds with use (Thompson, 2013). The definition of ‘quality’ will be different for everyone, but generally includes an enjoyable and safe environment and opportunities to participate in preferred activities (Bonnes & Secchiarolli, 1995; Thompson, 2013). Quality can also refer to the features and characteristics of a green space that are required to maintain or enhance natural habitats and biodiversity. The City of Ottawa (2006) identifies strategies that reflect a desire to provide consistent design guidelines for achieving quality green spaces. Establishing parameters for achieving quality green spaces can be important to ensure that green spaces are viewed as attractive places for urban dwellers to visit.

The history of parks illustrate that urban green spaces were originally provided for purposes other than physical activity (Cranz, 1982). Olmsted, the ‘Father’ of North American urban parks, thought urban green spaces should be built as:

Places where people may easily go after their day’s work is done, and where they stroll for an hour, seeing, hearing, and feeling nothing but the bustle and harp of the streets, where they shall, in effect, find the city put far away from them. (Olmsted, as cited in Cranz, 1982)

Olmsted recognized that contact with nature can improve mental and emotional well-being and was a strong supporter in the provision of green spaces as places where urban dwellers may experience the restorative properties of nature. More recently, a growing

body of research supports Olmsted indicating that exposure to the natural world can positively enhance psychological health by improving levels of stress, depression and anxiety, as well as reducing mental fatigue, and the tendency for aggressive behavior (Bedimo-Rung et al., 2005; Bratman, Hamilton & Daily, 2012; Brymer et al., 2012; Frumkin, 2005; Hartig, Mang & Evans, 1991; S. Kaplan, 1995).

The movements, motion, and crowding of people, as well as the visual stimulation of urban environments can lead to mental and physical fatigue. R. Kaplan (1984) describes nature as “relatively less intense with respect to motion, as the movements have greater regulatory and predictability” (p. 191). The differences in visual stimulus as well as the relief from people are acknowledged as characteristics of natural areas that may influence psychological well-being (Cole & Hall, 2010; R. Kaplan, 1984). The research of Cole and Hall (2010) adds that the restorative properties of nature can also be directly related to the physical setting itself. By surveying a cross-section study of overnight national park visitors in the northwestern United States, Cole and Hall (2010) discovered that the degree of crowding did not affect the restorative properties of wilderness environments. The results may have been different had less remote nature been studied, yet nonetheless suggest that the restorative properties of natural environments may be more directly related to the natural and wild features of the landscape rather than the relief from people. The research of Frumkin (2005) supports Cole and Hall (2010) by providing case studies on wilderness therapy programs that demonstrate how contact with wild landscapes provide therapeutic benefits.

Empirical evidence indicates that *conceptual nature* can also influence psychological well-being (R. Kaplan, 1980; R. Kaplan, 1984; Ulrich & Addoms as cited

in Bedimo-Rung et al., 2005, p. 161). Conceptual nature is defined as “one’s knowledge and imagining [of nature], in the absence of the physical setting itself” (R. Kaplan, 1980, p. 195). Ulrich and Addoms (as cited in Bedimo-Rung et al., 2005, p. 161) identify that green spaces can be a source of great satisfaction and pleasure for individuals even when the individual is not physically near nature. For example, evidence supports that “micro-restorative experiences”, such as viewing nature from a window may provide respite even if brief (R. Kaplan, 2001; Mayer, Frantz, Bruehlman-Senecal, & Dolliver, 2009; Ulrich as cited in Beatley, 2011, p. 4). R. Kaplan (1984) argues that simply thinking about nature can accrue restorative benefits whereby “the act of planning one’s garden or window box in the dead of winter can permit the mind to wander to a situation that is coherent and whole” (p. 197). The examples of micro-restorative experiences should not be interpreted as grounds for continuing city building techniques that lead to weak relationships between nature and urban dwellers, yet demonstrate the power of nature in enhancing our well-being.

R. Kaplan (1984) identifies that our physical and psychological health are not solely dependent on interactions with the natural environment. While this is true, contact with nature nonetheless significantly influences an urban dweller’s health and well-being. As previously mentioned, lower rates of chronic illness and disease and reduced rates of stress, anxiety and depression are the result of contact with nature. In order to maintain the health and wellness benefits of living close to nature, planning and design solutions must be implemented. By addressing proximity to nature and standards for achieving quality green spaces, Milwaukee, Ottawa, and Calgary demonstrate how plans and policies may influence the design of green spaces for health and well-being. The concept

of nature-first urban green spaces is one solution that can prompt urban dwellers to have frequent contact with nature and thus increasingly the likelihood of overall health and well-being.

2.2.2 Fostering Environmental Behaviour

In the ‘Age of Recreation’ historical park period, natural elements were replaced with sports facilities and playgrounds, creating urban green spaces as places for physical activity, rather than to develop an understanding and appreciation of nature (Cranz, 1982). However, as indicated by the literature it is important that opportunities exist for urban dwellers to connect with nature because it is through an individual’s experience with nature that responsible environmental behaviours are fostered (Beatley, 2011; Dunn, Gavin, Sanchez, & Solomon, 2006; Frantz, Mayer, Norton, & Rock, 2005; Hough, 2004; Pretty, 2002; Schultz, Shriver, Tabanico, & Khazian, 2004).

The literature reveals that residents who interact and relate with nature are more likely to possess ‘ecological consciousness’, an expanded sense of self which recognizes that humans are not separate from nature (Chatalos, 2014; Frantz et al., 2005; Pretty, 2002). As one spends time in nature, feelings of empathy, respect for the environment and other living things, and a sense of interconnectedness and resonance to the natural world are developed (Chatalos, 2014). Realizing one’s connection with the natural world develops a sense of reciprocity and mutuality that can then manifest as responsible environmental behaviours (Chatalos, 2014; Dunn et al., 2006). The literature indicates that responsible environmental behaviour demonstrates a greater awareness in how one can support sustainability initiatives. As the built environment continues to adversely affect the natural environment, ecological consciousness is considered necessary to

mitigate actions related to the disruption of ecosystems and loss of natural habitat (Chatalos, 2014; Schultz et al., 2004).

The importance of close contact with nature to increase people's interest in conservation is supported by several case studies. For example, Palmber and Kuru (2000) studied how participation in outdoor education programs (field trips, hiking, camping, and adventure activities) influenced the development of affective relationships to the natural environment and responsible environmental behaviour. As a result of time spent in nature, participants were more likely to view humankind as equal or interdependent of the environment (Palmber & Kuru, 2000). Research from Chatalos (2014), Frantz et al. (2005), and Mayer et al., (2009) support Palmber and Kuru (2000). Shwartz et al., (2012) explored how participation in knowledge-based education and participation in conservation effort activities could influence individual interest in urban conservation. The results of this research revealed that as participants learned about local biodiversity their interest in local conservation increased. Planning documents from Milwaukee, Ottawa, and Calgary, demonstrate support for community initiatives to take on stewardship roles for natural land, and for educational awareness campaigns to teach the public about urban plants and animals. Although the planning documents from Milwaukee, Ottawa, and Calgary do not discuss how community involvement may influence further urban conservation, the policies nonetheless advocate for a greater role of community members in maintaining and preserving urban green spaces.

As previously discussed, supporting opportunities to foster 'ecological consciousness' is considered important for mitigating city building practices that adversely affect the natural environment. With the majority of people living in urban

environments, opportunities to interact with nature and develop ecological consciousness must occur locally. For the built environment to further enhance personal experiences with the natural world, planning practices must be encouraged so that the features and characteristics of natural, wild landscapes become a primary factor in the planning of urban green spaces.

2.2.3 Appreciating Nature for Nature

Apart from the value that nature imparts onto humans for physical, psychological, and social benefits, nature is recognized for its intrinsic value, that is appreciating nature for nature; the landscape, plants, animals, and the physical forces causing and regulating ecological processes. Having nature in a city is not only beneficial for urban dwellers but is necessary to help sustain biodiversity and natural ecosystems. To sustain biodiversity and natural ecosystems green spaces must shift away from spaces dominated by monocultures and become places that support a variety of plant and animal species. As urbanization disrupts natural landscapes, urban green spaces become important to help maintain the interrelationships and interconnections of ecological systems and processes (Barthel, Colding, Elmqvist & Folke, 2005; Colding & Barthel, 2013; Coyle, 2011; Perlman & Milder, 2005). Nature knows no boundaries and therefore places in the built environment are needed for animals to live, plants to thrive, and water to flow. Urban green spaces can be a place for nature, supporting and enhancing the interrelationships between the air, watersheds, aquifers, soils, and vegetative covers (McHarg, 1964; Hough, 2004).

Biodiversity is the term used to describe, “the entire diversity of life-encompassing all of the species, genes, and ecosystems on earth, or within a given area”

(Perlman & Milder, 2005, p.21). Although not always obvious, the urban environment can be a patchwork of different types of naturalized spaces and home to numerous plants and animals (Hough, 2004). Each space, whether it is a forest, grassland, meadow, or marsh provides a habitat to various plant and animal species. To maintain biodiversity, species must be supported by one another's presence, as all species play a unique and specialized role in supporting the ecological community (Hough, 2004; Perlman & Milder, 2005). With the support of one another, plants and animals are more resilient in the face of disturbance, which in turn helps build resilient ecosystems (Cadenasso & Pickett, 2008). Valuing nature for nature can be supported by planning practices that help secure a place for nature in the built environment. For example, a planning policy in Milwaukee targets increasing the acreage of natural areas, including riparian areas, wetlands, stream buffers, and green corridors, that are restored or placed under protection by 10% annually (The City of Milwaukee, 2013) as a way to protect, restore, and maintain Milwaukee's natural resources.

Green infrastructure is a recognized planning practice that focuses on preserving or restoring interconnected networks of green space (Allen, 2012; Benedict & McMahon, 2002; Griffith, 2010). As Benedict and McMahon (2002) explain, planning practices that apply green infrastructure differs from conventional open-space planning "because it looks at conservation values in concert with land development, growth management and built infrastructure planning" (p.12). As a strategic planning approach, green infrastructure is argued to better support biodiversity and maintain the interrelationships and interconnections necessary for ecological processes (Hostetler, Allen & Meurk, 2011; Mell, 2008; Wilkie & Ascroft, 2009). The City of Calgary's (2003) *Open Space Plan*

identifies that where appropriate the development of open space shall be part of a continuous and integrated open space system that takes advantage of both natural and constructed features. Green spaces (either natural or restored environments), which emphasize ecology, not recreation, anchor green infrastructure networks and by providing linkages through a web of green infrastructure, enhances biodiversity and ecological processes (Allen, 2012; Benedict & McMahon, 2002). Although green infrastructure planning is guided foremost by considerations supporting ecological processes and not recreational opportunities, urban dwellers can nonetheless benefit in that green infrastructure networks tend to support passive activities such as walking or cycling.

The literature indicates that nature often losses out to development because of the perception that nature has no utility, or value, to humans. Ecological goods and services is an approach that shifts away from the intrinsic value of nature, and rather values the functions of an ecosystem that provides utility to humans through an economic lens (Daily, 2000; Perlman & Milder, 2005). The argument to monetize ecological processes is that in demonstrating the dollar value of climate regulation, water purification, or reductions in air pollution for example, further protection of natural landscapes can occur. The dollar value of ecological goods and services can be tremendous and without ecological services, public or private funds would otherwise be required to provide the benefits of natural processes (Millennium Ecosystem Assessment, 2005; Newman, Beatley & Boyer, 2009; Perlman & Milder, 2005). The City of Milwaukee (2010) *Citywide Policy Plan*, structures many of its green space policies to support the environmental services and economic activity of natural landscapes. Framing the role of nature in the built environment in terms of improving a city's competitiveness, may lead

to a greater emphasis for natural landscapes to be protected or restored within the built environment, which may lead to providing further opportunities for urban dwellers to enhance their relationship with nature. Monetizing nature may lead to spin-offs that support the goals of nature-first planning but it may also detract from recognizing and valuing nature for its intrinsic value.

Urban green spaces are important to help maintain the interrelationships and interconnections of ecological systems and processes within the built environment. Natural, wild landscapes within our urban environments are important to not only support ecological goods and services but also enhance biodiversity, and to support nature for nature. Examples from Milwaukee, Ottawa, and Calgary were highlighted to demonstrate ways in which planning policies may help ensure that nature has its place in the built environment.

2.3 Guiding Land Use Through Municipal Development Plans

As built environments continue to grow, natural landscapes are lost. Throughout the literature, numerous authors posit that despite development negatively impacting the preservation of wild landscapes, urban development is a necessity of life. Although at times development may be perceived as impossible to control, policymakers have the ability to guide development through the use of municipal development plans (MDPs). MDPs are defined as a document which provides an overarching set of policies designed to guide and regulate urban development in a manner which supports the future well-being of a community (American Planning Association, 2010; Baer, 2007; Berke & Godschalk, 2009). MDPs are prepared at many different geographic scales. For example, in Winnipeg, a development plan is prepared to guide growth and development at the city-scale, precinct plans focus on community systems, and area structure plans guide

development at a neighbourhood scale. Although the specific content of each MDP is often reflective of the scale and context of the planning area, MDPs generally include an analysis of current and future conditions, identification of community issues, vision and goal setting, and recommended actions or strategies to guide public and private land use (Gebhardt & Eagles, 2014; Neuman, 2007). MDPs can be either statutory or non-statutory plans. The process of writing an MDP is often collaborative whereby municipal staff, elected officials, and stakeholders are involved throughout the planning process (Baer, 2007).

Research indicates that MDPs can influence the planning of urban green spaces. To evaluate the degree to which MDPs support, or may support, nature-first urban green spaces, the following questions will be explored in the literature: what is the role of planning documents within the larger planning context; what constitutes “good” or “poor” plans; and how do plans once adopted subsequently be implemented to influence local development decisions.

2.3.1 The Role of Municipal Development Plans

Municipal development plans have long played a pivotal role in guiding and regulating urban development and land use decisions (Baer, 2007; Berke & Godschalk, 2009; Norton, 2007; Ryan, 2011). By outlining long-term land use planning strategies and policies regarding physical, social, environment, and economic objectives, MDPs can have the capacity to influence many important aspects of community life, including access to green space (Berke & Godschalk, 2009).

As the literature indicates, a MDP is a powerful tool for the following reasons. MDPs are powerful because they are granted authority and power through the structures of government. As Neuman (2007) describes, “plans derive their greatest authority in

practice by being inextricably entrenched in governing institutions” (p.215). Legislation that requires or encourages municipalities to adopt MDPs is common. For example, *The City of Winnipeg Charter Act* (Province of Manitoba, 2002), requires the City of Winnipeg and its City Council to create and adopt both a development plan and bylaws to support the implementation of the plan. The legal standing of MDPs gives it prominence among planning and policy documents (American Planning Association, 2010). MDPs influence many aspects of life (Berke & Godschalk, 2009; Norton, 2007). By directing development and the ongoing use of land, the policies within a plan can influence environmental initiatives, economic opportunities, and infrastructure investment. As MDPs facilitate collaboration, they provide a platform for community consensus and bring a “ready-made consensus to political bodies” (Neuman, 2007, p. 209). As a result, plans can be used to set agendas and resolve conflicts. A well-written plan can be instrumental in guiding decisions and can bring diverse interests together to negotiate and agree on policy.

Miller (2006), McHarg (1969), and Newman and Dale (2009) indicate that municipal development plans may help guide a shift in planning processes and policy to better recognize planning processes that supports nature in the built environment. MDPs are a well-established and accepted framework for land use planning strategies. By operating at different geographical scales, municipal development plans have far reaching capabilities shaping urban development (American Planning Association, 2010). For example, Calgary has planning documents that targets the preservation of significant lands in the Calgary River Valley, an internal working document examining the need for open space in inner city neighbourhoods, and an integrated pest management plan promoting healthy vegetation and pest control activities; these plans are in addition to

Calgary's overarching plan for green space. MDPs can address general public policies such as the protection of ecologically sensitive lands, or specific objectives like infrastructure improvements to a particular green space. When the policies of MDPs support the existence of nature in the built environment, a foundation to support further efforts to enhance an urban dwellers close contact with local biodiversity is established.

2.3.2 Municipal Development Plans and Plan Quality

A MDP is one of the more important and valuable tools for planners and planning processes (Baer, 2007; Talen, 1996). Apart from shaping both public and private investment and guiding land use and regulation, MDPs also provide a platform for both the communication of community consensus and the formation of objectives to steer urban development (American Planning Association, 2010; Gebhardt & Eagles, 2014). As a result, a MDP can be an appropriate vehicle for addressing and implementing green space planning and design decisions. However, the extent to which a MDP is “successful” largely depends on the quality of the plan.

The literature defines plan quality as “the idea that the planning process has produced a ‘good plan’ ” (Leone, 2008, p.28) and defines success in planning as the degree of implementation that occurs (Gebhardt & Eagles, 2014; Talen, 1996). The quality of a plan, or whether a plan is a “good” plan, or a “poor” plan, significantly affects the degree to which a plan is implemented and, in effect, influences the planning and design of the built environment (Berke, 2009; Laurian et al., 2004; Talen, 1996). To support the development of nature-first urban green spaces, MDPs must not only reflect nature-first goals and objectives but also have the capacity to influence the course of development. Research indicates that good plans, or plans that are successful in influencing future urban development, include the following characteristics: clear

identification of community issues; strong direction setting; policies well-suited to manage the effects of development occurring; and an evaluation process (Berke, 2009; Gebhardt & Eagles, 2014; Laurian et al., 2004).

Clear identification of community issues is identified by the literature as a characteristic of a good plan (Gebhardt & Eagles, 2014). Many planning processes include public participation as a means to accurately identify community issues; when community residents participate in plan making, their own values, beliefs, perceptions, and ideas for the future are expressed. Listening to and learning from the community can therefore shape a plan's goals, objectives, and approaches towards achieving a future that is consistent with the community's vision (Laurian & Shaw, 2009). For example, *OurWinnipeg* and its supporting Direction Strategies, incorporate the perspectives of local residents and in doing so identifies that planning for recreation and leisure infrastructure is required to support community recreation needs (The City of Winnipeg, 2011b). In addition, demographic analysis can help express community issues and their green space needs. As developers dedicate only so much land to green space, demographics can help inform the best use of green space dedication requirements. For example, population predictions can inform whether green space is dedicated to additional soccer fields, walking trails, or can be directed to the preservation of mature forest. Plans that clearly express community needs are more likely to be implemented and therefore are successful in influencing future urban development (Gebhardt & Eagles, 2014; Norton, 2007; Talen, 1996).

The literature indicates that to best guide future land use decisions, MDPs must include strong direction setting (Baer, 2007; Norton, 2007). Direction setting is a process that links actions and strategies to overarching principles or goals and visions and is

considered to be an element of a good plan as strong directions can clearly indicate next steps for how to shape future urban development (Talen, 1996). Norton (2007) states, “a plan ideally provides a repository of information and analysis, as well as guidance...but is not a blueprint to be followed slavishly, but rather provides a reasoned policy argument” (pg. 437). Strong direction setting does not authoritatively prescribe future actions, but rather informs local decision-makers to create consistent resolutions. Whether guidance is required for a discretionary decision or input is requested to shape private sector investment, a well-grounded and defined direction-setting framework can steer decisions and actions in a manner that supports the overarching principles of the plan. As a result, strong direction setting influences the likelihood of a plan’s ability to exert control over planning agendas and ensure that the goals of the plan supersede over private interests and concerns (Berke & Godschalk, 2009). This can be especially important for guiding land use decisions, where private interests may not appropriately reflect public goods and benefits, such as the development of green space.

In addition to strong direction setting, the literature agrees that good plans include policies that are well-suited to manage the effects of development occurring (American Planning Association 2010; Baer, 2007; Laurian et al., 2004). Laurian et al. (2004) investigated whether the number of policies in a plan affects plan implementation. The research found no clear relationship between the number of policies in a plan and the degree of implementation, but rather how plan implementation is influenced by the presence of policies suited to manage development conditions (Laurian et al., 2004). The tools selected to achieve the objectives of a MDP must be appropriate to the circumstances presented and be capable of producing the desired or intended outcome (Norton, 2007). For example, to achieve a plan’s objective of conserving natural areas,

policies may mandate that ecologically significant lands be protected through conservation easements, or that planted green space vegetation must be consistent with the local natural ecosystem. Policies should be crafted in a manner that influences policy implementation. Winnipeg's *Ecologically Significant Natural Lands (ESNL) Strategy and Policy* is an example of policy that aims to protect naturally valuable lands yet lacks a mechanism for policy implementation. Although policies may not be implemented for a variety of economic or political reasons, policies that are well-suited to manage the effects of development occurring influences plan quality.

The literature identifies that plan quality is further influenced by whether plan evaluation is part of the planning process. In their review of Ontario municipal development plans, Gebhardt and Eagles (2014) found that plans were more often deemed successful when the planning document indicated in detail when and how evaluation of the plan would take place and by whom. Talen's (1996) research supports the findings of Gebhardt and Eagles (2014) and adds that evaluating plans is a valuable part of the broader planning process as it can help further determine which factors contribute to higher standards of plan quality. There is no single process or format for developing MDPs, and also a detailed process of plan evaluation is not always evident or executed in the planning process (Berke & Godschalk, 2009; Norton, 2007; Talen, 1996). Berke and Godschalk (2009) acknowledge that evaluating the outcomes of plans whose effects will be realized in the future may be difficult. Yet disregarding evaluation because of this limitation discards a valuable opportunity to identify how to improve plan quality. For example, a process of evaluation must be carried out to validate whether or not crafted policies are fulfilling its objectives. To support plan evaluation, MDPs can include criteria for evaluating and measuring success, a time frame for when evaluation

shall occur, as well as identify the required resources to execute an evaluation (Baer, 2007; Gebhardt & Eagles, 2014). In doing so, the planning process can better support plan evaluation, which in turn can lead to good plans.

While clear identification of community goals, strong direction setting, and plan evaluation are considered the more influential factors affecting the quality of a MDP, the literature also highlights the following qualities that can shape the success of a plan: how well planning documents are consistent and compatible with one another (Mueller & Hersperger, 2014); technical inadequacies such as policy vagueness and ambiguity or policy rigidity (Berke & Godschalk, 2009); and commitment to adequate resources for plan implementation (Gebhardt & Eagles, 2014).

Green space planning documents from Milwaukee, Ottawa, and Calgary are highlighted here because their plans reflect the qualities of ‘good’ planning documents. For example, the City of Calgary (2003) *Open Space Plan* is a supporting policy document that demonstrates well-expressed green space policies informed by extensive research and analysis of trends and community goals for parks and open space; a commitment to monitor and update the plan is also included. The City of Ottawa (2006) *Green Space Master Plan* clearly and concisely identifies a vision for green space in Ottawa, why green space is of importance to the built environment, as well as how the plan will manage development to achieve its green space vision. The City of Milwaukee (2010) *Citywide Policy Plan* includes green space policies that can be measured; established baseline data is compared against actions, measuring and evaluating whether policy targets were met. MDPs can be a successful tool for addressing and implementing green space planning and design decisions, yet as illustrated a plan’s ability to inform planning decisions is largely dependent on the quality of the plan.

2.3.3 Plan Implementation

Plans are often portrayed as lengthy documents with little use other than gathering dust on the shelf. These types of criticisms lead to the discussion of plan implementation in the literature (Gebhardt & Eagles, 2014; Laurian et al., 2004; Talen, 1996). Although MDPs often include a section to steer plan implementation, plans or specific policies may not be implemented. The planning literature identifies the determinants of plan implementation to include capacity, community awareness, and the political environment (Gebhardt & Eagles, 2014). By discussing the determinants of plan implementation, a more informed assessment of how a MDP and supporting planning documents might subsequently influence green space planning and development can be better achieved.

Previous research indicates that staff capacity of local authority planning departments is significantly correlated with how well plans are implemented (Dalton & Burby, 1994; Reid, 1989). Staff capacity can be defined as the ability of individuals and organizations to perform functions effectively and efficiently. Building capacity is a process which strengthens one's capabilities by building on existing infrastructure and staff abilities, recognizing interdependence among systems and capturing opportunities for cross-sector benefits, and by responding to political and economic realities (Laurian et al., 2004). Staff shortages, a lack of experienced staff, as well as funding are cited as reasons that can inhibit staff capacity for plan implementation (Dalton & Burby, 1994; Reid, 1989). Despite these limitations, Berke et al. (2006) and Reid (1989) indicate that plan implementation may be more directly associated with the commitment of planning and administrative staff to the objectives and goals of the plan. Although the literature does not specifically discuss best practices for increasing staff capacity, case study

research as discussed in the literature nonetheless provides a strong correlation with plan implementation and staff capacity (Berke et al., 2006; Dalton & Burby, 1994; Reid 1989).

Public support, or lack thereof, is also a substantial factor affecting plan implementation. (Baer, 2007; Laurian et al., 2004). Community residents often monitor planning decisions, especially when proposed planning initiatives affect individuals (Laurian et al., 2004). Despite MDPs role to guide the decision-making process of local officials, political processes may be swayed. Fearful property owners or selfish petitioners who oppose plan recommendations can influence elected officials in their decision-making (Laurian et al., 2004). For example, a homeowner who opposes the recommended location of an infrastructure project can attempt to circumvent the planning process by pressuring his or her elected officials to abandon the project. Despite planning processes having identified the best location, the community's attitude towards a plan can obstruct the implementation of policy recommendations and actions. As a result, the degree to which community members embrace or resist a plan directly impacts whether a MDP is implemented (Hoch, 2002). Building community awareness is identified as a tool, to help citizens better understand the goals of MDPs and subsequent plan policies (Gebhardt & Eagles, 2014). As Leone (2008) describes, "building awareness refers to the dialogue regarding local issues and how plans, their goals, and policies will address them" (p. 34). Local awareness fosters inclusive dialogue, mutual learning, collective problem-solving, as well as builds trust in the plan and planning process (Laurian & Shaw, 2009; Leone, 2008). As a result, community residents are more equipped to trust a MDPs recommendations and support plan implementation.

The recommended actions and strategies of a MDP help guide and inform elected officials in the ongoing deliberative land-use decision-making process. For a variety of

reasons, including a degree of uncertainty, limited knowledge about the issues at hand, the degree of consensus, and questions regarding funding, an elected official may choose to not support a plan's recommendation (Laurian et al., 2004; Gebhardt & Eagles, 2014). In addition, the degree to which a plan may support an elected official's own personal commitments and pressure from constituents are additional factors that may sway the commitment of a Councilor to a plan and planning process. (Laurian et al., 2004; Norton, 2007). Depending on whether strong political will or opposition exists for planning initiatives, the political context can be both a catalyst and hurdle (Leone, 2008). Thus the political environment and its complexities significantly influences plan implementation. To overcome this barrier for plan implementation, Gebhardt and Eagles (2014) suggest that elected officials must be involved in the early stages of the planning process. In addition, any changes in members of Council, such as newly elected officials should be provided a copy of the plan and be educated on their role in the plan.

As discussed, staff capacity, community involvement, and the political environment can influence the extent to which a plan's recommendations guide future development. Due to the future oriented nature of plans, it takes time and knowledge of a local planning context to evaluate the implementation of planning documents. For example, an outsider may not be able to discern in what ways the planning policies from Milwaukee, Ottawa, and Calgary were implemented. Despite each plan providing strong green space policies built on community identified goals, the extent and degree of plan implementation may be uncertain. MDPs include specific actions to steer plan and policy implementation yet barriers exist that hinder implementation.

MDPs are considered one of the most effective instruments of urban policy and as a result can assist in eliciting greater support and mandated practices for enhancing the

presence of nature in the built environment. As legal standing documents, municipalities are often obligated to follow policies within an MDP, which may include progressive green space policies. Given that MDPs can guide land use planning at different geographic scales, MDPs have the capacity to appropriately reflect and capture the interconnectedness of natural landscapes and ecological processes.

2.4 Planning practices to support nature in the built environment

Research indicates that green space planning is not only influenced by municipal development plans but other related documents and tools. Examples from Milwaukee, Ottawa, Calgary, as well as other select cities are discussed to demonstrate how municipalities use resourceful planning practices to further support nature in the built environment. The literature revealed four areas of planning policy and related tools that direct efforts to increase the presence and quality of nature in the built environment.

