EXPLORING THE UTILIZATION OF SUSTAINABLE DEVELOPMENT STRATEGIES FOR THE NEW PARKS IN THE MUNICIPALITIES OF THE GREATER TORONTO AREA

A Thesis
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by
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for the degree of
Master of Landscape Architecture
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ABSTRACT

EXPLORING THE UTILIZATION OF SUSTAINABLE DEVELOPMENT STRATEGIES FOR THE NEW PARKS IN THE MUNICIPALITIES OF THE GREATER TORONTO AREA

Amir Ardeshir Nikzad                                  Advisor:
University of Guelph, 2011                         Professor Lise Burcher

Sustainable urban parks provide social and economical benefits to the residents and contribute to the urban ecosystem health. Municipalities are responsible for development and management of urban parks and the goal of this study was to better understand if, and why, the municipalities in the Greater Toronto Area (GTA) have utilized sustainable development strategies in the planning, design, construction and management for their new park projects. A qualitative study utilizing an in-depth interview format was created based on the principles of sustainable development compiled from the Sustainable Sites Initiative. A sample of four municipalities in the GTA was selected based on population and development growth and the park authorities were contacted. The results indicated few sustainable initiatives implemented in the design and management stages of park development. Understanding the constraints against these suggest that there may be potential to increase the sustainability of urban parks.

Keywords: Urban sustainability, Best Management Practices, SITES
ACKNOWLEDGEMENTS

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Lastly, I would like to thank my family for their unconditional love and support in every possible way throughout my entire life. Thanks to my brother and sister who always stood behind me. I dedicate this thesis to my mother whose love is boundless and to my father who is my role model.
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CHAPTER ONE
INTRODUCTION

Southern Ontario is one of the fastest growing regions in Canada. Ninety four percent of the province’s population or thirty six percent of Canada’s population of 31.6 million people currently reside in this region (Statistics Canada, 2006 Census). The government projects that, by 2031, an additional four million people will settle in the Greater Golden Horseshoe (the GGH is an area in Southern Ontario, extending roughly from Niagara Falls to Georgian Bay to Peterborough). This unprecedented population growth in Ontario will be accompanied by a growth in development. New sustainable communities must be built to meet resident expectations. Parks are key components of sustainable communities since they contribute to the social, environmental and economical health and well-being of the residents and the cities (Cook and Vanderzanden, 2011). The extent to which these services are provided to the communities depends heavily on the sustainability of parks themselves. Municipal governments are fundamental to achieving park sustainability since they have significant influence on development and land-use decisions.

This study explores what sustainable development strategies a selected sample of municipalities have adopted in the development of their new parks according to the principles outlined in the latest landscape sustainability guidelines and evaluation tools. By better understanding the potential barriers in implementing these strategies, the results of this study may lead to the implementation of more sustainable practices in municipalities’ park projects.
Goal of the study

To explore if, and why, the municipalities in the Greater Toronto Area (GTA) have or have not adopted sustainable development strategies in planning, design, construction and management of their new parks.

Objectives

• To identify sustainable development strategies employed in planning, design, construction and management of new parks through semi-structured interviews with the municipalities’ park authorities.

• To identify the barriers in employing sustainable development strategies in planning, design, construction and management of new parks through semi-structured interviews with the municipalities’ park authorities.

Organization of thesis

The thesis is organized into five chapters. The literature review found in Chapter Two contains a brief history of the evolution of urban parks in Ontario, the literature related to park typology, and the social, economical and environmental factors that shaped the five different park types. A review of the literature related to sustainable development was undertaken. Finally, the literature related to current quantitative and qualitative landscape sustainability evaluation systems was completed.

The study methodology is presented in Chapter Three and describes the process employed to select the landscape architecture professionals working for the municipalities in the GTA for the interviews and the interview questions. A description
about the time and the location of the interviews and how the information received was analyzed is presented. In order to explore what sustainable development strategies the selected municipalities are currently employing in their new park projects, a semi-structured interview based on the *Sustainable Sites Initiatives’ Guidelines and Performance Benchmarks* was created.

The results are presented in Chapter Four, demonstrating the municipalities’ park departments’ organizational structure, park classification systems, policies in place related to sustainable development strategies and barriers in implementing specific sustainable development strategies. A synthesis of the results is also presented in Chapter Four where the author synthesizes the results exploring if the municipalities in the GTA have or have not adopted sustainable development strategies in the planning, design, construction and management of their new parks. The thesis concludes with Chapter Five on limitations and the future research directions that other students or scholars can take.
CHAPTER TWO
LITERATURE REVIEW

Overview

This chapter discusses the literature relevant to the history of urban parks, the concept of sustainable development and the latest landscape sustainability guidelines and evaluation tools. The literature on the history of urban parks reveals how social, economic, political and psychological processes influenced park location, size, shape, composition, equipment and landscaping. The literature on the concept of sustainable development will explain the link between urban nature, human decisions and sustainability. Finally the literature on the most recent landscape sustainability guidelines and evaluation tools will assist in shaping the framework for the questionnaire to be used in the semi-structured interviews with the municipalities’ park authorities.

2.1 History of Urban Parks & Typology

There is limited published literature available related to the history of urban parks in Canada and Ontario in particular. Based on the information gathered from Jack Wright’s three books titled Urban Parks in Ontario, Part I: Origins to 1860 (1983), Part II: The Public Park Movement 1816-1940 (1984) and The Modern Period (2000) and the available literature related to the history of urban parks in the United States, a general understanding about the evolution and transition of park types in Ontario could be achieved.
### Table 2.1: Comparison of the four park types
Source: Boland and Cranz (2004), 103.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Social Goal</strong></td>
<td>Public health &amp; Social reform</td>
<td>Social reform: children’s play; assimilation</td>
<td>Recreation service</td>
<td>Participation; revitalize city; stop riots</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td>Strolling, carriage racing, picnics, rowing, classical music, non-didactic education</td>
<td>Supervised play, gymnastics, crafts, Americanization classes, dancing, plays &amp; pageants</td>
<td>Active recreation: basketball, tennis, team sports, spectator sports, swimming</td>
<td>Psychic relief, free-form play, pop music, participatory arts</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>Very Large, 1000+ acres</td>
<td>Small, city blocks</td>
<td>Small to medium, follow formulate</td>
<td>Varied, often small, irregular sites</td>
</tr>
<tr>
<td><strong>Relation to City</strong></td>
<td>Set in contrast</td>
<td>Accepts urban patterns</td>
<td>Suburban</td>
<td>City is a work of art; network</td>
</tr>
<tr>
<td><strong>Order</strong></td>
<td>Curvilinear</td>
<td>Rectilinear</td>
<td>Rectilinear</td>
<td>Both</td>
</tr>
<tr>
<td><strong>Elements</strong></td>
<td>Woodland &amp; meadow, curving paths, placid water bodies, rustic structures, limited floral displays</td>
<td>Sandlots, playgrounds, rectilinear paths, swimming pools, field houses</td>
<td>Asphalt or grass play area, pools, rectilinear paths, standard play equipment</td>
<td>Trees, grass, shrubs, curving &amp; rectilinear paths, water features for view, free-form play equipment</td>
</tr>
<tr>
<td><strong>Promoters</strong></td>
<td>Health reformers, transcendentalists, real estate interests</td>
<td>Social reformers, social workers, recreation workers</td>
<td>Politicians, bureaucrats</td>
<td>Politicians, environmentalists, artists, designers</td>
</tr>
<tr>
<td><strong>Beneficiaries</strong></td>
<td>All city dwellers (intended), upper middle class (reality)</td>
<td>Children, immigrants, working class</td>
<td>Suburban families</td>
<td>Residents, workers, poor urban youth, middle class</td>
</tr>
</tbody>
</table>

account and introduces four different park types based on specific social and physical
criteria: 1. the Pleasure Ground 1850-1900, 2. the Reform Park 1900-1930, 3. the
Recreation Facility 1930-1965 and 4. the Open Space System 1960-? (Cranz, 1982).
Table 2.1 summarizes the characteristics of each park type based on the social goals,
social actors and formal characteristics of each of the four types.

Cranz believes each park type evolved to address what were considered to be the
pressing urban social problems at that time (Boland & Cranz, 2004). Reviewing the
information available in Wright’s three books on urban parks in Ontario reveals a similar
sequence of park typology as Cranz. Wright does not categorize each park type into a
specific era, but discusses the major events and factors that led to the formation of each
park type. The biggest difference between the history of urban parks in the United States
and Canada lies in the inception of urban park as a concept. According to Wright, in
contrast to the United States, Canada’s urban parks did not originate as the result of a
popular social movement (Wright, 1983). The first parks in Ontario, were established in
Niagara-on-the-Lake, Toronto, Kingston, and Hamilton, with City Park in Kingston
generally recognized as Ontario’s first truly public park (Wright, 1984). Wright states
that the concept of urban parks in Canada was brought from the Great Britain and applied
under completely different social conditions. He mentions “there was no profound
malaise or urgent urban crisis to precipitate these first parks as there had been in Britain”
(Wright, 1984, p. 1). According to the 1851 census, 16 percent of Ontario’s population,
lived in incorporated centres, and 84 percent were rural. Toronto was reaching 30,775
persons by 1851. By the same year, Kingston had reached 11,585 persons and Hamilton
14,112. (Wright, 1983) Wright argues that the public park as a concept
was generally accepted earlier in Canada than in many American cities. It seems the Britain influence continued to play a stronger role in the Canadian colony than in the independent United States of America, despite the much greater population of the States and its much larger and more congested cities (Wright, 1983, p. 53).

Therefore, the public parks were initiated by the elite sector of the society in 1850’s before the middle class assumed greater responsibility in the 1870’s and 1880’s. (Wright, 1983)

The review of the literature related to the history of urban parks in Canada reveals the same social goals, social actors and formal characteristics for each park type compared to the American model already discussed. The intent of this research is not to define specific start and end points for each park type, but to see how the changes in society have led to the formation and transition of each park type. The common characteristic of the mentioned four park types is that all four responded to social problems and expressed various ideas about nature, but they showed little or no concern for actual ecological fitness (Boland and Cranz, 2004). According to Boland and Cranz,

Today, in contrast, ecological problems may be counted among our most pressing social problems. Because social problems are now conflated, a new park urban park type that focuses on solutions to ecological problems and expresses new ideas about nature can build upon the traditional social genesis of urban parks in the United States to help improve the quality of life in American Cities (Boland and Cranz, 2004, p. 102).

In 2004, twenty two years after The Politics of Park Design was published, Galen Cranz and Michael Boland conducted a research to see if a new park type had evolved, utilizing the same social and physical criteria that described the previous four types. They used a societal technique called content analysis and analyzed parks published in five prominent landscape journals from 1982 to 2002. They started in 1982, when The Politics of Park Design was published, to pick up where they had left off. They found 125 parks
in their analysis, which included parks in Canada as well. Their analysis concluded that a new park type is emerging and they called it the Sustainable Park. The social goals, social reformers and formal characteristics of the sustainable park are shown in Table 2.2.

Table 2.2: Comparison of the Sustainable Park with the previous four types
Source: Boland and Cranz (2004), p. 103

<table>
<thead>
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</thead>
<tbody>
<tr>
<td><strong>Social Goal</strong></td>
<td>Public health &amp; Social reform</td>
<td>Social reform: children’s play; assimilation</td>
<td>Recreation service</td>
<td>Participation; revitalize city; stop riots</td>
<td>Human health; ecological health</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td>Strolling, carriage racing, picnics, rowing, classical music, non-didactic education</td>
<td>Supervised play, gymnastics, crafts, Americanization classes, dancing, plays &amp; pageants</td>
<td>Active recreation: basketball, tennis, team sports, spectator sports, swimming</td>
<td>Psychic relief, free-form play, pop music, participatory arts</td>
<td>Strolling, hiking, biking, passive &amp; active recreation, bird watching, education, stewardship</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>Very Large, 1000+ acres</td>
<td>Small, city blocks</td>
<td>Small to medium, follow formulate</td>
<td>Varied, often small, irregular sites</td>
<td>Varied, emphasis on corridors</td>
</tr>
<tr>
<td><strong>Relation to City</strong></td>
<td>Set in contrast</td>
<td>Accepts urban patterns</td>
<td>Suburban</td>
<td>City is a work of art; network</td>
<td>Part of larger urban system</td>
</tr>
<tr>
<td><strong>Order</strong></td>
<td>Curvilinear</td>
<td>Rectilinear</td>
<td>Rectilinear</td>
<td>Both</td>
<td>Evolutionary aesthetic</td>
</tr>
<tr>
<td><strong>Elements</strong></td>
<td>Woodland &amp; meadow, curving paths, placid water bodies, rustic structures, limited floral displays</td>
<td>Sandlots, playgrounds, rectilinear paths, swimming pools, field houses</td>
<td>Asphalt or grass play area, pools, rectilinear paths, standard play equipment</td>
<td>Trees, grass, shrubs, curving &amp; rectilinear paths, water features for view, free-form play equipment</td>
<td>Native plants, permeable surfaces, ecological restoration, resource self-sufficiency</td>
</tr>
<tr>
<td><strong>Promoters</strong></td>
<td>Health reformers, transcendentalists, real estate interests</td>
<td>Social reformers, social workers, recreation workers</td>
<td>Politicians, bureaucrats</td>
<td>Politicians, environmentalists, artists, designers</td>
<td>Environmentalists, local communities, volunteer groups, landscape architects</td>
</tr>
<tr>
<td><strong>Beneficiaries</strong></td>
<td>All city dwellers (intended), upper middle class (reality)</td>
<td>Children, immigrants, working class</td>
<td>Suburban families</td>
<td>Residents, workers, poor urban youth, middle class</td>
<td>Residents, wildlife, cities, planet</td>
</tr>
</tbody>
</table>
Three general attributes that separate the Sustainable Park from the previous models are:

1. **Self-sufficiency in regard to material resources and maintenance**

Boland and Cranz identified recurring strategies for increasing resource self-sufficiency including sustainable design, construction and maintenance practices, plant choices, composting, water harvesting, public-private partnerships and community stewardship in the Sustainable Parks. (Boland and Cranz, 2004)

2. **Solving larger urban problems outside of park boundaries**

The Sustainable Parks have been designed to solve several social and environmental urban problems outside of their boundaries. These problems fall into four broad categories the first of which is the integration of urban infrastructure into parks. By using parklands to treat city wastewater and stormwater, the sustainable park functions as a component of the larger infrastructure system. (Boland and Cranz, 2004)

A second urban problem that sustainable parks tackle is urban land reclamation. Parks which have been built on sites unsuitable for new development such as former military bases, landfills, industrial yards and obsolete transportation systems are some examples of how this park type solves this problem. (Boland and Cranz, 2004)

A third urban problem that Sustainable Parks address is health. The sustainable park might be used to improve and maintain physical and psychological health. (Boland and Cranz, 2004)

A fourth problem is urban alienation, which sustainable parks address by seeking to increase social well-being. Direct public participation in the conception, creation and
stewardship of Sustainable Parks, reconnects citizens to each other and to the landscape.
(Boland and Cranz, 2004)

3. Creating new standards for aesthetic and landscape management in parks and other urban landscapes

The use of drought tolerant, low maintenance species, recycled yard waste for soil amendment, wood chips from debris for paths and mulch, recycled plastic lumber for benches, and low maintenance, local, or renewable materials resulted in evolutionary aesthetic and landscape management practices for sustainable parks. (Boland and Cranz, 2004)

The sustainable park type has evolved as a result of understanding the role that urban landscapes play in achieving city sustainability. The next section of this chapter addresses the relation between urban parks and city sustainability.

2.2 Sustainable Development

Urban parks provide a whole range of environmental, social and economical benefits, which are of crucial significance for the well-being of the urban residents and the livability of modern cities (Cook and Vanderzanden, 2011). The benefits provided by urban green spaces are listed in Table 2.3.

It has become apparent that conventional methods of development have had huge negative impacts on the natural environment. Humans often underestimate the value of these services when making land-use decisions. These decisions and activities are landscape disturbing processes which affect the health and well-being of the natural world and in turn affect the health and well-being of the humans.
Table 2.3: The benefits commonly attributed to urban green spaces.
Source: Cook and Vanderzanden (2011), p. 177

<table>
<thead>
<tr>
<th>Economic</th>
<th>Social</th>
</tr>
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<tbody>
<tr>
<td>• Add value to the surrounding property, both commercial and</td>
<td>• Provide places for quiet contemplation and reflection, for</td>
</tr>
<tr>
<td>residential, consequently increasing tax yield to maintain public</td>
<td>relaxation, informal recreation, peace, space and beauty.</td>
</tr>
<tr>
<td>services.</td>
<td>• Provide opportunities to improve health and personal fitness</td>
</tr>
<tr>
<td>• Contribute to attracting tourists.</td>
<td>and take part in a wide range of outdoor sport and activity.</td>
</tr>
<tr>
<td>• Encourage employment and inward investment to an area.</td>
<td>• Provide safe areas to meet, talk and play for free association of</td>
</tr>
<tr>
<td>• Help to create a favourable image of a place.</td>
<td>friends and strangers, for families and between generations.</td>
</tr>
<tr>
<td></td>
<td>• Provide cultural links with the past, a sense of place and</td>
</tr>
<tr>
<td></td>
<td>identity.</td>
</tr>
<tr>
<td></td>
<td>• Provide opportunities for community events, voluntary activity</td>
</tr>
<tr>
<td></td>
<td>and charitable fundraising.</td>
</tr>
<tr>
<td></td>
<td>• Provide an educational resource – an outdoor classroom</td>
</tr>
<tr>
<td></td>
<td>stimulating ideas on art, design, the environment and natural</td>
</tr>
<tr>
<td></td>
<td>sciences.</td>
</tr>
<tr>
<td></td>
<td>• Provide habitats for wildlife, aiding biodiversity.</td>
</tr>
<tr>
<td></td>
<td>• Help to stabilise urban temperatures and humidity.</td>
</tr>
<tr>
<td></td>
<td>• Absorb pollutants in air and ground water.</td>
</tr>
<tr>
<td></td>
<td>• Provide opportunities for the recycling of organic materials.</td>
</tr>
<tr>
<td></td>
<td>• Slow storm water runoff and reduce drainage infrastructure.</td>
</tr>
<tr>
<td></td>
<td>• Provide a sense of the seasons and links with the natural world</td>
</tr>
<tr>
<td></td>
<td>within the urban environment.</td>
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</tbody>
</table>
Sustainable development is essentially a shift in how we make decisions. By integrating environmental considerations with economic and social values, we recognize our collective responsibility to provide ourselves and other generations with a future that fosters their physical, social and cultural well-being. (Sustainable Development Strategy, 2006)

In 1983, the United Nations created the World Commission on Environment and Development. Led by the former prime minister of Norway, Gro Harlem Brundtland, the commission produced a report, titled *Our Common Future*, in 1987. In this report, the commission defined sustainable development as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987, p. 43). This definition, vague and simple as it is, is widely used in published literature related to the topic (Thompson and Sorvig, 2008, p. 3; Cook and Vanderzanden, 2011, p. 9; Benson and Roe, 2007, p. 22, Roosa, 2008, p. 36).

The *Millennium Ecosystem Assessment*, a United Nations study completed in 2005, highlighted the need for all development to address considerations in three key areas: social, environmental, and economic (Millennium Ecosystem Assessment, 2003). Unless all three aspects are equally vibrant, true sustainability is not possible. (Figure 2.1) An environmentally sustainable landscape, must engage its users on multiple levels – physical, aesthetic, cultural, spiritual – and its creation and maintenance must be economically feasible.
For the purpose of this research, sustainable development is defined as “design, construction, operations, and maintenance practices that meet the needs of the present without compromising the ability of future generations to meet their own needs”, which is the Sustainable Sites Initiative’s modified version of the Brundtland Report’s definition of sustainable development (The Case for Sustainable Landscapes, 2009, p. 7).

To achieve and maintain sustainable development, we must pursue it at the local, regional and global levels, from both short- and long-term perspectives. (Sustainable Development Strategy, 2006) The aim of this research is to identify the sustainable development strategies that are being implemented by the local government in the design, planning, construction and management of their new park projects.

The next section introduces the principles of sustainable development found in the latest qualitative and quantitative landscape sustainability guidelines and evaluation tools.
2.3 Landscape Sustainability Guidelines and Evaluation Tools

Existing sustainable development guidelines and evaluation tools fall primarily into two categories: those that offer qualitative, theoretical, or values-based criteria; and those which prescribe specific quantitative or standards-based criteria (Edwards, 2005). The following is a list of some of the most recent guidelines and evaluation tools and their guiding principles for sustainable development.

**Qualitative guidelines and evaluation tools:**

*Andropogon Associates’ Ecological Site Design Guidelines*

- Create a participatory design process
- Preserve and re-establish landscape patterns
- Reinforce the natural infrastructure
- Conserve resources
- Make a habit of restoration
- Evaluate solutions in terms of their larger context
- Create model solutions based on natural processes
- Foster biodiversity
- Retrofit derelict lands
- Integrate historic preservation and ecological management
- Develop a monitored landscape management program
- Promote an ecological aesthetic

*Sanborn Principles - Urban Design Foundations for Sustainable Communities*

- Healthy indoor environment for occupants
- Ecologically healthy
- Socially just
- Culturally creative
- Beautiful
- Physically and economically accessible
- Evolutionary

*Values of Place - Essence of Timeless Design, Human-Centered Building, and Personal Responsibility*

- Diversity
- Beauty and aesthetics
• Accidental meeting places
• Surprise and discovery
• Resource efficiency
• Leaving your mark
• Human form emerging naturally from its place

*Principles of Smart Growth - www.smartgrowth.org*

• Range of housing opportunities
• Walkable neighbourhoods
• Community and stakeholder collaboration
• Distinctive attractive communities with sense of place
• Development decisions are predictable, fair, and cost-effective
• Mix land uses
• Preserve open space in critical areas
• Variety of transportation
• Place new development where existing infrastructure/development occurs
• Compact building design

*Sustainable Landscape Construction Principles—Thompson and Sorvig*

• Keep healthy sites healthy
• Heal injured sites
• Favor living, flexible materials
• Respect the waters of life
• Consider the fate and origin of materials
• Know the costs of energy over time
• Celebrate light, respect darkness
• Quietly defend silence
• Maintain to sustain

**Quantitative guidelines and evaluation tools:**

*LEED - New Construction v2.2*

• Sustainable Sites
• Water Efficiency
• Energy and Atmosphere
• Materials and Resources
• Indoor Air Quality
• Innovation and Design Process

*LEED - Neighborhood Development – Pilot Program*

• Smart Location and Linkage
• Neighborhood Pattern and Design
• Green Construction and Technology
• Innovation and Design Process

*Sustainable Sites Initiative – Pilot Program*

• Site Selection
• Pre-Design Assessment and Planning
• Site Design—Water
• Site Design—Soil and Vegetation
• Site Design—Materials Selection
• Site Design—Human Health and Well-Being
• Construction
• Operations and Maintenance
• Monitoring and Innovation

The intent of this research is not to compare and contrast these guidelines and evaluation tools, but to find the most recent, applicable and comprehensive system to apply as the basis for the questionnaire which will be used in the interviews with the municipalities’ park authorities. While many of the qualitative frameworks tend to be highly influential and formative, the most actively utilized and applied systems tend to be the quantitative ones, in which focused, tangible, and measureable directives and benefits are identified (Dinep and Shwab, 2010).

Amongst the quantitative guidelines and evaluation tools, the United States Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) Green Building Rating System has become an influential standard for green buildings. Until two years ago, no such rating system existed for sustainable landscapes. In November 2009, the *Sustainable Sites Initiative*, a partnership between the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center at the University of Texas and the United States Botanic Garden, announced the release of the United States’ first rating system for the design, construction and maintenance of sustainable landscapes with or without buildings. The USGBC is a stakeholder in the
initiative and the rating system is modelled after LEED, drawing from its resource materials and the LEED Reference Guides (Guidelines and Performance Benchmarks, 2009). The rating system is part of two reports issued from the initiative; The Case for Sustainable Landscapes and Guidelines and Performance Benchmarks 2009. The central message of the initiative is that “any landscape, whether the site of a large subdivision, a shopping mall, a park, an abandoned rail yard, or a single home, holds the potential both to improve and to regenerate the natural benefits and services provided by ecosystems in their undeveloped state” (Guidelines and Performance Benchmarks, 2009, p. 5).

The benchmarks are outlined as prerequisites and credits, organized into nine sections shown above. The prerequisites are required and must be met in order for a site to participate in this voluntary program, while the credits are optional, but a certain number of them must be attained for a project to achieve eventual recognition as a Sustainable Site. The rating system works on a 250 point scale, with levels of achievement for obtaining 40, 50, 60 or 80 percent of available points, recognized with one through four stars, respectively.

Nancy Somerville, ASLA’s executive vice president and CEO, believes the rating system could increase public understanding of the value of parks and recreation areas for long-term community sustainability.

The SITES rating system should lead to a greater understanding of the value of parks and recreation areas because of critical roles those landscapes play in the ecosystem and their positive impact on health and welfare … and placing a higher value on these landscapes should lead to greater investment. (Kapp, 2010, p. 45)

The initiative’s partners believe that greater investment in well-planned communities is necessary for the long-term well-being of communities. Summerville adds “Sustainability
should be at the forefront of all decision-making that relates to parks, open spaces and public lands.” (Kapp, 2010, p. 45)

Even in its pilot stage, the rating system proves to be the most complete framework to be utilized in the questionnaire to assist in achieving the goal and objectives of this research.

**Summary**

The literature review explored the history of urban parks in Ontario, the concept of sustainable development and the latest landscape sustainability guidelines and evaluation tools. The following chapter discusses the methodology required to identify the sustainable development strategies that are implemented by the municipalities in GTA and the barriers they face in achieving the mentioned task.
CHAPTER THREE
METHODOLOGY

Overview

This exploratory study employed semi-structured, focused interviews to create awareness about the current sustainable development strategies employed in planning, design, construction and management in new park projects of the municipalities in the Greater Toronto Area. Interviews were conducted with the selected municipalities’ park authorities in the spring of 2011. Data was analyzed using a qualitative method to gather the thoughts, experiences and opinions of the park authorities in the selected sample of four municipalities in the GTA. Figure 3.1 shows the steps undertaken to achieve the goal and the objectives of this research.

Goal of the study

To explore if, and why, the municipalities in the GTA have or have not adopted sustainable development strategies in planning, design, construction and management of their new parks.

Objectives

• To identify sustainable development strategies employed in planning, design, construction and management of new parks through semi-structured interviews with the municipalities’ park authorities.
• To identify the barriers in employing sustainable development strategies in planning, design, construction and management of new parks through semi-structured interviews with the municipalities’ park authorities.
3.1 Interview Questions

After completing the literature review, the researcher concluded that the questions for the semi-structured interview would be derived from Sustainable Sites Initiative’s Guidelines and Performance Benchmarks 2009. The interview questions were presented in eight areas; the first two sections were designed by the researcher to better understand the organization of the municipalities’ park departments, the number of staff with post-secondary education in landscape architecture working for that department, whether the selected municipality has a parks standards manual, the information included in that
document, and information about the municipalities’ park classification system. Sections 3, 4, 5, 6 and 7 are directly derived from SITES’ *Guidelines and Performance Benchmarks*’ prerequisites. SITES’ ranking system includes 15 prerequisites and 51 credits based on the Initiative’s Guiding Principles. Prerequisites are required and are not assigned a point value while credits are assigned a point value and in many cases offer a range of points. The rating system works on a 250-point scale, with levels of achievement for obtaining 40, 50, 60 or 80 percent of available points, recognized with one through four stars, respectively. The prerequisites were chosen as the basis for the questionnaire because, for a site to achieve certification it must meet all the prerequisites and at least 40 percent of the available points. Thus, the research questions in sections 3, 4, 5, 6 and 7 were derived from the prerequisites to explore the following options: to find out whether the municipalities implement these sustainable development strategies into their new park projects and if not, what are the barriers in adopting these strategies. To better understand the nature of the barriers, at the end of sections 3, 4, 5, 6, and 7, the researcher asked the interviewee what he/she thought the reason for not implementing the sustainable development strategies are and presented the interviewee with the following options:

1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. The strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors
7. Other
The interview questions are presented in eight different sections in the following order:

1) **Municipality Organizational Structure:** General information about the name and the organization of the department responsible for the development of the municipalities’ parks and open space projects, the department responsible for the operation and management of the municipalities’ parks and its relationship to the above-mentioned department, whether the municipalities have an active sustainability office or department and whether the municipalities have a sustainability guideline/document.

2) **Park Standards and Classification:** Specific questions about the municipalities’ parks standards manual, park classification system, whether the municipalities have their own sustainability development guideline specifically written for the parks departments and if the municipalities follow any other sustainability guidelines or evaluation tools for their projects.

3) **Site selection:** Specific questions about limiting development on Class 1 agricultural land, floodplains and wetlands and preserving endangered animals and species.

4) **Pre-design Assessment and Planning:** Specific questions about conducting an accurate and detailed assessment of site conditions and whether a multidisciplinary team of professionals experienced in sustainable practices is collaborating in different stages of the development or not.

5) **Site Design:** specific questions about water, soil, vegetation and materials selection.
6) **Construction:** Specific questions about the construction contractors and their role in preventing and minimizing discharge of site pollutants and restoring soils disturbed during construction.

7) **Operations and Maintenance:** Specific questions about site maintenance plans and collection of recyclable materials.

8) **General questions:** Feedback about the format and the type of questions asked and the interviewee’s opinion about the effectiveness of the *Sustainable Sites Initiative* as a guideline or an evaluation tool.

The questionnaire was pretested in two different stages; two graduate students with municipal work experience evaluated the questionnaire first and provided feedback. The questions were revised after and sent to the advisor, committee member and one of the faculty members, where additional suggestions for improvement were offered and the final draft of the questionnaire was produced.

### 3.2 Study Context

According to the 2001 and 2006 Census of Canada, the population of Canada was 31,612,897 in 2006 which increased by 1,605,803 people since 2001. The population of Ontario increased by 750,236 people in the same period, which means 47% of the total population growth in Canada happened in Ontario. The Greater Toronto Area (GTA) which consists of 25 municipalities hosted 30% of Canada’s total population growth (Figure 3.2).
Within the same period, the total number of private dwellings in Canada increased by 1,028,267 units, of which 416,629 units or 41% are in Ontario, and 244,590 units or 24% are in the GTA (Figure 3.3). Due to the significant population and development growth, GTA was selected as the study context for this research.
According to the 2006 Census of Canada, five of the twenty most populous municipalities in Canada are located in the GTA (Figure 3.4). These municipalities are:

Toronto, Mississauga, Brampton, Markham and Vaughan.

![Canada's Largest Municipalities in 2006. The municipalities in the GTA are highlighted with red. Source: Statistics Canada, 2006 Census of Canada.](image)

Table 3.1 demonstrates the ranking of the municipalities within the GTA based on their population in 2006.
Table 3.1: Municipalities in the GTA ranked based on population in 2006.