1. Green Space Planning Documents
2. Land Use Regulations
3. Land Acquisition & Compensation
4. Ecological Restoration

Although numbered the tools are not presented in hierarchical order. Each is considered below.

2.4.1. Green Space Planning Documents

As indicated in the literature, effective strategies for enhancing urban nature are often based on careful planning and background work. Planning is the essential foundation of any successful implementation strategy. By identifying and understanding the local, ecological, and development conditions, planning can help craft comprehensive green space strategies that encourage the preservation or development of the features and characteristics of natural, wild landscapes. Municipalities often guide the protection and

creation of green spaces through planning documents that are dedicated solely to green space (Arendt, 1999; Gobster & Barro, 2000). A green space plan or parks plan is a targeted planning document that serves as policy foundation for a city's natural elements.

As Arendt (1999) explains, plans which specify recommendations for adopting clear green space standards is necessary since municipal development plans too often take a limited approach. A scan of urban green space plans indicate that green space planning documents reflect a community's goals and objectives relating to the delivery and care of urban parks, open spaces, and natural resource assets, such as waterways and urban forests. In addition, green space plans will often include implementation strategies to achieve the plan's objectives. For example, The City of Brandon (2002) *Green Space Master Plan* includes specific policy recommendations for targeted preservation areas and green space development, identifies specific implementation tools, prioritizes green space projects, and references potential funding sources. Montréal, Ottawa, Toronto, and Calgary are examples of other Canadian cities that have invested in planning documents specifically for adopting clear urban green space standards.

To help sustain ecological processes and biodiversity, green space planning tools must appropriately reflect the interconnectedness of natural landscapes. As discussed, MDPs can be prepared at different geographic scales and green space planning documents can as well. The Netherlands *Nature Policy Plan* is an example of a green space plan that serves as a national framework for conservation actions (Beatley, 2000). The Netherlands is a leader in green space planning as evidenced by its use of a landscape ecology approach to study the natural environment in relation to the built environment on a national scale since the 1960s (Beatley, 2000). On the other end of the spectrum, the boroughs of Montréal demonstrate a green space planning approach for

neighbourhoods. Montréal's 19 boroughs range in size from 4 km² to 42 km², with an average of 18 km², just slightly larger than Winnipeg's River Heights/Fort Gary Ward. Boroughs, and their respective Mayor and Council, use a Green Plan to help direct action and attention to local green space matters. Compared to a national or regional green space plan, localized planning initiatives, such as a borough's Green Plan, can provide greater detail on how to best manage and protect pockets of green spaces. Examples of green space plans also include green space plans produced for a city or region such as Ottawa's *Green Space Master Plan*; *Strategies for Ottawa's Urban Greenspaces* (2006), as well as planning documents for specific types of environments, such as river valleys and ravine systems as found in Calgary and Toronto. A green space planning approach that respects the complexity and interconnectedness of ecological relationships is important because natural systems are not limited by boundaries (Duerksen & Snyder, 2005; Nassauer, 1997). By creating green space plans at different scales, green space policies may be better suited to best support ecological communities.

A hierarchy of planning documents, each scaled to reflect a different geographic area, such as a neighbourhood, city or municipality can provide better-suited policies to manage development conditions (Laurian et al., 2004). As the scale of a plan changes, the plan will include different environmental inventories and analyses of best practices, as well as varying policies, strategies, and regulations (American Planning Association, 2010). Calgary is an example of a municipality with a hierarchy of green space planning documents, each produced to guide green space planning at a different scale. The City of Calgary (2003) *Open Space Plan* offers "broad policy direction for decision-making on individual community plans, area redevelopment plans and development proposals" (p.3) and in addition forms the foundation for specific green space plans and planning

documents including the *Urban Park Master Plan*, *Natural Area Management Plan*, and *Development Guidelines for Landscape Construction*. Although each plan targets a specific scale, type of environment, or topic, the plans and policies within each support one another as well as promote the overarching goals of the green space plan, creating a robust planning framework.

When decisions relating to urban green space are made on an ad hoc basis, opportunities to preserve significant natural lands, develop green space, and/or increase connectivity between naturalized areas are jeopardized. Planning documents that specify recommendations for adopting clear green space standards is a practical planning tool that can help increase the presence of nature in the built environment. Serving as a policy foundation for the delivery and care of urban green spaces, green space planning documents identify policies directing environmental objectives, design standards, land acquisition, and implementation strategies. Green space plans that are prepared at different geographic scales can further enhance green space planning practices, leading to a robust green space planning framework reflecting the interconnectedness of natural systems.

2.4.2 Land Use Regulations

Land use regulations are identified by the literature as an essential planning tool to guide economic, social, and environmental aspirations (American Planning Association, 2010). Regulations can be used to establish the minimum procedures for protecting green space and in doing so, allow for the effective use of other tools such as transferrable development credits and acquisition programs (Duerksen & Snyder, 2005). In protecting and developing green space, land use regulations can include zoning, subdivision controls and development standards. As indicated by the literature, zoning typically focuses on

allowable land use and density, subdivision regulations address the process of dividing a land parcel into smaller lots, and development standards address a wide variety of development impacts (Anderson, 2008; Duerksen & Snyder, 2005). As a planning tool, land use regulations can be used to encourage or mandate a greater amount of nature in the built environment.

To regulate specific land uses and buildings, zoning is applied to land parcels. Land use zoning indicates municipally approved uses such as, commercial, industrial, or park dedication. In Winnipeg, for example, land parcels zoned as PR indicate that the land is reserved for parks and green space and use of the land must follow a set of restrictions as identified in the *City of Winnipeg Zoning By-law*. In addition to zoning a parcel of land, zoning may also be applied to a particular natural resource or feature (Duerksen & Snyder, 2005). The City of Milwaukee has instituted a type of zoning called overlay zoning to help preserve and create green space along the City's two rivers. Overlay zoning is a regulatory tool that provides a means to alter or specify allowed uses and/or development standards to the existing base zoning (Morris, 2009). For example, the Milwaukee Greenway Overlay applies development set-back and riparian corridor requirements to preserve natural landscapes along the riverbanks. Rather than applying site specific zoning and regulations, overlay zoning applies area-wide regulations, which may be more appropriate to preserve or enhance natural features, such as ecologically significant lands. The City of Winnipeg has utilized overlay zoning for neighbourhood districts and an opportunity may exist for overlay zoning to be applied to the features and characteristics of natural, wild landscapes.

Density is often regulated through zoning bylaws that establish the maximum number of dwellings permitted per building acreage, or by establishing minimum lot sizes

(Arendt, 1999). As cities strive to increase population density, planning tools are used to incentivize developers and can create opportunities for additional green space acquisition. Municipalities may allow developments a level of density that surpasses allowable zoning bylaws in exchange for additional green space, conservation easements, or lands desired for recreation (Arendt, 1999; Beatley, 2011; Taves, 2002). This planning approach trades density for a benefit and is often referred to as “density bonusing”. Both Toronto and Vancouver allow developers to exceed current density restrictions in exchange for cash contributions or amenities (Moore, 2013). Over a five-year period, the development industry in Toronto contributed a value of \$22,000,000 into park development, and in Vancouver \$12,000,000 was contributed by developers for park development (Moore, 2013). As indicated density bonus schemes can act as an incentive to encourage private investment in green space development, and in doing so shift some of the costs associated with green space acquisition onto the development industry (Taves, 2002). While density bonus schemes is an effective tool in dense urban environments, it is infrequently applied to greenfield residential development as increasing the density is often not valued nor necessary since affordable land prices allow developers to build out rather than up (Taves, 2002). However, as Taves’ (2002) research would suggest, legislation regarding density bonus schemes may be adapted to better suit and encourage additional green space conservation for greenfield residential development. An opportunity therefore exists to assess the applicability of trading density for additional green space in a suburban context.

Development standards have evolved beyond zoning ordinances to include standards that address a wide variety of development effects (Slone, 2008). For example, development standards can be used to increase the presence of nature in the built

environment through enhancing existing urban green spaces, protecting different types of wildlife habitat, or mitigating potential adverse impacts from some feature of development (Moughtin, 2005; Schwab, 2008). Standards for tree and vegetation protection, stream and wetland buffers, ecologically sensitive lands, and biodiversity are examples of development standards enacted in Milwaukee, Ottawa, and Calgary. For example, the City of Calgary's (2013) *Development Guidelines and Standard Specifications: Landscape Construction* includes guidelines for tree and native vegetation replacement. By directing developers to replace natural landscape features, development standards play a role in attempting to maintain existing landscapes. Although this standard does not prevent the removal of trees and native vegetation it nonetheless suggests that development standards can play a role in supporting nature-first urban green spaces. For example, the adoption of a development standard that prohibits the removal of trees and native vegetation would both elevate the importance of nature in the planning process and better integrate natural landscapes into the built environment. Development standards are relatively easy to administer (Duerksen & Snyder, 2005) and if incorporated clearly into development agreements, protection standards for natural landscapes can have beneficial results in enhancing natural elements in the built environment (Schwab, 2008). Development standards are therefore an example of a practical planning tool that can benefit urban nature.

An additional land use regulation tool that may be used to encourage preservation of existing natural landscapes is Transfer of Development Credits (TDC). TDCs are similar to density bonus schemes in that it encourages high-density development, yet unlike density bonus schemes, TDCs present an opportunity to preserve privately owned, high-valued green space (Alberta Environment and Sustainable Resource Development,

2014). Originating in the 1950s in the United States, TDC programs exist in many American states and demonstrate successful results for protecting natural landscapes. For example in Montgomery County, Maryland, a TDC program was implemented to protect the lands associated with the region's drinking water supply and has since protected over 10,000 acres of land (Duerksen & Snyder, 2005).

Greenaway and Good (2008) describe how in a TDC program, a landowner's rights to develop their parcel of land are purchased and applied to another location. In a TDC program, the landowner selling their development rights benefits as they receive a financial payment, the landowner purchasing the development rights benefits as the transferrable development credit permits the landowner to build at a higher density than would otherwise be allowed, and an area of natural landscape benefits as it becomes protected from future development (Greenaway & Good, 2008). Although TDC programs exist in Canada, Canada has been slow to adopt the tool yet examples do exist from Alberta demonstrating how TDCs may be applied to protect large areas of contiguous natural landscapes.

The Municipal District (MD) of Bighorn, Alberta amended their development plan in 2006 to include a TDC policy. The TDC policy is based on the premise that it is better to conserve land in some areas and concentrate development in others. The policy outlines the process of transferring development potential from parcels within an identified conservation area to parcels within an identified development area and is supported through a local area structure plan and zoning by-law. Since its introduction, the TDC policy has resulted in the preservation of approximately 1650 acres of land in the MD of Bighorn (Greenaway & Good, 2008). Another example of a TDC program is in Wheatland County, Alberta. Due to a sharp rise in the number of subdivision

applications a TDC program was introduced in Wheatland County in 2006. The TDC program aims to help maintain relatively large blocks of contiguous agricultural land without removing the economic benefit a landowner may receive by developing a parcel (Greenaway & Good, 2008). The TDC subdivision program follows a similar process as regular subdivision applications and a record of where “subdivision credits” have been removed is kept by the local planning department. Although the scale of protected lands in the MD of Bighorn and Wheatland Country is rural and regional, the objective of the tool reflects a nature-first planning approach by acknowledging the value of nature through protection. In addition, TDC programs demonstrate the effectiveness of protecting natural lands when concerted effort is first directed towards identifying natural spaces for protection and enhancement.

Vancouver has the only active and comprehensive urban TDC program. Despite being used predominately to protect historical buildings it may also be applied for open space and park creation but has not yet been used in this capacity (Greenaway & Good, 2008). While TDC programs can lead to substantial green space preservation, Duerksen and Snyder (2005) note that many TDC programs are designed without a clear understanding of how to assign development rights and how to create a viable market for the development rights. Greenaway and Good (2008) cite that it is largely a lack of awareness which has limited the application of TDCs in Canada. As a planning tool, TDCs offer a creative approach to increase the presence of nature in the built environment.

2.4.3. Land Acquisition & Compensation

To support nature in the built environment a strong acquisition element is deemed critical (Duerksen & Snyder, 2005; Harnick, 2008; Murphy, Meijer, & Visscher, 2012).

While regulations are essential for protecting and developing urban green space, regulations alone are insufficient (Murphy et al., 2012). In situations where ecologically sensitive land is privately owned, or where local authorities want to see additional green space, compensation is often required. As Duerksen and Snyder (2005) indicate, acquisition strategies that are backed by reliable, long-term funding can also support green space development and protection when increasing green space regulations are met with opposition. Strategies to provide funding for acquisition concentrate on open space dedication requirements, impact fee requirements, and mitigation requirements (Arendt, 1999; Duerksen & Snyder, 2005; Harnick, 2008; Murphy et al., 2012).

A common approach for local authorities in addressing green space preservation is to use land acquisition tools and programs. As highlighted by Duerksen and Snyder (2005), land acquisition programs are often subject to legislation that dictates local governments to “exact only an amount of land/fee that is reasonably related to the demand created by a particular development” (p.62). Land acquisition requirements for green space may be found in a municipality’s development agreement parameters. A municipality can acquire green space by indicating within the development agreement parameters the minimum allowable percentage of land that a developer must contribute for green space purposes (Evergreen, 2004). Alternatively, a municipality may permit a developer to provide a payment in lieu of green space to purchase land for green space creation (Harnick, 2008). Evergreen, a national organization supporting and facilitating urban greening, conducted a national survey on green space acquisition and stewardship approaches in 2004. The answers gathered from twenty-four interviews with municipal authorities revealed that green space dedications in Canada include 5 percent or 10 percent of developable land (Evergreen, 2004). For example, Nova Scotia, New

Brunswick, Ontario, and British Columbia all require 5 percent of developable land to be dedicated as green space and the remaining provinces and territories require 10 percent (Evergreen, 2004). While green space dedication requirements is successful in increasing the total quantity of green space within a city or town, as a planning tool it may be limited to reflect preservation of high-quality natural features, green space connectivity, and in accommodating diverse users and activities.

Another acquisition tool that can support green space dedication in the built environment is the direct purchasing of development rights. Purchasing development rights is a technique that can assist local governments in preserving open space without having to directly purchase land. Landowners enter into a voluntary and legal agreement that allow owners of land, which meets certain criteria, to sell the right to develop their property to local authorities or non-profit-organizations (Duerksen & Snyder, 2005). The agreement is recorded on title and permanently limits the future use of the land to dedicated green space (Worbets & Berdhal, 2003). Purchased development rights ensure continued private ownership, and can provide income and tax benefits. Similar to TDCs, few examples exist in Canada of purchased development rights supporting green space preservation. However, examples do exist where landowners donate their land to local authorities for green space. Pollock Island, located in the community of St. Norbert, Winnipeg, is a local example of a property donated to the City of Winnipeg. In doing so, the 16-acre property home to river bottom forest and diverse plant and animal species is protected from future development and provides opportunities for residents to connect with nature in the built environment.

An additional method that may be used to acquire additional natural, wild landscapes in the built environment is through reforming urban fee and tax systems

(Beatley, 2001; Duerksen & Snyder, 2005; Harnick, 2008). Programs that entice developers and residents to preserve or enhance nature and natural features may help increase the presence of green space in urban environments. For example, Beatley (2011) suggests that municipal property tax systems could include the presence of natural elements that provide high economic value to the municipality, such as stormwater retention. Landowners with trees or wildlife habitat on their property, for example, would be compensated with lower municipal property taxes. Alternatively, landowners may be charged with a fee for the absence or removal of nature from private property. Duerksen and Snyder (2005) suggest that requirements, which penalize landowners for removing natural features from the landscape, can be quite effective. For example, programs in California and Oregon require developers to offset any impact that their development may cause on existing vegetation or habitat by rehabilitating or recreating natural areas on or off-site (Duerksen & Snyder, 2005). As a result of this requirement, urban environments experience a no-net loss of green space. Incentives to support nature in the built environment are one possible strategy to help facilitate further protection and development of natural, wild landscapes in the built environment.

2.4.4. Ecological Restoration

Arendt (1999) expresses that the quality of open space that is preserved is equally important as the quantity and configuration as it is the features and elements of nature that support biodiversity, enhance ecological processes and attract people. Unfortunately as a result of development pressures, natural areas found in urban environments may be degraded. However, degraded urban natural areas are increasingly being transformed back to their native ecosystems. Ecological restoration is an effective strategy for both restoring and enhancing nature in the built environment.

Ecological restoration does not always receive a positive response from the wider public. Practices such as removing trees or brush to restore more open prairie ecosystems, for example, tend to raise questions and comments asking what does it mean to restore a landscape or an ecosystem, and once restored, how do you keep it that way. The literature indicates criticism that restoration ecology is “faking” or “reinventing” nature, and akin to acting out fantasies of natural landscapes (Katz, 2000). A review of the literature indicates that not everyone defines nature found in urban environments as ‘natural’ since the features and characteristics have been impacted by processes of urbanization (Godschalk, 2004; Katz, 2000). According to this view, even if ecological restoration or rehabilitation efforts are applied to re-establish the natural regime, the lands have been subjected to man-made influences and therefore the landscape is no longer considered natural. On other hand, as illustrated by Katz (2000) an underlying intention of ecological restoration can be to approximate natural processes. This research acknowledges that urban nature is impacted by humans but still considers nature within the built as ‘natural’ since nature is not fully under human control but rather by its own ecological processes of growth and change.

Regardless of one’s conception of nature and view of ecological restoration, ecological restoration programs and strategies can be effective to enhance the quality of natural elements and features in the built landscape. Ecological restoration is broadly defined as “nothing less than the reestablishment of a completely functional ecosystem, containing biodiversity so that it could continue to mature and evolve over time” (Clewel, Rieger, & Munro 2005, as cited in Fraser, 2009, p. 283). Ecological restoration goes beyond ecological rehabilitation, which is viewed as less ambitious, and consisting of beneficial treatment to allow ecological recovery but at times falling short of the full

complement of species and processes (Fraser, 2009). Tasks involved in ecological restoration include but are not limited to removing invasive species, reestablishing a fire regime, removing dams or other artificial water systems, and replanting native vegetation; all tasks are centered on the goal of restoring biological functionality, the dynamic relationships and processes (Duerksen & Snyder, 2005). The literature indicates that it is common for municipal development plans to include ecological restoration as a strategy to improve natural ecosystems affected by urban development. The City of Montréal continually assesses the natural habitats of its urban parks and green spaces to identify steps required for an ecological restoration and management process. Similar to other green spaces, Montréal's parks have been impacted by human use and development. Through ecological restoration and management the plan seeks to make it possible to restore ecosystems and through monitoring, maintain its plant and animal diversity (The City of Montréal, 2004). Recreational and educational activities for users are then developed to minimize disruption. Through its municipal development plan, *The City of Calgary Municipal Development Plan* (2009), Calgary seeks ecological restoration of native habitat and areas of biodiversity to reduce disruption and fragmentation of natural habitats. To support this objective, the City of Calgary Parks Department developed the *Habitat Restoration Project Framework* (2014). This document identifies the professional qualifications required to carry out habitat restoration projects, and helps ensure restoration project consistency, defensibility, and compliance (The City of Calgary Parks Department, 2014).

As identified herein planning tools to insert nature into the built environment are numerous. The development and adoption of planning documents such as biodiversity action plans, green space master plans, and urban ecology strategic plans, create a

foundation to inform and encourage actions to increase the quantity and quality of green space. To help support the objectives of green space planning documents, and to retain ecologically significant lands and/or to provide access to wild and natural spaces within the built environment, natural lands are acquired. Land acquisition mechanisms include municipal open space dedication requirements, purchasing development rights, and urban fee and tax systems. Zoning and subdivision regulations are created to further protect and acquire natural spaces through density bonus schemes, transferrable development credits and development standards that can increase vegetation and protect existing natural features. In circumstances where human impacts have degraded natural systems, municipalities can fund rehabilitation and restoration efforts. Although a variety of planning tools exist to support the integration of natural, wild urban green spaces, limitations in the form of political support, funding mechanisms, and legislated development rights may prevent their application. Success in increasing natural, wild landscapes in the built environment will not happen by accident, but requires commitment from local authorities to invest time and resources into researching, developing, and implementing the appropriate planning tools.

2.5 Conclusion

In reviewing the literature, questions were proposed to identify the benefits of nature in the built environment, the role of municipal development plans in guiding land use, and how planning policies and related tools can increase the presence of nature in the built environment. In seeking answers to these three questions, the literature revealed that urban dwellers benefit physically, psychologically, and socially from nature in the built environment, municipal development plans are powerful tools with the capacity to

enhance the presence of urban nature, and that both practical and creative planning practices and tools are necessary to insert nature into the built environment.

The literature indicated that there are numerous benefits to including nature in the built environment. When individuals interact with nature, physical and emotional well-being improves and responsible environmental behaviours are fostered which can encourage action to further support the protection of natural habitat. Conscious efforts to increase opportunities for urban dwellers to interact with nature within the built environment may lead to healthier and happier lives overall. In addition to the value that nature imparts onto humans for physical, psychological, and social benefits, the existence of nature in the built environment is necessary to sustain biodiversity and natural ecosystems. As urbanization disrupts biodiversity and natural processes, deliberate efforts must be directed to support naturalized landscapes within the built environment. To maintain ecological processes and to enhance the possibility of ongoing contact with biologically rich environments in developed urban areas, purposeful planning and design strategies are required.

As highlighted, MDPs are one of the most effective instruments of urban policy and as a result can assist in supporting policy and planning processes to enhance the presence of nature in the built environment. As legal standing documents, municipalities are obligated to follow policies within an MDP. Therefore, by including progressive green space policies, the development of green spaces that reflect the distinctive features and characteristics of nature found in the absence of humans, may be further supported. However, MDPs must not only reflect nature-first goals and objectives but also have the capacity to influence the course of development. The capacity of local planning authorities, community awareness, and the political environment are proven determinants

of a plan's success. Although at times development may be perceived as impossible to control, MDP's can be effective tool to in the ongoing deliberative land-use decision-making process.

Beatley (2011) suggests that to create biophilic cities, "a city looks for opportunities to repair and restore and creatively insert nature wherever it can" (p.2), and in doing so, the built environment will incorporate natural elements to a far greater extent than current practices. Both practical and creative practices to insert nature into the built environment were identified. Planning documents, such as green space master plans or strategies, are critical to guide decisions relating to nature and the built environment. Zoning, subdivision controls, development standards, and land acquisition strategies are additional and important tools that when applied in a complementary manner, can increase nature in the built environment and further protect existing natural features. Where urbanization has impacted and degraded natural lands, restoration and rehabilitation efforts may be applied to recover ecological processes.

Evolving from the literature is the perspective that for the built environment to further enhance personal experiences with the natural world, planning practices must be encouraged so that the features and characteristics of natural, wild landscapes become a primary factor in the planning and design of urban green spaces. Although the benefits of nature in the built environment is well documented and a wide variety of tools and approaches exist to enhance urban nature, a scan of Canadian cities indicate that it is not common practice for green space planning decisions to be exclusively steered by what is best to support nature in the built environment. Barriers such as pressure for development, limited available land, and economic drivers may result in green space planning decisions driven by economic utility. Furthermore, political processes, civic

administration, and community involvement may also impact the planning and design of nature-first urban green spaces.

To further identify how planning processes may support the application of nature-first urban green spaces, the City of Winnipeg's green space planning practices are assessed. In doing so, the opportunities, barriers, and challenge in protecting and/or developing nature-first urban green spaces are revealed to gain a deeper understanding of how green space policies may influence planning practices which further acknowledge the value of nature in the built environment.

CHAPTER 3 ANALYSIS OF GREEN SPACE PLANNING IN WINNIPEG; POLICY AND PLAN REVIEW

3.1 Introduction

The intent of this research is to identify how municipal development plans support, or may support, the integration of natural, wild landscapes into the built environment, through what is labeled here as *nature-first urban green spaces*. To identify the elements of municipal development plans that can advance green space planning practices as well as the obstacles that may hinder the creation of nature-first urban green spaces for residential greenfield development, this practicum asks the following research questions:

1.a What is the existing role of the City of Winnipeg's municipal development plan towards the protection and/or development of urban green spaces in residential greenfield development?

1.b What is the potential role of the City of Winnipeg's municipal development plan towards the protection and/or development of urban green spaces in residential greenfield development?

2.a What is the existing role of the City of Winnipeg's municipal development plan in applying nature-first planning practices towards the protection and/or development of urban green spaces in residential greenfield development?

2.b What is the potential role of the City of Winnipeg's municipal development plan in applying nature-first planning practices towards the protection and/or development of urban green spaces in residential greenfield development?

3. In what ways can urban planners and urban policy in Winnipeg apply lessons from other cities to support nature-first planning practices?

To seek answers to the research questions, the research methodology followed a case study of municipal development plans and their influence on green space preservation and development in Winnipeg. Upon reviewing the literature on the benefits of nature in

the urban environment, the role of municipal development plans as an effective instrument to guide land use and urban policy, and how planning tools and processes may support the application of green space planning practices to enhance nature in the built environment, an analysis of Winnipeg's relevant green space planning documents was conducted. Figure 1 illustrates the research methodology and where the analysis of Winnipeg's green space policies falls within the research process.

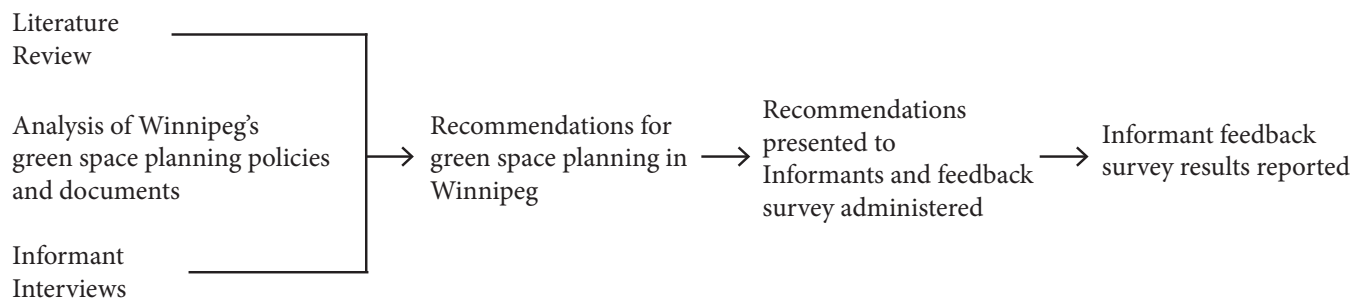


Figure 1: Research Methodology (E.Blackie December, 2014)

The analysis of Winnipeg's relevant green space planning documents was informed by the literature review and supplemented by interviews with informants. The concepts and themes discussed in Chapter 2, such as the benefits of urban nature in the built environment, the characteristics of policy and plans that influence the course of development, and planning tools which protect urban nature, help demonstrate how urban green space planning policies may steer planning practices to further acknowledge the value of nature in the built environment.

An analysis of Winnipeg's green space policies as found in selected municipal development plans helped identify the role of MDP's towards the protection and development of green spaces. In addition, reviewing and assessing Winnipeg's green space policies revealed the ways in which current policies are delivered, the successes

and gaps in Winnipeg's green space policies and planning documents, and what steps may be implemented to influence the application of nature-first planning.

3.2 Review of Winnipeg's relevant green space planning documents

An initial scan of Winnipeg's planning processes and documents revealed that *OurWinnipeg*, including two of its accompanying documents, *Complete Communities* and *A Sustainable Winnipeg*, precinct plans, the City of Winnipeg's *Development Agreement Parameters*, and the *Ecologically Significant Natural Lands Strategy*, all shape how green spaces are planned and designed in Winnipeg. Of these documents, *OurWinnipeg* is the City's municipal development plan and serves as the official development plan guiding growth and change. Both *Complete Communities* and *A Sustainable Winnipeg* are supporting complementary planning documents to *OurWinnipeg*, and *Complete Communities* is also a Council adopted secondary plan. Precinct Plans are either secondary plans or non-secondary plans and the *Ecologically Significant Natural Lands Strategy* and *Development Agreement Parameters* are non-statutory policy plans and adopted council policies. As the research revealed, each of the identified documents influence green space development and as a result were included in the assessment. Figure 2 illustrates the hierarchy of planning documents and how each of the planning documents relate to one another.