<table>
<thead>
<tr>
<th>Municipality</th>
<th>Population in 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario</td>
<td>12,160,282</td>
</tr>
<tr>
<td>GTA</td>
<td>5,555,487</td>
</tr>
<tr>
<td>1. Toronto</td>
<td>2,503,281</td>
</tr>
<tr>
<td>2. Mississauga</td>
<td>668,549</td>
</tr>
<tr>
<td>3. Brampton</td>
<td>433,806</td>
</tr>
<tr>
<td>4. Markham</td>
<td>261,573</td>
</tr>
<tr>
<td>5. Vaughan</td>
<td>238,866</td>
</tr>
<tr>
<td>6. Oakville</td>
<td>165,613</td>
</tr>
<tr>
<td>7. Burlington</td>
<td>164,415</td>
</tr>
<tr>
<td>8. Richmond Hill</td>
<td>162,704</td>
</tr>
<tr>
<td>9. Oshawa</td>
<td>141,590</td>
</tr>
<tr>
<td>10. Whitby</td>
<td>111,184</td>
</tr>
<tr>
<td>11. Ajax</td>
<td>90,167</td>
</tr>
<tr>
<td>12. Pickering</td>
<td>87,838</td>
</tr>
<tr>
<td>13. Clarington</td>
<td>77,820</td>
</tr>
<tr>
<td>14. Newmarket</td>
<td>74,295</td>
</tr>
<tr>
<td>15. Caledon</td>
<td>57,050</td>
</tr>
<tr>
<td>16. Halton Hills</td>
<td>55,289</td>
</tr>
<tr>
<td>17. Milton</td>
<td>53,939</td>
</tr>
<tr>
<td>18. Aurora</td>
<td>47,629</td>
</tr>
<tr>
<td>19. Georgina</td>
<td>42,346</td>
</tr>
<tr>
<td>20. Whitchurch-Stouffville</td>
<td>24,390</td>
</tr>
<tr>
<td>21. Scugog</td>
<td>21,439</td>
</tr>
<tr>
<td>22. East Gwillimbury</td>
<td>21,069</td>
</tr>
<tr>
<td>23. King</td>
<td>19,487</td>
</tr>
<tr>
<td>24. Uxbridge</td>
<td>19,169</td>
</tr>
<tr>
<td>25. Brock</td>
<td>11,979</td>
</tr>
</tbody>
</table>

To better understand where population growth is happening at a greater rate within the GTA, municipalities are ranked in Table 3.2 based on population growth since 2001. The five fastest growing municipalities in the GTA are: Brampton, Vaughan, Mississauga, Markham and Richmond Hill.
Table 3.2: Municipalities in the GTA ranked based on population increase since 2001.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario</td>
<td>11,410,046</td>
<td>12,160,282</td>
<td>750236</td>
</tr>
<tr>
<td>GTA</td>
<td>5,081,512</td>
<td>5,555,487</td>
<td>473975</td>
</tr>
<tr>
<td>1. Brampton</td>
<td>325,428</td>
<td>433,806</td>
<td>108378</td>
</tr>
<tr>
<td>2. Vaughan</td>
<td>182,022</td>
<td>238,866</td>
<td>56844</td>
</tr>
<tr>
<td>3. Mississauga</td>
<td>612,925</td>
<td>668,549</td>
<td>55624</td>
</tr>
<tr>
<td>4. Markham</td>
<td>208,615</td>
<td>261,573</td>
<td>52958</td>
</tr>
<tr>
<td>5. Richmond Hill</td>
<td>132,030</td>
<td>162,704</td>
<td>30674</td>
</tr>
<tr>
<td>6. Whitby</td>
<td>87,413</td>
<td>111,184</td>
<td>23771</td>
</tr>
<tr>
<td>7. Milton</td>
<td>31,471</td>
<td>53,939</td>
<td>22468</td>
</tr>
<tr>
<td>8. Toronto</td>
<td>2,481,494</td>
<td>2,503,281</td>
<td>21787</td>
</tr>
<tr>
<td>9. Oakville</td>
<td>144,738</td>
<td>165,613</td>
<td>20875</td>
</tr>
<tr>
<td>10. Ajax</td>
<td>73,753</td>
<td>90,167</td>
<td>16414</td>
</tr>
<tr>
<td>11. Burlington</td>
<td>150,836</td>
<td>164,415</td>
<td>13579</td>
</tr>
<tr>
<td>12. Newmarket</td>
<td>65,788</td>
<td>74,295</td>
<td>8507</td>
</tr>
<tr>
<td>13. Clarington</td>
<td>69,834</td>
<td>77,820</td>
<td>7986</td>
</tr>
<tr>
<td>14. Aurora</td>
<td>40,167</td>
<td>47,629</td>
<td>7462</td>
</tr>
<tr>
<td>15. Halton Hills</td>
<td>48,184</td>
<td>55,289</td>
<td>7105</td>
</tr>
<tr>
<td>16. Caledon</td>
<td>50,605</td>
<td>57,050</td>
<td>6445</td>
</tr>
<tr>
<td>17. Georgina</td>
<td>39,263</td>
<td>42,346</td>
<td>3083</td>
</tr>
<tr>
<td>18. Oshawa</td>
<td>139,051</td>
<td>141,590</td>
<td>2539</td>
</tr>
<tr>
<td>19. Whitchurch-Stouffville</td>
<td>22,008</td>
<td>24,390</td>
<td>2382</td>
</tr>
<tr>
<td>20. Uxbridge</td>
<td>17,377</td>
<td>19,169</td>
<td>1792</td>
</tr>
<tr>
<td>21. Scugog</td>
<td>20,173</td>
<td>21,439</td>
<td>1266</td>
</tr>
<tr>
<td>22. King</td>
<td>18,533</td>
<td>19,487</td>
<td>954</td>
</tr>
<tr>
<td>23. Pickering</td>
<td>87,139</td>
<td>87,838</td>
<td>699</td>
</tr>
<tr>
<td>24. East Gwillimbury</td>
<td>20,555</td>
<td>21,069</td>
<td>514</td>
</tr>
<tr>
<td>25. Brock</td>
<td>12,110</td>
<td>11,979</td>
<td>-131</td>
</tr>
</tbody>
</table>

The change in the total number of private dwellings between 2001 and 2006 would indicate the extent at which development growth has taken place within the GTA.

Table 3.3 demonstrates the top five municipalities that had the greatest increase in the total number of private dwellings between 2001 and 2006. These municipalities are: Toronto, Brampton, Mississauga, Markham and Vaughan.
Table 3.3: Municipalities in the GTA ranked based on total number of private dwelling increase since 2001.


<table>
<thead>
<tr>
<th>Municipality</th>
<th>Dwellings 01</th>
<th>Dwellings 06</th>
<th>Dwellings ↑ 01-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario</td>
<td>4,556,240</td>
<td>4,972,869</td>
<td>416,629</td>
</tr>
<tr>
<td>GTA</td>
<td>1,820,698</td>
<td>2,065,288</td>
<td>244,590</td>
</tr>
<tr>
<td>1. Toronto</td>
<td>965,554</td>
<td>1,040,597</td>
<td>75,043</td>
</tr>
<tr>
<td>2. Brampton</td>
<td>98,753</td>
<td>130,803</td>
<td>32,050</td>
</tr>
<tr>
<td>3. Mississauga</td>
<td>198,235</td>
<td>223,737</td>
<td>25,502</td>
</tr>
<tr>
<td>4. Markham</td>
<td>61,618</td>
<td>81,181</td>
<td>19,563</td>
</tr>
<tr>
<td>5. Vaughan</td>
<td>54,359</td>
<td>71,265</td>
<td>16,906</td>
</tr>
<tr>
<td>6. Richmond Hill</td>
<td>41,966</td>
<td>53,028</td>
<td>11,062</td>
</tr>
<tr>
<td>7. Oakville</td>
<td>50,000</td>
<td>58,828</td>
<td>8,828</td>
</tr>
<tr>
<td>8. Whitby</td>
<td>29,530</td>
<td>38,129</td>
<td>8,599</td>
</tr>
<tr>
<td>9. Milton</td>
<td>10,933</td>
<td>18,913</td>
<td>7,980</td>
</tr>
<tr>
<td>10. Burlington</td>
<td>59,020</td>
<td>65,340</td>
<td>6,320</td>
</tr>
<tr>
<td>11. Ajax</td>
<td>23,642</td>
<td>29,535</td>
<td>5,893</td>
</tr>
<tr>
<td>12. Newmarket</td>
<td>21,589</td>
<td>25,876</td>
<td>4,287</td>
</tr>
<tr>
<td>13. Oshawa</td>
<td>53,298</td>
<td>57,469</td>
<td>4,171</td>
</tr>
<tr>
<td>14. Clarington</td>
<td>23,619</td>
<td>27,753</td>
<td>4,134</td>
</tr>
<tr>
<td>15. Aurora</td>
<td>13,412</td>
<td>16,032</td>
<td>2,620</td>
</tr>
<tr>
<td>17. Caledon</td>
<td>16,662</td>
<td>18,915</td>
<td>2,253</td>
</tr>
<tr>
<td>18. Pickering</td>
<td>27,188</td>
<td>29,044</td>
<td>1,856</td>
</tr>
<tr>
<td>19. Georgina</td>
<td>15,518</td>
<td>16,879</td>
<td>1,361</td>
</tr>
<tr>
<td>20. Whitchurch-Stouffville</td>
<td>7,642</td>
<td>8,898</td>
<td>1256</td>
</tr>
<tr>
<td>21. Scugog</td>
<td>7,473</td>
<td>8,345</td>
<td>872</td>
</tr>
<tr>
<td>22. Uxbridge</td>
<td>6,094</td>
<td>6,916</td>
<td>822</td>
</tr>
<tr>
<td>23. East Gwillimbury</td>
<td>6,653</td>
<td>7,037</td>
<td>384</td>
</tr>
<tr>
<td>24. King</td>
<td>6,359</td>
<td>6,576</td>
<td>217</td>
</tr>
<tr>
<td>25. Brock</td>
<td>4,866</td>
<td>4,927</td>
<td>61</td>
</tr>
</tbody>
</table>

According to the results, four of the five municipalities which demonstrated faster population growth since 2001, also demonstrated greater development growth within the same period. These four municipalities, which are: Mississauga, Brampton, Markham and Vaughan were selected as the study sample for this research. Figures 3.5 through 3.9 demonstrate the location and statistics of the selected municipalities.
Figure 3.5: City of Mississauga. Source: http://mapsof.net/toronto/static-focus/png/greater-toronto-area-map/full-size.

Highlights:

Population in 2001: 612,925
Population in 2006: 668,549
2001 to 2006 population change: 55,624
2001 to 2006 population change (%): 9.1

Total private dwellings in 2001: 198,235
Total private dwellings in 2006: 223,737
2001 to 2006 private dwelling change: 25,502
2001 to 2006 private dwelling change (%): 19.92

Land area (square km): 288.53
Population density per square kilometre: 2,317.1

Source: Statistics Canada, 2001 and 2006 Census of Canada
Figure 3.6: City of Brampton. Source: http://mapsof.net/toronto/static-maps/png/greater-toronto-area-map/full-size.

Highlights:

Population in 2001: 325,428  
Population in 2006: 433,806  
2001 to 2006 population change: 108,378  
2001 to 2006 population change (%): 33.3

Total private dwellings in 2001: 98,753  
Total private dwellings in 2006: 130,803  
2001 to 2006 private dwelling change: 32,050  
2001 to 2006 private dwelling change (%): 32.4

Land area (square km): 266.71  
Population density per square kilometre: 1,626.5

Source: Statistics Canada, 2001 and 2006 Census of Canada
Town of Markham

Figure 3.7: Town of Markham. Source: http://mapsof.net/toronto/static-maps/png/greater-toronto-area-map/full-size.

Highlights:

Population in 2001: 208,615
Population in 2006: 261,573
2001 to 2006 population change: 52,958
2001 to 2006 population change (%): 25.4

Total private dwellings in 2001: 61,618
Total private dwellings in 2006: 81,181
2001 to 2006 private dwelling change: 19,563
2001 to 2006 private dwelling change (%): 31.7

Land area (square km): 212.58
Population density per square kilometre: 1,230.5

Source: Statistics Canada, 2001 and 2006 Census of Canada
Figure 3.8: City of Vaughan. Source: http://mapsof.net/toronto/static-maps/png/greater-toronto-area-map/full-size.

Highlights:

Population in 2001: 182,022  
Population in 2006: 238,866  
2001 to 2006 population change: 56,844  
2001 to 2006 population change (%): 31.2

Total private dwellings in 2001: 54,359  
Total private dwellings in 2006: 71,265  
2001 to 2006 private dwelling change: 16,906  
2001 to 2006 private dwelling change (%): 31.1

Land area (square km): 273.58  
Population density per square kilometre: 873.1

Source: Statistics Canada, 2001 and 2006 Census of Canada
3.3 Interviews

A standard telephone script was read over the phone for the municipalities’ park departments requesting participation in the study. For a copy of the standard telephone script please see Appendix A. The one hour interviews were conducted during the month of June 2011 at the municipality offices. The interviews were tape-recorded and transcribed by the interviewer to assist in the analysis and synthesis of the data. The interviewer asked verbal permission to record at the beginning of the interview. A copy of the consent (Appendix B) and questionnaire was sent to the interviewees two weeks before the interview to familiarize them with the questions and allow them to prepare for the interview.

3.4 Data Analysis

After the transcription was complete, the researcher read over the interviews four times and made notes to identify themes, quotes, comparisons and contradictions. The results were compared against the other interviews to identify stronger trends and patterns. The results from sections 3, 4, 5, 6 and 7 of the questionnaire were placed in a two dimensional table to identify common trends in implementation or the lack of implementation of sustainable development strategies by the municipalities. The findings from the data analysis are presented in the next chapter.
Introduction

The results discussed in this chapter are the product of four semi-structured interviews conducted in June 2011. The recorded interviews were transcribed into 41 pages of text, followed by a content analysis (Babbie, 2010) of the results. Based on the analysis of the transcribed interviews, the results are organized into four sections: 1) Municipality organization structure, 2) Park classifications, 3) Sustainable development strategies implemented in planning, design, construction and management of the new park projects, and 4) Barriers to adopting sustainable development strategies.

For a copy of the interview notes please refer to Appendix C.

4.1 Municipality Organizational Structure

To better understand the complexity of the departments in charge of planning and development of the municipalities’ parks, the interviewees were asked to provide an organizational chart as well as the total number of staff with post-secondary education in landscape architecture. The researcher also asked if the municipalities have active sustainability offices/departments and whether the mentioned offices/departments have direct involvement in the municipalities’ park projects. Although the researcher had originally requested to interview the managers and directors, due to scheduling difficulties, some municipalities introduced individuals with other positions to participate in the interviews. The organization charts are shown below in Figures 4.1 through 4.4, and the interviewees’ positions are highlighted.
Figure 4.1: City of Brampton Organization Chart, Open Space Design and Construction Section.

Community Services Department

→ Community Design, Parks Planning and Development Division

→ Open Space Design and Construction Section

Manager
Open Space Design and Construction

Administrative Assistant

Supervisor
New Development
West and Capital Projects

Landscape Architect
Landscape Architect

Supervisor
New Development
East and Site Plan

Landscape Technologist
Landscape Technologist

Landscape Architect
Landscape Architect

Landscape Architect
Landscape Architect

Landscape Architect
Landscape Architect

Landscape Architect

Landscape Architect
Figure 4.2: City of Mississauga Organization Chart, Park Development Section.

Community Services Department

→ Planning, Development and Business Services Division

→ Park Development Section

Manager
Park Development

Administrative Assistant

Senior Project Manager

- Project Manager
  - Landscape Architect

- Project Coordinator
  - Landscape Architect

- Project Coordinator
  - Engineering

Senior Project Manager

- Project Manager
  - Landscape Architect

- Project Coordinator
  - Landscape Architect

- Project Coordinator
  - Landscape Architecture Student

- Project Coordinator
  - Engineering

- Project Coordinator
  - Landscape Architecture Student
Figure 4.3: City of Mississauga Organization Chart, Park Planning Section.

Community Services Department

→ Planning, Development and Business Services Division

→ Park Planning Section
Figure 4.4: City of Vaughan Organization Chart, Parks Development Department.

Community Services Commission

→ Parks Development Department
4.1.1 City of Brampton

The intent of this section of the research was not to compare and contrast the organization of the selected municipalities but to explore how specialized they are and to find out the number of staff with landscape architecture degrees in each department.

The City of Brampton (Figure 4.1) consists of ten landscape architects, six landscape technologists and an Administrative Assistant. Steve Dewdney, Manager of the Open Space Design and Construction section mentioned:

There are 3 different sections in the Community Design, Parks Planning and Development Division: the Planning section which deals with bigger picture policy planning, Urban Design section which deals with mostly public buildings and urban nodes, Open Space Design and Construction and we essentially build things.

Steve also mentions that the City of Brampton does not have an active Sustainability Department/Office and his department is in the “forefront of pushing sustainability initiatives.”
4.1.2 City of Mississauga

The City of Mississauga is the only municipality that has a section specifically devoted to Park Planning (Figure 4.3). The Long Term Planning Team, within the Park Planning Section, consists of a Team Leader (who is an accredited Planner), five senior level planners and a planning student. All Planners are accredited members of the OPPI (RPP, MCIP). Two planners hold separate degrees in Landscape Architecture (BLA and MLA respectively) but are not accredited members of the OALA.

The Park Assets Team consists of a Team Leader (who is an accredited Planner), three Planners of varying experience (two are accredited), two intermediate level Landscape Architects (one who is accredited and the other is working on it) and a planning student. Additionally, one of the Planners in this team is also accredited by the OALA (not a requirement of employment).