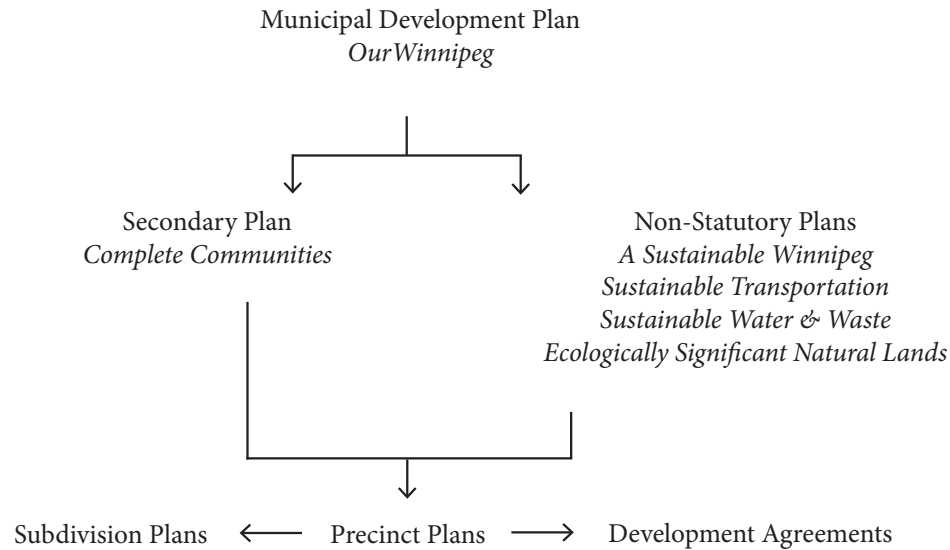


Figure 2: Hierarchy of Winnipeg's Planning Documents (E.Blackie December, 2014).

Each of the documents identified was thoroughly read and scanned for key words and themes. These key words and themes were informed by the literature review. The emerging themes reveal how Winnipeg's green space planning documents influence the size and quality of green spaces, efforts to preserve existing naturalized landscapes, processes for collaborative green space planning, and maintenance and management practices.

A description of each document, its structure, and an extraction of key relevant clauses, objectives and/or requirements, and their relevance to green space planning is followed by a summary of emerging themes within the documents. The selected planning documents relevant to green space planning in Winnipeg are discussed in the following order:

1. The *OurWinnipeg* Planning Framework
2. Precinct Plans
 - a. *Waterford Green Precinct Plan* (Precinct C)
 - b. *Ridgewood South Statutory Plan* (Precinct Q)
 - c. *Precinct K Precinct Plan* (Precinct K)

3. *City of Winnipeg Development Agreement Parameters*
4. *Ecologically Significant Natural Lands Strategy*

3.2.1 *The OurWinnipeg Planning Framework*

In 2011, the City of Winnipeg's municipal development plan, *OurWinnipeg* was approved by the Province of Manitoba and adopted by City Council in accordance with *The City of Winnipeg Charter*. Through the use of a creative consultation strategy and collaborative planning process, *OurWinnipeg* puts forward a 25-year vision for the entire city. More than 40,000 Winnipeggers participated in the development of *OurWinnipeg* (The City of Winnipeg, 2011b) and in 2012, *OurWinnipeg* was awarded the Planning award of Excellence from the Canadian Institute of Planners and the Manitoba Planning Excellence Award from the Province of Manitoba. As a recipient of these awards, *OurWinnipeg* is credited with demonstrating planning excellence, innovation, and implementation potential.

As part of the *OurWinnipeg* initiative, the City of Winnipeg developed four detailed Direction Strategies: *Complete Communities*, *Sustainable Transportation*, *Sustainable Water and Waste*, and *A Sustainable Winnipeg*. These four Direction Strategies complement the visions laid out in *OurWinnipeg* by providing a more detailed framework to inform land use and development in Winnipeg. As Figure 3 illustrates, the four Direction Strategies are housed within the overall framework of *OurWinnipeg* and the intent of each Direction Strategy is to support the goals and vision of *OurWinnipeg*.



Figure 3: The *OurWinnipeg* Planning Framework (The City of Winnipeg, 2011b, p. 4).

Of the four Direction Strategies, *Complete Communities* and *A Sustainable Winnipeg* are the most relevant to green space planning.

Complete Communities is the only Direction Strategy officially adopted through a by-law as a secondary plan. The objective of a secondary plan is to represent a progressive translation of the more broad and general ideas of development plans into operational targets (The City of Winnipeg, 2007). As a secondary plan enacted by the Complete Communities Direction Strategy By-law, *Complete Communities* enables the City of Winnipeg to further enact detailed visionary planning by directing development in accordance with the objectives of *OurWinnipeg*. *A Sustainable Winnipeg* is not a secondary plan but endorsed in principle as City Council policy. Accordingly, *A Sustainable Winnipeg* acts as a set of guidelines for the City of Winnipeg to follow, expresses Council's will and expectations, and provides transparency to the public, all with respect to subject matter.

Figure 4 illustrates the framework of *OurWinnipeg*, *Complete Communities*, and *A Sustainable*. Each document is organized into sections; each section is one theme, or topic, and is supported by directions. The directions summarize the main intent of the section and like a goal, provides a description of the results that the City of Winnipeg

hopes to achieve. Enabling strategies are provided for each direction, providing guidance that will assist the City fulfilling the direction. *Complete Communities* also includes four categories of strategic implementation tools: planning, incentives, capital budget/infrastructure, and leadership/partnership.

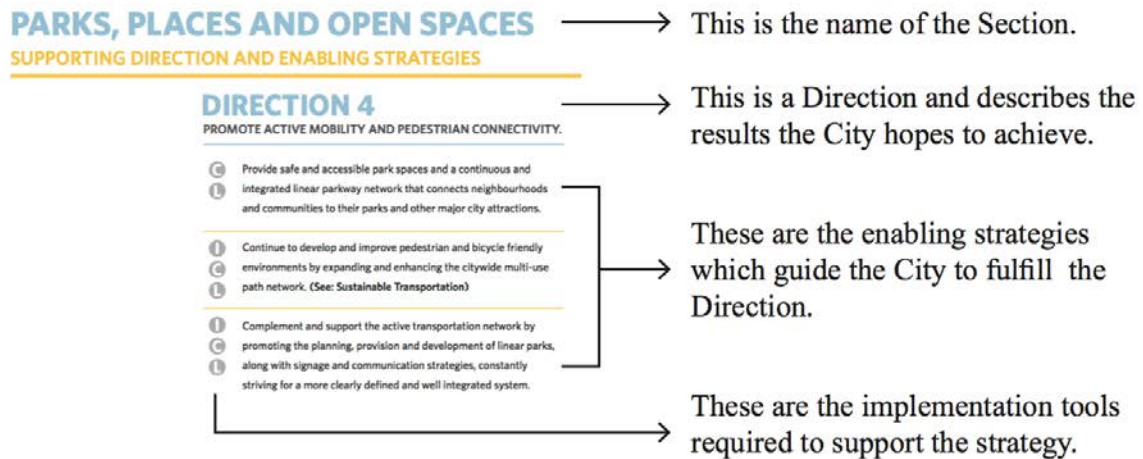


Figure 4: An example of the structure of *OurWinnipeg* and the four Direction Strategies (The City of Winnipeg, 2011a, p.110. Adapted by E. Blackie).

As the scope of this research includes the preservation and creation of green space in new residential greenfield development, the assessment focuses on the policies of *OurWinnipeg*, *Complete Communities*, and *A Sustainable Winnipeg*, directed to the development of new communities only.

Below are examples of some of the relevant key directions and enabling strategies related to green space development. For emphasis, important points are underlined.

OurWinnipeg

Section 01-1b Key Directions for the Entire City

- Focus future acquisition, design, development, operation, use and promotion of our parks, places and open spaces within the context of *Complete Communities*

The City of Winnipeg, 2011b, p.31

Section 02-2 Environment

- Recognize and preserve Winnipeg's parks, green spaces and riverbanks as green oases in our urban setting
- Enable the protection of ecologically significant lands
- Support and enhance the urban forest

The City of Winnipeg, 2011b, p.68

Complete Communities

Section 3 Direction 5: Encourage Green Development and Conserve Natural Areas to develop new communities in a sustainable manner

- Balance provision (scale, distribution, and design) of parks and open space with density, demographics and distance
- Park sites will be selected in ways that maximize the conservation, protection and integration of existing natural features
- Parks will be integrated purposively into the overall community design
- Promote and expand biodiversity and 'green' principles consistent with the local natural ecosystem to all Parks, Places and Open Spaces beyond the expected

The City of Winnipeg, 2011a, p. 77

Section 7 Direction 3: Demonstrate the value of our environmental and cultural capital by protecting, enhancing and restoring those natural and cultural park resources that are recognized as having historical, ecological, or aesthetic value

- Maintain our Ribbons of Green (riverbanks, urban street trees, green corridors) and provide a well-managed urban forest that contributes to air, water, environmental and aesthetic quality
- Establishing an urban forest management plan, continue to preserve and expand our urban forest
- Maintain a focus on preserving and conserving habitats designated through the Ecologically Significant Natural Lands Strategy along the city's riverbanks and lands
- Protect and enhance public access to our riverbanks and forest environments and expand ecological networks and linkages
- Promote and expand biodiversity consistent with the local natural ecosystem, not only within the urban forest and designated 'natural areas' but in all Parks, Places, and Open Spaces
- Collaborate with environmental and stewardship organizations on shared best practices and implementation strategies
- Demonstrate the benefits of both natural and restored environments as contributors to quality of life by promoting environmental practices and public education

The City of Winnipeg, 2011a, p. 109

Section 7 Direction 5: Maintain relevant standards and guidelines for open space development and management

- Update the Development Agreement Parameters to reflect innovation in development practices as they pertain to parks, such as watershed management, ESNL, and active and passive park spaces
- Balance of the provision (scale, distribution and design) of Parks, Places and Open Spaces with density, demographics and distance
- Define and prioritize Parks, Places and Open Spaces services to provide consistent, effective and efficient delivery of services
- Recognize and protect the lands designated as Major Open Space for recreational uses and the preservation of natural habitats

The City of Winnipeg, 2011a, p. 110

A Sustainable Winnipeg

Section 9 Direction 2: Recognize and preserve Winnipeg's parks, green spaces, and riverbanks as green oases in our urban setting

- Actively and continuously seek out alternative planning, maintenance and operation approaches, products and practices that are sustainable
- Improve ecosystems through restoration, reforestation and effective pest management
- Develop a city-wide natural network connecting neighbourhoods, communities, and the river system, providing ecological, recreational and transport benefits

The City of Winnipeg, 2011c, p. 37

Section 9 Direction 6: Enable the protection of ecologically significant lands

- Evaluate proposed developments that affect high quality natural areas and encourage the protection and preservation of such lands to the greatest extent possible
- Utilize the ESNL Strategy to evaluate proposed developments
- Designate natural areas that are environmentally-sensitive and/or significant and provide measures for the possible acquisition, preservation, protection and maintenance of such lands
- Utilize guidelines that assess a value for natural areas on public guides
- Encourage private landowner participation in support of riverbank management

The City of Winnipeg, 2011c, p. 39

As illustrated by the key relevant clauses from *OurWinnipeg, Complete Communities* and *A Sustainable Winnipeg*, support is evident for the conservation and protection of existing natural features, promoting biodiversity in green spaces, balancing the provision of green space with density, demographics, and access, innovation in maintenance and management practices, and to pursue alternative and sustainable green space planning approaches; these themes are supported by the literature as means to enhance nature in the built environment. Although implementation mechanisms and evaluation strategies are discussed in *OurWinnipeg*, the strategies identified are not specifically for green spaces but rather more broadly support all direction strategies of *OurWinnipeg*. Plans are most successful when the plan indicates in detail its policies and objectives, how the success of each are reviewed and updated, and who is responsible for this task (Gebhardt & Eagles, 2014). As a framework for all land use and development in the City of Winnipeg, it may not be appropriate for implementation and evaluation methods specifically for green space to be inserted in *OurWinnipeg* or its accompanying Direction Strategies but rather in a green space plan.

3.2.2. Precinct Plans

To accommodate Winnipeg's projected population, *OurWinnipeg* identifies areas of land that will support the development of 'New Communities'. The City of Winnipeg defines New Communities as "large undeveloped land areas identified for future urban development and are not currently served by a full range of municipal services" (2011a, p.70). To support more efficient and coordinated planning efforts, New Communities are allocated into planning precincts. The City has identified a total of eighteen precincts labeled A through R as illustrated in Figure 5.

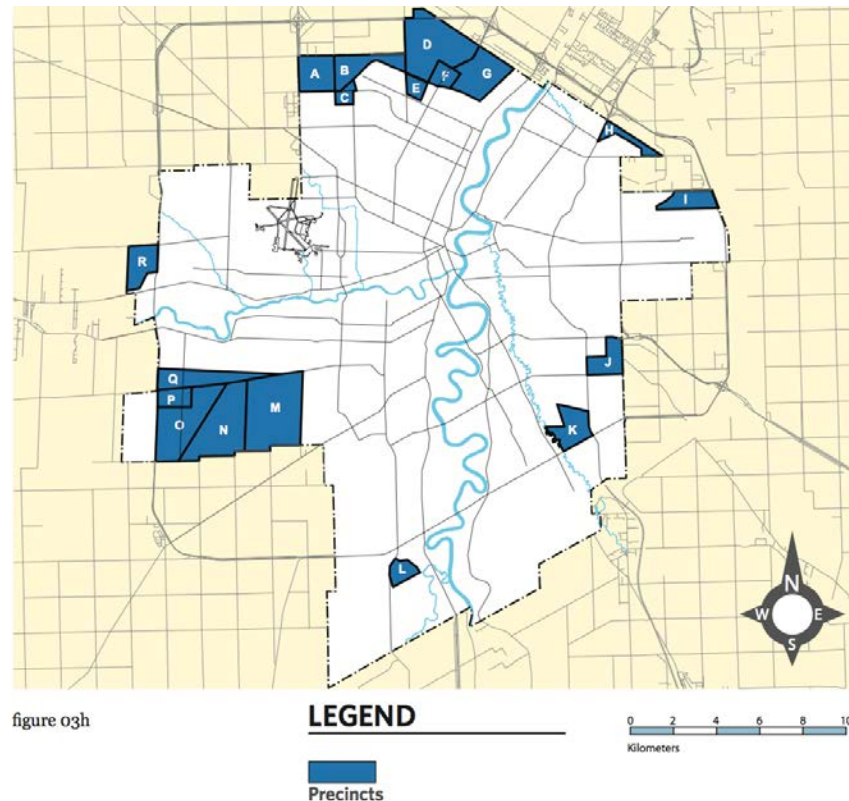


Figure 5: Winnipeg Precinct Boundaries (The City of Winnipeg, 2011a).

To meet the goals of *OurWinnipeg* and *Complete Communities*, the City of Winnipeg has developed an implementation strategy to approach the development of new communities. Compared to the ‘typical’ development process, where a developer generates its development proposal independently for their site, *OurWinnipeg* requires that detailed planning studies be completed for an entire precinct. The precinct planning approach introduces an iterative planning process fostering a collaborative approach for diverse parties to be involved, leveraging the expertise of numerous stakeholders and experts (Marsh, 2013). Stakeholders include, but are not limited to City of Winnipeg Departments, landowners within and adjacent to the precinct, and local community residents.

The intent of planning at a local area scale, or precinct, rather than at a subdivision or neighbourhood scale is to foster coordination of municipal infrastructure with proposed land uses to ensure that new infrastructure and community services make the best use of existing facilities and connections (The City of Winnipeg, 2011a). In addition, necessary upgrades, such as increasing the capacity of streets or water distribution lines, can be identified and planned from the outset. The City of Winnipeg (2011a) indicates that a precinct planning approach will “support a more efficient planning process for all parties as well as ensure that planning for New Communities is comprehensive, complete, and aligns with citywide goals and objectives” (p.72). As indicated by the current Council adopted precinct plans, a common approach is for developers to hire consultants to lead the precinct planning process. As a result, it is largely the consultants’ responsibility to steer the collaborative planning process, ensuring that not only sufficient dialogue occurs with all stakeholders, but to also see that the content of the precinct plan relates back to and supports *OurWinnipeg* and its accompanying Direction Strategies (Marsh, 2013).

Each precinct plan must include at a minimum: land use objectives and zoning policies, sustainability principles, park objectives and policies, community facility objectives and policies, conservation objectives, land use diversity and development densities, and the objectives and policies for municipal services and utilities (The City of Winnipeg, 2011a). In addition, context-specific guidelines and policies such as high quality habitat policy recommendations or transit-oriented development policy recommendations are also often reflected in a precinct plan.

To identify the current role of precinct plans in green space planning as well as to assess their potential role in applying nature-first planning practices, an analysis was

conducted on three precinct plans. At the time the research was completed for this project, five out of the eighteen precincts had precinct plans prepared by consultants and approved by City Council. From the five precinct plans for new residential communities, three precinct plans were chosen. In selecting the precinct plans, criteria included the size of the precinct, the existence of naturalized landscapes, the consultant, and the landowner (developer); this criteria was applied to ensure that the selected precinct plans represented a diverse sample. Precinct plans for Precinct C, Precinct K, and Precinct Q were selected. A brief description of each precinct and their respective relevant green space policies follows.

3.2.2.1 Precinct C

Precinct C is located in the northwest corner of Winnipeg and is approximately 165 acres of land. SGS Properties and Terrascope Developments, a large landowner in the precinct, hired Lombard North Group to lead the precinct planning process and to produce the plan titled, *Waterford Green Precinct Plan*. Of the three precinct areas studied, the lands of Precinct C were the most impacted by past land uses and as a result, the plan states, “there are no significant natural areas” (Lombard North Group, 2012, p.8). The primary purpose of proposed green space in Precinct C is to “provide areas for active and passive recreational and leisure activities in a safe and inviting way” (Lombard North Group, 2012, p.24). The plan suggests that Precinct C’s proposed green space does not include the protection of existing landscapes because of the impacts of past land uses. Demographic trends, existing green space infrastructure, the objectives of *Complete Communities* and *OurWinnipeg*, as well as the plan’s overall objectives guide Precinct C’s green space policies. For example, the plan anticipates that Precinct C will be a desirable area for older adults, families with school age children, and newcomers

(Lombard North, 2012, p.25). As recommended by *Complete Communities*, green spaces shall accommodate the recreation and leisure choices of each demographic group, and therefore green spaces in Precinct C “will be encouraged to provide a variety of experiences and year-round activities for people of all ages and abilities” (Lombard North, 2012, p.25).

Below are key clauses for Precinct C relating to green space planning (for emphasis, important points are underlined).

Waterford Green Precinct Plan: Precinct C Precinct Plan

Section C 1.2 Objectives

- Design with nature: Designing with nature can be achieved through promoting biodiversity, linking green spaces, incorporating native plant species, and naturalizing stormwater retention basins to provide a contiguous network of habitats.

Lombard North Group, 2012, p.13

Section C 2.1 Urban Design Policies

- Sustainable landscapes: The green space network will be designed to promote a sustainable relationship between human activity and the landscape, promote biodiversity and incorporate the use of native plant species.

Lombard North Group, 2012, p.16

Section C 6.1 Park Policies

- The parks of Waterford Green shall provide residents of Waterford Green and of adjacent and nearby neighbourhoods with:
 - Active recreation opportunities such as sports fields
 - Passive recreation and leisure opportunities, such as places to play, sit, enjoy nature, garden, learn, walking, cycling, and skiing
 - Parks should be located such that most dwellings in Waterford Green are within approximately 400 metres of a park open space
 - Parks shall be an appropriate size and configuration for their intended uses
 - Orientation and quality of the parks should be appropriate for the intended use

- Parks will incorporate principles of sustainable landscapes, which may include but are not limited to naturalized plantings and low maintenance vegetation
Lombard North Group, 2012, p.24

The above serves to illustrate that green space policies for Precinct C would suggest that support is evident to plan and design accessible green spaces that may reflect characteristics of naturalized spaces, offering residents opportunities to enjoy nature. As suggested by the literature, access to naturalized spaces is necessary to foster the health and wellness benefits which spending time in nature can bring as well as to enhance an urban dwellers relationship with nature. In addition, with an objective to “design with nature”, green space planning and design strategies such as planning contiguous habitat networks and incorporating naturalized plantings and low maintenance vegetation are identified for Precinct C. Including these strategies in the precinct plan would indicate that an interest exists to re-create features and elements of natural landscapes.

3.2.2.2 Precinct K

In 2013, MMM Group was hired by Genstar to develop a precinct plan for Precinct K. Precinct K is approximately 547 acres and is located in the southwest quadrant of Winnipeg. The lands within the Precinct contain a number of pockets of existing naturalized areas. Although past uses, such as agriculture, has altered the landscape, pockets of treed areas are located throughout the precinct. In addition, the Seine River, a relatively small but ecologically diverse river corridor, is the western boundary of Precinct K. The river corridor is an important refuge for plants and animals in the city as well as is a source of great satisfaction and pleasure for community residents. Treed areas extend from the river corridor and into the adjacent lands forming natural wildlife corridors. The *Precinct K Precinct Plan* includes the preservation of

natural areas as one of its guiding visions. In particular, green space policies for Precinct K reflect a desire to maximize greenspace along the Seine River, retain existing treed areas, minimize environmental impacts of new development, and promote connectivity to a trail network (MMM Group, 2014).

Below are key clauses for Precinct K relating to green space planning (for emphasis, important points are underlined).

Precinct K Precinct Plan

Section 3.7.1.2 Parks Policies

- Parks may incorporate principles of sustainable landscapes, which may include but are not limited to naturalized plantings and low maintenance vegetation. Naturalized landscaping may be encouraged, where appropriate to support environmental sustainability and reduce maintenance costs.
- Parks should be sized and sited according to their intended use and to provide public park space within 400 metres of most dwellings.
- Passive recreation and leisure opportunities such as small park spaces; to establish playgrounds, sit, picnic, enjoy nature, garden or learn; or linear parks to facilitate walking and cycling and cross-country skiing.
- Final configuration of parks and pathways will be determined at development application stage, evaluation of which shall be on both qualitative and quantitative considerations.
- Park dedication in the precinct should, where possible and practical, preserve existing trees and other natural areas.

MMM Group, 2014, p.11-12

Section 3.7.3.2 Passive Park Policies

- To balance the provision of active and passive parks, generally a minimum of 30% of the parks within the Precinct should be established as passive park space.
- Parcels adjacent to the Seine River shall provide their required park dedication as linear park, to expand the park corridor along the Seine River in order to establish a greenway and allow for a connection to the Bois-des-Esprit trail system and natural forest area in Royalwood.

MMM Group, 2014, p.13-14

Precinct K's green space policies would suggest that efforts, where possible, will be directed to planning green spaces that preserve existing natural lands. In particular, by mandating that land parcels adjacent to the Seine River must provide park dedication along the river corridor, the *Precinct K Precinct Plan* demonstrates the use of a prescriptive policy that will increase the presence of naturalized, or nature-first urban spaces in Winnipeg. With the exception of the Seine River policy, many of Precinct K's policies that indicate a capacity to enhance the integration of natural, wild landscapes into the built environment are not mandatory policies but rather serve as guidelines or suggestions. As a result, these policies have much less influence towards increasing the quality and quantity of nature in the built environment.

3.2.2.3 *Precinct Q*

At approximately 800 acres, Precinct Q is the largest of the three precincts studied. Located in the southwest quadrant of Winnipeg, the vision of Precinct Q is "to be built around a substantial network of trail systems and open spaces that interconnect neighbourhoods and community assets, providing opportunities to experience the outdoors in an urban setting" (Landmark Planning and Design, 2012, p. 17). Of the three precincts studied, Precinct Q has the most extensive and diverse existing natural landscape. The policies of Precinct Q which relate to green space planning include preservation of high quality existing natural areas for parkland dedication, and a continuous and integrated linear parkway network. The plan estimates that at full build-out, Precinct Q will consist of approximately 15% of public reserve/park areas as a result of established urban green spaces and future green space dedicated requirements (Landmark Planning and Design, 2012).

Below are key clauses for Precinct Q relating to green space planning (for emphasis, important points are underlined).

Ridgewood South Precinct Plan: Precinct Q of Complete Communities

Section 4.2.5 Encourage green development and conserve natural areas to develop New Communities in a sustainable manner:

- To provide linear greenway network linking focal points where natural areas, land drainage systems, pedestrian trails, parks, and open spaces can be created.
- To promote public awareness and support for the enhancement of natural areas.
- To incorporate existing natural areas and enhance ecological habitats wherever feasible and based on the Ecologically Significant Natural Lands Strategy.
- To enhance the urban forest in Charleswood by including trees and native plants in the design of new subdivisions.
- To collaborate with local environmental and stewardship organizations on shared best practices and implementation strategies.
- To demonstrate the benefits of both natural and restored environments as contributors to quality of life by promoting environmental practices and public education.

Landmark Planning and Design, 2012, p.20

Section 6.4.2 Parks and Parkland Dedication Policies

- Preservation of high quality existing natural areas for parkland dedication purposes should be considered as per DAP, the ESNL Strategy, and any natural areas supplementary information appended of this plan.
- Subdivision designs within the precinct shall include provision for a continuous and integrated linear parkway network that connects neighbourhoods and other community features within the precinct. The linear parkway shall be designed with consideration to the following principles:
 - Natural areas that serve as end points (i.e. ‘patches’) to linear trail connections should be of sufficient size to generally accommodate use by a variety of animal species.
 - Public access should be provided to all naturalized linear lakes/retention ponds and significant existing public forest cover areas.
 - The selection of existing natural areas for parkland dedication purposes should give consideration to the types of landscape that are represented within the overall precinct, such that a variety of types of landscape are

either preserved or newly created to acceptable standards within the overall precinct area.

- In recognition that some sub-areas within the precinct will have more higher quality natural areas than others, the City of Winnipeg may apply parkland dedication requirements from one sub-area of the precinct for use in other sub-areas within the precinct.
- Natural areas may be acquired by the City through vegetation easements, charitable donations, outright purchase, land exchange, etc. as determined feasible.

Landmark Planning & Design, 2012, p.27-28.

The green space policies of Precinct Q would suggest that the preservation and development of green space for the Precinct will concentrate on opportunities to enhance a linear parkway system that is representational of the existing diverse natural landscape. To accomplish this vision, the plan suggests planning methodologies, such as vegetation easements, land exchanges, and outright purchase. Unlike other precinct plans, Precinct Q refers to the role of the *Ecologically Significant Natural Lands Strategy* and the *Development Agreement Parameters* in establishing areas for green space preservation. By referencing these two documents, the plan suggests that the planning and design of green spaces may be bound, or restricted to additional requirements; this statement reinforces the fact that green space planning in Winnipeg is influenced by more than municipal development plans.

3.2.3. *City of Winnipeg Development Agreement Parameters*

The *City of Winnipeg Charter* grants the City of Winnipeg authority to enter into development agreements. A development agreement is a contract between a municipality and a person who has ownership or control of property within the municipality's jurisdiction. Through the use of development agreements, municipalities grant certain development rights in exchange for the construction and dedication of public improvements, including rights of way or including but not limited to public green space.

Development agreements therefore influence the planning and design of green spaces in Winnipeg.

To help inform the content of development agreements, the City of Winnipeg prepared and adopted The *City of Winnipeg Development Agreement Parameters* (DAP). DAP expresses the City's general policies and expectations regarding a development agreement's conditions. Each development is governed by its respective development agreement which, with few exceptions, follows the DAP guidelines as a way to ensure that developer obligations are both fair and consistent (The City of Winnipeg, 2002). Policies relating to the development of green space in Winnipeg are found in Part 3: Land Acquisition and Dedication, Part 4: Services and Improvements, and Part 5: Maintenance and Compliance of The *City of Winnipeg Development Agreement Parameters*.