According to Ruth Marland, Team Leader of Long Term Planning, the Park Planning Section is responsible for:

Long term masterplans, pre-planning on a site specific basis to determine whether or not there are any regulatory changes that need to be undertaken, assessment with respect to our recreational masterplan and to determine from a program perspective what needs to be within the park. We basically take a landuse planning assessment of the site and then guide park development accordingly so if there are any sensitive areas or any issues that have come up through our public engagement we address those before we handover the project to park development.

The Park Development Section (Figure 4.2) consists of a Manager (who is an accredited Landscape Architect) and two Senior Project Managers (both accredited Landscape Architects) who oversee the six Project Managers (all with landscape architecture
degrees), eight Project Coordinators (six with landscape architecture degrees and two with engineering background) and two Landscape Architecture Students.

Jill Goldie, Project Manager in the Park Development Section, mentioned that the City of Brampton has an active sustainability department, called the Environmental Management Section which is under the Recreation and Parks Division. According to Ruth, the Environmental Management Section:

Leads the creation of the Living Green Masterplan right now. That process started last year and will be brought to conclusion in the fall. Again, that’s high level environmental management strategies across the corporation and they focus on things that the city can do, things that the city can encourage and things that others can do. We have a Green Development Strategy both for our city projects and also private projects. So the Living Green Masterplan is looking at ways to reinforce those strategies.

In terms of the level of involvement of the Environmental Management Section in park development projects, Jill mentions that:

In Park Development when we are carrying a project to design, we will actually go to their group and report to the Environmental Network team with our design, and that’s just going there for information sharing and letting them know what we are working on. Often they’ll run through a checklist of green initiatives that they think are important or we might want to consider for our project so we try to take that input and implement it.

4.1.3 City of Vaughan

City of Vaughan’s Park Development Department consists of a Director (accredited landscape architect), two Construction Coordinators (both accredited landscape architects) who oversee four Landscape Architects (one accredited), one Landscape Technologist and a Technical Coordinator. According to Martin Tavares, Construction Coordinator, the City does not have an active sustainability office/department.
4.1.4 Town of Markham

The Town of Markham’s Parks and Open Space Development Section consists of a Manager and three Project Coordinators, who are all accredited landscape architects. Compared to the other municipalities, it is the smallest department and has the least level of specialization in terms of staff. Linda Irvine, Manager of Parks and Open Space Development Section mentions that the Town has an active Sustainability Office and states that:

The principal role of this particular department has been to create Markham’s Greenprint sustainability plan. They have been working on that in a collaborative way with all departments within the municipality and as I understand that sustainability plan has been received and approved by the council.

When asked about the level of involvement of the mentioned department in Parks and Open Space Development Section’s projects, Linda states:

As I understand it correctly it lays out Markham’s sustainability priorities in the near and the long-term. Every single department has a role in fulfilling those priorities. As I understand, there’s an action plan being developed which will require all departments in the municipality to identify projects in action which their group can do to support the sustainability priorities.

4.1.5 Discussion about the Municipalities’ Organizational Structure

The synthesis of the results highlights the significant role of landscape architects in different stages of the municipalities’ park development projects. The City of Mississauga is an example of multiple roles that landscape architects could undertake in a municipality. In the Park Planning Section, they collaborate with the planners to determine the size, location, program and landscape elements of the parks. The importance of involving landscape architects in the pre-construction stage is emphasized by Thompson and Sorvig (2008) as follows:
The pre-construction actors are likely to be realtors, surveyors, developers, utility companies, and government agencies. Increasingly, projects stand or fall on the input of neighbourhood groups as well. Landscape professionals can influence most of these groups toward sustainable practice—but only if they form strong channels of communication and give input at the right time. Failing this, these same groups will act on the site, often by default, before landscape professionals are involved. Some standard practices—including hiring a landscape consultant only at the last moment to “shrub up” an already completed design—attempt to disguise unsightly or unhealthy results. Although not easy, winning influence over land-use planning is critically important to sustainability. The teamwork required among landscape architect, contractor, architect (or other consultants), and client/user is a good place to start forging community connections (Thompson and Sorvig, 2008, p. 38).

In the Park Development Section they collaborate with engineers to coordinate and manage the projects. Therefore, in addition to working with separate engineering and planning departments, they have planners and engineers working in their own department as well. Whether their projects are considered to be more sustainable as a result of this collaboration compared to the other municipalities is out of the context of this research, but the City of Mississauga is certainly unique in this aspect.

The second important matter which arises from the synthesis of the results is the limited input that the Sustainability Departments/Offices have on the municipalities’ park projects. The City of Mississauga and the Town of Markham both have active sustainability offices, but according to the interviewees the major responsibility of these offices have been to produce the long-term sustainability documents for the mentioned municipalities without any direct input into their park projects. Designating a staff from the sustainability departments to share their knowledge and expertise in sustainability and to collaborate with the park planning and park developments departments’ staff could provide positive results.
4.2 Park Classification

The interviewees were asked to provide the municipalities’ classification system for their parks and a brief explanation about each park type. Table 4.1 through 4.4 demonstrate the results obtained based on the responses from the interviews and the information gathered from the municipalities’ official documents.

Table 4.1: City of Brampton Park Classification System.


<table>
<thead>
<tr>
<th>Park Type &amp; Size</th>
<th>Content</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Parks &gt; 12ha</td>
<td>Large playground, shade structure, multi-purpose court, multiple sports fields, lighting, seating areas, walkways, open active area, landscaping, floral displays, and buffer areas.</td>
<td>Located along arterial roads, preferably at the intersection of major streets to act as gateway features to communities and the City and serviced by transit.</td>
</tr>
<tr>
<td>Community Parks 10-12ha</td>
<td>Large playground, shade structure, multi-purpose court, splash pad, multiple sports fields and associated flood lighting, seating areas, walkways, lighting, open active area, landscaping, floral displays, and buffer areas.</td>
<td>15,000 to 20,000 persons within a 3.0 kilometre radius.</td>
</tr>
<tr>
<td>Neighbourhood Parks 0.8 – 1.2ha</td>
<td>Playground, shade structure, multi-purpose court, seating areas, walkways, lighting, open active area, landscaping, floral displays, and buffer areas.</td>
<td>4,000 to 5,000 people within a 0.4 kilometre radius.</td>
</tr>
</tbody>
</table>
Table 4.2: City of Mississauga Park Classification System.


<table>
<thead>
<tr>
<th>Park Type &amp; Size</th>
<th>Content</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination Parks 1.2ha / 1000 people</td>
<td>Major facilities (e.g., golf course), preservation of unique historical, cultural or significant natural areas, may also meet the need for community-level parkland or serve an area greater than the city, may serve a unique function such as a waterfront park, major tournament sports park, or special use park.</td>
<td>within an 800 metre radius</td>
</tr>
<tr>
<td>Community Parks 1.2ha / 1000 people</td>
<td>Sports fields for organized use, space/equipment for unorganized activities and passive use, preservation of woodlands, multi-purpose year-round activities, visual relief and aesthetic qualities.</td>
<td>within an 800 metre radius</td>
</tr>
</tbody>
</table>
Table 4.3: City of Vaughan Park Classification System.


<table>
<thead>
<tr>
<th>Park Type &amp; Size</th>
<th>Content</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Parks &gt; 15ha</strong></td>
<td>All facilities listed under District Park in quantities and at a scale which will accommodate major events including festivals, tournaments, public permitting for private events (wedding celebrations etc.), and recreational activities that require large scale areas in order to function.</td>
<td>By transit, automobile, including major highways (400 series), pedestrian routes, and bike paths. Serving all areas of the city</td>
</tr>
<tr>
<td><strong>District Parks &gt; 5ha</strong></td>
<td>Major sports fields, community centres, large skateboard parks, outdoor skating facilities, field houses, picnic shelters, off-leash areas, aquatic/waterplay facilities, parking.</td>
<td>By transit, auto routes, pedestrian and bike paths. Within a 2 kilometre radius.</td>
</tr>
<tr>
<td><strong>Neighbourhood Parks 1 – 5ha</strong></td>
<td>Active and passive uses, balancing the needs of the city and those of the local economy. Generally there is no more than one of any type of active and permitted facility included in a neighbourhood park.</td>
<td>Within 500m of transit. Links to pedestrian and bike paths. Within 5 minutes walk of homes / 500m of persons to be served.</td>
</tr>
<tr>
<td><strong>Public Squares &lt;1ha</strong></td>
<td>Intensely used spaces that can accommodate a range of neighbourhood oriented social activities. May include seating, bicycle parking, playground structures, &amp; fountains/waterplay. Accommodating street related activities such as vendors, festivals, temporary markets, performance space and art installations.</td>
<td>Direct connections to transit. Links to pedestrian and bike paths. Within a 5 minute walk of homes / 500m of persons to be served.</td>
</tr>
</tbody>
</table>
Table 4.4: Town of Markham Park Classification System.

<table>
<thead>
<tr>
<th>Park Type &amp; Size</th>
<th>Content</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town Parks</td>
<td>Space for active and passive recreation for all age groups including a wide range of specialized facilities such as arenas, stadiums, camp grounds, swimming pools, and boating areas and similar other facilities which serve a number of communities</td>
<td>Suitable locations in the residential areas of the Town.</td>
</tr>
<tr>
<td>&gt; 12ha</td>
<td>1.0118ha / 1000 people</td>
<td></td>
</tr>
<tr>
<td>Community Parks</td>
<td>Designed and intended to provide space for active and passive recreation for all age groups including organized sporting activities.</td>
<td>Within a 2.4 kilometre radius.</td>
</tr>
<tr>
<td>&gt; 6ha</td>
<td>0.8094ha / 1000 people</td>
<td></td>
</tr>
<tr>
<td>Neighbourhood Parks</td>
<td>Space for field sports, playgrounds and the recreational needs of a local residential area.</td>
<td>Within a 0.8 kilometre radius.</td>
</tr>
<tr>
<td>1.6 – 4.9ha</td>
<td>1.2141ha / 1000 people</td>
<td></td>
</tr>
<tr>
<td>Parkettes</td>
<td>To provide passive recreational space to serve local neighbourhoods.</td>
<td>Within a 0.4 kilometre radius.</td>
</tr>
<tr>
<td>0.4 – 1.6ha</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2.1 Discussion about Municipalities’ Park Classification Systems

Synthesis of the results from the interviews and the municipalities’ official documents revealed that all four municipalities either recently updated their official park classification system or are in the process of doing so. According to Steve Dewdney, the City of Brampton’s park classification system is “in a state of flux” since the City originally included four park types which has now been reduced to three.

In City of Mississauga’s *Future Directions - Parks and Natural Areas Master Plan* published in December 2009, it is mentioned that:
These current park classifications are reasonable categories to achieve the stated objectives for ‘placemaking’ in areas of growth and intensification, providing that the category of Community Park is redefined as including all types of parks, including small urban parks and public squares that may offer different forms of leisure pursuits that appeal to urban dwellers and contribute to the urban form, e.g. shaded seating areas, sculpture gardens, ‘internet’ parks, cafés (Future Directions for Recreation and Parks, 2009, p. vii).

In City of Vaughan’s old Official Plan called the OPA 600, dated August 2000, six park types were introduced, which have been reduced to four in the new Official Plan. Using “District Parks” as an example, the characteristics of this park type in the OPA 600 were as follows:

- 12-15 ha in size
- Adjacent to secondary schools
- Located centrally in an area of 10,000 to 20,000 people
- Accessible to the community (planning district) they are intended to serve
- Linked into an overall open space system, including valleys and greenways
- Accessible by public transit
- Can include community centres, arenas, pools, public cultural facilities etc.

In comparison to the characteristics listed in Table 4.3, it becomes clear that the size, function, programming and distance from the residents have all changed.

Linda Irvine mentioned that Town of Markham’s park classification system is “expected to change over the next few months and a new classification system will be adopted as part of the new Official Plan.” She further elaborates on the old classification system and the changes to come as follows:

In the old days it was function and size that dictated the classification system and in the new days it has to be more than function and size; it might relate to program, it might relate to quality, it might relate to characteristics, it might even relate to certain sustainability criteria. In my opinion the previous park types were gross categories to look to classify our parks. As we urbanise, as we grow and our community becomes more complex we design them based on a wider set of design principles. I anticipate our future classification system to be much finer.
grained and to be much more specific and related to actual types of parks that we are delivering.

The evolution of park types over the years has resulted in the evolution of park classification systems. The municipalities’ park authorities are aware of the constant changes in the society and have modified their classification systems to respond to these changes. By providing a range of parks and community amenities in walking distance, the municipalities seek to provide more recreational and natural environment experiences while reducing car dependency. The new classification systems suggest a system of public open space areas which can adapt to changing needs.

4.3 Sustainable Development Strategies

The results gained from sections 3, 4, 5, 6 and 7 of the interview are displayed in Table 4.5. One of the main objectives of this research was to identify the sustainable strategies implemented by the municipalities in the GTA in planning, design, construction and management of their new parks. To satisfy the mentioned objective, the latest landscape sustainability guidelines and evaluation systems were reviewed and the researcher decided that the questions should be derived from SITES’ Guidelines and Performance benchmarks 2009. In the interview, the interviewees indicated the sustainable strategies that are in place as policy (shown as P in the table), the sustainable strategies implemented that are not policy (shown as Y in the table) and the sustainable strategies that are not implemented (shown as N in the table). The intent of this research was not to compare and contrast the results obtained, but to see where the selected municipalities stand with respect to the most recent landscape sustainability guidelines and evaluation tools.
Table 4.5: Results obtained from sections 3, 4, 5, 6 and 7 of the interview questions.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Mississauga</th>
<th>Brampton</th>
<th>Markham</th>
<th>Vaughan</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Site Selection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Limit development on Class 1 agricultural land</td>
<td>N</td>
<td>N</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>3.2 Protect floodplain functions</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>3.3 Preserve wetlands</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>3.4 Preserve threatened or endangered species</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>Y</td>
</tr>
<tr>
<td>4. Pre-Design Assessment and Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Pre-design site assessment and site sustainability</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>4.2 Use an integrated site development process</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>5. Site Design - Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 Reduce potable water use for landscape irrigation</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Site Design - Soil and Vegetation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2 Control and manage known invasive plants</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>5.3 Use appropriate, non-invasive plants</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>5.4 Create a soil management plan</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Site Design - Materials Selection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5 Eliminate the use of wood from threatened tree species</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>6. Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1 Control and retain construction pollutants</td>
<td>Y</td>
<td>P</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>6.2 Restore soils disturbed during construction</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>7. Operations and Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.1 Plan for sustainable site maintenance</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>7.2 Provide for storage and collection of recyclables</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>2P</td>
<td>3P</td>
<td>4P</td>
<td>4P</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9Y</td>
<td>6Y</td>
<td>10Y</td>
<td>6Y</td>
<td></td>
</tr>
<tr>
<td>4N</td>
<td>6N</td>
<td>1N</td>
<td>5N</td>
<td></td>
</tr>
</tbody>
</table>
Based on the results obtained, the sustainable development strategies that are not implemented by at least one of the municipalities are presented and discussed in greater detail.

### 4.3.1 Limit Development on Class 1 Agricultural Land

The researcher asked if there are any locations that have been identified as Class 1 agricultural land within the municipalities’ boundaries. Steve Dewdney mentions that the entire City of Brampton is classified as Class 1 agricultural land but the City has no restrictions on developing on this type of soil:

The focus isn’t much on Class 1 agricultural land in Brampton but it is more about sub-watershed management and the Ministry of Natural Resources and the Conservation Authorities are very strong on that. The fight to save Class 1 agricultural land seems to have been taken elsewhere. We don’t see challenges through our *Official Plan* based on loss of agricultural land. Back in the 80s we did, I don’t see them anymore; what we see is challenges based on overall management of the sub-watershed. Regenerating and enhancing natural heritage systems along system corridors. All of Brampton is Class 1 but no one is blinking and no restrictions on developing Class 1. We are now developing over sandy loam fruit lands which are the most valuable in Brampton and Ontario.

Ruth Marland indicates that the City of Mississauga contains lands that are zoned agriculture but cannot confirm whether they are Class 1 or not.

If I go to our planning framework, we don’t have any land that’s designated for agriculture. There are some lands that are zoned agriculture but that’s because they are remnants of the older zoning by-law. But effectively we are built out and in our Credit River Watershed we do have some lands that have been and continue to be used as agriculture but whether or not they are Class 1, I cannot confirm. We acquired 160 acres last year that is a current farm that’s actually being reviewed by this *Credit River Park Strategy* and one of the concepts that the consultant is presenting is to maintain the agricultural operation, the urban agriculture focus.
Martin Tavares indicates that the City of Vaughan has a policy in their new *Official Plan* that restricts developing on Class 1 agricultural land.

I know within the OP it talks about Greenbelt protections lands and there are portions within the City to the north that no longer fall under development. At one time people had application in for development and they were allowed based on the old OP and now with the new OP certain requirements where they can’t construct are originally as planned.

Linda Irvine mentions that the majority of this special class of agricultural land falls outside of the Town of Markham’s growth boundary and if there is any remaining agricultural land within the Town’s growth boundary, the Town has a policy that will not allow development to take place on those.

### 4.3.2 Use an Integrated Site Development Process

The researcher asked if the municipalities require a multidisciplinary team of professionals experienced in sustainable practices to collaborate on the design, construction and maintenance of the site in an integrated design and implementation process. The City of Vaughan was the only municipality that responded no to this question and Martin Tavares mentions that:

I don’t think we go that far to say you need to be experienced in sustainable practices; we kind of assume that they are coming to the table with information, or background that they have somewhere else… There is an RFP that goes out and we typically ask for what we want and these are the objectives and what we are trying to show. Then they will provide us with examples of parks that are related in size and type and then we’ll base our scoring criteria on what we see in the proposals. So if someone is saying “oh I do a lot of this” and there are these green initiatives within the design they’ll score higher because it is what we want to do, but if no one is providing that information we can’t score them poorly.
4.3.3 Reduce Potable Water Use for Landscape Irrigation

The researcher asked if the municipalities encourage reduction of potable water use for landscape irrigation. Steve Dewdney mentions that the City of Brampton has no active program for this sustainable strategy at the moment.

Jill Goldie indicated that at the City of Mississauga “it is pretty much done on a site by site-specific need. I can’t speak for it generically across the City, because every site is different. Some sites are irrigated and some are not.”

Martin Tavares indicates that at the present time the standards in place at the City of Vaughan will not allow this strategy to be implemented and mentions that:

> We talk about it but there are certain requirements that we have to satisfy. Building the facilities requires that there is a servicing requirement for all the parks, engineering and public works as well. So there are these other departments that come into play about what is allowed. We have mechanical systems that are in place that prevent contamination of the water system but we definitely use potable water.

Linda Irvine responded to the question as follows:

> It is wasteful to irrigate all parklands; better to irrigate aspects of parkland. At this point of time the town only irrigates their sport fields because those need to be in prime playing condition and because of the soil mix which is typically 50% soil and 50% sand, these fields drain away very quickly so it’s important to have irrigation on them in order to keep them in prime condition. For the most part that’s the only time we irrigate; we are starting now to build parks above parking garages and that’s in our intensification areas and those landscapes have to be irrigated otherwise everything will just die. As you know, it is basically a park over concrete so it needs irrigation in order to allow the plants to survive and thrive.
4.3.4 Control and Manage Known Invasive Plants

The interviewees were asked if they incorporate the use of appropriate plants that are non-invasive and appropriate for site conditions, climate and design intent. Steve Dewdney responded by saying

Invasive plants is a bit of a tricky topic right now. The Conservation Authorities are very aggressively pushing to eliminate invasive plants. The problem is that in urban areas native plants don’t do really well on roads and highly urbanized conditions. That’s why cultivars were developed over the years because they do better in urban conditions than native plants. Also, they look better and flower nicer and they have all kinds of attributes that native plants don’t necessarily have.

Jill Goldie mentioned they would consult with other departments more knowledgeable about plants regarding this matter and stated that

We would certainly like to run our plants list by Forestry, because they are so well knowledgeable of what is considered invasive. We simply have so many park sites with wooded areas that already have huge amounts of invasive material, it’s a huge job. You would read it in the Natural Areas Survey; you read it in any environmental management plan that we have produced to get rid of the invasive material that’s out there. It is a big job, a huge job.

Martin Tavares indicated that his department does not formally incorporate an active management plan. He also mentioned that for the City in general, this is policy and is required for all development sites but not specific to park sites. He also mentioned that within Forestry there is policy in place about invasive plants.

Linda Irvine indicated that managing invasive plants is not part of her department’s job and mentioned that

That is Operations’ job to control invasive plants after the parks have been built. If there are invasive plants that are on a site, let’s say we are in a river valley and we are putting in a trail system and it’s found that there might be certain invasive plants, we will develop a management plan as part of that exercise to see if we can control those prior to handing the site over to Operations if possible. At the
end of the day it is the Operations Department to control invasive plants and they have policies related to certain species.

4.3.5 Create a Soil Management Plan

The researcher asked if the municipalities require the consultants to develop and implement a soil management plan prior to construction to limit disturbance, assist soil restoration efforts, and define the location and boundaries of all vegetation and soil protection zones. Steve Dewdney indicates that in all City of Brampton’s new developments the top twelve inches of soil is stripped and six to eight inches are put back. He mentions:

The problem is that it is not a very precise process; we get a lot of subsoil mixed with topsoil. Original topsoil gets contaminated with subsoil so you have a very mixed soil profile that gets restored. We have standards in place to amend soil, to put it back in the condition much like it was stripped off.

4.3.6 Eliminate Use of Wood from Threatened Tree Species

The researcher asked if the municipalities eliminate the use of wood from threatened tree species and the general response was that the interviewees were not sure what the endangered tree species would be because they were not provided any information about them.

4.3.7 Plan for Sustainable Site Maintenance

The researcher asked if the municipalities require that the consultants develop a site maintenance plan that outlines the long-term strategies and identifies short-term actions to achieve sustainable maintenance goals. The general response received for this question was that there is an establishment requirement for each project but not a long
term maintenance requirement. Once a park is constructed it then is turned into the Operations Department.

The next section will present the barriers that the municipalities are facing in adopting the above mentioned sustainable strategies.

4.4 Barriers in Adopting Sustainable Development Strategies

The second objective of this research was to identify the limitations that the selected municipalities face in adopting the sustainable development strategies discussed in the previous section. To satisfy this objective and to understand the nature of the limitations, when the interviewees indicated that a specific sustainable strategy was not implemented, the researcher presented the following options:

1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. The strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors
7. Other

Table 4.6 through 4.9 display the barriers that, according to the interviewees, the municipalities face in adopting specific sustainable development strategies.

Synthesis of the results suggests the most dominant barriers are

1. Limited budget
2. Lack of public support
3. Not considered a priority at the moment
Table 4.6: Brampton’s barriers in adopting sustainable development strategies

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Brampton</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3. Site Selection</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Limit development on Class 1 agricultural land</td>
<td>N</td>
</tr>
<tr>
<td>3.2 Protect floodplain functions</td>
<td>P</td>
</tr>
<tr>
<td>3.3 Preserve wetlands</td>
<td>P</td>
</tr>
<tr>
<td>3.4 Preserve threatened or endangered species</td>
<td>Y</td>
</tr>
<tr>
<td><strong>4. Pre-Design Assessment and Planning</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Pre-design site assessment and site sustainability</td>
<td>Y</td>
</tr>
<tr>
<td>4.2 Use an integrated site development process</td>
<td>Y</td>
</tr>
<tr>
<td><strong>5. Site Design - Water</strong></td>
<td></td>
</tr>
<tr>
<td>5.1 Reduce potable water use for landscape irrigation</td>
<td>N</td>
</tr>
<tr>
<td><strong>Site Design - Soil and Vegetation</strong></td>
<td></td>
</tr>
<tr>
<td>5.2 Control and manage known invasive plants</td>
<td>N</td>
</tr>
<tr>
<td>5.3 Use appropriate, non-invasive plants</td>
<td>Y</td>
</tr>
<tr>
<td>5.4 Create a soil management plan</td>
<td>N</td>
</tr>
<tr>
<td><strong>Site Design - Materials Selection</strong></td>
<td></td>
</tr>
<tr>
<td>5.5 Eliminate the use of wood from threatened tree species</td>
<td>N</td>
</tr>
<tr>
<td><strong>6. Construction</strong></td>
<td></td>
</tr>
<tr>
<td>6.1 Control and retain construction pollutants</td>
<td>P</td>
</tr>
<tr>
<td>6.2 Restore soils disturbed during construction</td>
<td>Y</td>
</tr>
<tr>
<td><strong>7. Operations and Maintenance</strong></td>
<td></td>
</tr>
<tr>
<td>7.1 Plan for sustainable site maintenance</td>
<td>N</td>
</tr>
<tr>
<td>7.2 Provide for storage and collection of recyclables</td>
<td>Y</td>
</tr>
</tbody>
</table>
Table 4.7: City of Mississauga’s barriers in adopting sustainable development strategies

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Mississauga</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3. Site Selection</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Limit development on Class 1 agricultural land</td>
<td>N</td>
</tr>
<tr>
<td>Not sure where Class 1 Agricultural land are.</td>
<td></td>
</tr>
<tr>
<td>3.2 Protect floodplain functions</td>
<td>P</td>
</tr>
<tr>
<td>3.3 Preserve wetlands</td>
<td>P</td>
</tr>
<tr>
<td>3.4 Preserve threatened or endangered species</td>
<td>Y</td>
</tr>
<tr>
<td><strong>4. Pre-Design Assessment and Planning</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Pre-design site assessment and site sustainability</td>
<td>Y</td>
</tr>
<tr>
<td>4.2 Use an integrated site development process</td>
<td>Y</td>
</tr>
<tr>
<td><strong>5. Site Design - Water</strong></td>
<td></td>
</tr>
<tr>
<td>5.1 Reduce potable water use for landscape irrigation</td>
<td>N</td>
</tr>
<tr>
<td>Done on site specific, no general policy</td>
<td></td>
</tr>
<tr>
<td><strong>Site Design - Soil and Vegetation</strong></td>
<td></td>
</tr>
<tr>
<td>5.2 Control and manage known invasive plants</td>
<td>Y</td>
</tr>
<tr>
<td>5.3 Use appropriate, non-invasive plants</td>
<td>Y</td>
</tr>
<tr>
<td>5.4 Create a soil management plan</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Site Design - Materials Selection</strong></td>
<td></td>
</tr>
<tr>
<td>5.5 Eliminate the use of wood from threatened tree species</td>
<td>N</td>
</tr>
<tr>
<td>No list provided</td>
<td></td>
</tr>
<tr>
<td><strong>6. Construction</strong></td>
<td></td>
</tr>
<tr>
<td>6.1 Control and retain construction pollutants</td>
<td>Y</td>
</tr>
<tr>
<td>6.2 Restore soils disturbed during construction</td>
<td>Y</td>
</tr>
<tr>
<td><strong>7. Operations and Maintenance</strong></td>
<td></td>
</tr>
<tr>
<td>7.1 Plan for sustainable site maintenance</td>
<td>N</td>
</tr>
<tr>
<td>Not documented in any implementation document for each park site</td>
<td></td>
</tr>
<tr>
<td>7.2 Provide for storage and collection of recyclables</td>
<td>Y</td>
</tr>
</tbody>
</table>
Table 4.8: City of Vaughan’s barriers in adopting sustainable development strategies

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Vaughan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3. Site Selection</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Limit development on Class 1 agricultural land</td>
<td>P</td>
</tr>
<tr>
<td>3.2 Protect floodplain functions</td>
<td>P</td>
</tr>
<tr>
<td>3.3 Preserve wetlands</td>
<td>P</td>
</tr>
<tr>
<td>3.4 Preserve threatened or endangered species</td>
<td>Y</td>
</tr>
<tr>
<td><strong>4. Pre-Design Assessment and Planning</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Pre-design site assessment and site sustainability</td>
<td>Y</td>
</tr>
<tr>
<td>4.2 Use an integrated site development process</td>
<td>N</td>
</tr>
<tr>
<td>Assume that consultants have knowledge about sustainable practices.</td>
<td></td>
</tr>
<tr>
<td><strong>5. Site Design – Water</strong></td>
<td></td>
</tr>
<tr>
<td>5.1 Reduce potable water use for landscape irrigation</td>
<td>N</td>
</tr>
<tr>
<td>Limited budget, lack of support from other departments involved in the project such as engineering.</td>
<td></td>
</tr>
<tr>
<td><strong>Site Design - Soil and Vegetation</strong></td>
<td></td>
</tr>
<tr>
<td>5.2 Control and manage known invasive plants</td>
<td>N</td>
</tr>
<tr>
<td>Don’t formally incorporate an active management plan</td>
<td></td>
</tr>
<tr>
<td>5.3 Use appropriate, non-invasive plants</td>
<td>Y</td>
</tr>
<tr>
<td>5.4 Create a soil management plan</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Site Design - Materials Selection</strong></td>
<td></td>
</tr>
<tr>
<td>5.5 Eliminate the use of wood from threatened tree species</td>
<td>N</td>
</tr>
<tr>
<td>List of threatened species not provided by anyone.</td>
<td></td>
</tr>
<tr>
<td><strong>6. Construction</strong></td>
<td></td>
</tr>
<tr>
<td>6.1 Control and retain construction pollutants</td>
<td>Y</td>
</tr>
<tr>
<td>6.2 Restore soils disturbed during construction</td>
<td>Y</td>
</tr>
<tr>
<td><strong>7. Operations and Maintenance</strong></td>
<td></td>
</tr>
<tr>
<td>7.1 Plan for sustainable site maintenance</td>
<td>N</td>
</tr>
<tr>
<td>They need to be maintained by operations so there is no formal document or policy put together.</td>
<td></td>
</tr>
<tr>
<td>7.2 Provide for storage and collection of recyclables</td>
<td>P</td>
</tr>
</tbody>
</table>
Table 4.9: Town of Markham’s barriers in adopting sustainable development strategies

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Vaughan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3. Site Selection</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Limit development on Class 1 agricultural land</td>
<td>P</td>
</tr>
<tr>
<td>3.2 Protect floodplain functions</td>
<td>P</td>
</tr>
<tr>
<td>3.3 Preserve wetlands</td>
<td>P</td>
</tr>
<tr>
<td>3.4 Preserve threatened or endangered species</td>
<td>P</td>
</tr>
<tr>
<td><strong>4. Pre-Design Assessment and Planning</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Pre-design site assessment and site sustainability</td>
<td>Y</td>
</tr>
<tr>
<td>4.2 Use an integrated site development process</td>
<td>Y</td>
</tr>
<tr>
<td><strong>5. Site Design – Water</strong></td>
<td></td>
</tr>
<tr>
<td>5.1 Reduce potable water use for landscape irrigation</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Site Design - Soil and Vegetation</strong></td>
<td></td>
</tr>
<tr>
<td>5.2 Control and manage known invasive plants</td>
<td>N</td>
</tr>
<tr>
<td>5.3 Use appropriate, non-invasive plants</td>
<td>Y</td>
</tr>
<tr>
<td>5.4 Create a soil management plan</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Site Design - Materials Selection</strong></td>
<td></td>
</tr>
<tr>
<td>5.5 Eliminate the use of wood from threatened tree species</td>
<td>Y</td>
</tr>
<tr>
<td><strong>6. Construction</strong></td>
<td></td>
</tr>
<tr>
<td>6.1 Control and retain construction pollutants</td>
<td>Y</td>
</tr>
<tr>
<td>6.2 Restore soils disturbed during construction</td>
<td>Y</td>
</tr>
<tr>
<td><strong>7. Operations and Maintenance</strong></td>
<td></td>
</tr>
<tr>
<td>7.1 Plan for sustainable site maintenance</td>
<td>Y</td>
</tr>
<tr>
<td>7.2 Provide for storage and collection of recyclables</td>
<td>Y</td>
</tr>
</tbody>
</table>
4.5 Discussion about the barriers

Analysis of the municipalities’ organization structure revealed the strong presence of the individuals with post-secondary landscape architecture education currently employed in the park development departments. Out of the forty seven full-time staff employed in all four municipalities, thirty five have university degrees in landscape architecture not including landscape technologists and students. By understanding the nature of the barriers and the individuals who oppose to the adoption of the sustainable development strategies, the landscape architecture professionals could assume a leadership role in pushing towards achieving sustainability.

With regards to the issue of budget, Thompson and Sorvig suggest a technique called Life-cycle Costing for apple to apple comparison between the conventional methods of the development and the sustainable strategies. They mention that over a project’s useful life, costs occur in five major forms referred to as:

1. *Capital costs* include materials and construction work, as well as engineering services.
2. *Maintenance* costs include all anticipated annual operating expenses such as routine inspections, seasonal start-up and shutdown etc.
3. *Fuel costs*.
4. *Replacement* costs include overhauls that are not annual.
5. *Salvage* is usually calculated as 20 percent of the original costs of materials (Thompson and Sorvig, 2008).