Arguably the most influential policy relating to green space in DAP is Part 3(24) Public Park Reserve which establishes the standard requirement for the amount of green space a developer must dedicate for green space. Part 3(24) states:

A. The Developer shall dedicate a minimum of 8% of the net area* for public park purposes and pay the remaining 2% in cash.

B. If land is not dedicated for public purposes, the Developer shall provide cash payment representing 10% of the appraised value of the Development Application as determined by the City and prior to the release of subdivision mylars by the City.

**Net area is defined as all land within the Development Application excluding property acquired by the City for impoundment areas, regional street road allowances (including any widening reserves) and land drainage flow conveyances*

The City of Winnipeg, 2002, p.15

Clause B represents what is called “cash-in-lieu” of land dedication. This is applied when open space (“Public Reserve”) dedication is deemed unnecessary or undesirable due to the geographical context of the area (e.g. size, external pressures, and/or location). When

cash-in-lieu of land dedication occurs, monies are distributed by the City of Winnipeg to Community Committees for parks and recreation projects in that community (The City of Winnipeg, 2008). Community Committees may use cash-in-lieu funds for: the acquisition of land for parks or recreation facilities; the development of properties for parks and recreational purposes including such ancillary equipment and structures as may be necessary to that development; and the construction or renovation of recreation facilities on parks and recreation properties (The City of Winnipeg, 2008).

The requirement outlined in Part 3(24) Public Park Reserve is commonly referred to as the park or “Public Reserve” dedication requirement. This requirement is applicable to all developments in the City of Winnipeg and is recognized by planners, the development community, and stakeholders as the established practice for green space development. The values of 8% land and 2% cash for park dedication are intended to cover the developer’s cost for basic site improvement (i.e. grade, sod, drainage) to establish a usable park. While the quantity of green space can be an important concern to ensure that green spaces are of a sufficient size to meet recreational needs as well as to support ecological processes, the City of Winnipeg’s public park reserve strategy does not specifically address issues relating to the density, distribution and quality of green space, such as landscape design, ecological health and biodiversity, or green space connectivity. In 2005, the policies of the *City of Toronto Official Plan* introduced a new, greater parkland dedication rate for higher density residential development. The parkland dedication rate is a rate of 0.4 hectares of green space per 300 units, subject to a set of “caps” (The City of Toronto, 2010). This rate was introduced as a way to address the pressure that new residential development was placing on green space service levels. When the goal is to foster opportunities for urban dwellers to connect with nature, a green

space dedication requirement based on density, rather than net land area, may be a more appropriate approach.

3.2.4. Ecologically Significant Natural Lands Strategy

The *Ecologically Significant Natural Lands* (ESNL) *Strategy* provides policy direction for the City of Winnipeg on the identification, assessment, protection, and management of natural lands. As a result, this policy document influences the planning and design of green spaces. The City of Winnipeg defines natural lands as “all lands, which support native plants and animals, and are a representative of the natural ecology of the region” (The City of Winnipeg, 2007, p. 1). The *ESNL Strategy* provides a framework to objectively assess natural lands. The method employed assesses the quality of natural lands including: current condition (e.g. presence of invasive species and connectivity for plants and animal); rarity, (e.g. presence of rare species and the amount that is already protected); ecological services (e.g. contributions to water retention, riverbank stability, and carbon sequestration); and human interaction (e.g. difficulty of acquisition, cost to improve or maintain, value for passive or active recreation, and sense of place) (The City of Winnipeg, 2007).

The *ESNL Strategy* is not adopted as policy or regulated through by-laws, which reduces the strategy’s effectiveness in preserving natural lands. When a parcel of land enters the development review process, the lands are assessed for natural areas deemed worthy of protection. If lands located within the development are worthy of preservation, opportunities to protect the lands may be sought out and the lands protected through conservation easements, charitable donations of land, land exchange, or outright purchase. The land is not granted out-right protection through the *ESNL Strategy* but relies on efforts to work with the landowner for its preservation. Despite its intentions to

influence the preservation of high quality habitat in Winnipeg, without regulatory protection the *ESNL Strategy* lacks teeth in meeting its objective of protecting important areas of flora and fauna. Upon acquisition of natural lands, the City of Winnipeg becomes responsible for managing the lands, unless an agreement is in place allowing management by another organization.

3.3 Analysis of Selected Green Space Planning Documents

To better understand how municipal development plans may influence green space planning in Winnipeg and how policies support, or may support, nature-first urban green spaces, an assessment was conducted of selected planning documents.

OurWinnipeg, *Complete Communities*, *A Sustainable Winnipeg* and the precinct plans for Precinct C, Precinct K, and Precinct Q were selected for this purpose. Upon review of Winnipeg's planning processes, the *Ecologically Significant Natural Lands Strategy* as well as the *City of Winnipeg Development Agreement Parameters* were identified as potentially influential documents in the planning process for green spaces and were included in the assessment.

Common policies and reoccurring key words that emerged from an initial review of the selected planning documents were used to establish five themes. Each theme represents an objective of green space planning in Winnipeg as suggested by the policies, strategies, and directions of MDPs. The intent of the assessment was to reveal how Winnipeg's green space planning documents direct the planning and development of green spaces as well as to provide insight as to how municipal development plans support, or may support, the application of nature-first urban green spaces in residential greenfield development.

The assessment of the selected green space planning documents for the City of Winnipeg revealed five broad theme areas:

1. Preservation of existing natural areas
2. Supporting the health and well-being of residents
3. Planning for the needs of a community
4. Collaborative green space planning
5. Green space maintenance and management

Although numbered here the themes are not presented in a hierarchical order. Each theme is presented below.

3.4 Preservation of existing natural areas

Policies within MDPs would suggest that green spaces in Winnipeg will be planned with consideration to existing natural areas in the built environment and to incorporate principles of sustainable landscapes. The preservation of natural landscapes in the built environment is necessary to maintain and enhance biodiversity and natural ecosystems as well as is important in providing opportunities for urban dwellers to interact with nature (Barthel, et al., 2005; McHarg, 1964). Planning and design strategies in support of naturalized elements in green spaces are established in *OurWinnipeg* and *Complete Communities*, and are reflected in precinct plans as well. Section 3, Key Direction 4 in *Complete Communities* identifies how new communities “should integrate protected natural areas with open space and sustainable infrastructure systems” (The City of Winnipeg, 2011a, p. 70). To support this Key Direction, Direction 5 encourages conservation of natural areas by promoting “park sites to be selected in ways that maximize the conservation, protection, and integration of existing natural features” (The City of Winnipeg, 2011, p.77) as well as to “promote and expand biodiversity consistent with the local natural ecosystem, not only within the urban forest and designated ‘natural areas’ but in all Parks, Places and Open Spaces” (The City of Winnipeg, 2011, p. 77).

Complete Communities indicates clear direction-setting objectives that reflect notions of planning practices to enhance nature in the built environment by maximizing efforts to preserve existing natural landscapes. Furthermore, the phrase “expanding biodiversity”, would suggest support for ecological restoration or rehabilitation. Although the text of each document indicates support for the preservation of existing natural areas, one should not assume that it leads to action.

The *ESNL Strategy* is a tool that can inform and prompt preservation of existing ecologically valuable natural lands, which supports the objectives of *OurWinnipeg* and *Complete Communities*. Yet, it appears that the *ESNL Strategy* has little clout in actually preserving existing natural landscapes, as policy to enforce its recommendations does not exist. Precinct plans for Precinct C, Precinct K, and Precinct Q each indicate that an assessment of natural areas was conducted. However, the degree to which each plan includes and mandates the recommendations from the ESNL assessment varies. Precinct Q includes in its green space policies, “to incorporate existing natural areas and enhance ecological habitats wherever feasible and based on the Ecologically Significant Natural Lands Strategy” (Landmark Planning and Design, 2012, p.20). Similarly, Precinct K states, “park dedication should, where possible and practical, preserve existing trees and other natural areas” (MMM Group, 2014, p.12). Although the recommendations of the *ESNL Strategy* and the green space policies of precinct plans support preservation of existing natural lands, the policies and recommendations are not mandatory but rather suggested. The existence of the *ESNL Strategy* and its application in precinct plans does further indicate that an objective of green space planning in Winnipeg includes the preservation of existing natural areas, but without policy to enforce the use of the tool, its effectiveness is diminished.

3.5 Supporting the health and well-being of residents

Close contact with nature is a key component to keeping people physically and emotionally healthy and well (Beatley, 2011; Chatalos, 2014; Frumkin, 2005). Policies within selected MDPs appear to recognize the link between access to nature and individual health which would suggest that green spaces in Winnipeg will be planned to support the health and well-being of residents. In particular, the objectives of *OurWinnipeg* and *Complete Communities* refer to how parks and open spaces can promote health and well-being. The key direction for Section 7 of *Complete Communities* states that “Parks, Places, and Open Spaces will be developed within planned communities as opportunities for people to enjoy nature and engage in activities that promote health and well-being” (The City of Winnipeg, 2011a, p.104). The health benefits of having exposure and contact to nature are often associated with access to green space and opportunities to participate in physical activity (Cohen et. Al, 2007; Ho, et al., 2003).

To support the objective of promoting health and well-being through green spaces, green space policies in the selected precinct plans include actions that may promote an individual using nearby green spaces. Both Precinct C and Precinct K recommend that green spaces be planned so that most dwellings are located within 400 metres. The greater the distance an urban dweller must travel to access green space, the less likely they will visit, therefore, policies which support increased access to green space supports health and well-being objectives (Cohen et al., 2007; Thompson, 2007). To promote opportunities specifically for urban dwellers to interact with nature, a provision could be added to this policy to state that dwellings are to be located within a

specified distance to nature-first green spaces as a means to promote human interaction with wild, natural green spaces over manicured green spaces.

The precinct plans for Precinct C, Precinct K, and Precinct Q include policies that suggest how the planning and design of green spaces will enable a variety of recreation experiences for residents of all ages. Each plan states that green spaces shall provide recreation as well as leisure opportunities for residents and fails to address the role of green spaces for emotional health and well-being. As per the literature (Davis & Gatersleben, 2013; Frumkin, 2005), time spent in green spaces that are characterized by natural, wild features leads to greater psychological well-being over manicured and controlled green spaces. The addition of objectives and policies to plan green spaces for emotional health and well-being in precinct plans and/or other green space planning documents would better support the application of nature-first urban green spaces.

3.6 Supporting the needs of a community

Policies within the selected municipal development plans would suggest that green spaces in Winnipeg will be planned to meet the needs of both current and future residents. This includes consideration to the present and future needs of a community, as well as taking into account existing green space infrastructure.

OurWinnipeg indicates that green spaces shall be planned to reflect changes in the population and diversity of Winnipeg's communities (The City of Winnipeg, 2011b). In addition, Section 3.5 of *Complete Communities* states that green spaces in new communities shall "balance the provision (scale, distribution and design) of parks and open space with density, demographics and distance" (The City of Winnipeg, 2011a, p.77). Planning for both current and future residents is important to help ensure that green spaces are meeting the needs of a community. For example, as our population ages, an

argument could be made towards increasing the quantity of passive recreation to meet the recreation needs of older adults.

To assist precinct planning processes in making sound decisions for the planning and design of green spaces, Direction 6 of *OurWinnipeg* states that a data collection system for built infrastructure, parks, and open spaces shall be maintained and used with existing and projected community demographic information to support the matching of green spaces with community needs (The City of Winnipeg, 2011b). By maintaining records of existing green space assets and related infrastructure, as well as the maintenance and budget requirements of green space, a precinct's green space policies can be better positioned to not only support the needs of a community but to also address any potential challenges or barriers relating to green space planning. Furthermore, policies that are built on credible and relevant information are more likely to be implemented, since they conceivably produce results that support a community's needs.

To help understand what the needs are of a community, an assessment of current green space infrastructure, forecasted population predictions, and community consultation aimed at identifying green space preferences can lead to thoughtful and integrated planning approaches resulting in better informed decisions regarding the planning and design of green spaces (Laurian et al., 2004). Within the selected MDPs are policies that instruct green space planning decisions to consider existing and projected community demographic information. For example, Precinct C predicts that at full build-out young families will represent the majority population in the precinct and as a result a greater number of playgrounds may be built to accommodate their needs. Green space policies for Precinct C as well as Precinct Q include that the green spaces and amenities of surrounding neighbourhoods, such as active transportation pathways, will influence the

planning of green spaces provided for the precinct in that connections will be sought (Lombard North Group, 2012). Community demographic information, such as density, household and dwelling characteristics, family characteristics, and social and economic status can influence the type of green space and available amenities required to best meet the needs of community residents. It is suggested that this policy requirement may be a result of the two large existing green spaces for active recreation currently serving the community.

The green space needs of a community often include both passive and active green space. Passive green space is defined as either more naturalized or “unprogrammed” areas that support passive activities such as walking, cycling, or contemplation. Active green space is open, less-naturalized spaces that provide space for programmable activities such as soccer, baseball, and playground equipment. If a goal of Winnipeg’s green spaces is to enhance the health and well-being of residents, both types of green spaces are necessary. The plans for Precinct C, Precinct K, and Precinct Q all identify that green space shall be included for both active and passive use. As the focus of this research is to identify in what ways MDPs support the planning of green spaces that display the distinctive features and characteristics of nature found in the absence of human habitation and other human related influences, the extent to which MDPs support passive green spaces is of particular interest; this is because passive green spaces tend to have greater biological diversity and are therefore places where urban dwellers are more likely to interact with nature.

Precinct C and Precinct K specifically mention that green spaces will be planned to include natural spaces to enjoy nature (Lombard North Group, 2012; MMM Group, 2014) and Precinct Q states that public access should be provided to all naturalized linear

retention ponds and existing forest cover areas (Landmark Planning and Design, 2012). Of the three precinct plans, Precinct K is the only plan that quantifies a minimum amount of passive green space, “to balance the provision of active and passive parks, generally a minimum of 30% of the parks within the Precinct should be established as passive park space” (MMM Group, 2014, p. 14). Policies such as this may influence, or prescribe, subsequent development applications to include passive green spaces that are planned and designed to further an urban dweller’s relationship with nature.

3.7 Collaborative green space planning

The theme of partnership is weaved throughout the objectives and policies of *OurWinnipeg*, *Complete Communities*, *A Sustainable Winnipeg*, and the precinct plans. Policies in the select MDPs would suggest that partnerships and collaboration will help guide the planning and design of green spaces in Winnipeg. Policies include collaboration as a means to assist with the promotion of green spaces and its features, identifying key locations for new green space, and to implement more effective green space planning efforts by integrating planning processes with other City departments (The City of Winnipeg, 2011a; The City of Winnipeg, 2011b). Community organizations, residents, stewardship groups, businesses, and other levels of government, are specifically identified as partners, though the use of the term ‘partnerships’ in the assessed MDPs often implies a wider range of partners than what is listed. As identified by the literature and by informants, collaboration may be key in establishing clear expectations for green space standards, overcoming challenges and barriers relating to green space planning such as the lack of authority of the *ESNL Strategy* and the 10% green space dedication requirement, as well as may encourage the adoption of green space planning practice which support the application of nature-first planning.

The planning processes for Precinct C, Precinct K, and Precinct Q, all followed Section 3 Direction 2 of *Complete Communities*: “New Communities will be established through a planning process....generally including at the minimum: public engagement to identify local character and community needs” (p.74). Public engagement for the three precinct plans typically included landowners within the precinct, City of Winnipeg departments, the area Councilor, the local school division, and the general public of the surrounding area. Although stakeholders were included in the process to form the overarching goals and objectives of the precinct plans, there is no indication of the extent to which stakeholders will be involved at the subdivision planning process. Precinct Q outlines goals to work with local environmental and stewardship organizations on best practices and implementation strategies for the conservation of natural areas (Landmark Planning and Design, 2012), yet it is unclear as to whether these goals were applied to the precinct planning process or will be applied to subsequent development applications. Similarly, Precinct K states that the final configuration of green spaces will be determined at the development application stage with no indication of whether public input will be sought. Public participation may occur through the public hearing process as the development application goes before Council; this can be more controversial and result in more opposition than if public engagement occurred throughout the subdivision planning processes. When stakeholders and community residents participate in plan making, a plan is more likely to express a community’s desires and be implemented with little to no opposition (Gebhardt & Eagles, 2014; Laurian & Shaw, 2009; Norton, 2007).

Partnering with citizens and businesses is also a strategy identified by *OurWinnipeg* and *A Sustainable Winnipeg* to assist with green space maintenance. Section 3 Direction 6 of *A Sustainable Winnipeg* emphasizes partnering with residents

and local businesses to promote cleanliness and beautification of Winnipeg. Although the strategies relate mostly to programs that maintain clean and litter-free streets, alleys, and sidewalks, a similar approach may be applied to green spaces. Partnering with local community groups may encourage more individuals to visit and participate in programs and activities that occur within green spaces. The intended effect is that individuals who interact and relate with nature are more likely to develop affective relationships to the natural world, as it is through an individual's experience with nature that environmental behaviours are fostered (Chatalos, 2014; Franz et al., 2005; Palmber & Kuru, 2000). Picking up garbage is likely not the most attractive activity, yet can prompt people to get outside and connect with nature. Evergreen's experience shows that stewardship and the preservation of natural spaces are closely linked. Where community organizations support municipal efforts through stewardship activities, a municipality's willingness to preserve additional green space can increase (Evergreen, 2004). Establishing partnerships, collaborating with others, and encouraging individuals to be stewards of their green spaces has a capacity to incrementally influence actions to support nature-first urban green spaces. As green space policies of select MDPs would indicate, green space planning in Winnipeg includes opportunities for collaboration and partnerships.

3.8 Green Space Maintenance and Management

Green space policies of select MDP's suggest that an objective of green space planning in Winnipeg is to plan green spaces which can be maintained through sustainable maintenance and management practices. The strategies and key directions expressed in *OurWinnipeg* reflect a desire to protect and enhance the city's natural assets through innovative, sustainable, and effective maintenance and management practices. Section 9 Direction 2 of *A Sustainable Winnipeg* identifies the strategy of: "Develop a

Parks, Places and Open Space Sustainable Management Plan, created within the overarching framework of sustainability” (The City of Winnipeg, 2011c, p.37). No details are provided regarding what may be included in a sustainable management plan for green spaces, however, *Complete Communities* does suggest that the *Development Agreement Parameters* may be updated to reflect innovation in development practices as they pertain to parks, ecologically significant natural lands, and passive spaces (The City of Winnipeg, 2011a). Furthermore, green space policies for Precinct K and Precinct Q state that parks may incorporate principles of sustainable landscapes to support environmental sustainability and reduce maintenance costs (Landmark Planning, 2012; MMM Group, 2014). The literature supports that green spaces which feature functional ecosystems and which support biodiversity may be considered a sustainable approach to green space maintenance as fewer inputs and onsite maintenance may be required (Beatley, 2011).

Collaborative partnerships and financial resources are identified by Winnipeg’s green space planning documents as tools required to support the management of green spaces. Coordinating and collaborating with strategic partners may help determine the most effective and efficient means of providing and maintaining green spaces. The Assiniboine Park Conservancy is an example of a strategic partnership to green space management. As a private/public not-for profit organization, the Assiniboine Park Conservancy is responsible for the daily operations and management of Assiniboine Park. Funding for park management comes from the City of Winnipeg, other levels of government, as well as from private donations. In addition, *A Sustainable Winnipeg* suggests that strategic partnering may also occur with private landowners to preserve urban nature on their properties. Approaching landowners to encourage the preservation of natural areas may support the application of nature-first planning, as well as meet the

goals of *OurWinnipeg* to maintain green space through sustainable and innovative practices.

A Sustainable Winnipeg indicates that maintenance procedures shall be applied to enhance the urban forest, protect flood plains and unstable riverbank slopes, increase the stock of trees, and foster improvements to existing ecosystems (The City of Winnipeg, 2011c). Maintenance procedures can play a significant role in restoring or enhancing ecological processes. For example, removing invasive species, removing dams or other artificial water systems, and replanting native vegetation, can not only re-establish functional ecosystems but are effective strategies for enhancing nature in the built environment (Arendt, 1999; Fraser, 2009). This strategy of *A Sustainable Winnipeg* may support nature-first planning in that efforts to maintain existing natural areas are reflected.

As a strategy to manage green spaces in a financially sustainable manner, *Complete Communities* suggests to “establish tools for the measured allocation of resources that align to the community’s evolving recreation and open space needs” and “develop and maintain an asset management strategy for reinvesting in Parks, Places and Open Spaces, green, grey and amenity infrastructure” (The City of Winnipeg, 2011a, p.108). A green space inventory and asset management strategy can provide measurements of maintenance requirements and procedures, existing resources, infrastructure, and necessary upgrades. This type of tool may reveal opportunities to enhance natural assets through innovative maintenance and management practices.

3.9 Conclusion

In conducting an analysis of the green space policies found in Winnipeg, five themes stood out. From an urban green space planning perspective, Winnipeg’s

municipal development plans guide the planning and design of green spaces with consideration to preservation of existing natural areas, the health and well-being of residents, the needs of a community, opportunities for collaboration, and to promote sustainable maintenance and management practices.

Select key directions from *OurWinnipeg* and *Complete Communities* establish an objective for green spaces in new communities to maximize the conservation, protection, and integration of existing natural features. This objective is generally reflected in the policies of precinct plans and seems to suggest support for enhancing nature in the built environment, yet, written support does not necessarily lead to action. For the most part, policies within the selected MDPs recognize the link between access to nature and individual health and well-being. Policies that encourage the preservation and/or development of wild, natural spaces for active and passive recreation are not only important for the health and well-being of residents but can also increase the presence of natural spaces in our communities. Policies in *OurWinnipeg*, *Complete Communities*, and precinct plans indicate that the planning of green spaces for new communities will be driven by existing and projected community demographic information. This approach can, but not always, lead to thoughtful decisions regarding the quantity and quality of green spaces and help ensure that green spaces support the needs of a community. Policies in the select MDPs would suggest that partnerships and collaboration will assist in green space planning decisions. By working together, not only can the current opportunities, challenges, and barriers in green space planning, including the absence of a green space master plan for Winnipeg, the lack of regulatory power to the *ESNL Strategy*, and the need for clearer expectations from the City for green space planning and design,

begin to be addressed but also discussions regarding the application for nature-first planning may be explored.

Green space policies found in *A Sustainable Winnipeg* and the select precinct plans reflect a desire to protect and enhance the city's natural assets through innovative, sustainable, and effective maintenance practices. To meet this objective, sustainable maintenance procedures must first be developed, implemented and the results monitored for effectiveness. As the City begins to identify maintenance procedures to meet the objectives of *A Sustainable Winnipeg*, practices may be encouraged and incorporate more wild, natural urban green spaces.

Green space policies of the select MDPs are generally consistent with one another in supporting the benefits of nature in the built environment. This is achieved by which the policies of a precinct plan often expand on an objective or direction of *OurWinnipeg* and *Complete Communities* and results from Winnipeg's planning document hierarchy; Figure 6 demonstrates this relationship using policies from *OurWinnipeg*, *Complete Communities*, and *Precinct K*.

In Figure 6, the policy from *OurWinnipeg* establishes that Winnipeg's green spaces shall be recognized and preserved but no indication is given as to how or to what extent this may occur. *Complete Communities* conforms to the objectives of *OurWinnipeg* and describes the enabling strategy of providing a well-managed urban forest and maintaining riverbanks, urban street trees, and green corridors; this strategy supports the objective of recognizing and preserving green spaces in Winnipeg. The policy from Precinct K translates the strategy of *Complete Communities* into the action of preserving riverbank lands; this demonstrates how precinct plan policies directs

development within an area while reflecting the local context as well as strategies and objectives of *OurWinnipeg* and *Complete Communities*.

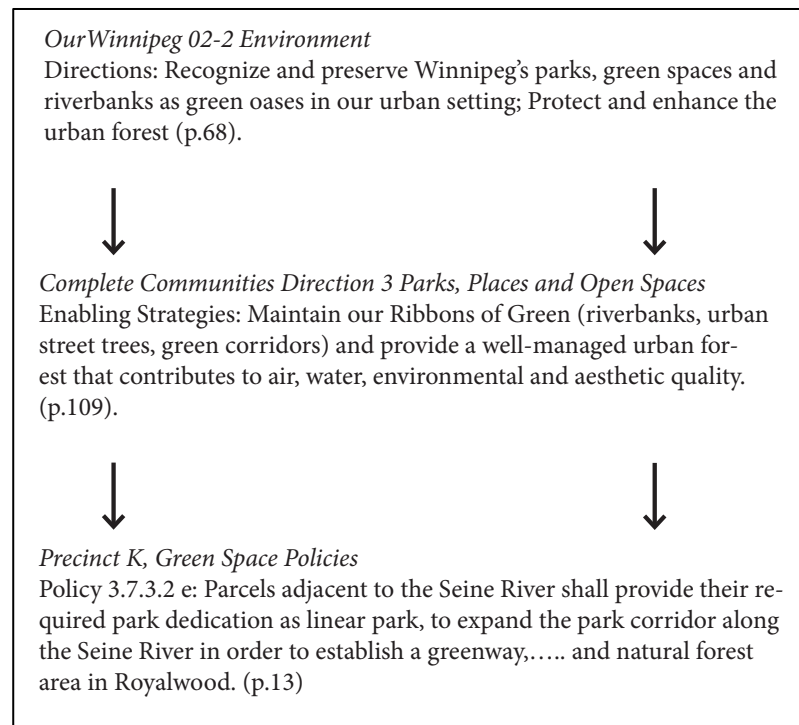


Figure 6: The Relationship of Winnipeg's Green Space Policies (E.Blackie, June 2014).

The hierarchy of Winnipeg's green space planning documents suggests that *OurWinnipeg* and its accompanying documents may hold significant influence in determining a precinct's green space policies. The goals of *OurWinnipeg* and *Complete Communities* are presented as high-level directions and/or objectives, rather than policy. This offers flexibility enabling policies to adapt, and can result in the preservation and/or creation of green spaces that are reflective of the present opportunities and local context. To further understand and explore in what ways support may be evident, or absent, for enhancing nature in the built environment interviews with individuals involved in green space planning in Winnipeg were conducted. The perceptions of informants augment the analysis of Winnipeg's MDPs relevant to green space planning by providing a pragmatic

depiction of the realities associated with green space planning and the opportunities and challenges corresponding with enhancing nature in the built environment.

CHAPTER 4 PERCEPTIONS OF GREEN SPACE PLANNING IN WINNIPEG; INTERVIEW RESULTS

4.1 Introduction

In seeking how municipal development plans support, or may support, the integration of natural, wild landscapes into the built environment, through what is labeled here as *nature-first urban green spaces*, a literature review and assessment of selected MDP's relevant to green space planning in Winnipeg was conducted. This process looked for policies, strategies, and tools, or lack thereof, which may steer planning practices to better acknowledge nature in the built environment. To further draw conclusions and supplement the findings of the literature review and MDP assessment, informant interviews were conducted to better understand the process of green space planning in Winnipeg. A series of questions was developed and posed to informants with the intention to better understand their perception of how municipal development plans influence, or may influence, the development of green spaces and to explore opportunities for the City of Winnipeg to encourage the development of nature-first urban green spaces.

4.2 Informant Interviews

Semi-structured interviews with informants provided a sense of how urban green spaces are currently planned in Winnipeg and how and which planning processes and tools may be used to enhance nature in the built environment. The semi-structured interview format allowed for probative follow-up questions and exploration of topics unanticipated; this helped to facilitate the understandings of what happens and why. Although consistent questions and themes were maintained across all interviews, the flexibility to adapt the questions to suit individual subjects was required due to the nature

and extent of involvement represented by informants. The literature review provided guidance on what type of questions to ask as well as on what information to seek out.

Informant interviews were an appropriate method to address the proposed research questions as personal opinions (including perceptions, attitudes, and meanings) of informants can provide powerful and in-depth explanations. However, a weakness of the interviews is the reliance on the respondent to be willing to give accurate and truthful answers. To overcome this limitation, efforts to establish a mutual rapport were taken throughout the interview by posing friendly and nonthreatening questions so that informants felt comfortable in providing a response. In addition, there was a responsibility to deliver questions in an unbiased manner and to recall and articulate information that accurately reflected the responses.

A total of seven interviews were completed with informants in September 2014. Informants were selected for their qualifications, which included professional designation status, academic accomplishments, years of relatable work experience and knowledge of green space planning and development in Winnipeg, and experience working with municipal development plans. The informant group included a planner from the City of Winnipeg, Urban Planning Division, four private-sector planners from selected firms who are actively involved in precinct planning, an individual from the local development community, a landscape architect with experience in green space planning in greenfield development, and an academic whose research focus is conservation planning and urban nature. Currently, three of the four planners work in consulting and one works for the City of Winnipeg, however experience working for the Province of Manitoba is also represented through their past employment. Table 1 lists the informants and their assigned acronym used throughout the following chapters.

Informant	Acronym used in Reporting
Private Sector Planner	P1
Private Sector Planner	P2
Private Sector Planner	P3
City of Winnipeg Urban Planning Division	CW
Landscape Architect	LA
Academic	A
Developer	D

Table 1: Interview informants and associated acronyms

Six of the seven interviews were face-to-face interviews conducted in Winnipeg. One interview was conducted over the phone with an individual from Toronto. Each interview lasted approximately one hour. Thirteen interview questions were prepared to guide the conversation and questions were organized into three topic headings: influential mechanisms in green space planning, nature-first urban green spaces, and the application of nature-first planning and design. In general, interview responses revolved around the existing mechanisms guiding the planning and design of urban green spaces in Winnipeg, current knowledge and impressions of nature-first planning and design, and the opportunities, barriers, and challenges in protecting and/or developing nature-first urban green spaces. Each interview lasted approximately one hour, with the shortest at 45 minutes and longest at one and a half hours. A copy of the interview guide and questions can be found in Appendix A. The interview questions, length of interviews, and number of interviews conducted received approval from the University of Manitoba Research Ethics and Compliance Board; a copy of the ethics approval can be found in Appendix B.

The data generated from the interview process resulted in rich and detailed descriptions, opinions, and insight that would have been quite difficult to achieve through other forms of research. The ability to openly discuss green space planning processes and the associated benefits and challenges in Winnipeg with informants provided a pragmatic

depiction of the realities associated with green space planning and the opportunities and challenges corresponding with adopting a nature-first planning framework.

Common subjects, reoccurring issues, and key words that emerged from the interviews were used to establish four theme areas. Each theme area is further categorized into sub-themes that provides perspectives on how green spaces are currently planned and designed in Winnipeg and how nature-first planning principles may be applied. The four themes and sub-themes include:

1. Green space planning tools
 - i. Statutory Plans and Acts
 - ii. Non-Statutory Plans and Documents
 - iii. Policy and Programs
2. Nature-First Urban Green Space
 - i. Defining Nature, A Discourse
 - ii. Nature-First Planning
 - iii. Nature-First Urban Green Spaces
3. Constraints and conflicts
 - i. Land Use and Ownership
 - ii. Existing Practice and Policies
 - iii. Maintenance
 - iv. Financial Constraints
4. Collaboration and communication
 - i. Working Together and with Others
 - ii. Disseminating Knowledge

Although numbered, the themes are not in hierarchical order. As indicated from the interviews, each theme is equally important in directing the planning and design of green spaces. In addition, many of themes directly connect to one another making it difficult to rank.

4.3 Green Space Planning Tools

It was generally understood by informants that the development of green space in Winnipeg is guided by a wide array of planning tools. Statutory plans and acts, non-

statutory plans, development controls and tools, and policy and programs were all identified as playing important and influential roles in determining the location, size, and design of green spaces.

4.3.1 Statutory Plans and Acts

OurWinnipeg, *Complete Communities*, the *City of Winnipeg Charter*, and *Manitoba's Planning Act* are all statutory plans and acts identified by informants that govern all planning in Winnipeg and therefore also influence the planning and design of urban green spaces in Winnipeg. The informants identified that *OurWinnipeg* as the municipal development plan provides the overall arching policies relating to provision of green space planning. *Complete Communities*, precinct plans, and subsequent development plans were identified as planning documents that build on the policies within *OurWinnipeg*. The comments below illustrate how two Planners perceived the role of *OurWinnipeg* in guiding green space planning:

"There is policy outlined in OurWinnipeg which is the guiding policy for developing Winnipeg and any Precinct Plan." (P2)

"OurWinnipeg doesn't direct the amount, but does [direct] how [green space] is planned." (P1)

On the other hand, responses from the Developer and Landscape Architect would indicate that *OurWinnipeg* may not significantly guide their green space plans and designs:

"I would generally say we're doing what we want to do. But I would also say that the Complete Communities idea is a pretty good document." (D)

"As landscape architects we don't always look through all the planning processes, we probably should. You do follow some of the policies, but you don't always agree with all the mechanisms either." (LA)

These comments would suggest that *OurWinnipeg*, *Complete Communities*, and precinct plans are not prescriptive regarding expectations for the size and quality of green space. In addition, responses suggested that expectations for the quantity of passive and active green space is unclear.

A difference of opinion existed among informants on the role of *Complete Communities* in guiding the planning and design of green spaces. Informants generally agree that Section 7 of *Complete Communities*, Parks, Places and Open Spaces, identifies important directions for green space planning and design. However, some informants felt that *Complete Communities* does not provide a strong argument for park policy:

“The City should define where they are going to have their parks in existing and new areas in Complete Communities. If they don’t identify [green spaces] on a map then they should have some policies to identify how they should be established.” (P3)

Four of the six Winnipeg-based informants suggested that precinct plans can and should play a greater role in green space planning than *OurWinnipeg* and *Complete Communities*. Comments indicated that precinct plans contain enforceable regulatory policy that can hold all development within a Precinct to the same standard. For example, zoning bylaws and development applications submitted with respect to any lands within a precinct must be reviewed to ensure compliance with the policies established in the precinct plan. One Planner felt very strongly that secondary plans are the best planning tool for green space because they are enforceable. For this reason, precinct plans and secondary plans targeting green space may present an opportunity to include clearer expectations and requirements informing green space planning.

Informant responses would indicate that the presence of existing natural features in a precinct may influence a precinct’s green space policies to a greater extent than the

objectives and strategies of *OurWinnipeg* and *Complete Communities*. Tree stands in Ridgewood South and in Precinct K are two examples shared by informants demonstrating how existing natural elements have influenced a precinct's green space policies:

"In this particular area [Royalwood], the strength is the river so let's keep it passive and let's keep it [all passive green space] against the river and not dedicate any active in there. That was a policy decision in the Precinct Plan." (P3)

"Even if its chummy forest, people are like "oh, its our backyard, we love it"- well, no its our land. But then you realize I'm not going to fence it and tell them to stay off when they are enjoying it and, we say okay, we will incorporate [the forest] too." (D)

These two examples demonstrate how existing natural spaces, such as riverbank forest and tree stands, were considered during the green space planning process for precincts and protected through its policies.

Rather than *OurWinnipeg* and *Complete Communities* directing green space policies, a precinct plan's green space policies are largely the developer and/or consultant's responsibility:

"We had to work through our own directions rather than have the City ready to tell use what their expectations were. They themselves didn't know what their own expectations were." (P1)

4.3.2 Non-Statutory Plans and Documents

Comments indicated that green space planning and design decisions are influenced by non-statutory plans and documents. Non-statutory plans are often developed to further inform or encourage a certain direction for development. Informants identified Winnipeg's *Ecologically Significant Natural Lands (ESNL) Strategy* as an existing non-statutory document that helps guide opportunities to preserve and develop green space. Informants identified that the *ESNL Strategy* can be applied throughout the

initial stages of the green space planning processes. An assessment of a precinct's natural lands will identify whether ecologically valuable lands are present; if ESNL is present, the City may request that the valuable natural lands are included within green space requirements and adhered to by developers.

Responses from informants would suggest that non-statutory green space plans for natural areas such as the Seine River have been completed. However as a non-statutory plan, the findings and recommendations generally inform planning processes and decisions but do not influence the final outcome to the same degree as a statutory plan. Comments from the five Planners supported literature findings in that a statutory plan specifically directed to recommendations for green space protection and development is an incredibly valuable tool for green space planning. Green space plans that are adopted as a secondary plan can establish proactive and coordinated long-term planning for green space development and can clearly identify green space standards and expectations for all subsequent development to follow (Arendt, 1999). As illustrated, comments from informants would suggest that the City of Winnipeg should consider drafting and adopting a green space plan for Winnipeg:

"I suggest that the City get ahead by doing a proper inventory of all areas undeveloped now. The first would be to inventory [natural lands], and the second step would be to designate [green space], it may be a mapping policy, and the third and best is to acquire [natural landscapes], there's just no question." (P1)

"A regional park should be strategic, it should be coming forward and there should be capital funds and the City should go and buy [land]." (P2)

" 'Complete Communities' doesn't provide a strong argument for park planning. There is no opportunity for the City to come in and say 'okay, we are going to reassess whether we want this as a park during this planning process, before it gets developed and designated, we are going to take that land now.' (P3)

“In the past there have been studies that have identified areas where maybe there’s an opportunity to set natural lands aside. Those have never been passed as secondary plans. So they are nice studies and we do try to be informed by them but they don’t carry any weight.” (CW)

The adoption of a green space plan may assist the City of Winnipeg in overcoming some of the current green space planning challenges that informants commented upon. As a policy foundation for the delivery and care of green spaces, a green space plan can outline a vision and plan for Winnipeg’s green spaces and direct strategies for land acquisition, funding and compensation, and implementation.

4.3.3 Policy and Programs

Although the City of Winnipeg has a number of policies that guide green space planning decisions, comments would suggest that the City of Winnipeg could better express its expectations for green space planning and design through the creation of additional policies and/or regulations. For example, a policy expressing the City’s expectations for passive green space and active green space was suggested by one informant. Responses from informants indicated that for policies to produce the desired outcome, policies must be clearly defined, enforceable, and non-negotiable:

“Don’t negotiate [policy] every time because you will never get anywhere.” (P1)

“Well, it’s a little frustrating when you see that happen - when you provide the green space requirements and then you see somebody next door doesn’t.” (LA)

Although *OurWinnipeg*, *Complete Communities*, and precinct plans contain enforceable policy, comments from informants suggested that policies from statutory municipal development plans can be negotiated. As made evident by the literature as well as

suggested by informants, strong, non-negotiable policies are necessary to ensure private interests do not supersede the goals of a MDP.

Programs and incentives were suggested as ways to improve policy compliance. If the expectation moving forward is for developers to provide higher quality green spaces, then perhaps an incentive for developers should be offered. Incentives may include tax credit arrangements, land trades, density bonus schemes, and conservation land tax initiatives. Without incentives, informants suggested that developers may be reluctant to meet the requests or demands for changes in green space planning as increasing the quantity of green space without some type of compensation can result in lost profit for the developer. The notion of incentives also came up in the literature as a tool to further encourage the preservation of existing natural landscapes, which would support the goals of nature-first urban green spaces.

The *City of Winnipeg's Development Agreement Parameters* (DAP) was well recognized by informants as an influential policy for green space planning. DAP outlines roles and responsibilities of the City of Winnipeg and developers in becoming partners to a development. This includes general policy to help ensure that all parties who benefit from a development pay their equitable share of development costs. Section 24 of DAP, Public Park Reserves, outlines a developer's responsibility for green space allocation. All of the Winnipeg-based informants were aware that DAP green space requirements state that a dedication of 8% net land area for green space and 2% as money for capital projects on the land, or 10% cash-in-lieu of green space is required for new developments. However, comments from informants would suggest that opportunities to modify the DAP green space requirements may exist:

“The Charter gives the [the City] the right to increase [green space dedication requirements.” (P3)

“The 10% requirement is interpreted as 8% land and 2% money for capital projects on land, but the requirement can be manipulated from time to time for City advantage.” (CW)

“I keep coming back to the [10% green space dedication requirements] of the Act and it is variable, but the practice is exactly 10%. In practice, no one has interpreted that regulation in saying more or less than 10%, everyone interprets that as exactly 10%- it gets measured.” (P1)

Through their experiences, informants suggested that the DAP green space requirements can be altered.

Informants identified the 10% dedication fee as a barrier for increasing the quantity of green space, as well as possibly a barrier in planning urban green spaces which reflect the characteristics of natural, wild landscapes. It was suggested by informants that without compensation, developers are typically not willing to dedicate more than the minimum 10% requirement. In addition, the amount of land required to provide active green spaces and related park uses, such as school yards and community centres, can easily consume the 10% green space dedication which can limit green space dedication for nature-first green spaces. Comments from informants lend support to the *Complete Communities* direction to update the DAP to reflect new practices. Additional comments from informants reflected upon the appropriateness of DAP’s green space requirement:

“I think 10% is fair, I think its working.” (P3)

“[The DAP 10% green space requirement] in itself has become a bit of an old rule because by the late 90’s, as developers we were providing green space that the City parks department really couldn’t find good use for. In other words we were delivering too much programmable space and high maintenance sod. And they were going, we don’t want to take care of this, give us less than

this. So, we said lets design something that you don't have to take care of. Let's not have to sod everything.” (D)

The above comments demonstrate that different opinions exist as to whether the DAP's 10% green space requirement is considered fair and appropriate for green space planning in Winnipeg. In addition, the Developer hints at how the quantity of green space dedication may not be the issues but rather how the green space dedication is landscaped and the level of maintenance it would then require. An opportunity may be present for the DAP to include a provision relating to the maintenance green spaces.

The Developer suggested that detailed guidelines outlining expectations and acceptable green space designs within the Developer Agreement Parameters could assist in adopting a planning framework to support the concept of nature-first urban green spaces:

“We have to develop parameters for [nature-first]. We are always talking about procedures and codes, what I'm really talking about are development guidelines. We need some measure of predictability when somebody shows up, and says 'I know that this is a priority one forest here, we have rules for that' ... and the rules are.... 'We try and buy it, or, we can't [buy it] so we try and save it, or, save x %, or, we try and do vegetation easements.' All these things will come into this boring document of development guidelines.” (D)

Examples from other cities illustrate how a shift may be occurring in green space development standards towards implementing performance-based measures. For example, development agreements can include standards to reflect green space planning that is appropriate for ecological health and biodiversity, or suitable design measures for diverse users and activities, rather than standards based solely on the quantity of green space preserved or created.

In all, comments indicated that Winnipeg's green space planning tools and mechanisms provide a general vision for green space planning in Winnipeg and that limitations and gaps exist in how well policies are adhered to as well as the extent of a policy's influence to preserve existing natural areas as green space. Statutory plans and acts, such as *OurWinnipeg* and *Complete Communities*, non-statutory plans such as the *Ecologically Significant Natural Lands Strategy*, and current policy and programs are influential planning tools in that these documents establish a vision, objectives, and standards for green space planning. However, not one of these documents provides a truly strong argument for park policy in Winnipeg. A coordinated green space planning approach supported by enforceable green space policy, and incentives for higher green space development standards may help Winnipeg overcome this limitation and in addition, may assist Winnipeg towards encouraging, or adopting, a nature-first planning approach for green space preservation and development.

4.4 'Nature-First' Urban Green Spaces and Planning Practices

One of the objectives of this research was to further refine a definition of 'nature-first' and explore whether the notion of nature-first planning has merit within the planning community in Winnipeg. Informants were asked questions relating to what 'nature-first' means to them. The concept of nature-first urban green spaces and nature-first planning and how such planning processes may differ from conventional green space planning were discussed. Although the proposition of 'nature-first' was a new term to all informants, informants provided insightful comments and dialogue. Responses to the interview questions highlighted planning considerations that when applied may help define nature-first urban green spaces and a nature-first planning approach. In addition,

informants revealed how in their opinion, a nature-first urban green space may be different from a conventional urban green space.

4.4.1 Defining Nature, A Discourse

Conversations on the topic of nature-first urban green spaces and nature-first planning revealed how individuals each have their own definition and set of assumptions on the concept of nature and on what is considered natural. One informant suggested that to better direct how nature-first planning may inform green space planning, a definition of nature must be further explored:

“The way you talk about nature-first planning probably will engender questions about what do you mean about design, or whose idea of nature is the one that gets represented.” (A)

As informants would imply, nature can have many different meanings to different people. Therefore, coming up with a well-accepted definition of nature may be a potential challenge and barrier towards adopting a nature-first planning approach and nature-first urban green spaces. However, in defining ‘nature’ an opportunity may be present for key players and stakeholders in Winnipeg to collaborate and explore questions related to nature-first urban green spaces. Questions such as, what nature-first may represent, how design interventions may support nature in the built environment, and whose idea of nature is steering the application of nature-first urban green spaces, may be explored. This type of dialogue can help lead to a shared definition and understanding of the application of nature-first planning. From informant interviews, it is inferred that a discourse on current green space planning practices in Winnipeg, its strengths, weaknesses, challenges, and opportunities, might need to be thoroughly addressed prior to, or in conjunction with, a discussion on the concept and definition of nature-first planning and nature-first urban green spaces.

4.4.2 Nature-First Planning

Comments from informants would suggest that nature-first planning is a planning approach where land use decisions are primarily guided by opportunities to preserve or create spaces for nature. This may include processes that elevate the importance of natural landscape features as a land use, planning land uses around existing natural features, designating green spaces early in the planning process, and processes which consider how human intervention may affect existing natural features.

Informants described planning processes which initially assess opportunities to preserve existing natural elements and natural open spaces as well as that direct design interventions to establish natural features where none existed as nature-first planning. Comments from five informants suggested that nature-first planning processes may help identify, establish, and designate green spaces early in the planning process:

“I think it would mean, when you are doing a development you are generally trying to figure out what your opportunities and constraints are, and what you are talking about is elevating the importance of the existing natural environment over and above a lot of things.” (CW)

“Before I designate [green space] I find out what do we want to preserve and from there, I start creating my land uses which complement [existing treed areas, waterways, native grasses] and then create some linkages to [what we are preserving].” (P3)

Comments from informants would suggest that compared to conventional planning approaches, nature-first planning processes may be influenced by a much greater extent by the natural landscape and existing natural elements. Walking the land, inventorying existing natural features, and incorporating existing green networks and corridors into a land use plan will not only help preserve existing natural elements but will identify opportunities for potential ecological co-benefits such as flood protection. Furthermore,

establishing the location and size of green spaces early in precinct or subdivision planning, for example, can harness opportunities to improve the quantity and quality of green space, connect green spaces with other land uses, and better incorporate existing natural features in green space designations.

As identified by one informant, a nature-first planning approach should consider how post-development conditions will continue to support natural lands. In greenfield developments, the land is typically re-graded to control surface water drainage providing more suitable topography for land uses and as a result post-development landscapes are often quite different from pre-development landscapes. This can impact the survival of existing natural areas. As the land is graded, green networks become fragmented, natural drainage patterns are re-oriented, and plant and animal habitat is lost. As a result, the conditions that once supported natural areas to grow and thrive is lost and plant species die back. A nature-first planning approach should therefore not only reflect opportunities to preserve existing natural areas but also advocate for post-development landscapes to retain the required land conditions for its survival.

Informants would suggest that the location, size, and shape of conventional urban green spaces are often planned after other land uses are determined, in which the “left over pieces” become green spaces:

“If [green spaces] are last, then its like a persons budget at home, if it’s the last thing, its going to get dropped.” (P1)

As indicated by informants, as well as by the literature, urban green spaces become much lower priorities than other objectives when its importance and role is dismissed or overlooked. The preparation of planning documents, such as green space master plans, can elevate the importance of nature in the built environment. By forming a foundation

for subsequent plans and by guiding implementation strategies which support the preservation of naturalized landscapes, a green space plan may embody a nature-first planning approach.

4.4.3 Nature-First Urban Green Spaces

In defining what a nature-first urban green space is, informants suggested three broad characteristics: the presence of nature, green space designed for passive activity, and green space which support or create ecological productivity. Designated green spaces that design with and around existing natural elements to provide passive green spaces for both ecological productivity and human enjoyment are considered by informants as nature-first urban green spaces.

Conversations about the features and characteristics of nature-first urban green spaces centered on the presence of natural elements, and included preserving open space and landscapes that are natural, such as tree stands or coulees, and creating or designing natural elements where none existed. In describing characteristics of nature-first urban green spaces, examples of green and blue infrastructure were often provided. Wetlands, water, tree stands, and native grasses were the most common natural elements informants identified when defining a nature-first urban green space:

“In Bridgewater Forest, the existing aspen forest was for the most part preserved in whole and you worked around that. So I’d say that, that’s a nature-first urban green space.” (LA)

“The Bois des Esprit, or some other examples where we just kept bushes.... We kept green.” (P1)

“Something like the trail system in Bois des Esprit and some of the stuff around Assiniboine Park, though its so trampled its hard to say it’s natural, but I would still consider it nature-first because it’s not actively, necessarily maintained at the same level.” (CW)

The aspen forest in Bridgewater Forest, the Bois des Esprit in Royalwood, and the protected forest area known as Assiniboine Forest, located near Assiniboine Park, are well-known Winnipeg examples of existing natural areas that were protected as public green space. It would appear that informants reflected upon these areas and used their characteristics to help define the features and characteristics of nature-first urban green spaces.

Comments from informants would suggest that nature-first urban green spaces may include landscapes where nature has re-claimed the landscape:

“The whole Harte Trail and old rail line, you walk down there and it feels like nature, so just allowing something to do what it does naturally, after having been used by humans.” (P1)

The Harte Trail was one site cited as an example of an area considered “natural” because it has qualities resulting from habitat reclamation due to the landscape being left alone. As indicated by past land uses, the Harte Trail was an active railway line up until the mid 1970’s. Since the conversion of the railway line into a walking trail, native plants and vegetation have grown up as shelter demonstrating how withdrawing human intervention can result in the presence of natural elements that feel like an un-altered natural, or wild landscape. Comments would indicate that areas where nature has re-claimed landscapes because of changes to land use may be defined as a nature-first urban green space. Although this area was not planned as a nature-first urban green space, the efforts to preserve this space reflect a nature-first planning approach.

Comments from informants would suggest that the design of a nature-first urban green space may include a degree of human intervention. In discussing the concept of nature-first urban green spaces, four informants referred to designed and constructed

natural elements such as engineered naturalized stormwater ponds. Although naturalized stormwater ponds are found in green spaces which may not embody characteristics of nature-first planning, such as golf courses, the example nonetheless would suggest that informants include constructed naturalized elements as a characteristic of nature-first urban green spaces. As indicated by the literature criticism exists towards “reinventing” nature. Yet as expressed by informants, designed and constructed natural elements that restores ecological processes are an option to enhance nature in areas where existing natural elements are of poor ecological value, or when the size and distribution of the existing natural elements is too fragmented:

“Some of our projects are basically just agricultural fields, with nothing there, so you basically just have to create [nature].”
(LA)

“You want [nature] to happen organically but you’re going to try to recreate the savannah, because everyone loves the savannah. Trees, the outlook, open areas.” (CW)

Through design interventions, natural features may be re-introduced to establish the distinctive characteristics and features of nature as found in the absence of human habitation or other human related influences with the intent to allow opportunities for urban dwellers to access nature.

Two informants indicated that if the goal of nature-first urban green spaces is to provide opportunities for people to interact with nature, human intervention is often necessary:

“Its not just putting a fence around a forest and saying “there it’s protected”, its about programming that area and bringing people in through that area, through probably highly choreographed interventions of design. Whether it’s through programming or through structures and pathways, it is never without design even though it might seem to be.” (A)

To support and encourage human use of a naturalized green space, design elements such as pathways, lighting, interpretative signage, benches, and shelters may be necessary and/or legislated by policy and by-laws for safety and universal accessibility. While programming areas can encourage individuals to use and visit green spaces, programming areas must be considerate of its impact on natural features and ecological processes.

Furthermore, intensive human intervention to maintain the natural features and characteristics of landscapes is often required when the principal purpose of the landscape is to protect and support urban biodiversity. As discussed in the literature, strategies may be necessary to support fully functioning ecosystems, enhance biodiversity, and to foster the maturity and evolution of biodiversity over time. For example, maintenance procedures such as brush clearing, invasive species removal, and prescribed fires may be necessary to establish and manage the local ecology (Beatley, 2011). Even though a green space may appear natural, as suggested by informants, nature found in the urban environment is rarely without design interventions.

Compared to conventional urban green spaces, one informant suggested that the term ‘nature-first’ may imply how the appearance and ecological structure of a nature-first urban green space may “change” over time as a result of natural processes and reduced human intervention. When the vegetation and structure of a green space changes, even if the change is caused by catastrophic events such as flooding, the landscape may be viewed as more natural, less controlled by design interventions, and considered nature-first.

All informants either directly stated or inferred through an example, how the design characteristics of passive green space reflects the concept of nature-first urban green spaces:

“I think that urban green spaces would include active parks, which would in no way resemble nature-first.” (P1)

“The natural green space would link [active green space] into the neighbourhoods, so we would see [the natural space] as passive.” (P2)

“What you want to preserve probably has to be passive [green space] ...and support passive activities such as bird watching.” (P3)

“Seems that green spaces in an urban setting range from soccer fields, with active play, programmed space which is just green-green meaning, no buildings. But when you get into a nature-one, I think you’re letting it happen more organically.” (CW)

Informants highlighted how the characteristics often found in active green spaces, such as open-space, sod grass, and sports equipment contradict the proposed characteristics of nature-first urban green spaces. Furthermore, one informant commented that the level of services a green space provides may differentiate nature-first urban green spaces from urban green spaces. For example, if sports equipment or playgrounds are included in the design of the green space, not only is a higher level of service provided but the services cater more to active green spaces, which may not necessarily support the characteristics of a nature-first urban green space. However, Shorehill Drive Park in Royalwood is an example of a green space that features a playground within an existing forest. The park reflects a nature-first planning approach in which the existing aspen forest was preserved and incorporated into the green space and the playground equipment supports the objectives of active green spaces and yet the green space retains a wild, natural feeling. This may suggest that nature-first urban green spaces could include active uses.

As discussed by the literature, green space planning and design theory recognizes that the planning and design of urban green spaces can better reflect and support diverse

plants, animals, and ecological processes. Although practitioners do plan and design green spaces with considerations to biodiversity and ecological processes, this practice is inconsistent. As a result, green spaces found in new greenfield residential communities can be as one informant described, ecologically destructive:

“Green space is such an awful term, it’s so monolithic and monoculture.... It doesn’t suggest very much other than the colour. But it is actually quite fitting for most urban spaces that look green because they are not ecologically productive and can actually be very ecologically destructive.” (A)

Strong public policy accompanied by political commitments, concerted action plans and financial as well as other incentives are required to change green space planning practices to consistently support biodiversity in our green spaces (Beatley, 2011; Duerksen & Snyder, 2005; Perlman & Milder, 2005).

4.5 Constraints and Conflicts

Various constraints and conflicts relating to the preservation and/or development of urban green spaces in Winnipeg became evident in comments from informants. Such issues as competing land use, balancing different types of green spaces, maintenance procedures, practices and policies that conflict with one another and financial constraints were common remarks made by almost all informants.