The suggested formula to calculate the life-cycle of a project, a system, or a piece of equipment is:  
\[ LCC = C + M + F + R - S \]
Conventionally, design and construction professionals only considered the capital cost of projects but sustainability requires broadening this perspective (Thompson and Sorvig, 2008). In order to do a correct comparison between the conventional methods and sustainable development strategies, all the above mentioned values must be inserted into the formula. If this formula is used to determine the life-cycle cost of the initiatives that were not implemented in comparison to the life-cycle cost of conventional methods, the budget issue could be resolved.

Engaging the residents in conception, creation and stewardship of new park projects would create a stronger sense of community and help connect the residents to the landscape (Boland and Cranz, 2004). In order to receive the support required from the public and create a stronger sense of urgency in adopting sustainable development strategies, there are a number of strategies recommended by the Sustainable Sites Initiative which are:

1. Promoting equitable site development: ensuring that the project provides economic or social benefits to the local community during the construction.
2. Promoting equitable site use: ensuring that the project provides economic or social benefits to the local community during site use.
3. Promoting sustainability awareness and education: interpreting on-site features and processes to promote understanding of sustainability in ways that positively influence user behavior on site and beyond (Guidelines and performance benchmarks, 2009).

Once the residents personally experience the social, economical and environmental benefits of urban parks through the above mentioned strategies, they will develop a
greater sense of urgency towards sustainable development strategies and they will provide the required support.

Summary

This chapter presented the results obtained from the four semi-structured interviews with the municipalities’ park departments’ staff. The following conclusions have been drawn from each section of this part of the research:

1. The strong presence and the important role of individuals with post-secondary landscape architecture education in developing municipalities’ parks

2. Revisions made or expected to be made to the municipalities’ park classification systems as a result of changing demands of the society

3. Sustainable strategies that received the majority of negative responses were
   - Reduce potable water use for landscape irrigation
   - Control and manage invasive plants
   - Plan for sustainable site maintenance

4. The most dominant barriers that municipalities face in adopting sustainable strategies were
   - Limited budget
   - Lack of public
   - The strategy not considered a priority at the moment
CHAPTER FIVE
CONCLUSION

5.1 Research Limitations

As in any exploratory research there are limitations based on the methods used to collect data and the data analysis itself. The following can be regarded as areas of limitation that if improved upon could serve to strengthen the procedure:

1. Study context – this research was limited to four municipalities in the GTA selected based on specific criteria. Therefore, only the results of four interviews were analyzed.

2. Interviewees – although the researcher specifically requested to interview directors and managers of municipalities’ park departments, due to scheduling difficulties individuals who hold other positions were interviewed and this might have influenced the results.

3. Limited literature on history of urban parks in Ontario – The primary source for information related to the history of urban parks in Ontario came from Jack Wright’s published literature. The author had to rely on facts and assumptions in the mentioned series due to the lack of existence of other literature related to the topic.
5.2 Areas for future research

There are a number of unanswered questions that have arisen from this study. Some of the areas that require further investigation are described below.

The results of this research depended on the answers that the interviewees provided to the researcher. One of the suggestions coming out of this thesis was the verification of these responses at the ground level. Analyzing recently built parks in the municipalities to verify the validity of the results. This would require examining the “Request for Proposals” (RFP) and the “Request for Quotations” (RFQ) to see what is asked from the consultants and the contractors. The next step would involve interviewing the mentioned professionals to fully understand the process.

An interesting course of study would be to interview other municipalities’ park authorities across the nation to grasp what is being done in other provinces and at a broader scale. Interviewing professionals at other levels of government (Regional, Provincial, Federal etc.) could also assist in understanding the big picture.

One final area of future research could involve analyzing other types of landscapes. Some suggestions would be

- Open spaces, local, provincial and national parks, conservation easements, buffer zones, utility corridors, and transportation rights-of-way.
- Sites with buildings including industrial, retail and office parks, military complexes, airports, botanical gardens, streetscapes and plazas, residential and commercial developments, and public and private campuses.

### 5.3 Conclusion

The goal of this study was to explore if, and why, the municipalities in the Greater Toronto Area (GTA) have or have not adopted sustainable development strategies in planning, design, construction and management of their new parks. The results of this study clearly show a need for discussion among professionals as to what can and should be done regarding sustainable development strategies. The results clearly show that the landscape professionals working for the municipalities could assume leadership positions in encouraging the adoption of sustainable development strategies. As discussed in this thesis there are a number of barriers that municipalities are facing in adopting sustainable strategies. By opening up a meaningful discussion about the long-term economical benefits of adopting sustainable strategies in comparison to the conventional methods of development, the budget could be provided. By promoting equitable site development, equitable site use and sustainability awareness and education the behaviours of the local community could be changed and the support from them will be provided. Emphasizing on the negative impacts that the conventional methods of development have had on the environment, could provide a greater sense of urgency and adopting sustainable development strategies will become a priority.
REFERENCES


Hello, my name is Amir Nikzad. I am an MLA student at the University of Guelph.

I am currently in the process of gathering data for my thesis, in which I am exploring the utilization of sustainable development strategies for the new parks in the municipalities of the Greater Toronto Area.

I wonder if you would be willing to sit down with me for about an hour at your convenience to discuss sustainable strategies utilized in your projects.
APPENDIX B

INTRODUCTION TO INTERVIEW & CONSENT

I am a 3rd year MLA student at the University of Guelph, writing my thesis about sustainable development strategies utilized in new park projects of the municipalities in the Greater Toronto Area.

In order to create categories of this survey, the questions are based on the most recent sustainability guidelines and evaluation systems.

Interested to know whether your city/town utilizes sustainable development strategies/initiatives and where it stands with respect to these guidelines and evaluation tools.

If at any point you feel uncomfortable with questions asked, you can withdraw your responses.

I would like to receive permission to record this interview.
APPENDIX C

INTERVIEW QUESTIONS AND NOTES

Interviewee Information: City of Brampton

Name: Steve Dewdney

Title: Manager, Open Space Design and Construction

SEMI-STRUCTURED INTERVIEW QUESTIONS

Part 1: Municipality Organizational Structure

1.1 Please provide the title and the organization of the department responsible for the development of the City/Town’s parks and open space.

Planning, design and development

1.1.1 Please provide the duties associated with the staff in your department.

1.1.2 Please provide the certification/credentials required for the positions listed.

There are 5 divisions: Policy, Development services, Community Design Parks Planning and Development, Engineering Services, Building

3 different sections in Community Design Parks Planning and development

Division: Planning section which deals with bigger picture policy planning, Urban design section which deals with mostly public buildings and urban nodes, Open Space Design and Construction and we essentially build things

1.1.3 How many certified landscape architects are in your department?

17 staff in this section, 10 LAs, 6 LTs and 1 assistant

1.2 Which department is responsible for the operation and maintenance of your parks?

Community Services, Parks and Recreation

1.2.1 Where does the above-mentioned department stand with respect to your department?

Very close interaction
At the program initiation stage whether or not they have a piece of land and they don’t know what to do with it or if they have a general program they are not sure where to put it or what land to put it on, they have some ideas about what they want to do so they’ll come to us to toss around ideas either about programming or acquiring a piece of land suitable for the programming

1.3 Does the City/Town have an active Sustainability Office or Department?

No, you could say that out department is in forefront of pushing sustainability initiatives

1.3.1 What is the role of the above-mentioned office/department?

1.3.2 Is the above-mentioned office/department directly involved with your departments’ projects? If so how?

1.4 Does the City/Town have a sustainability strategy document/policy?

No, just the policies in the Official Plan which are quite general. We are in the process of reviewing an RFP for sustainable community guidelines for Brampton, and it was sent out to a number of consultants on June 7th.

1.4.1 If so, when was it published?

The Official Plan is about 2 years old now

1.4.2 When was this document last updated?

No, the Official Plan gets updated every 7 to 8 years.

Part 2: Park Standards and Classification

2.1 Does your department have a Parks Standard Manual?

Yes

2.1.1 If so, when was this document published?

About 15 years old, two versions: one, dealing with streetscape published in mid 80s and the other dealing with parks published in mid 90s. The two departments merged in early 2000s

2.1.2 When was this document last updated?

We are currently updating it. One of my initiatives this year is to update it. The challenge we face in updating is that everything is in a state of flux. Technologies
are changing so quickly, politics are changing fast with the demographic shifts. We are about 30% Punjabi; the influence of the Punjabi population has been huge. The demands in parks have a huge effect on sustainability; they use the parks in tremendous numbers much more so than we planned for, so this obviously has wear impacts on parks.

2.1.3 What information is included in this document?

Combination of basic design principles drilling down to construction standards and an index or links to other supporting documents.

2.2 Do you have an official park classification system?

Yes

2.2.1 If so, could you explain how you classify your parks?

Speaking about things in a state of flux. We have had an unofficial hierarchy for a number of years. Neighbourhood Parks which are around 2 acres for neighbourhood recreation, the Community park which tends to be sports facility focused 15 to 20, 25 acres and the third level is the City-wide Sports Park which deals with sports destinations around 100 acres. There one more level which we used to have before but not so much anymore around 4 to 5 acres of community level park which might have one sports field, quite often it’d have a destination water-play facility, might have a skateboard park in it. Generally speaking it’d be a 4 level park hierarchy but there’s a number of sub-layers in there too which we are just now debating and can’t say that we have had a park hierarchy that we have published.

2.3 Do you have a sustainability guideline to follow for the City/Town’s parks and open space projects?

No

2.3.1 If so, is this document specifically written for your department?

RFIP sent June 7th

2.3.2 If not, would you be interested in having such a document to guide your projects?

Yes

2.4 Are there any other sustainability guidelines that you follow for the development of your projects (Sustainable Sites Initiative, LEED ND, etc)?
No. We attend workshops and seminars and try to work up to speed on what the Conservation Authorities are thinking. We are in transition period now between traditional ways of thinking and a more sustainable approach. There are a number of competing forces that exist while we are going through this transition. The most powerful one if public acceptance and desire for certain things; they still love their cars in suburbia and that’s probably the single most challenged force. We’d have to wait and see whether the number of public transportation users will grow exponentially or whether people would still drive their cars to most places. We really having seen growth in cycling that you get in Toronto. In Toronto, the streets are filled with cyclists but you would not see that here in Brampton.

2.4.1 If so, please list.

2.5 What is your definition of sustainability?

The ability of the planet to sustain human habitation in perpetuity, based on a pragmatic and balanced assessment of the priorities required to achieve this goal and the realities of human behaviour.

It’s a balancing act; the realities of behaviour of people settling in the 905. They come here and they like their cars. One of the reasons they left the city and came here is because they like the ability to move 2 or 3 families in one home with lots of cars in the driveway. The terms pragmatic and balanced are very important I think. There are of special or single interest thinking going to right now in the environmental field, quickly administering natural resources. The MNR have a very strict hands off keep out of our natural areas attitude right now. We have about at least 5 or 6 kilometres trail projects now being held up by the MNR’s policies on encroaching into natural areas around water courses.

Not sure if you are familiar with the policy protecting the prickly streams. It is strictly left to the interpretation of the MNR staff and they can basically determine how quickly and where and when trail projects move forward. Several kilometres of our trail projects are now held by very unclear policies and lack of clear direction from the province.

Part 3: Site selection

3.1 Within the City/Town boundaries, are there any locations that have been identified by the Ministry of Natural Resources as Prime Agricultural land?

The focus isn’t much on Prime Agricultural Land in Brampton but it is more about sub-watershed management and MNR and the CA are very strong on that. The fight to save Class 1 agricultural land seems to have been taken elsewhere. We don’t see challenges through our official plan based on loss of agricultural land. Back in the 80s we did, I don’t see them anymore; what we see is challenges based on overall management of the sub-watershed; are we delivering clean waters through our systems. Regenerating and the enhancing natural heritage systems along system corridors.
All of Brampton is Class 1 but no one is blinking and no restrictions on developing class 1. We are now developing over sandy loam fruit lands which is the most valuable in Brampton and Ontario.

3.1.1 If so, do you allow development to take place on these identified locations? P__Y__N__

Yes, there’s no restrictions.

3.2 Do you protect floodplain function by limiting new development within the 100-year floodplain for waterways of all sizes? P__Y__N__

The regional 100yr is probably the number one restriction to development in Brampton or anywhere else in Ontario. It is mandated by the provincial legislation.

3.3 Do you protect areas that contain wetlands, including isolated wetlands from development? P__Y__N__

Yes, there is a provincial legislation for wetlands. We don’t have to have our own policies. We do in our OPs but the province provides more than adequate legislation.

3.4 Do you preserve endangered animal/plant species identified by the province or on the International Union for Conservation of Nature Red List of Threatened Species as critically endangered or endangered? P__Y__N__

Yes, that again comes under provincial legislation. Province provides all the guidance we need on that.

The above-mentioned initiatives/strategies were not implemented because:

1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. The strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors

Other, Brampton has been entirely urbanized so within that scenario there’s obviously no room to maintain Class 1 agricultural uses to any. With the exception of market gardens but large tracts of Class 1 land don’t fit in a fully urban condition. It’s not an economically viable mixture to mix crop land and urban areas. The idea is that the entire city will be urbanized and within that mix there will be no room for agricultural tracts with the exception of pockets of market gardens.

Part 4: Pre-design assessment and planning
4.1 Do you conduct an accurate and detailed assessment of site conditions and explore options for sustainable outcomes prior to design? P__Y__N__

There are aspects of sustainability that are of course considered in a block plan level which is where most municipalities are now. You generate plans for larger tracts of land, you don’t do small developments anymore freestanding from each other. You look at large tracts of 500-2000 acres and they are generally analyzed through sub-watershed studies before they can proceed to any level of planning and the sub-watershed study will guide to what the land is capable of sustaining, where the natural feature are, where the valley systems will be protected. Most of the initial action and consideration is at the sub-watershed study level.

4.2 Do you require a multidisciplinary team of professionals experienced in sustainable practices to collaborate on the design, construction and maintenance of the site in an integrated design and implementation process? P__Y__N__

Yes, but I’m not sure how integrated we are. It’s a bit fragmented now because of competing interests and forces in business; not everybody pulling quite in the same direction. The example of trails into the valley systems, so the MNR’s single purpose is to protect endangered species, they are not particularly interested in people having a healthy lifestyle in the adjoining communities. So you have all these competing forces that are causing us to have somewhat a disjointed process and not necessary very integrated at the moment.

The above-mentioned initiatives/strategies were not implemented because:

1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. the strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors

Other competing forces.

Part 5: Site Design

Water

5.1 Do you encourage reduction of potable water use for landscape irrigation? P__Y__N__

No, we don’t have an active program to do that at the moment

5.1.1 If yes, is there a benchmark that you have predetermined? Y__N__

5.1.2 If yes, what percentage of reductions from this established baseline?
The above-mentioned initiatives/strategies were not implemented because:

1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. The strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors

I’d say probably cost and we just haven’t got around to it as a priority yet.

**Soil and Vegetation**

5.2 Do you incorporate development and implementation of an active management plan for the control and subsequent management of known invasive plants found on site? P__Y__N__

Invasive plants is a bit of a tricky topic right now. The CAs are very aggressively pushing to eliminate invasive plants. The problem is that in urban areas native plants don’t do really well on roads and highly urbanized conditions. That’s why cultivars were developed over the years because they do better in urban conditions than native plants. Also, they look better and flower nicer and they have all kinds of attributes that native plants don’t necessarily have. You have this multi billion garden center industry in Ontario promoting cultivars and aggressively advertising and selling in any way they can, offering very few native plants so the whole non-invasive native plant discussion has validity but how do you turn this ship around? How do you convince people that they can give up their lovely flowering variety of trees in their backyard for some native variety?

We don’t have an active policy banning invasive species. There’s a noxious weeds legislation at the provincial level

5.3 Do you incorporate the use of appropriate plants that are non-invasive and appropriate for site conditions, climate and design intent? P__Y__N__

Yes

5.4 Do you require the consultants to develop and implement a soil management plan prior to construction to limit disturbance, assist soil restoration efforts, and define the location and boundaries of all vegetation and soil protection zones? P__Y__N__

No, in all our new developments the top 12 inches is stripped and 6-8 inches are put back. The problem is that it is not a very precise process; we get a lot of subsoil mixed with topsoil. Original topsoil gets contaminated with subsoil so you have a very mixed soil profile that gets restored. We have standards in place to amend soil, to put it back in the condition much like it was stripped off.

The above-mentioned initiatives/strategies were not implemented because:
1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. the strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors

For 5.2 on the list of priorities but not the top 2 or 3. Limited budget for 5.4

**Materials selection**

**5.5** Do you eliminate the use of wood from threatened tree species? P__Y__N__

Self regulating. We don’t use any exotic species. I’m not sure what the endangered tree species would be.
The above-mentioned initiatives/strategies were not implemented because:

1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. the strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors

We are not given a list of threatened tree species because no one has raised our consciousness about it.

**Part 6: Construction**

**6.1** Do you require that the construction contractors prevent and minimize discharge of construction site pollutants and materials to protect receiving waters (including surface water, groundwater, and combined sewers or stormwater systems), air quality, and public safety? P__Y__N__

Water quality and public safety are definitely legislated by both the province and the municipalities. Every development has to be protected with siltation barriers for protection of water resource areas. Air pollution? Within reason there are no controls and we have no policies

**6.2** Do you require that the construction contractors restore soils disturbed during construction in all areas that will be re-vegetated (all areas that will not be built upon) to rebuild soils’ ability to support healthy plants, biological communities, water storage and infiltration? P__Y__N__
Yes. We have a policy to try to do it but we don’t have the capacity

The above-mentioned initiatives/strategies were not implemented because:

1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. The strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors

Limited budget and resources.

Part 7: Operations and maintenance

7.1 Do you require that the consultants develop a site maintenance plan that outlines the long-term strategies and identifies short-term actions to achieve sustainable maintenance goals? P__Y__N__

No. There is a maintenance component during the warranty period that consultants are supposed to manage with the contractor. The warranty period is 2 years for all landscape elements.

7.1.1 If yes, for what period of time?

7.2 Do you provide space for collection of recyclable materials (including paper, glass, plastics, and metals) in outdoor areas to facilitate recycling and reduce waste generation and waste disposal in landfills? P__Y__N__

We are starting to. Historically we haven’t had a multi stream recycling in parks. Not written anywhere as a policy; it is something we are starting to do.

The above-mentioned initiatives/strategies were not implemented because:

1. Limited budget
2. Lack of support from government (local/higher)
3. Lack of public support
4. The strategy/initiative not sustainable
5. Not considered a priority at the moment
6. Lack of interest and/or knowledge from the consultants and the contractors

For 7.1 lack of perceived need for one. Lack of sensitivity to the whole question of sustainability. We are driven by what people want in their parks particularly the manicured; they don’t understand natural areas. Aesthetics and fear of the wild and what comes out of the wilderness.
For 7.2 Not a priority and the programs were not in place and the resources and funding weren’t in place.

**Part 8: General questions**

8.1 Based on these questions, do you feel your projects will be considered sustainable if they utilize the above-mentioned strategies/initiatives?

Partly. We are doing a lot of pilot sustainability right now where we are kind of feeling our way, engaging the public and the industries receptiveness to helping. The public has to support what we are doing and the development industry has to help fund what we are doing and we are feeling our way and moving people with us slowly.

This is a plan of a subdivision on a prime agricultural land (sandy loam), we have a prime class 1 woodlot of mature maple beach here, and the land provides the water and sustains the woodlot and there happens to be a stream through the woodlot that takes the peak flows off this field. The woodlot is quite damp because it gets a lot of water from this field. The consultants and the developers in their wisdom decided to cut the flow off this woodlot and pipe it around to SWM system. Even the consulting arbourists said that the woodlot would be fine without this water and I am going are you guys kidding me? You can’t just the hydrology of an area and screw it up like that. So now they have come back with a very good solution which would take the water from the roofs of homes in this area and directly recharge the woodlot. We almost missed this one. We have a whole consulting team who thought what they were doing here was fine but we had to say no, it’s not fine. We’ve been hearing from ecologists for 30 years that you have to maintain the aquifer for the woodlots to sustain them. There’s a small example of sustainability that we are working on right now.

8.2 Overall, would you consider the Sustainable Sites Initiative as an effective guideline and evaluation tool for your projects?

Could be. The guidelines are good to a point though. They need a lot of technical back up to develop the techniques for implementing the guidelines. Also, guidelines get outdated quickly and have to be a dynamic document and kept current because technology is changing, public attitudes are changing constantly. So to think to put a guideline in place and have it static for 10 years just doesn’t work anymore. What we do on the landscape side of Brampton even though we eventually get our consolidated guidelines done, things are constantly changing for us, we send our bulletins probably 2 to 3 times to our developers and these bulletins became our dynamic guidelines. Same would apply to guidelines; you’d want them to keep current and have system to send bulletin updates about changes in philosophy, technology.
Interviewee Information: Town of Markham

Name: Linda Irvine, Morteza Behrouz

Title: Manager, Parks and Open Space Development & Parks Development Coordinator

SEMI-STRUCTURED INTERVIEW QUESTIONS

Part 1: Municipality Organizational Structure

1.5 Please provide the title and the organization of the department responsible for the development of the City/Town’s parks and open space.

Development Services Commission, Planning and Urban Design Department, Parks and Open space development section which I head as manager

1.5.1 Please provide the duties associated with the staff in your department.

1.5.2 Please provide the certification/credentials required for the positions listed.

I am the manager, Manager Parks and Open space Development and I currently have 3 full-time staff; they are park development coordinators; they are project managers overseeing the design and construction of particular park projects as I’ve assigned to them

1.5.3 How many certified landscape architects are in your department?

4, they are all full members of the OALA

1.6 Which department is responsible for the operation and maintenance of your parks?

Operations Department and that department exists in the Community Services Commission. The Operations Department has 2 primary divisions; one division relates to parks and the other division relates to roads

1.6.1 Where does the above-mentioned department stand with respect to your department?

We are very close with that department. We work collaboratively not only on the establishment of particular park standards as they may affect operations but also all park projects are reviewed at least twice by the Operations Department; the first time they are provided preliminary conceptual plans for their information and comment as they desire and then when we get to 90-95% completion of the working drawings those are again circulated to the Operations Department for
their review and comment. Their comments come back, we review those comments and we make changes as we are able to.

1.7 Does the City/Town have an active Sustainability Office or Department?

Yes

1.7.1 What is the role of the above-mentioned office/department?

The Sustainability Office exists in CAO’s office. The principal role of this particular department has been to create Markham’s Greenprint sustainability plan. They have been working on that in a collaborative way with all departments within the municipality and as I understand that sustainability plan has been received and approved by council.

1.7.2 Is the above-mentioned office/department directly involved with your departments’ projects? If so how?

As I understand it correctly it lays out Markham sustainability priorities in the near and the long-term. Every single department has a role in fulfilling those priorities. As I understand it there’s an action plan being developed which will require all departments in the municipality to identify projects in action which their group can do to support the sustainability priorities

1.8 Does the City/Town have a sustainability strategy document/policy?

Yes

1.8.1 If so, when was it published?

Recently, within the past few months

1.8.2 When was this document last updated?

Part 2: Park Standards and Classification

2.6 Does your department have a Parks Standard Manual?

Yes

2.6.1 If so, when was this document published?

It’s an ongoing document, a living document. Over the last 15 years it exists and it evolves and adapts and changes and we add to it. It’s not published in a sense that it’s for public consumption. It’s published only for internal use.
2.6.2 When was this document last updated?

We update it regularly as we encounter new challenges. Now we will be looking at Markham sustainability priorities and determining the kinds of things that we could do in our parks in order to support that mission. We are going to be drilling that and developing very clear goals, objectives and standards as it relates to park development.

2.6.3 What information is included in this document?

Details, specs, performance criteria, photographs, objectives, goals. Anything that supports our mission to design and develop parks with leadership. In the old days it used to be specs and my view is that’s a dinosaur; you need to be able to have park development standards that reach out and touch a number of important areas and you choose the appropriate format or expression that’s necessary. It’s all about what’s your end goal and what you need to achieve that.

2.7 Do you have an official park classification system?

Yes

2.7.1 If so, could you explain how you classify your parks?

In the Official Plan there is a park classification system that is currently under review because the town is reviewing and revising its official plan. So it is expected to change over the next few months and a new classification system will be adopted as part of the new official plan. I believe the old classification system was town-wide park, community park, neighbourhood park and parkette. In my opinion those were gross categories to look to classify our parks. What we are finding as we urbanise, as we grow and our community become more complex and we design them based on a wider set of design principles that higher is too course, it’s too gross. Just like hitting a fly with a hammer. I anticipate our future classification system to be much finer grained and too be much more specific and related to actual types of parks that we are delivering. In the old days it was function and size that dictated the classification system and in the new days it has be more than function and size; it might relate to program, it might relate to quality, it might relate to characteristics, it might even relate to certain sustainability criteria.

2.8 Do you have a sustainability guideline to follow for the City/Town’s parks and open space projects?

Markham’s Greenprint is the only sustainability guideline we follow at the moment. Now that this document is approved, all the departments need to look within their own department, the services they provide, the programs they provide, the activities that they do and drill down to that next layer. I anticipate over the next number of
years there will be a specific sustainability guideline developed by our department for park and open space projects

2.8.1 If so, is this document specifically written for your department?

No

2.8.2 If not, would you be interested in having such a document to guide your projects?

Not just interested, it is mandated. We are expected to deliver it on the ground.

2.9 Are there any other sustainability guidelines that you follow for the development of your projects (Sustainable Sites Initiative, LEED ND, etc)?

We follow best practices, so any document that we find, that we research, that we obtain, that we have, that we get from our consultants, that we get off of the internet, any documents that are relevant published anywhere in the world we would use as our guide.

With respect to SITES we currently do not use it, because it’s actually not completed. In 2013 when the final version will be released we’ll look at and evaluate it and see if there’s a match with respect to our own sustainability priorities or not, whether it’s comprehensive enough or not.

2.9.1 If so, please list.

2.10 What is your definition of sustainability?

My definition of sustainability is the municipalities’ definition of sustainability and that means we want to become a sustainable community and it’s about considering our community’s environmental, economic, social and cultural vitality in every decision we make and these are the pillars of sustainability. As I understand it, Markham is going further than many sustainable sites initiatives, because those sustainable sites initiatives look primarily at environmental issues and Markham is looking at many more pillars. For example, we address particular identity and cultural issues in our parks; I consider that a sustainable initiative. I consider access and mobility a sustainable initiative.

I also wanted to speak to LEED ND which you have identified as a criteria, we tend to use this more on a community planning basis; when we design our neighbourhoods, we would look at these criteria for neighbourhood development. Of course parks are a component of that as our streets and built form. We don’t use LEED ND specifically to design individual parks, we use it more as a guideline when we are designing our communities. If you look at Cornell, I’m sure that you’d see many aspects of LEED ND criteria in there; walkability, transit, built-form, pedestrian friendly, stormwater management, water effectiveness etc.

Part 3: Site selection
3.5 Within the City/Town boundaries, are there any locations that have been identified as Class 1 Agricultural land?

Yes

3.5.1 If so, do you allow development to take place on these identified locations?  
P__Y__N__

No, the majority of it is currently outside of our growth boundary. We don’t allow development outside of the Town’s growth boundary defined by our Official Plan and our Growth Management Strategy. At the moment if there are any remaining agricultural land within our growth boundary, those lands can’t be built on and there’s a process for zoning and development.

3.6 Do you protect floodplain function by limiting new development within the 100-year floodplain for waterways of all sizes?  
P__Y__N__

Yes we do. It’s just not our policy; all hazard lands and valley lands are regulated by the TRCA. They have criteria that defines valleys and in addition to the limit of those valleys or floodplains we protect an additional 10m buffer. To a large degree, those policies are established by the Provincial Government and the TRCA and we have adopted those policies in our official plan and our development approval process.

3.7 Do you protect areas that contain wetlands, including isolated wetlands from development?  
P__Y__N__

Yes. If they are determined to be significant based on provincial and town policy we will protect them. But not all wetlands are protected, not all wetlands are considered significant. They might just be a dip in the land and happened to be wet. The municipality has a Natural Feature Study and it identifies all of our woodlots, creeks, significant wetlands which has been adopted as part of the Official Plan.

3.8 Do you preserve endangered animal/plant species identified by the province or on the International Union for Conservation of Nature Red List of Threatened Species as critically endangered or endangered?  
P__Y__N__

Yes. It’s required by law for us to do that. Every time we have a development that is within what I call screening zones as identified by MNR we are obliged to let them know and to get clearance and if we don’t we could be charged or subject to legal action by the province.

The above-mentioned initiatives/strategies were not implemented because:

7. Limited budget
8. Lack of support from government (local/higher)
9. Lack of public support
10. the strategy/initiative not sustainable
11. Not considered a priority at the moment
12. Lack of interest and/or knowledge from the consultants and the contractors

**Part 4: Pre-design assessment and planning**

4.3 Do you conduct an accurate and detailed assessment of site conditions and explore options for sustainable outcomes prior to design? P__Y__N__

Yes. It’s part of our practice. I hire LAs and I require them to do an accurate and detailed assessment of site conditions.

4.4 Do you require a multidisciplinary team of professionals experienced in sustainable practices to collaborate on the design, construction and maintenance of the site in an integrated design and implementation process? P__Y__N__

Yes. All of the team of professionals in all of our projects are multidisciplinary. LAs tend to be the prime consultants; there are numerous sub-consultants on all of our projects depending upon the complexity of the project and the need. If there are significant environmental aspects to a piece of land then we may have sub-consultants related to watershed management, arboriculture, environmental sciences etc. If it’s a more urban related project then we may have other sub-consultants but all teams are multidisciplinary.

The above-mentioned initiatives/strategies were not implemented because:

7. Limited budget
8. Lack of support from government (local/higher)
9. Lack of public support
10. the strategy/initiative not sustainable
11. Not considered a priority at the moment
12. Lack of interest and/or knowledge from the consultants and the contractors

**Part 5: Site Design**

**Water**

5.6 Do you encourage reduction of potable water use for landscape irrigation? P__Y__N__

At this point of time the town only irrigates their sport fields because those need to be in prime playing condition and because of the soil mix which is typically 50% soil and 50% sand, these fields drain away very quickly so it’s important to have irrigation on them in order to keep them in prime condition. For the most part that’s the only time we irrigate; we are starting now to build parks above parking garages and that’s in our intensification areas and those landscapes have to be irrigated
otherwise everything will just die. As you know, it is basically a park over concrete so it needs irrigation in order to allow the plants to survive and thrive. It is wasteful to irrigate all parklands; better to irrigate aspects of parkland.

5.6.1 If yes, is there a benchmark that you have predetermined? Y__N__

5.6.2 If yes, what percentage of reductions from this established baseline?

The above-mentioned initiatives/strategies were not implemented because:

7. Limited budget
8. Lack of support from government (local/higher)
9. Lack of public support
10. The strategy/initiative not sustainable
11. Not considered a priority at the moment
12. Lack of interest and/or knowledge from the consultants and the contractors

Soil and Vegetation

5.7 Do you incorporate development and implementation of an active management plan for the control and subsequent management of known invasive plants found on site? P__Y__N__

That is not my job. That is operations’ job to control invasive plants after the parks have been built. If there are invasive plants that are on a site, let’s say we are in a river valley and we are putting in a trail system and it’s found that there might be certain invasive plants, we will develop a management plan as part of that exercise to see if we can control those prior to handing the site over to operations if possible. At the end of the day it is the operations department to control invasive plants and they have policies relating to certain species.

5.8 Do you incorporate the use of appropriate plants that are non-invasive and appropriate for site conditions, climate and design intent? P__Y__N__

Always

5.9 Do you require the consultants to develop and implement a soil management plan prior to construction to limit disturbance, assist soil restoration efforts, and define the location and boundaries of all vegetation and soil protection zones? P__Y__N__

Yes
The above-mentioned initiatives/strategies were not implemented because:

7. Limited budget
8. Lack of support from government (local/higher)
9. Lack of public support
10. the strategy/initiative not sustainable
11. Not considered a priority at the moment
12. Lack of interest and/or knowledge from the consultants and the contractors

Materials selection

5.10 Do you eliminate the use of wood from threatened tree species? P____N____

Yes. We have a list provided by the MNR but there are threatened tree species all over the world, so every time we make a selection of wood, we are obviously going to understand where it is coming from in the world and if they are indicated to be endangered we don’t use them.