4.5.1 Land Use and Ownership

Green space is one of many land uses that is universally required in new developments. Informants commented on how the planning and design decisions about the size, quality, and resources invested into green space must be balanced with other land use demands:

“I don’t imagine anybody would be against [nature-first] but there is a lot of [land requirements] that happens in developments that people might not realize.” (P3)

Comments highlighted that the quantity of land allocated for active green space as well as other green space requirements could restrict opportunities to incorporate nature-first urban green spaces. Comments from three informants revealed how the acreage of land dedicated for green space under the DAP is used to provide a new development with both active green space and passive green space. As expressed by informants, the design and purpose of active green spaces do not support the intent of nature-first urban green spaces. Active green spaces often require large areas of land to support programmable activities. Therefore, the acreage of land used to support active green space may reduce the quantity of land available to provide passive, or nature-first urban green spaces, given the limitations of 8% land dedication as outlined by the *City of Winnipeg’s Development Agreement Parameters*. In addition, land allocated for pathways, trails, access points to stormwater retention ponds, and adjoining land uses of school yards and community centres, such as parking lots, are also included in a developer’s 10% green space dedication. As one key informant explained, the minimum 10% green space dedication which developers are obligated to provide can be easily consumed in new suburban developments:

“For example, in a 100 acre subdivision, you have a 10 acre budget of green space to work with. If you have a high quality urban forest that is 10 acres, you’d say perfect, just take the 10 acres, but its not perfect because you need active green space, you need pathways and all these other things. They suck up a lot of the urban green space budget to the point where, in one area of X, we were left with 2% [land dedication] for nature-first type areas because of expectations for a soccer field and other amenities - given the ratios of providing active park space for certain number of people, we needed a five-acre piece. And with

the lakes, we said, well we aren't just going to have lakes where people can't walk by them and use them. Plus they are great connectors to the neighbours, so we need [paths] along the lakes. By the time you do just those two things, you have 2 acres of your land left [for passive green space]. And then that raises the question, is 2 acres enough for a nature-type piece.... probably not depending on the size and the setting.” (P1)

As comments from informants would infer, the 10% green space dedication can be easily depleted by other types of parks. In addition, green space dedication is required to meet green space directions as identified in *Complete Communities* as well as meeting green space requests from the City of Winnipeg. In identifying opportunities for the protection and/or development of nature-first urban green spaces, an assessment of the green space dedication requirements may be necessary; in particular, questions may need to be addressed relating to whether the minimum 10% green space dedication is appropriate to provide a balance of green space amenities that includes nature-first urban green spaces.

Four informants commented how difficult it can be for the City of Winnipeg to impose regulations relating to the preservation of natural elements on land that is privately owned. As expressed by the Developer, landowners have the right and authority to remove natural elements from their land. If the presence of nature is perceived by the landowner to be an inconvenience or a barrier for development, landowners may remove tree stands or ecologically valuable elements prior to the development application process. By removing natural areas, the developer is not constrained to plan other land uses such around pockets of natural habitat:

“There is a patchy piece of poplar forest along Fermor, and the owner of that land is about to go in for development approval. The best thing that they can do is just knock that forest down first. Now, that's good ‘me’ thinking for a little guy that is a one-time developer.” (D)

The ability of removing nature from the landscape due to the perceived inconvenience in the face of development is a barrier towards enhancing opportunities for urban dwellers to connect with nature in the built environment. The *ESNL Strategy* is a tool that could prevent from this occurring, but it lacks the authority to mandate its recommendations. Compensation and incentives can also encourage the protection of ecologically significant land on privately owned land. Programs that support the transfer of development credits, or which compensate landowners who retain natural elements on their property are two approaches that if applied may encourage landowners to preserve natural elements on their property.

4.5.2 Existing Practice and Policies

Informants voiced frustrations that the City of Winnipeg's green space policies and recommendations can at times be unclear and/or conflict with one another. The *City of Winnipeg Charter*, *Development Agreement Parameters*, and the *Ecologically Significant Natural Lands Strategy* were each specifically named by informants as existing practices and policies that can constrain green space planning and may obstruct the preservation and development of green spaces which aim to preserve existing natural features.

Winnipeg's green space planning documents outline both mandatory and suggested policies for green space development; words such as "shall" indicate that the policy is considered mandatory, where as words such as "should", "may", or "encourage" indicate that the policy is either intended to apply or is offered as a guideline. Although policies which reflect principles of natural, wild landscapes can be found in *OurWinnipeg* and *Complete Communities*, they are often included only as guidelines in precinct plans and as a result do not have to be followed, hindering potential preservation opportunities.

Two informants discussed how a developer's contributions as per their development agreement with the City of Winnipeg could constrain efforts to adjust a developer's green space dedication requirement. Under the City of Winnipeg's *Development Agreement Parameters*, developers are legally required to provide the minimum of 8% net land and 2% capital for green space development. In addition to the green space requirement, developers are also typically required to provide land and capital for infrastructure such as roads, water and sewer lines, drainage, and lighting. The land and money a developer dedicates to meet the City's requirements as outlined in their development agreement, reduces a developer's capital to pay for public amenities or improvements, such as green space. If changes in the DAP, including any efforts to adjust the minimum dedication requirements or the addition of provisions which relate to the quality of green space, increases a developer's cost to green space dedication developers are likely to oppose, or be reluctant to comply.

Furthermore, one informant identified that any changes to green space policies and/or regulations, including adjusting green space dedication requirements, may be perceived as potentially restricting development decisions and as a result may persuade the development community to disagree with enhanced policy requirements for green space planning. For example, it was suggested that the Urban Development Institute might not be in favour of any green space policy or regulation that appears to confine development in anyway.

Comments from the Developer revealed how the *ESNL Strategy* may not be very effective in preserving valuable natural lands. There is currently no provision in the *ESNL Strategy* to prevent landowners from removing existing natural features from their property. Also, because the way the ESNL document has been interpreted, the assessment

process for the *ESNL Strategy* is triggered when land enters the development review process, which is too late. Currently, if a landowner chooses to remove natural elements from their land there is no mechanism, except public outcry (if the public is aware), to prevent this. The Developer stated that “*razing the land is an inherit incentive in the [approval process]*”, suggesting that the removal of natural elements may benefit a developer in their development approval process. As suggested in the literature, tools to identify natural lands of ecological significance are necessary towards preservation efforts, however the implementation of such tools must occur in a manner that can lead to appropriate protection for naturalized lands and features. Tools are available in Winnipeg which allows the City to use natural lands information early in the decision making process, but the City lacks policy enforcing the use of natural lands information. Comments from the Developer would suggest that changes are needed to the ESNL assessment process to mitigate against natural area decimation to avoid what they perceive as a development impediment.

4.5.3 Maintenance

Informants discussed how existing green space maintenance practices can influence the planning and design decisions of green spaces. In particular, informants identified the cost of green space maintenance as a significant influential factor:

“There is a concern that if you put in a high quality green space there is an expectation of it being maintained to a certain quality and typically after the developer’s [maintenance] responsibility, which may last two or more years of maintenance, the City takes over and sometimes there is a perceptive change in the maintenance quality.” (P2)

“Maintenance is a big factor- [the City] really has no money to maintain things. Public Works, Parks & Open Space Division takes over after [green spaces] are built and they are under big pressure to keep costs down.” (LA)

“Having [high cost park maintenance] is probably a deterrent for creating more [green space] in the city right now because of the existing costs.” (P3)

Maintenance costs related to the provision of green spaces and its services, are perceived by informants as a barrier towards protecting and developing green space in Winnipeg. To overcome this barrier, informants discussed how opportunities exist to plan and design green spaces to require less maintenance inputs and therefore cost less. For example, planting native vegetation often requires fewer inputs, such as fertilizer and pesticides, than sod or non-native vegetation and as a result can reduce maintenance costs. Green space policies for Precinct C and Precinct K support naturalized plantings where appropriate to reduce maintenance costs.

Informants indicated that education and awareness to planners, developers, and City of Winnipeg Public Works Staff on how maintenance practices can support or hinder naturalized landscapes may assist in enhancing nature in the built environment. One informant shared that Public Works staff have in the past unknowingly removed patches of tall grass prairie with a lawn mower; the individual was unaware that the tall grass prairie was intentionally protected. Educating Public Works Staff, or those responsible for maintaining green spaces, in recognizing the value of natural areas may be critical to ensure that naturalized green space elements are sustained.

4.5.4 Financial Constraints

When planning and designing a subdivision, developers continuously balance the costs and rewards for the risks they take. Included within their expenses, is the cost of preserving and developing green space. Informants identified that a developer’s cost to provide green space within their development influences the overall quality and quantity of green space for that development. As previously indicated, under the City of Winnipeg

DAPs, it is the developer's responsibility to provide land and capital for green space.

Developers may be reluctant to go above and beyond the minimum requirements as additional investments can cut into their bottom line:

"Its about the balance between the costs and the rewards for the developer for the risks they will take." (P2)

"Developers may agree with increasing nature, so long its not cutting into their bottom line." (P1)

It is inferred from informant comments that a developer's financial constraints may be a barrier towards increasing the quantity and quality of green space. Furthermore, if developers provide more than their minimum green space requirements, the City may then require additional financial and/or human resources to appropriately maintain the green space. Costs associated with park maintenance are likely an added burden to the City budget and as a result may be an additional constrain or limitation nudging the developer away from providing green spaces. However, if green spaces were more frequently planned to preserve existing natural elements or designed to include native plants and grasses, maintenance costs could be reduced; potentially reduced maintenance costs of green spaces which reflect more wild, natural elements may help support the case for nature-first urban green spaces.

To enhance nature in the built environment, the literature indicates that green spaces must shift away from current practices and assess opportunities to improve the quality of green spaces by becoming places that foster biodiversity and ecological processes. However, if improving the quality or quantity of green results in higher development costs, a developer will be less likely to adopt a nature-first planning approach. One informant suggested that to overcome this barrier, nature-first urban green spaces must be proven to cost at least equal or less than conventional green spaces.

Financial constraints of both the City of Winnipeg and members of the development community may present a barrier to enhancing nature in the built environment. Informants indicated that as a planning tool, secondary plans can assist with overcoming financial constraints. Informants indicated that if there is an interest to enhance green space protection and development for residential greenfield developments, secondary plans must reflect both acquisition and funding strategies. For example, comments from informants would suggest that the City of Winnipeg may consider establishing a green space fund; similar to the land dedication fund reserve (LDFR) monies from the fund would be allocated to purchase additional green space where required, however unlike the LDFR, 100% of monies would be used for purchasing green space. The Developer expressed that with a fund to purchase additional green space, the City may approach landowners or work with developers to purchase additional green space:

“I, for example have said because we are a large land owner, I will sell some [land]. If [the City] wants to get above the minimum [green space] requirement, yeah we will talk, we will do appraisals and sell at market.” (D)

Compensation is often required where local authorities want to see additional or higher quality green space. Alternatively, the City of Winnipeg could purchase lands before development interests when the land is more affordable. By including policy recommendations for funding mechanisms and compensation strategies, a secondary plan can assist with overcoming financial barriers towards increasing nature in the built environment.

In all, findings would suggest that to enhance nature in the built environment, existing conflicts and constraints must be overcome. This study indicates that competing

demands for land use, requests for different types of green spaces, the City of Winnipeg DAP Public Reserve requirements, maintenance practices, as well as financial constraints, all present challenges toward creating nature-first urban green spaces in Winnipeg. An assessment of how existing practices, policies and tools can better support green space planning practices may help overcome barriers and also identify best practices for enhancing nature in the built environment. Secondary plans created specifically for guiding green spaces in Winnipeg along with education and awareness about naturalized landscapes were also identified by informants as playing a role in reducing barriers for nature-first planning.

4.6 Collaboration and Communication

Informant responses suggested that collaboration and communication influences green space planning in Winnipeg. Within the concept of collaboration and communication, two themes emerged: working together and with others and disseminating knowledge.

4.6.1 Working Together and with Others

Informants identified how political support from the City of Winnipeg, Provincial Government, and Federal Government can influence green space planning when working internally with the City of Winnipeg and externally with stakeholders. For example, the planning process for the Bois des Esprit in Royalwood showed that decisions regarding green space in Winnipeg can at times be influenced by all three levels of government. Two informants identified how political support is not only an influencing factor in green space planning but may also be a barrier towards supporting, or mandating, more stringent standards for the quantity and/or quality of green space.

Informants shared how City Council may not be interested in increasing green space or enhancing nature in the built environment due to a perception of increased costs and risks associated with an increased quantity of green space and/or higher quality green space. As indicated in the literature, political processes can obstruct the implementation of Council adopted policy, swaying the outcome of land-use decision-making processes. Although *OurWinnipeg* and *Complete Communities* advises City Council on green space expectations in new communities, elected officials may instead choose to support proposed developments that may not fully reflect green space policy recommendations. For example, one informant shared an example of how City Council approved a subdivision plan that did not meet the DAPs Public Reserve requirements.

Informants would suggest that the capacity of City of Winnipeg planners to effect City Council decisions may be too limited and as a result, political processes can pass over adopted policy as presented in municipal development plans as well as recommendations from City of Winnipeg staff:

“[City Staff] are not put in a position of leadership and the policies are not detailed enough that they know the scope of what they can negotiate to. Rather the power lies within the political sphere.” (P2)

Planners serve as technical advisors and do not hold any form of power to enforce political adherence to policy, and as the informant’s comment points to, this results in elected officials ultimately making planning decisions. The authority of local planning departments to influence planning decisions can be correlated with how well plans are implemented. Involving and working with elected officials in the early stages of planning processes can influence the degree to which plan and policy recommendations are implemented (Berke et al., 2006; Reid, 1989). To ensure that green space requirements

are included in precinct plans and subdivision plans, city administration, staff, and elected officials must work together fostering an institutional commitment to support a MDP's vision, objectives, and policy recommendations.

Informants indicated that the precinct planning process is largely driven by the landowner and/or hired consultants. Staff from different City of Winnipeg departments are also quite involved working alongside landowners and consultants during the precinct planning process. Comments from informants would suggest that during the initial stages of planning, consistent communication with City staff in regards to the City of Winnipeg's expectations and/or wishes is necessary to help establish clear expectations for the planning and design of green spaces. For example, it was suggested that early in the precinct planning process, the City of Winnipeg may provide more direction regarding expectations for the acreage of passive and active green spaces as well as to outline which amenities they require for green spaces (i.e. playground equipment, trails, lighting, vegetation planting). In working more closely with City of Winnipeg staff from the beginning of the precinct planning process, consultants can better identify the City's expectations for the planning and design of green spaces which may foster a more efficient and effective green space planning process.

One informant identified how the institutional nature of city administration as well as a lack of formal processes in how city departments work with one another may be a barrier in Winnipeg's green space planning. Green space planning decisions relating to the protection of ecologically significant lands, landscaping and urban design requirements, and maintenance, for example, will require input from city staff in different departments. Formal processes in regards to decision making may include enhanced collaboration, which can lead to efficient and appropriate information sharing between

departments and decision-makers, increased productivity, and improved solutions to overcome green space challenges related to practices and policies that conflict with one another, and balancing dedication requirements for different types of green spaces. As comments from informants would suggest, if attention was directed to better address how city departments can best work with one another for the planning and design of green spaces, the issues and challenges associated with green space planning listed above may be overcome.

In addition to collaborating with city department staff and elected officials, informants identified that local residents and community leaders must be involved throughout green space planning processes as well. A spectrum of public participation exists, from simply informing the public with information to help assist their understanding of the issues, to empowering the public by placing the final decision-making in their hands. The extent to which members of the public should reflect their interest in the project as well as the potential impact the plan may have on them. As informants expressed, throughout green space planning processes in Winnipeg, community members have demonstrated limited knowledge in how green space is preserved and/or created, which can result in unrealistic green space expectations. In addition, community members may be unaware of how other land uses and developer contributions can restrict the size and location of green space. By educating and working with community members throughout the planning process, discussions regarding green space planning processes and limitations, such as developer obligations and city requirements for green spaces can illustrate the challenges associated with green space planning. Community consultation is also important to identify local wishes and expectations for green space preservation and/or development, as well as to draw on local

knowledge to identify opportunities, barriers, and challenges for the preservation and development of green space in Winnipeg.

One informant, discovered first hand that engaging with community members can result in clearer green space directions:

“It was clear from day one from when we went to look at [the precinct] and talk to people that green space was going to be the number one issue. That plan in particular provides pretty strong direction in terms of connecting green spaces and looking for natural areas to preserve, using the dedication as a vehicle to preserve it.” (P1)

As the informant illustrated, collaborating with community members can lead to the identification of green spaces that reflect the needs and desires of local residents. By working with community members throughout planning processes, local residents can better understand how green spaces fit in with the goals and vision of MDPs, as well as begin to identify what tools are available, or absent, to preserve and/or create green space.

Informants suggested that enhanced collaboration and communication between conservation organizations, stakeholders and experts may be a mechanism to assist with enhancing nature in the built nature, and in moving towards the application of nature-first planning. Three informants specifically mentioned that collaborating with conservation easement authorities such as Ducks Unlimited or the Nature Conservancy of Canada, as well as working with neighbouring municipalities may present opportunities to identify mechanisms, policies, and/or opportunities for enhanced green space development in Winnipeg. Organizations such as Ducks Unlimited and Nature Conservancy of Canada bring experience and knowledge in lands conservation that other collaborators may lack. Comments would suggest that by bringing interested parties together, a discussion on opportunities in applying a nature-first planning approach may be better explored.

Collaborating with and learning from others may lead to innovative practices or pilot projects which may support nature-first planning practices.

Informants viewed trust and relationship building as critical elements to help gain traction and support for precinct plans and green space planning. Building a mutual sense of rapport and trust with parties involved in green space planning is essential:

“Many things can go wrong, even after a Planner says this is the way we must do [green spaces], we aren’t in control of [politics], so collaboration must be a part of it.” (CW)

“We have to come together as an industry and as a city and say let’s figure out how to balance these priorities.” (D)

As individuals collaborate fairly and openly with one another, a history of social interactions and honoured commitments is established, further strengthening a sense of trust and respect amongst parties which may lead to further initiatives to work together, this then garners traction supporting the application of nature-first planning practices.

4.6.2 Disseminating Knowledge

Comments from informants would suggest that education, public discourse and planner-led advocacy plays a role in current green space planning practices and may assist towards enhancing nature in the built environment. Acquiring knowledge on green space planning practices is important in helping to identify new processes, techniques, or strategies that may advance current practices. Comments from informants indicated that lessons may be learned by looking and learning from others:

“If we don’t have a precedent we can work on, how do we say this is how we should do things for continuous improvement.” (CW)

As suggested by the informant, sharing precedents and case studies of innovative green space planning and design approaches is an important method for improving planning processes, objectives, or strategies. For example, the City of Winnipeg may look to

Milwaukee, Ottawa, and Calgary for precedents on green space planning practices. In doing so, the City of Winnipeg can begin to build a case demonstrating how policies, strategies, and/or tools have been used in other cities to enhance nature in the built environment. In addition, using precedents from other municipalities can help build support and credibility for applying a similar approach in another context and encourage continuous improvement for green space planning and design. As suggested by one informant, learning from municipalities who implement more advanced green space planning processes may assist Winnipeg in adopting a nature-first planning approach.

Planners and developers who apply un-conventional and innovative green space planning approaches can share their experiences which may encourage others to consider a broader range of approaches. For example, one informant suggested that developers who have included naturalized retention ponds in their developments should share their experience with others. By sharing and elaborating on the benefits, costs, and maintenance practices of naturalized retention ponds, a wider adoption of this practice may occur. Documenting and sharing one's own experience and/or knowledge of green space planning precedents with other developers, planners, and city administration can inspire one another to try a nature-first approach to green space planning.

Precedents as well as one's own experience in enhancing nature in the built environment can play a significant role in fostering a shift towards nature-first planning practices. A planning approach that elevates the importance and priority of nature in planning decisions is not yet widely adopted. As planners and developers begin to apply a nature-first planning approach, one will become more familiar with the process and may be more likely to implement it again. For example, for a shift towards nature-first planning to occur, a change in the way urban nature is defined, how green spaces are

planned, and new maintenance practices may be required. Comments from informants would suggest that documenting and sharing precedents as well as one's own knowledge and experiences can be very powerful instruments to influence change. As suggested by one informant, change is not resisted because it is bad, but rather because change can create unfamiliar processes. Yet, resistance and hesitancy towards change can be addressed through education and public discourse.

One informant's comments suggested that a healthy discourse on the topic of urban nature currently exists in Winnipeg. As cities grow and become denser, opportunities to introduce and/or preserve nature in an urban setting through emerging design interventions are created. With these opportunities, questions regarding what defines 'urban nature' and what the purpose of nature is in the built environment can be discussed. Comments from informants would suggest that planners can play a role in facilitating a dialogue around culture and nature. Planners may engage with stakeholders and experts and begin "making a case" for enhancing nature in the built environment. Elected officials, city staff, developers, landscape architects, ecologists, and community residents, for example, each bring a diverse perspective regarding the role of nature in the built environment. By working together, the opportunities, challenges and barriers for introducing creative green space planning practices for Winnipeg's green spaces can become further identified. Discussions regarding enhancing nature in Winnipeg are currently underway. However, these conversations tend to respond to and focus on current 'hot topics', such as specific development areas like the Parker Wetlands, or the sale of City owned land including City owned golf courses. An opportunity exists to move beyond dialogue that reacts to current green space issues and rather engages in proactive and meaningful discourse regarding green space planning at a city-wide scale.

In doing so, conversations may focus on an overall vision for how to best enhance nature in Winnipeg, what tools are available to implement this vision, and who should be evaluating its implementation. Furthermore, a working group made up of key players such as but not limited to city staff, planners with experience in green space planning, developers, landscape architects, academics, and/or conservation organizations may also provide an opportunity to not only discuss urban nature but to advocate for a nature-first planning and design approach. Remarks from informants hint at how the planning and development community in Winnipeg could be better advocates for nature-first planning and design.

In all, findings would suggest that working and learning with others is a very important process to advance Winnipeg's green space planning processes. The ways in which planners, developers, and city staff work internally within their own departments as well as externally with other stakeholders and experts can help identify and clarify the challenges and breakdown the barriers that have hampered green space planning processes to date. Through open communication, dialogue, and the dissemination of information, opportunities for improving how planning practices may protect and/or develop more naturalized green spaces can be identified. In addition, looking to other municipalities and learning from one another's experiences builds support and credibility for applying a similar approach in Winnipeg's context.

CHAPTER 5 SYNTHESIS AND RECOMMENDATIONS

5.1 Introduction

This research project was aimed to better understand in what ways the built environment can increase the presence of green spaces that reflect the characteristics of natural, wild landscapes. Urban green spaces serve a number of important roles: they are fundamental in enhancing the quality of the built environment for people; recognized for maintaining biodiversity and ecological processes; and provide valued space for recreational opportunities and passive entertainment. Legislation concerning community planning mandates local governments to make provisions for urban green spaces (Schleisger, 2001). In response, local governments establish green space standards through the use of municipal development plans and supporting documents (Talen, 1996). To better integrate nature in our cities and towns, a shift in how urban green spaces and the built environment is designed and planned must occur.

This research project explored the ways municipal development plans can support the creation of green spaces that through its vegetation and structure display the distinctive features and characteristics of nature typified by the absence of human habitation and other human related influences; this type of green space is herein defined as nature-first urban green spaces.

Given the accelerating rate of urbanization and the associated disconnect between people and nature in the built environment, the presence of nature in the built environment is increasingly being recognized as an integral feature. Current urban green space planning processes can struggle to provide sufficient amounts of nature to foster the benefits which nature provides. However, there is a shift occurring in the planning and

design of urban green spaces towards a better integration of nature in our cities and towns.

The research methodology assessed the City of Winnipeg's municipal development plan and green space planning practices for residential greenfield development to identify the existing and potential creation of nature-first urban green spaces in Winnipeg. A literature review, analysis of Winnipeg's municipal development plan and relevant green space planning documents, and informant interviews was conducted. The applied methodology helped answer the three research questions and provided insight on elements that may advance planning practices as well as obstacles that may hinder the preservation of nature in Winnipeg. In addition, research findings were synthesized into seven recommendations. The recommendations address how the planning and design of green spaces in Winnipeg may further enhance the presence of nature in the built environment as well as better reflect ways the City can create opportunities for urban dwellers to foster a relationship with nature. The recommendations are based on a synthesis of best practices garnered from the literature, the strengths and weaknesses of Winnipeg's municipal development plans, and a reaction to ideas, suggestions, and experiences elicited from informant interviews. If applied, the recommendations could contribute to the advancement of green space planning in Winnipeg to reflect what has been proposed as nature-first urban green spaces. The seven recommendations may also contribute to a wider application of nature-first urban green space planning practices.

5.2 Responding to research questions

This practicum was guided by three research questions. By addressing the themes in each question throughout the course of this project, recommendations were developed.

Below is a general response to each research question explaining how the key lines of inquiry used in this practicum have addressed the questions.

5.2.1 Research Question 1

The first research question asked:

- 1.a What is the existing role of the City of Winnipeg's municipal development plans towards the protection and/or development of urban green spaces in residential greenfield development?
- 1.b What is the potential role of the City of Winnipeg's municipal development plan towards the protection and/or development of urban green spaces in residential greenfield development?

The research identified that the City of Winnipeg's municipal development plan, *OurWinnipeg*, and two of its accompanying documents, *Complete Communities* and *A Sustainable Winnipeg*, as well as precinct plans influence green space planning in Winnipeg for residential greenfield development. *OurWinnipeg* and *Complete Communities* were adopted by City Council as secondary plans and as a result the policies and objectives within these documents are enforceable. Enforceable policy is critical to ensure that subsequent planning decisions support a MDPs overarching goals. In addition, enforceable policy can influence local decision-makers to create consistent resolutions and hold all development to the same standards. Winnipeg's green space planning process is therefore significantly influenced by the vision and policies laid out in *OurWinnipeg* and *Complete Communities*. *A Sustainable Winnipeg* influences green space planning as well, albeit to a lesser degree, as it is a non-statutory plan. Precinct plans are either adopted as secondary plans or council policy. The three precinct plans reviewed here were adopted as secondary plans and as a result contain enforceable policy and the benefits described above accrue. Although the City of Winnipeg's *Development Agreement Parameters* and the *Ecologically Significant Natural Lands Strategy* are not

MDP's, these documents are also identified as influencing green space planning. The *Development Agreement Parameters* affects green space planning as it establishes minimum green space dedication requirements and the *Ecologically Significant Natural Lands Strategy* guides preservation requirements.

The role of *OurWinnipeg*, *Complete Communities*, and *A Sustainable Winnipeg* in green space planning is to provide overarching goals for Winnipeg's parks and open spaces. These goals and objectives are important for guiding green space planning practices, however are too general to effectively direct green space planning. The objectives for Winnipeg's green spaces, as presented in *OurWinnipeg* and its accompanying documents, are not prescriptive actions but rather descriptive goals and strategies. It is understood that MDP's typically contain general policy direction only, yet without a green space or parks plan, a major weakness of green space planning in Winnipeg is that the primary guiding objectives and policies are not specific enough to effectively direct green space planning. For example, *Complete Communities* identifies the objective to "Promote and expand biodiversity consistent with the local natural ecosystem, not only within the urban forest and designated natural areas but in all Parks, Places and Open Spaces" (The City of Winnipeg, 2011a, p. 109). This policy may be difficult to enforce because there is no clear indication as to where the policy applies, under which circumstances, and who will be subject to it. In addition, the policy does not identify who is responsible for implementation as well as when and how development will implement the policy. It is argued that the provision of more prescriptive green space expectations can strengthen Winnipeg's green space objectives.

By expressing desired qualities of green spaces, such as passive, sustainable, natural, or diverse, *OurWinnipeg*, *Complete Communities*, and *A Sustainable Winnipeg*,

highlight aspirations for how Winnipeg's green spaces shall be, yet do not necessarily express expectations for the size, quality, or natural features of green spaces. A variety of planning tools, such as green space master plans and development standards for tree and vegetation protection exist and if applied could assist with the implementation of such high-level policies. In the protection and/or development of urban green spaces in residential greenfield development, an opportunity exists to address the absence of prescriptive green space policies; the development of a green space master plan for Winnipeg, for example, may help overcome this.

The City of Winnipeg's green space objectives demonstrate an interest in planning green spaces for current and future populations, accessibility, health and well-being, biodiversity, and ecological processes. These themes are discussed in the literature as important considerations for urban green spaces and the effort of *OurWinnipeg* and its accompanying documents to reflect such considerations is commendable. To further strengthen the planning practices within *OurWinnipeg*, *Complete Communities*, and *A Sustainable Winnipeg*, a potential exists to include measurable objectives. The types of measurable objectives found in municipal development plans from other cities include targets for acceptable walking distances to access green space, a minimum quality requirement for the preservation of natural lands, or a minimum area requirement of green spaces for passive recreation. Inclusion of such metrics can help increase the presence of nature in the built environment as clearer expectations are established for the preservation and development of urban green spaces in residential greenfield.

The existing role of precinct plans on the matter of protection and/or development of urban green spaces in residential greenfield development is to offer a more detailed course of action than what is found in *OurWinnipeg*, *Complete Communities*, and *A*

Sustainable Winnipeg. Precinct plans are either adopted as statutory planning documents or as Council adopted policy. This paper shows that precinct plans adopted as statutory plans are more effective than Council adopted precinct plans at holding subsequent development applications to an established standard; this includes green space requirements. For example, Precinct K, a statutory precinct plan, mandates that parcels adjacent to the Seine River provide their required park dedication as linear park abutting the river. This policy supports the objectives of *OurWinnipeg* and *Complete Communities* to maintain green corridors, and protect and enhance riverbanks and forest environments. As enforceable regulatory policy governing an area's development, statutory precinct plans have a potential role to mandate strong policies relating to green space. Policies which reflect principles of natural, wild landscapes can be found in precinct plans, yet, such policies are often not mandatory and rather are included as guidelines only. As a result these policies do not have to be followed, which hinders potential preservation opportunities. There is an opportunity for precinct plans to further the protection and development of urban green spaces in residential greenfield development by shifting more of its green space policies to be mandatory policies. The development of a green space master plan, the use of zoning and subdivision controls, development standards, and incentives may assist with the implementation of mandatory precinct plan green space policies.

Although the *City of Winnipeg Development Agreement Parameters* (DAP) is not a municipal development plan, the document is nonetheless influential in green space planning. DAP significantly impacts green space planning in that it establishes the minimum quantity of green space for residential greenfield developments. DAP has a potential role to advance green space planning practices by increasing the minimum

quantity of green space in residential greenfield development. This can be accomplished by increasing the 8% land and 2% cash Public Park Reserve dedication requirement. To reach a mutually agreed upon policy addressing land use within the DAP's green space requirements will require collaborative efforts by stakeholders.

The existing role of the *Ecologically Significant Natural Lands Strategy* towards the protection and/or development of urban green spaces in residential greenfield development is to help prioritize the preservation and restoration of ecologically significant natural lands. The *ESNL Strategy* is an integral tool to proactively identify ecologically significant lands in Winnipeg and can be used to increase the quantity of green spaces which reflect the features and characteristics of wild, natural spaces, thus increasing opportunities for an urban dweller to interact with nature. However, the *ESNL Strategy* currently lacks genuine force towards influencing the preservation of ecologically significant natural lands.

The *ESNL Strategy* provides a framework that subjectively assesses the quality of natural lands. When a parcel enters the development review process, natural areas are evaluated and graded on their quality and ecological services using a multi-criteria evaluation matrix. Sites receiving a grade of B or higher are considered to be good sites worthy of consideration for preservation, however as the *ESNL Strategy* lacks teeth, the grade assigned does not necessarily grant protection. This study suggests that the lack of power in the *ESNL Strategy* to mandate the preservation of ecologically significant lands is a missed opportunity and gap in the preservation of natural lands in Winnipeg.

Although the City of Winnipeg strives to work with landowners to acquire ecologically significant valuable land, situations may arise where the natural lands can not be preserved and as a result green space preservation may be lost. To advance and

strengthen the role of the *ESNL Strategy*, policies could be added to *OurWinnipeg*, *Complete Communities* or precinct plans directing developers to follow the recommendations for preservation of natural areas as identified through *ESNL*. The *ESNL Strategy* may also explore alternative or additional land acquisition mechanisms. Currently, the *ESNL Strategy* identifies outright purchase, land exchange, conservation easements, donations and land dedication as viable acquisition strategies. Mitigation requirements, transferrable development rights, and development standards which reflect the conservation of existing natural landscapes are examples of planning tools from Calgary and Milwaukee which can assist with the acquisition of natural lands. Although examples exist of the application of such tools in other cities, research would be required to ensure that the use of additional land acquisition mechanisms meets local legislation.

5.2.2 Research Question 2

The second research question asked:

- 2.a What is the existing role of the City of Winnipeg's municipal development plan in applying nature-first planning practices towards the protection and/or development of urban green spaces in residential greenfield development?
- 2.b What is the potential role of the City of Winnipeg's municipal development plan in applying nature-first planning practices towards the protection and/or development of urban green spaces in residential greenfield development?

Influenced by both the literature review and informant interviews, nature-first planning is defined as a planning approach where land use decisions are primarily guided by opportunities to preserve or create spaces for nature. Nature-first planning may include processes that elevate the importance of natural landscape features as a land use, planning land uses around existing natural features, establishing green spaces early in the planning process, and processes which consider how human intervention may affect existing

natural features. Sustainable maintenance and management practices as well as collaborating with others are necessary to promote the development of nature-first urban green spaces. The existing role of the City of Winnipeg's municipal development plans in applying nature-first planning practices towards the protection and/or development of urban green spaces in residential greenfield development includes policy which places value on the presence of natural landscape features in the built environment, sustainable maintenance and management practices and collaborative green space planning. The potential role of the City of Winnipeg's municipal development plans in applying nature-first planning practices for the protection and/or development of urban green spaces in residential greenfield development requires policies to better encourage ecological restoration and rehabilitation, and green spaces to be designated early in the planning process.

Complete Communities states that park sites will be selected in ways that maximize conservation and to expand biodiversity consistent with the local natural ecosystem, not only within designated natural areas but all parks, places, and open spaces. These objectives are reflected in precinct plans as evidenced by the following examples. The green space policies of Precinct C includes promoting biodiversity within its green space network, Precinct K suggests that existing treed and other natural areas be preserved, and Precinct Q's green space policies states that existing natural areas are to be incorporated into the linear greenway. The existence of policies that are aimed to preserve and/or enhance natural landscapes, suggest that Winnipeg's municipal development plans value and place importance on the presence of natural landscape features in the built environment. However, the strength of these policies to make a substantial contribution to maximizing conservation and expanding biodiversity are

questioned, as the policies described are only recommended. While the existence of such policies is critical towards preserving natural landscapes, compliance from future development is not required as the policies are not prescriptive. Policy compliance is what truly counts to make a difference. It is argued that policies which enable, or mandate, the planning process of green spaces to maximize conservation, promote biodiversity, and enhance the local natural ecosystem applies a nature-first planning approach.

Research revealed that the extent to which a precinct's green space policies include policies to promote and expand biodiversity and ecological processes are influenced by the existence of nature in the precinct. Both informant interviews and the analysis of precinct plans indicated that policies to increase qualities of natural, wild landscapes are largely absent in precinct plans when no, or little, existing naturalized areas are present. This demonstrates a potential gap in green space planning processes in Winnipeg; to what extent are developers encouraged, or mandated, to re-establish ecological processes and natural landscapes where none may exist? Even though the landscape may not currently contain naturalized areas, opportunities may be present to restore the features and elements of biodiversity and ecological processes. As a result of development pressures, natural areas found in urban environments may be degraded. However, degraded urban natural areas are increasingly being transformed back to their native ecosystems. To enhance the presence of nature in the built environment as well as to reflect opportunities for urban dwellers to foster a relationship with nature, ecological rehabilitation or restoration may occur. The goal of ecological restoration and rehabilitation can be achieved through replanting efforts to re-establish a full complement of species and ecological processes. As enforceable policy, a precinct plan may prescribe

green space planning and design processes to restore a degraded landscape or ecosystem through ecological restoration. To advance green space planning practices as well as to further enhance the presence of nature in the built environment, a potential role exists for precinct plans to include policies which reflect a course of action to re-establish natural, wild landscapes.

Policies within the selected MDPs suggest that an objective of green space planning in Winnipeg is to plan green spaces that can be maintained through sustainable maintenance and management practices. Policies that support sustainable maintenance practices may or can also indirectly support the development of green spaces that display the characteristics of natural, wild landscapes. For example, *A Sustainable Winnipeg* includes the objective of actively and continuously seeking out alternative planning, maintenance, and operation approaches that are sustainable. As indicated in the literature and by informants, passive, or more naturalized wild green spaces may be less costly to maintain due to fewer required inputs. The green space policies of all three precinct plans support low maintenance vegetation; Precinct K specifically states that naturalized plantings and low maintenance vegetation may be included in parks to support reduced maintenance costs. Although naturalized plantings may be used as a cost saving measure, they have the added benefit of introducing native vegetation and thereby provide opportunities for a more personal interaction with nature which is a goal of nature-first planning. Green spaces that include naturalized landscapes were characterized by informants as one type of nature-first urban green spaces. The use of naturalized plantings in Winnipeg's urban green spaces indicates that there is potential support for nature-first planning practices.

The policies found within the City of Winnipeg's municipal development plans speak to a strong belief in collaborative green space planning. The existence of policies regarding partnerships and collaboration can support the application of nature-first planning practices. The literature review indicates that the proposition 'nature-first' is not a common term to describe urban green spaces that look and feel like wild, natural landscapes. As the concept was explored with informants, it was discovered that nature can have different meanings to different people. Although informant interviews and findings in the literature has helped to refine the concept and definition of nature-first planning and nature-first urban green spaces, collaborative planning efforts will be invaluable towards the application of nature-first planning. Stakeholders, experts, and community members each contribute unique views on the planning and design of green spaces. To promote the application of nature-first planning, collaborative discussions further exploring the concept of nature-first planning and nature-first urban green spaces, must occur. The City of Winnipeg's municipal development plans can support the application of nature-first planning practices by encouraging collaborative green space planning processes.

A potential opportunity is present for the City of Winnipeg's municipal development plans to advance nature-first planning practices by encouraging, or mandating green spaces to be designated early in the planning process. To increase the presence of nature in the built environment, green spaces must be among the first land use designations in a precinct plan. In doing so, the preservation of natural landscapes would receive as much respect and consideration as planning decisions which currently lead precinct planning processes, such as the location of transportation networks and connections to servicing infrastructure. Having a decision making process that is guided

by nature-first planning principles can help ensure that all planning processes are guided by similar principles, goals, and objectives; this can result in genuine effectiveness impacting the decision making process. As suggested by informants, nature-first planning is a planning approach where other land uses are primarily guided by opportunities to preserve or create spaces for nature. Establishing the location and size of green spaces as well as the reasons behind why the locations and sizes of green spaces are proposed early in precinct or subdivision planning can harness opportunities to improve the quantity and quality of green space, connect green spaces with other land uses, and better incorporate existing natural features in green space designation. By designating green spaces first, this approach elevates the importance of the existing natural environment above other land uses and can prevent “the left over pieces” of land from becoming green spaces. The experiences of individual informants suggest that the precinct planning process has prompted movement towards designating land uses first and to areas where preservation opportunities exist. To reflect this shift, Winnipeg’s municipal development plans could include policies that encourage green spaces to be designated prior to other land uses.

5.2.3 Research Question 3

The third research question asked:

3. In what ways can urban planners and urban policy in Winnipeg apply lessons from other cities to support nature-first planning practices?

While conversations in Winnipeg on the role of nature in the urban environment may only be just beginning, forward-thinking green space policies and plans from Milwaukee, Ottawa, and Calgary indicate that practices for how to best enhance nature in the built environment are being applied. Ottawa’s planning approach to enhancing green

space in the built environment includes a regional green space plan which reflects policies that best support the health of ecological communities within and beyond the city, green space design strategies which enhance the natural qualities of green spaces, and adopted policy strives to make green spaces accessible to all residents. Calgary's green space planning is led by a hierarchy of complementary green space planning policy documents, targeted green space performance indicators, stewardship programs, and educational campaigns about the area's biodiversity. Milwaukee demonstrates commitment to increasing the quantity and quality of protected natural lands through its Milwaukee Riverway Greenway Overlay as well as through a planning policy which aims to increase the acreage of protected or restored natural areas by 10% annually, programs which actively engage community residents to be stewards of local green spaces, and how the city monitors the effectiveness of its green space strategies to find areas for improvement. Examples from other cities provide Winnipeg with informative precedents demonstrating how planning practices may preserve and enhance nature within the built environment. Although support is evident in the City of Winnipeg's green space planning documents for nature-first planning practices, looking to other municipalities for precedents can further instigate a shift from current green space planning policy and practices to an approach that is driven by opportunities to preserve or create spaces for nature.

Milwaukee, Ottawa, and Calgary share a common approach to green space planning by having a green space master plan. Research revealed that municipal development plans are one of the most important and valuable tools for planners and planning processes and that green space plans are often necessary to advance green space

planning processes. By addressing the goals and objectives to elevate the importance of natural landscape features as a land use in relation to the delivery and care of green spaces, a green space plan is an appropriate tool to encourage or mandate nature-first planning practices. A green space master plan may be utilized in Winnipeg to advance green space planning practices, address how nature may be enhanced in the built environment, as well as reflect opportunities for urban dwellers to foster a relationship with nature.

Green space planning can occur at different scales. For example, green space planning in Montréal and Ottawa is guided by regional green space plans, whereas in addition to their regional green space plans Calgary and Toronto utilize green space documents for specific sites, such as river valleys and ravine systems. These examples demonstrate how operating at different geographical scales, green space policies can have further reaching capabilities shaping better suited strategies to best support ecological communities. The required policies to best support the preservation of a watershed, for example, will be different than policies directed to the development of pocket parks. Furthermore, plans that are site specific, or smaller in scale, tend to include policies that identify specific enough detail to be more effective at directing development. A similar approach may be encouraged in Winnipeg to compliment the existing completed green space studies with a further robust planning framework for green spaces.

5.3 Results and recommendations

The seven recommendations that follow are to enhance the presence of nature in Winnipeg by addressing opportunities to strengthen green space planning processes and policies. The intent of each recommendation is to provide increased opportunities for

urban dwellers to foster a relationship with nature. The seven recommendations, are set out below and each is next discussed.

1. Conduct a more in-depth assessment of current green space planning processes
2. Engage in green space dialogue to promote nature-first urban green spaces
3. Strengthen the role of the *Ecologically Significant Natural Lands Strategy*
4. Review and Update the *City of Winnipeg Development Agreement Parameters*
5. Develop and adopt a green space master plan for Winnipeg
6. Produce a City of Winnipeg green space planning and design handbook
7. Continue to seek a supportive political climate for green space planning

Each recommendation is based on a synthesis of best practices as indicated by the literature, the strengths and weaknesses of Winnipeg's municipal development plans, and informant interviews. If applied, the recommendations made here can contribute to the planning and design of green spaces in Winnipeg to better reflect what has been proposed as nature-first urban green spaces. A summary of the recommendations can be found in Appendix E.

5.3.1 Conduct a more in-depth assessment of current green space planning processes

The research revealed that challenges exist in Winnipeg's current green space planning processes. Challenges include competing demands for land use, balancing different types of green spaces, the cost of existing maintenance practices, policies that conflict with one another and financial constraints. As a first step in solving a problem is to fully identify what the problem is, it is recommended that a more in-depth assessment of current green space planning processes be conducted. A City of Winnipeg led initiative

can examine how existing practices, policies, and tools can better support green space planning practices and overcome current challenges and barriers.

The proposed assessment can map out green space planning process and examine maintenance procedures, the *Development Agreement Parameters* green space requirements, the way in which City departments work with one another, consultants and developers, the presence of policies or guidelines that indicate the City's expectations for green space, and the authority of the *Ecologically Significant Natural Lands Strategy* in preserving natural lands. In addition, a stakeholder consultation and public engagement process can be included so that all relevant parties have an opportunity to share their perspectives. Developing a set of 'best practices' rules may also be useful to help evaluate how well existing practices, policies, and tools support green space planning. The assessment would be a City of Winnipeg led initiative, but it suggested that a third-party consultant be hired to remove any potential bias or perception of bias from the assessment. The intent of this recommendation is to not only lead to more efficient practices but to also help set the stage for nature-first planning and nature-first urban green spaces.

5.3.2 Engage in green space dialogue to promote nature-first urban green spaces

This recommendation is aimed to help further define, explore, and promote the application of nature-first planning in Winnipeg. Throughout the research, it was discovered that 'nature' can have different meanings to different people. Although the applied research methods helped refine an initial concept and definition of nature-first planning and nature-first urban green spaces, dialogue can help lead to a shared understanding of the application of nature-first urban green spaces.

The policies found within the City of Winnipeg's municipal development plans speak to a strong belief in collaborative green space planning, which can include establishing a nature-first green space working group. This working group can explore precedents, discuss individual experiences, and help promote the application of nature-first planning. In addition, the working group can discuss advanced green space planning practices and help address the "it won't work in Winnipeg attitude", which was identified by informants as a barrier to implementing nature-first planning practices. The City of Winnipeg Planning, Property and Development Department and an environmental consultant, such as Native Plant Solutions, can lead the working group and members can include planners, landscape architects, land developers, naturalists, conservation easement authorities, economists, legal representation, and policy experts; each of whom bring an informed and different view of nature and its role in the built environment. Working group activities can include discussions regarding the opportunities, threats, challenges, and barriers to green space planning in Winnipeg as well as host guest lecturers and arrange engaging workshops aimed at learning and sharing new processes, tools, or strategies to increase the presence of nature in the built environment. Through their activities, the working group may begin to further tease out the strengths, weaknesses, and opportunities for a nature-first planning approach in Winnipeg. To implement the working group, the next steps may include fine-tuning the working group's mandate, who they report to, and who membership would consist of.

5.3.3 Strengthen the role of the Ecologically Significant Natural Lands Strategy

The *Ecologically Significant Natural Lands (ENSL) Strategy* currently lacks effective enforcement towards the preservation of ecologically significant natural lands. When a parcel of land enters the development review process, natural areas are evaluated

and graded using the *ESNL Strategy*. Sites receiving a grade of B or higher, are considered to be good sites worthy of consideration for preservation. However, the results of the ESNL assessment does not always lead to protection as the *ESNL Strategy* does not trigger policy for protection. Furthermore, why must a development review process prompt the *ESNL Strategy*? To proactively preserve ecologically significant lands, the *ESNL Strategy* could include an inventory of the region's undeveloped areas. This inventory would then be followed by green space designation and acquisition. The lack of power in the *ESNL Strategy* to mandate the preservation of ecologically significant lands is a missed opportunity and gap in the preservation of natural lands in Winnipeg.

While the *ESNL Strategy* is an integral tool to identify ecologically significant lands in Winnipeg, without teeth to mandate the preservation of natural areas, chances to preserve nature in the built environment are lost. To advance and strengthen the role of the *ESNL Strategy*, the City of Winnipeg can pass a by-law to improve its force of application. To do so, political will must exist from City Council and Senior Administrative Staff. Instances of where and why the *ESNL Strategy* was ineffective can be used to help lobby for change.

5.3.4 Review and Update the City of Winnipeg Development Agreement Parameters

The *City of Winnipeg Development Agreement Parameters* (DAP) is a very influential document for green space planning as it is the prime mechanism used by the City of Winnipeg to obtain greenspace. Informants indicated that land dedicated through the DAPs green space dedication requirement is easily consumed by requests from the City to provide active green spaces, passive green spaces, and other green space related uses. Without some type of compensation, developers are not willing to dedicate more than the minimum requirements. *Complete Communities* includes an update to the DAP

to reflect new practices and informants indicated support this. Updating DAP may include increasing a Developer's minimum green space contribution.

Part 3(24) Public Park Reserve establishes a standard requirement for the amount of green space a developer must dedicate. While the quantity of green space is an important concern, the Development Agreement Parameters does not address issues relating to the quality and distribution of green space, such as preserving ecologically significant lands and planning for green space connectivity. Therefore, it is also recommended that to reflect a nature-first approach, developer contributions may become based less on the quantity of green space and rather seek quality-based dedications. For example, the DAP green space dedication requirements can include provisions related to the preservation of natural areas and existing green networks, requirements to support ecological health and biodiversity, and suitable design measures for diverse users and activities. In doing so would further integrate nature in our city as well as increase the opportunities for urban dwellers to foster a relationship with nature in the built environment.

5.3.5 Develop and adopt a green space master plan for Winnipeg

It is recommended that the City of Winnipeg develop and adopt a green space master plan. This recommendation is in response to the need for green space planning as well as for effective ways and means to conduct green space planning. *OurWinnipeg* and *Complete Communities* do not provide a strong enough argument for green space planning. The three plans, *OurWinnipeg*, *Complete Communities*, and *A Sustainable Winnipeg*, provides overarching goals for Winnipeg's green space planning practices. This is typical of MDPs, as MDPs usually contain only general policy direction. Yet, without a green space or parks plan, it is difficult to establish a vision for Winnipeg's

green space and set policies on how this vision can be pursued. A major weakness of green space planning in Winnipeg is the absence of a green space master plan.

As indicated by the literature and suggested by informants, a statutory plan specifically directed to recommendations for green space protection and development is an incredibly valuable tool for green space planning. This is because green space plans can provide specific green space policy directions and recommendations, targeted implementation strategies, and funding and land acquisition strategies.

It is unrealistic to expect consultants and developers to voluntarily implement nature-first planning practices. A green space master can therefore direct planning processes to include provisions that promotes a nature-first approach, including designating green spaces early in the planning process, selecting park sites in ways that conserve and expand biodiversity, and re-establishing natural landscapes where none may exist. When developing a green space master plan, the City of Winnipeg may consider adopting a general green space by-law that requires a separate secondary plan be produced for identified green space areas or ecological communities; this approach would be similar to how *Complete Communities* identifies precincts and requires precinct plans. This approach has the benefit of each secondary plan containing more detailed policies related to the specific local environment. A green space master plan would be an invaluable tool for Winnipeg to advance its planning practices for green spaces.

As discussed in Section 5.2.3, opportunities exist in Winnipeg to apply lessons from other cities to support nature-first planning. One such opportunity includes developing a regional green space plan. Precedents from other Canadian cities, including Montreal and Ottawa, demonstrate the significant value in developing regional green space plans. Regional green space plans recognize that natural systems typically cross

municipal boundaries and reflect the interconnectedness of ecological processes and biodiversity at a regional scale. A regional green space planning approach may also be implemented for the Manitoba Capital Region (Winnipeg and the surrounding sixteen municipalities). The Partnership of the Manitoba Capital Region (PMCR) is actively involved in collaborative planning efforts, including protecting natural resources, and is an appropriate body to lead a regional green space planning process. Building on the PMCR's work, a regional green space plan would identify areas of regional natural significance and how protection can be achieved. Overarching green space objectives and goals from this plan would then inform municipal green space policies, such as those found in a green space plan for the City of Winnipeg. A regional green space plan would support coordinated planning processes ensuring that all green space policies are consistent and support one another. A provincially approved regional green space plan may also help enforce compliance with green space planning processes and policies. Achieving a regional green space plan will require sustained funding and collaboration between provincial departments such as Conservation and Water Stewardship, the planning services of Manitoba Municipal Government, and municipal representation, yet would protect ecological processes to a higher degree as well elevate the importance of green space planning in Manitoba.

5.3.6 Produce a City of Winnipeg green space planning and design handbook

The City of Winnipeg could do better to inform developers and consultants on their expectations for green spaces. For example, informants spoke of how it can be frustrating when the City does not clearly indicate guidelines for the acreage required for passive and active green spaces as well as which amenities they require for new developments. A green space planning and design handbook can outline the City's

expectations, as well as provide advice, clarity, and best practices for green space planning and design. The handbook would provide a measure of predictability for consultants and developers of what the City expects. One challenge with creating handbooks is that they often do not have regulatory power. Without teeth, handbooks can produce an elevated expectation as to what is possible. To overcome this, the green space planning and design handbook should be produced in conjunction with a green space master plan. The handbook would elaborate on and provide examples of how to meet the formally adopted policies found in the green space master plan.

OurWinnipeg and *Complete Communities* direct green space policies, however a precinct plan's green space policies are largely the developer and/or consultant's responsibility. This is a weakness of Winnipeg's green space planning process as it is unrealistic to expect consultants and developers to voluntarily implement nature-first planning practices. This handbook may help apply a more consistent approach to green space planning while introducing the concepts of nature-first planning and nature-first urban green spaces.

5.3.7 Continue to seek a supportive political climate for green space planning

The green space policies of *OurWinnipeg*, *Complete Communities*, and precinct plans demonstrate a desire to plan green spaces that preserve and expand naturalized landscapes. Despite the existence of policies that have the capacity to apply a nature-first planning approach, elected officials and community members must support the implementation and enforcement of such policies. Since City Council holds the power to adopt and enforce standards, political buy-in is an essential factor towards adopting a nature-first planning approach. Elected officials can demonstrate their support by voting on matters that approve or promote the application of nature-first planning. Elected

officials are usually more likely to adopt by-laws that are presented to them as being important and popular. Therefore, community members can demonstrate their support by endorsing elected officials who support green space planning. As indicated by the informants interviewed, the capacity of Winnipeg's civil servants can at times be limited; recommendations put forward to advance green space planning practices may be prevented by constraints, such as political will and public support. Yet, planners do play an important role by involving and working with elected officials and community members, throughout all stages of green space planning. For example, planners can keep elected officials informed about green space planning trends in Winnipeg and offer comment on the community benefits created through the planning and design of green spaces. In doing so, elected officials may become a catalyst in advancing green space planning practices. Similarly, planners can help build awareness and educate community members on the importance of green space in the urban environment.

5.4 Assessment of the research methodology

This practicum employed a research methodology that followed a qualitative case study of green space planning practices in Winnipeg. Following a linear progression, a literature review, case study investigation, informant interviews, analysis and recommendations, and informant recommendation feedback was conducted. This combination of methods enabled for the completion of original empirical research.

The case study investigation on the City of Winnipeg's municipal development plans was conducted through a content analysis research method. The content analysis proved to be an informative and stimulating research method. The content analysis helped establish emerging themes in how municipal development plans support, or may support, green space planning processes in Winnipeg and the application of nature-first planning.

In reflecting on the effectiveness of the content analysis, I feel as though it was an appropriate research method to identify the policies and planning tools that are currently used. However as a purely descriptive method, the content analysis could not explain why the policies or planning tools existed or inform the effectiveness of each. A limitation exists in the content analysis methodology and as a result in the research. As the sole researcher, I coded all of the documents myself; the literature recommends that multiple individuals conduct the analysis to ensure that reliable data is generated. Despite dedicating a significant amount of attention to the content analysis process, to ensure that consistent data was reported, another set of eyes may have resulted in a slight variation of reported data. To overcome this limitation and supplement the findings of the content analysis, informant interviews were conducted.

Informant interviews proved to be a complementary research method supporting the initial findings from the content analysis. Semi-structured interviews with planners, developers, an academic, and landscape architect provided a sense of how green spaces are currently planned in Winnipeg. In addition, the informant interviews offered high quality information that would have been challenging to acquire through another methodology. Specifically, informants' comments revealed underlying motives and patterns and offered insight on the opportunities, challenges, and barriers in adopting a nature-first planning approach. In reflecting on the effectiveness of the informant interviews as a research method, I feel that it would have been quite difficult to obtain as rich information as was generated through the interviews. The interview methodology proved extremely valuable in answering the research questions and informing the recommendations.

The seven recommendations presented were synthesized from the literature review, the strength and weaknesses of Winnipeg's municipal development plans, and from the insight and knowledge of informants. To test the rigour and applicability of the recommendations, informants were invited to comment on each through a briefing memo and questionnaire (Appendix D). The briefing memo and questionnaire included a brief description of the research process and an explanation of each recommendation. The document was sent by e-mail and informants were asked to write their responses following each question in the word document and attach in an email when complete. Of the seven informants, five granted their consent to be contacted again for further involvement in the project. In the end, the briefing memo and questionnaire was sent to four informants and responses were received from three. While there is immense value in seeking additional comments from informants, the questionnaire approach posed limitations. Unlike a semi-structured interview, there was no opportunity to introduce probing questions or to ask for clarification on responses. Furthermore, had a focus group been conducted informants would have had an opportunity to comment on each other's remarks, further enriching the findings. As a result, the quality of responses are likely not the same had semi-structured interviews or a focus group been conducted. Regardless of these limitations, the answers received are quite insightful and suggest potential next steps and challenges associated with each recommendation.

CHAPTER 6 CONCLUSION

6.1 The role of planners moving forward

The intent of this research was to reveal how Winnipeg's green space planning documents direct the planning and development of green spaces as well as to provide insight as to how municipal development plans support, or may support, the application of nature-first urban green spaces in residential greenfield development. Seven recommendations were identified for Winnipeg aimed to both enhance the presence of nature in the city and to increase the opportunities for urban dwellers to foster a relationship with nature. The seven recommendations were shared with informants through a briefing memo and questionnaire (Appendix D). For each recommendation, the questionnaire asked informants to identify approaches to implement the recommendation, areas which require refinement and further research, and in what ways planners may address the challenges associated with the recommendations. Of the seven informants, four informants indicated that they would be interested in participating but in the end only three provided responses and not to all of the questions.

The seven recommendations were well received by the three informants and they generally agreed with each one. As gleaned from informants, a Planner's role in moving the concept of nature-first urban green spaces and nature-first planning forward includes: articulating why nature in the built environment is so critical and share this with the planning profession, which can be done through dialogue; through the assessment of green space planning process build a case as to why policies such as the *ESNL Strategy* is ineffective and why a green space master plan is necessary for effective green space planning; and, use this knowledge to garner support and lobby for change. Lobbying for support from politicians and senior administration was a reoccurring action informants

identified to implement the recommendations. Planners often have the best of intentions, but as technical advisors planners must rely on elected officials to adopt bylaws and initiate change. Similarly, the support of senior administration is necessary to help advise Council direction and funding processes, such as developing a green space master plan and/or green space planning and design handbook. The informants recognized that gaining political and administrative support is also the greatest challenge associated with implementing the seven recommendations. To overcome this barrier, informants mentioned that community support for the recommendations is integral as elected officials are more likely to support a by-law or cause that is presented to them as being important and popular.

Initiating a shift in green space planning practices to better integrate nature into the built environment will undoubtedly require the efforts of many. Yet, with green space goals and objectives already identified in *OurWinnipeg* and *Complete Communities* the foundation for change towards a nature-first planning approach has been laid. Improving the force of the *ESNL Strategy* and reviewing the DAP Public Park Reserve dedication requirement's will help elevate the importance and priority of nature in green space planning and design decisions. The development and integration of a green space master plan and green space planning and design handbook will further link strong policies and clear, consistent expectations for preserving nature in our green spaces. Lastly, generating support from political leaders and community members will help carry the momentum towards further application of nature-first planning and nature-first urban green spaces.

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APPENDICES

Appendix A: Interview Questions/ Lines of Inquiry

Appendix B: Certificate of Ethics Approval

Appendix C: Informed Consent Form

Appendix D: Informant Briefing Memo and Questionnaire

Appendix E: Summary of Recommendations

APPENDIX A: INTERVIEW QUESTIONS/ LINES OF INQUIRY

Interview Questions/ Line of Inquiry

1. Initial Stage of Inquiry:

Semi-Structured Interview Questions:

Section 1. Urban Green Spaces:

- a) What mechanisms (i.e. policies/tools/programs) exist to guide the planning and design of urban green spaces in Winnipeg?
 - i. Prompts from content analysis
 - ii. OurWinnipeg?
 - iii. Precinct Plans?
 - iv. Development Agreement Parameters?
- b) In your opinion do you consider the policies/tools/programs suitable to direct the planning and design of green space in Winnipeg?
- c) What are the opportunities to develop urban green space in Winnipeg?
 - i. Opportunities to increase the quality of green space?
 - ii. Opportunities to increase the total area of green space?
 - iii. Opportunities to improve existing green space?
- d) What are the barriers to develop urban green space in Winnipeg?
 - i. Barriers to increase the quality of green space?
 - ii. Barriers to increase the total area of green space?
 - iii. Barriers to improve existing green space?

Section 2. Nature-First Urban Green Spaces:

- a) How do you define nature-first planning and design practices?
 - i. Can you provide an example of the application of nature-first planning and design principles?
- b) How do you define nature-first urban green spaces?
 - i. Can you provide an example of a nature-first urban green space?
- c) What are the differences between urban green spaces and nature-first urban green spaces?
 - i. Can you provide an example of a specific characteristic or feature?
- d) What are the differences between urban green space planning and design practices and nature-first urban green spaces planning and design practices?

Section 3. Application of Nature-First Planning and Design:

- a) What mechanisms (policies/programs/tools) exist in Winnipeg to guide the planning and design of nature first urban green spaces in Winnipeg?
- b) In your opinion what are the opportunities in Winnipeg to further adopt a nature-first planning and design framework for green spaces?
- c) In your opinion what are the challenges and barriers in Winnipeg preventing a nature-first planning and design framework for green spaces?
- d) What mechanisms (policies/programs/tools) would better support the adoption of nature-first urban green spaces? Please speak to, if you can, the following three areas:
 - i. OurWinnipeg
 - ii. Precinct Plans
 - iii. Development Agreement Parameters
- e) In your profession how may you support the application of nature-first planning practices?

2. Second Stage of Inquiry (Recommendation refinement process):

The line of questioning for the second stage of inquiry will be largely informed by the findings and analysis of the information produced from the initial stage of inquiry (semi-structured interviews). The purpose will be to solicit feedback and gain consensus on the draft conclusions and proposed recommendations. As a result, the questions submitted for the second stage of inquiry do not include the specific recommendations. It is expected that the recommendations will not pose risks to participants as the subject matter is not controversial and does not deal with sensitive subject matter. If necessary, I could re-submit the final questions for approval upon conclusion of recommendations. Please advise if the final questions will need to be submitted so that I may anticipate this additional step as time is of the essence.

The same set of questions will be administered regardless of whether in the form of semi-structured interviews or a focus group.

Second Stage of Inquiry Questions:

Section 1: Initial stage of inquiry conclusions:

From the initial stage of inquiry, it was concluded that:

- a) *X* opportunities exist in Winnipeg to further adopt a nature-first planning and design framework for green spaces?
 - i. Do you agree or disagree? Why/Why Not?
 - ii. Is there anything to add?
- b) *Y* barriers exist in Winnipeg preventing the adoption of a nature-first planning and design framework for green spaces.

- i. Do you agree or disagree? Why/Why Not?
 - i. Is there anything to add?
- c) Z challenges are associated with the adoption of a nature-first planning and design framework for green spaces in Winnipeg.
 - i. Do you agree or disagree? Why/Why Not?
 - ii. Is there anything to add?

Section 2: Recommendations:

- a) Recommendation X states:.....
 - i. In your opinion, how will Recommendation X benefit the planning and design of nature-first urban green spaces?
 - ii. How can Recommendation X be applied in Winnipeg?
 - iii. What are the associated challenges with Recommendation X?
- b) Recommendation Y states:.....
 - i. In your opinion, how will Recommendation Y benefit the planning and design of nature-first urban green spaces?
 - ii. How can Recommendation Y be applied in Winnipeg?
 - iii. What are the associated challenges with Recommendation Y?
- c) Recommendation Z states:.....
 - i. In your opinion, how will Recommendation Z benefit the planning and design of nature-first urban green spaces?
 - ii. How can Recommendation Z be applied in Winnipeg?
 - iii. What are the associated challenges with Recommendation Z?

Section 3: Prioritize Recommendations

- d) Please rank the recommendations according to the following criteria:
 - a. From most impactful to increasing natural spaces to least impactful
 - b. From most widely accepted across professions to least accepted
 - c. From least to most barriers for implementation

APPENDIX B: CERTIFICATE OF ETHICS APPROVAL



Research Ethics and Compliance
Office of the Vice-President (Research and International)

Human Ethics
208-194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Phone +204-474-7122
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APPROVAL CERTIFICATE

June 16, 2014

TO: Erika Blackie (Advisor D. van Vliet)
Principal Investigator

FROM: Susan Frohlick, Chair
Joint-Faculty Research Ethics Board (JFREB)

Re: Protocol #J2014:096
"The Role of Municipal Development Plans in the Promotion of 'Nature-First Urban Green Spaces'"

Please be advised that your above-referenced protocol has received human ethics approval by the **Joint-Faculty Research Ethics Board**, which is organized and operates according to the Tri-Council Policy Statement (2). **This approval is valid for one year only.**

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- If you have funds pending human ethics approval, please mail/e-mail/fax (261-0325) a copy of this Approval (identifying the related UM Project Number) to the Research Grants Officer in ORS in order to initiate fund setup. (How to find your UM Project Number: <http://umanitoba.ca/research/ors/mrt-faq.html#pr0>)
- if you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/orec/ethics/human_ethics_REB_forms_guidelines.html) in order to be in compliance with Tri-Council Guidelines.

umanitoba.ca/research

APPENDIX C: INFORMED CONSENT FORM



UNIVERSITY
OF MANITOBA

Department of City Planning

Informed Consent Form

Study Title: The Role of Municipal Development Plans in the Promotion of ‘Nature-First’ Urban Green Spaces

Principal Investigator: Erika Blackie

Research Supervisor: Dr. David van Vliet, Department of City Planning

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

1. Project Description:

The purpose of this research practicum is to satisfy the major degree project requirement of the Master of City Planning Degree at the University of Manitoba. The research explores in what ways municipal development plans support, or can support, “nature-first urban green spaces”. Nature first urban green spaces are defined here as green spaces that through its vegetation and structure display the distinctive features and characteristics of nature found in the absence of human habitation and other human related influences. Since the 19th century, a firm belief has existed in the fundamental role of urban green spaces to enhance the quality of the urban environment for people. The provision of urban green spaces bring numerous social, ecological, and economic benefits. The recognition of the benefits that urban green spaces bring to a city is well established. So much so, that legislation concerning community planning mandates local governments to make provisions for parks. Urban green space standards are established through both municipal development plans and municipal development agreements. The expected outcome of the research is to identify examples of programs, tools, and practices for nature-first urban green spaces, generate general recommendations that will advance planning and design practices, and identify challenges and obstacles that hinder the application of nature-first planning and design.

In the course of the interview, I will ask questions about your knowledge and experiences related to the planning and design of urban green spaces.

Although this research is primarily directed toward the production of an academic report, I intend that it will also provide practical suggestions for municipal government about the important role of urban green spaces within the built environment.

2. Location and Time Requirement

You are being asked to participate in an interview involving questions on the planning and design of green spaces. The interviews are intended to contribute to the understanding of how municipal development plans support or can support “nature-first urban green spaces”. The project will include approximately 6-12 semi-structured interviews with several distinct stakeholder groups including planners with green space planning expertise, developers who specialize in greenfield development, landscape architects, landscape ecologists, policy analysts, and other experts such as academics.

Participation in this study will require approximately 60-75 minutes of your time and would take place at a time and location of your choice/convenience. I will request that you permit me to digitally record our conversation and I will also take notes during the interview.

Participation in this project is voluntary and you may decline to answer any question or withdraw from the study without any negative consequences. The research process will conclude in July of 2014, and participants are free to withdraw at any time throughout the course of this research project.

3. Risks and Benefits

There are minimal risks to participants in this study. Risks associated with this project do not go beyond normal everyday risk. Subject matter is not controversial and does not deal with sensitive subject matter. Interview participants will be asked to select the location of the interview, likely their place of work, to help minimize risk and ensure privacy. The study asks only for professional knowledge about green space planning and design. Data generated will be kept confidential and participant names will not appear in the final practicum document. The potential benefits of this study includes the opportunity for participants to learn about the various perspectives related to nature-first planning and design as well as the challenges associated with policy development for nature-first planning and design.

4. Recording Devices

This interview will take approximately 60-75 minutes of your time. With your permission, the interview will be recorded with a digital recording device and notes taken of the interview. All audio files and researcher interview notes generated during the research process will be stored on a password-protected computer or in a locked drawer in my home office. All interview recordings and notes will be destroyed after two years

following the completion of the research project (expected to be December 2016). If you do not wish for the conversation to be recorded, only handwritten notes will be taken. However, digital recording will ensure a more accurate record of your responses in the final document.

I hereby provide consent to the researcher using a voice recorder for audio recording the interview? (Please tick the following box). ☐Yes ☐No

5. Confidentiality

Your privacy is important. You will not be personally identified in the final practicum document. The information you provide during the interview is strictly confidential and will be coded for use in the research project. All audio files and researcher interview notes generated during the research process will be stored on a password-protected computer or in a locked drawer in my home office. Only the researcher will have access to the data. All digital files and research information will be deleted and/or destroyed by shredding two years after completion of the project (expected December 2016).

Information containing personal identifiers (e.g., this consent form) will be destroyed as soon as it is no longer necessary for scientific purposes (expected December 2014). It is important that you are aware that the general nature and location of your place of work, and the broad scope of your professional role will be recorded to provide context to your contributions. It may be possible for those with special knowledge of these contexts to infer your identity. I will only be asking questions on areas of your expertise that relate only to the subjects of this study. No information of a personal nature will be collected. If at any time you wish to withdraw from the interview please advise me, and your responses will not be used in the final document. If after the interview you wish to withdraw from the research project, please contact me directly (prior to July, 2014) and your responses will not be used in the final document.

6. Feedback

A summary of research results will be made available to research participants upon completion of the research project. This summary will be distributed via email in PDF format. Additionally, participants will be debriefed immediately following the interview to learn of how the information will be used as part of the research practicum.

7. Dissemination

A summary of the research process will be provided to all those who participated in the study. The completed practicum will be made available in PDF format to all those who are interested in accessing the finished product. Following completion of the practicum and graduation from the program, the finished practicum will be available online through the Mspace function on the University of Manitoba Libraries website.

8. Compensation or Remuneration

Participants will not receive compensation for their participation in this research project. Research participants will be extending professional courtesy by volunteering their time for this study.

9. Permission to be contacted

You are being asked for permission to be contacted for participation in an additional line of research inquiry. The information and knowledge produced from the interviews will help inform ways in which policy and plans can better integrate a nature first planning and design framework into municipal development plans. I will be seeking feedback on a set of general policy recommendations to help identify issues that may require refinement, as well as explore the challenges associated with the recommendations.

I hereby provide consent to be contacted for additional participation pertaining to this study (Please tick the following box). ☐Yes ☐No

10. Consent

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba Research Ethics Board(s) and a representative(s) of the University of Manitoba Research Quality Management / Assurance office may also require access to your research records for safety and quality assurance purposes.

This research has been approved by the Joint Faculty Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at 204 474-7122. A copy of this consent form has been given to you to keep for your records and reference.

Participant's Signature

Date

Researcher

Date

Email or surface mail address to which a summary of findings and written reports (at your option) should be sent: _____

APPENDIX D: INFORMANT BRIEFING MEMO AND QUESTIONNAIRE

The role of municipal development plans in the promotion of 'Nature-First Urban Green Spaces'

Erika Blackie, Master of City Planning (Candidate)

Introduction

This briefing is prepared to seek feedback on seven recommendations for green space planning in Winnipeg. The recommendations were informed by a review of current literature, an analysis of selected municipal planning documents for the City of Winnipeg, and seven informant interviews represented by four planners, a developer, a landscape architect, and academic. The intent of the recommendations is to address how the planning and design of green spaces in Winnipeg may further enhance the presence of nature in the built environment and thereby create opportunities for urban dwellers to foster a relationship with nature.

A series of questions accompanies each recommendation. The questions are designed to seek feedback and additional comments from informants, assisting with the improvement of proposed recommendations and conclusions. Please write your responses in this word document and email when complete.

Background

The primary focus of the research was to assess the City of Winnipeg's municipal development plan (MDP) and associated green space planning documents and practices for residential greenfield development to identify the existing and potential role of Winnipeg's MDPs in applying *nature-first planning* practices.

Given the accelerating rate of urbanization, the presence of nature in the built environment is increasingly being recognized for its importance in furthering an urban dwellers relationship with nature and for maintaining the interrelationships of ecological processes. Conventional urban green spaces designed to support active recreation can no longer provide sufficient amounts of nature to foster the benefits which nature provides (Beatley, 2011). The purpose and public benefits of urban green spaces are so well established that legislation concerning community planning mandates local governments to make provisions for parks and open spaces (Schleisger, 2001). In response, local governments establish green space requirements through the use of MDPs (Talen, 1996).

By exploring the application of nature-first planning practices in the City of Winnipeg, the research highlights ways in which the City's municipal development plan, *OurWinnipeg*, and accompanying planning documents, support, or may support *nature-first urban green spaces*. In addition, the research seeks practices to elicit greater support and mandated approaches for *nature-first urban green spaces*. Nature-first urban green spaces are defined herein as green spaces that through its vegetation and structure display the distinctive features and characteristics of nature found in the absence of human habitation and other human related influences.

Summary of Recommendations

The research methodology followed a qualitative case study of green space planning practices in Winnipeg, Manitoba. Research followed a fairly linear progression through a literature review, case study investigation, informant interviews, and analysis and recommendations. To help refine the recommendations, the last stage in the research methodology is to seek feedback from informants on the seven recommendations.

The recommendations are aimed to support the development of nature-first urban green spaces and to increase opportunities for urban dwellers to foster a relationship with nature in the built environment. Each recommendation is based on a synthesis of best practices as indicated by the literature, the strengths and weaknesses of Winnipeg's municipal development plans, and informant interviews. If applied, the recommendations could contribute to the planning and design of green spaces in Winnipeg to better reflect what has been proposed as nature-first urban green spaces.

Recommendation 1: Conduct a more in depth assessment of current green space planning processes

The interview responses suggest that Winnipeg's current green space planning processes are often confronted by various challenges and barriers. Competing demands for land use, maintenance procedures, policies that conflict with one another and financial constraints were all identified as negatively impacting the planning and design of green spaces. Comments from informants indicate that support is evident for advancing green space planning practices but that the existing constraints on green space planning must first be addressed. It is therefore recommended that an assessment of how existing practices, policies, and tools can better support green space planning practices and overcome current challenges and barriers to green space planning in Winnipeg be completed.

Questions:

- Do you agree with this recommendation? Why/Why not?
- What challenges may be associated with this recommendation?
- What next steps do you suggest to implement this recommendation?
- Does this recommendation require additional details, refinement, or clarification?

Recommendation 2: Engage in green space dialogue

Research indicated that planners and developers are generally interested in planning green spaces that conserve existing natural landscapes and support biodiversity. However, a lack of knowledge of advanced green space planning practices within the planning and development community, as well as a "it won't work in Winnipeg" attitude may be preventing a desire to seek out the application of innovative and creative green space planning practices and tools focused on enhancing nature in the built environment. As indicated in the literature, acquiring new knowledge and perspectives on green space planning can play a vital role towards the application of new processes, tools, or strategies which may be used to increase the presence of nature in the built environment. It is therefore recommended that a working group be formed to explore precedents and discuss individual experiences regarding the application of planning

processes that further enhance nature in the built environment and which may lead to the creation of nature-first urban green spaces.

Questions:

- Do you agree with this recommendation? Why/Why not?
- What challenges may be associated with this recommendation?
- What next steps do you suggest to implement this recommendation?
- Does this recommendation require additional details, refinement, or clarification?

Recommendation 3: Strengthen the role of the *Ecologically Significant Natural Lands Strategy and Policy*

The *Ecologically Significant Natural Lands (ESNL) Strategy and Policy* currently lacks genuine force towards the preservation of ecologically significant natural lands. The existing role of the *ESNL Strategy and Policy* is to evaluate and grade natural areas on their quality and ecological services. This helps to prioritize the preservation and restoration of ecologically significant natural lands yet does not trigger policy towards protection. While the *ESNL Strategy and Policy* is an integral tool to proactively identify ecologically significant lands in Winnipeg, without teeth to mandate the preservation of natural areas, chances to preserve nature in the built environment may be lost. An opportunity is present for the *ESNL Strategy and Policy* to hold more authority and weight in mandating the preservation of ecologically significant lands. For example, to advance and strengthen the role of the *ESNL Strategy and Policy*, policies could be added to *Complete Communities* or Precinct Plans directing developers to follow the recommendations for preservation of natural areas as identified through the ESNL evaluation process.

Questions:

- Do you agree with this recommendation? Why/Why not?
- What challenges may be associated with this recommendation?
- What next steps do you suggest to implement this recommendation?
- Does this recommendation require additional details, refinement, or clarification?

Recommendation 4: Review and Update the City of Winnipeg Development Agreement Parameters

The City of Winnipeg's Development Agreement Parameters significantly impacts green space planning. Part 3(24) Public Park Reserve establishes a standard requirement for the amount of green space a developer must dedicate. While the quantity of green space is an important consideration, the Development Agreement Parameters does not address issues relating to the quality and distribution of green space, such as ecologically significant lands and green space connectivity. The addition of policies that direct Developers to dedicate existing natural areas and/or areas that would enhance ecological networks and corridors as green space would further integrate nature in our city. It is recommended that the City of Winnipeg Development Agreement Parameters be reviewed and updated to reflect development practices as they pertain to green space standards that utilize more quality-based approaches to green space dedication.

Questions:

- Do you agree with this recommendation? Why/Why not?
- What challenges may be associated with this recommendation?
- What next steps do you suggest to implement this recommendation?
- Does this recommendation require additional details, refinement, or clarification?

Recommendation 5: Develop and adopt a master green space plan for Winnipeg

To advance green space planning practices in Winnipeg, the City of Winnipeg should develop and adopt a master green space plan as a secondary plan. As indicated by the literature and suggested by informants, a statutory plan specifically directed to recommendations for green space protection and development is an incredibly valuable tool for green space planning. Although *OurWinnipeg*, *Complete Communities* and precinct plans are commendable documents influencing the planning and design of green spaces in Winnipeg, these documents simply can not capture, nor do justice, to a vision and overall plan for green space in Winnipeg.

Questions:

- Do you agree with this recommendation? Why/Why not?
- What challenges may be associated with this recommendation?
- What next steps do you suggest to implement this recommendation?
- Does this recommendation require additional details, refinement, or clarification?

Recommendation 6: Produce a City of Winnipeg green space planning and design handbook

Comments from informants suggested that the City of Winnipeg could do better to inform developers and consultants on the City's expectations for green spaces. Although *OurWinnipeg* and *Complete Communities* directs green space policies, a precinct plan's green space policies are largely the developer and/or consultant's responsibility. Rather than expecting consultants and developers to implement advanced green space planning practices, or to follow informal established guidelines, a green space planning handbook can assist developers by providing guidance, advice, clarity, and best practices on how to meet the objectives of *OurWinnipeg* and *Complete Communities*.

Questions:

- Do you agree with this recommendation? Why/Why not?
- What challenges may be associated with this recommendation?
- What next steps do you suggest to implement this recommendation?
- Does this recommendation require additional details, refinement, or clarification?
-

Recommendation 7: Foster a supportive political and community climate for green space planning

The green space policies of *OurWinnipeg*, *Complete Communities*, and precinct plans demonstrate a desire to plan green spaces that preserve and expand naturalized landscapes. Despite the existence of policies which have the capacity to apply a nature-first planning approach, elected officials and community members must support these policies to be implemented. As indicated by informants, the capacity of Winnipeg's civil servants to influence green space policies can at times be limited. For Winnipeg to advance its green space planning practices and overcome some of the obstacles that hinder green space preservation, the support of elected officials and community members must be present.

Questions:

- Do you agree with this recommendation? Why/Why not?
- What challenges may be associated with this recommendation?
- What next steps do you suggest to implement this recommendation?
- Does this recommendation require additional details, refinement, or clarification?

To assist in refining the overall research, the following questions are asked:

- Would you change the order of the recommendations? Why/Why not?
- The five recommendations were identified from the research as the most likely actions that may enhance nature-first urban green space planning in Winnipeg. In your opinion, what other recommendations may enhance nature-first urban green space planning practices in Winnipeg?
- Do you have any additional comments or suggestions?

Thank you for your time in completing the questionnaire. Should you have any questions or are interested in further discussing your responses, I can be contacted by email.

Thank you,

Erika Blackie

References

- Beatley, T. (2011). *Biophilic Cities*. Washington, DC: Island Press.
- Schlesiger, G. (2001). *The Multiple and Conflicting Roles of Local Government in Negotiating Parkland Acquisition: Can the Negotiations Satisfy the Criteria of Ethics and the Dimensions of Interests?* (Masters Thesis). Retrieved from <https://circle.ubc.ca/handle/2429/12219>
- Talen, E. (1996). After the Plans: Methods to Evaluate the Implementation Success of Plans. *Journal of Planning Education and Research*, 16, 79-91. DOI: 10.1177/0739456X9601600201.

APPENDIX E: SUMMARY OF RECOMMENDATIONS

1. Conduct a more in-depth assessment of current green space planning processes
• The following challenges exist in Winnipeg’s current green space planning processes and practices: • competing land uses • balancing different types of green spaces • practices and policies that conflict with one another • financial constraints • A City of Winnipeg led initiative can examine how existing practices, policies, and tools can better support green space planning practices. • This recommendation can lead to more efficient green space planning practices and help set the stage for nature-first planning.
2. Engage in green space dialogue to promote nature-first urban green spaces
• The intent of this recommendation is to help further define the application of nature-first planning in Winnipeg. • A working group can explore precedents, discuss individual experiences, promote the application of nature-first planning, and address the “it won’t work in Winnipeg” attitude. • Members can include: • planners • landscape architects • land developers • naturalists • conservation easement authorities • legal representation • economists • policy experts • Next steps include fine-tuning the working group’s mandate, who they report to, and who membership includes.
3. Strengthen the role of the <i>Ecologically Significant Natural Lands Strategy</i>
• When a parcel of land enters the development review process, natural areas are evaluated and graded using the <i>ESNL Strategy</i>. • The <i>ESNL Strategy</i> does not trigger policy for protection; this is a missed opportunity and gap in the preservation of natural lands in Winnipeg. • Recommended that the City of Winnipeg pass a by-law to improve the <i>ESNL</i>’s force of application. • Political support and examples of where and why the <i>ESNL Strategy</i> was ineffective can be used to help lobby for change.
4. Review and Update the <i>City of Winnipeg Development Agreement Parameters</i>
• The Development Agreement Parameters is the prime mechanism used by the City of Winnipeg to obtain green space: • 8% net land area for green space and 2% as money for capital projects on the land is applied to all new developments. • The green space dedication requirement is easily consumed to provide active green spaces, passive green spaces, and other green space related uses. • Developers are typically not willing to dedicate more than the minimum requirement unless mandated or compensated.

- Updating the DAP may include: - increasing a Developer's minimum green space contribution - the introduction of quality-based green space development standards
5. Develop and adopt a green space master plan for Winnipeg
- This recommendation is in response to how <i>OurWinnipeg</i> and <i>Complete Communities</i> does not provide strong enough green space planning policies. - The lack of a green space master plan is a major weakness of green space planning in Winnipeg. - As indicated in the literature, a statutory plan specifically directed to recommendations for green space protection and development is a very valuable tool for green space planning. - A green space master plan can provide: - specific policy directions and recommendations - targeted implementation strategies - funding and land acquisition strategies - A green space master plan can also include provisions that promotes a nature-first planning approach, such as: - designating green spaces early in the planning process - selecting park sites in ways that conserve and expand biodiversity - re-establishing natural landscapes where none may exist - Moving forward, the City of Winnipeg may consider adopting a general green space by-law which requires a separate secondary plan be produced for identified green space areas.
6. Produce a City of Winnipeg green space planning and design handbook
- Research suggested that the City of Winnipeg could do better to inform developers and consultants on their expectations for green spaces. - A green space planning handbook can outline the City's expectations, as well as provide advice, clarity, and best practices for green space planning. - This would provide a measure of predictability for consultants and developers of what the City expects. - A challenge with handbooks is that they often do not have regulatory power. - Without teeth, handbooks can produce an elevated expectation as to what is possible. - The green space planning and design handbook should be produced in conjunction with a master green space plan.
7. Continue to seek a supportive political climate for green space planning
- Elected officials and community members must support the policies of <i>OurWinnipeg</i>, <i>Complete Communities</i> and precinct plans which demonstrate a desire to preserve and expand natural landscapes. - As research showed, a supportive political and community climate is necessary to foster a nature-first green space planning approach. - Political buy-in is important because it is City Council who holds the power to adopt and enforce green space planning standards. - Elected officials are more likely to adopt by-laws that are presented to them as being important and popular. - City administration, staff, and elected officials must all work together and establish an institutional commitment to support a nature-first planning approach.