The above-mentioned initiatives/strategies were not implemented because:

7. Limited budget
8. Lack of support from government (local/higher)
9. Lack of public support
10. the strategy/initiative not sustainable
11. Not considered a priority at the moment
12. Lack of interest and/or knowledge from the consultants and the contractors

Part 6: Construction

6.3 Do you require that the construction contractors prevent and minimize discharge of construction site pollutants and materials to protect receiving waters (including surface water, groundwater, and combined sewers or stormwater systems), air quality, and public safety? P____N____

Yes

6.4 Do you require that the construction contractors restore soils disturbed during construction in all areas that will be re-vegetated (all areas that will not be built upon) to rebuild soils’ ability to support healthy plants, biological communities, water storage and infiltration? P____N____

Yes

The above-mentioned initiatives/strategies were not implemented because:

7. Limited budget
8. Lack of support from government (local/higher)
9. Lack of public support
10. the strategy/initiative not sustainable  
11. Not considered a priority at the moment  
12. Lack of interest and/or knowledge from the consultants and the contractors

Part 7: Operations and maintenance

7.3 Do you require that the consultants develop a site maintenance plan that outlines the long-term strategies and identifies short-term actions to achieve sustainable maintenance goals? P__Y__N__

Yes. Every LA prepares what I call a site maintenance plan or management plan that is given to operations. The complexity of that plan depends on the nature of management practices. So if we have a woodlot that has been preserved as part of a park or we have no-mow areas or wildflower areas or other specialty areas that go beyond mow here, don’t mow here, that information is provided to operations. It is their responsibility to manage the site, so that becomes just one resource that they can use to assist them in the long term management of their property.

7.3.1 If yes, for what period of time?

7.4 Do you provide space for collection of recyclable materials (including paper, glass, plastics, and metals) in outdoor areas to facilitate recycling and reduce waste generation and waste disposal in landfills? P__Y__N__

Yes. All parks have garbage containers, recycling containers. That’s a municipal policy in outdoor areas. It is a mission of the municipality to be zero waste.

The above-mentioned initiatives/strategies were not implemented because:

7. Limited budget  
8. Lack of support from government (local/higher)  
9. Lack of public support  
10. the strategy/initiative not sustainable  
11. Not considered a priority at the moment  
12. Lack of interest and/or knowledge from the consultants and the contractors

Part 8: General questions

8.1 Based on these questions, do you feel your projects will be considered sustainable if they utilize the above-mentioned strategies/initiatives?

To some extent yes. I don’t think the mentioned strategies and initiatives are comprehensive enough but it’s a good start towards sustainability. We need to go further, we need to be more innovative. For example we are working very closely with the TRCA, they have a full range of criteria related to water balance, infiltration, soils management. Their policies are evolving and adapting as a municipality as we are aware of those we are working with our agency partners to
try to do our best to achieve it. It is in fact in my opinion at the Town of Markham an evolving activity, it is something you just kind of do, like you breathe it in, you adapt, you evolve, you work with private partners, public partners, you work with other agencies as their sustainability criteria adapt and change, you continue to think how does that relate to a particular job or service that I am providing.

**8.2** Overall, would you consider the Sustainable Sites Initiative as an effective guideline and evaluation tool for your projects?

I wouldn’t know because it hasn’t been finalized. We haven’t officially adopted it. My reading of it, I think it is a step in the right direction, an excellent effort where people are trying to quantify and qualify particular sustainable initiatives, set points against it. It is really a benchmark but at this particular time I couldn’t say for sure whether it is effective guideline or not. You have to look at SITES and LEED as a way to change certain practices but those who are inclined to change their practices are moving well beyond these standards.
Interviewee Information: City of Mississauga

Name: Ruth Marland, Jill Goldie

Title: Team Leader, Long Term Planning & Project Manager

SEMI-STRUCTURED INTERVIEW QUESTIONS

Part 1: Municipality Organizational Structure

1.9 Please provide the title and the organization of the department responsible for the development of the City/Town’s parks and open space.

Community Services Department, Planning, development and business services division and in that division there are 2 sections that address park planning and park development: Park Planning and Park Development.

1.9.1 Please provide the duties associated with the staff in your department.

1.9.2 Please provide the certification/credentials required for the positions listed.

Ruth: 15 staff in Park planning section, all planners
Jill: not sure how many in park development section.
Ruth: Park planning duties: Long term master plans, pre planning on a site specific basis to whether or not there’s any regulatory changes that need to be undertaken, assessment with respect to our recreational masterplan and to determine from a program perspective what needs to be within the park. We basically take a landuse planning assessment of the site and then guide park development accordingly so if there’s any sensitive areas or any issues that have come up through our public engagement we address those before we handover the project to park development.
There are only planners in our department but when we do our public engagement we do use the skillsets of a landscape architect, either an intern or an architect to put together a block concept diagram that we would take out with us to the community to test and hear back.

Jill: Our department consists mainly of landscape architects. We do not have any planners and we also have engineering technicians. We are split up into project managers and project coordinators. Project coordinators might have an engineering technician background or landscape architecture background. We also have 2 senior project managers who oversee the project managers and the project coordinators. Not sure how many certified landscape architects we have but I will provide you a chart that will show whether they are certified landscape architects or engineering technologists, depending on their background.
1.9.3  How many certified landscape architects are in your department?

Park planning: all planners
Park development: Not sure

1.10  Which department is responsible for the operation and maintenance of your parks?

Recreation and parks division in the Community Services Department
Jill: I think that’s where you’ll find that the different municipalities have different scenarios.

1.10.1  Where does the above-mentioned department stand with respect to your department?

It’s a separate division.

Ruth: From a park planning perspective, we engage our frontline park staff to talk about issues with respect to pathway widths and types of planting, types of activities and activities that have problematic, so they are a fantastic resource for us and we are always working with the parks managers from a facility understanding planning perspective. Whenever we are doing our public engagement we always have park staff with us, because they represent the frontline staff who are on the ground everyday, know the community, know the comments, know the real usage of facilities.

Jill: We certainly talk to them when we are perceiving our design drawings, we do invite them to our meetings, whether we are in a design stage or whether we are moving into preparing the construction drawings. Because those phases are moving along at a pretty swift pace, it is very difficult though to get their time, once a week, once every two weeks depending on those meetings that are going on with our consultants. So often it ends up being a key milestone as oppose to being on a regular basis.

1.11  Does the City/Town have an active Sustainability Office or Department?

Environmental management Section under Recreation and Parks division.
Ruth: That’s with a view of corporate wide environmental management.

1.11.1  What is the role of the above-mentioned office/department?

Ruth: They are leading the creation of the Living Green Masterplan right now. That process started last year and will be brought to conclusion in the fall. Again, that’s high level environmental management strategies across the corporations and they focus on things that the city can do, things that the city can encourage
and things that others can do. We have a Green Development Strategy both for our city projects and also private projects. So the Living Green Masterplan is looking at ways to reinforce those strategies.

Jill: There’s the Strategic Plan as well which also has an emphasis on the environment.

1.11.2 Is the above-mentioned office/department directly involved with your departments’ projects? If so how?
Jill: No, not project based.

Ruth: But one of the recommendations that is still bubbling and very much draft is that they are looking at an internal staff coordination team to look at projects. We have an environmental advisory committee which has a committee of councils and there is an environmental network team of staff that can report to the Environmental Advisory Committee that was put together for a great variety of corporate wide environmental initiatives and I think Living Green Masterplan is looking at whether or not they re-jig that group or create a new group.

Jill: In Park Development when we are carrying a project to design, we will actually go to their group and report to the Environmental Network team with our design, and that’s just going there for information sharing and letting them know what we are working on. Often they’ll run through a checklist of green initiatives that they think are important or we might want to consider for our project so we try to take that input and implement it.

1.12 Does the City/Town have a sustainability strategy document/policy?

Ruth: our Strategic Plan which was approved in 2009 is our sustainability plan and shows the strategic pillars of change and one of them is green so flowing from that has come this initiative of the Living Green Masterplan. The Strategic Plan is available online along with the accompanying Action Plan and you will find status reports, so it documents our progress in 2009. It documents some of the green initiatives and some of them have been around Park Planning as we have recently opened a couple of green parks

1.12.1 If so, when was it published?
Ruth: Published in 2009.

1.12.2 When was this document last updated?
Ruth: It is a 40yr plan but on an annual basis reports are submitted to council which you can find online.
Part 2: Park Standards and Classification

2.11 Does your department have a Parks Standard Manual?

Ruth: we have a Subdivision Manual but in that it does speak to parks.

Jill: That manual tends to be what the developers are using when they are building parks. That’s not necessary the document we use in Park Development. I do know we are striving to create Parks Development Standard Manual. We have pieces of it but we don’t have it all put together.

2.11.1 If so, when was this document published?

Ruth: More than 10 years ago

2.11.2 When was this document last updated?

Ruth: updated every couple of years.

Jill: Individual sheets will get updated so if you look the manual you might be able to detect the oldest detail.

2.11.3 What information is included in this document?

Ruth: Specifications

Jill: Some information on lighting in general.

Ruth: We have done masterplans for our parks overall and we have recommendations that talk about green development in our parks and it gets into sustainable park maintenance and operation practices so from a masterplan perspective that’s the guidance that directs the planning and park development. This a masterplan that we did for our waterfront parks, the Waterfront Parks Strategies which is very green focused and promoted green park initiatives, bioswales and provided a tremendous amount of direction for our waterfront parks and Lakeside park which just opened last year. It used this document to guide it through the process, this was the masterplan for it so it did an assessment as to opportunities and constrains, came out with high level block concepts. In here there’s all sorts of text about types of gardens, pathways, materials, parking and how those can be resolved from a green development, low impact perspective and that provided guidance. The Waterfront Parks Strategy was approved 2008 and another document called Future Directions which is a masterplan for parks and natural areas was published in 2009. Unfortunately they are in 2 different sections on our website.
Jill: Essentially those documents are mapping out what our future parks should receive. We should be laying out programs that we are going to build, so it gives us guidance in Park Development as to what an individual park should be designing and building.

2.12 Do you have an official park classification system?

Ruth: In here we have identified that we have Destinations parks which are essentially city-wide facility and destinations and then we have the Community Parks and that’s reinforced through the city’s Official Plan.

2.12.1 If so, could you explain how you classify your parks?

Ruth: Based on function because we have some city-wide parks that are not the biggest so it is about function.

2.13 Do you have a sustainability guideline to follow for the City/Town’s parks and open space projects?

Waterfront Masterplan and the Future Directions

Ruth: we are working on the third one now called the Credit River Park Strategy to govern all of our 40 parks on the Credit River Watershed, which is also available online. Still in the process and there’s a public meeting on Tuesday.

2.13.1 If so, is this document specifically written for your department?

Yes, it also directs Recreation and Parks staff with respect to maintenance and operation of parks. It directs us with respect to planning and development. It provides 5 specific concept plans for 5 waterfront parks but it also provided guidance to other waterfront parks dealing with connectivity, signage and green development strategies.

2.13.2 If not, would you be interested in having such a document to guide your projects?

2.14 Are there any other sustainability guidelines that you follow for the development of your projects (Sustainable Sites Initiative, LEED ND, etc)?

Ruth: Yes

2.14.1 If so, please list.

Ruth: Credit Valley Conservation Authority has a Low Impact Development document. It is on the CVC website and it is a very comprehensive document.
Jill: They collaborate with us on different stages of our projects, especially if they own one of our properties or if they have some regulatory control. It speaks to things like using bioswales and permeable paving in parking lots and other hard surface areas.

2.15 What is your definition of sustainability?

Ruth: For me the true form of sustainability is again going back to the 4 pillars of sustainability, so looking at social, cultural, economic and environment. Environment is a piece of that and that’s why our Strategic Plan is our sustainability plan and the Living Green Masterplan is also about that one environmental pillar.

Jill: Planning, designing and building in a responsible manner

Ruth: And to move away from the academic interpretation of sustainability but from a functional day to day perspective it is about designing something that is going to live on and that the community will take ownership of and further sustaining the functionality and the stewardship of these spaces that we create in partnership with the community.

Jill: From a planning perspective the city also has a Natural Areas Survey, very important information which feeds into so many of our park properties because we are often working with a site that has already many natural features and of course we want to keep those features and work with them and enhance those areas so we might actually add to those natural features. So it’s really letting the site tell us what to do and then when it comes to fitting in facilities the Future Directions document might tell us you’ve got to fit in a softball diamond or a washroom, it’s locating those and letting the site tell us where these should be properly placed. Not every site is open for you to come in and do whatever you like, we are really working with existing natural features.

Part 3: Site selection

3.9 Within the City/Town boundaries, are there any locations that have been identified by the Ministry of Natural Resources as Prime Agricultural land?

Ruth: If I go to our planning framework, we don’t have any land that’s designated for agriculture. There are some lands that are zoned agriculture but that’s because they are remnants of the older zoning by-law. But effectively we are built out and in our Credit River Watershed we do have some lands that have been and continue to be used as agriculture but whether or not they are Class 1, I can not confirm. We acquired 160 acres last year that’s a current farm that’s actually being reviewed by this Credit River Park Strategy and one of the concepts that the consultant is presenting is to maintain the agricultural operation, the urban agriculture focus.
3.9.1 If so, do you allow development to take place on these identified locations? P__Y__N__

3.10 Do you protect floodplain function by limiting new development within the 100-year floodplain for waterways of all sizes? P__Y__N__

Jill: we do and that’s along with our Credit Valley Conservation Authority.

Ruth: in the city’s Official Plan we have Greenbelt designation which is basically aligned with the our Conservation Authorities’ regulated area and that does limit development

3.11 Do you protect areas that contain wetlands, including isolated wetlands from development? P__Y__N__

Ruth: Absolutely, and we have a number of provincially significant wetlands but of course there is a lot of regulation and policy framework around those to protect them. There are policies at provincial and regional levels. The Region of Peel Official Plan has a green system designation and in our city’s official plan we have the Greenbelt because our wetlands are identified through that and then our zoning by-law further enforces the Official Plan designation.

Jill: we do have some isolated wetlands, which are operating as stormwater detention ponds. But they are not provincially significant which is why we are able to do that.

3.12 Do you preserve endangered animal/plant species identified by the province or on the International Union for Conservation of Nature Red List of Threatened Species as critically endangered or endangered? P__Y__N__

Ruth: as Jill said we let the site tell us where sensitive areas are and it is certainly a factor and any development whether we are doing it or a private sector proponent is doing it, we often are required to submit an environmental impact statement that would identify any of these rare or endangered species and tell us how to deal with them. They may end up remaining on the site in an area that we can’t or that the proponent can’t touch or I know for certain infrastructure projects the Region of Peel has been putting major water mains, course mains through and we actually had to or have them remove some endangered plants species and then relocate them so it’s absolutely a factor in what we do.

Jill: so often if we have a site that certainly has a lot of plant species or animal species we study it.

Ruth: we have 2 staff in our Forestry section which is in our Recreation and Parks Division. We have a forest ecologist and we also have a Stewardship Coordinator, so they would be very knowledgeable on where our plants species are. We have some
rare prairie grass that in fact our Stewardship Coordinator, historically they have been expanding those areas, so they really become an important part of our landscape. The above-mentioned initiatives/strategies were not implemented because:

13. Limited budget  
14. Lack of support from government (local/higher)  
15. Lack of public support  
16. the strategy/initiative not sustainable  
17. Not considered a priority at the moment  
18. Lack of interest and/or knowledge from the consultants and the contractors

**Part 4: Pre-design assessment and planning**

4.5 Do you conduct an accurate and detailed assessment of site conditions and explore options for sustainable outcomes prior to design? P__Y__N__

Jill: Yes

Ruth: There’s corporate direction flowing from our Strategic Plan and Official Plan.

Jill: I think this is getting at the physical conditions of the site though, isn’t it? So understanding everything about the site, its drainage, vegetation, if it’s there to study we certainly do our best to reveal it all.

4.6 Do you require a multidisciplinary team of professionals experienced in sustainable practices to collaborate on the design, construction and maintenance of the site in an integrated design and implementation process? P__Y__N__

Jill: depending on the programs of the park when we are hiring for these multidisciplinary teams we look for those that have experience in sustainable practices and this is certainly a big positive for us

The above-mentioned initiatives/strategies were not implemented because:

13. Limited budget  
14. Lack of support from government (local/higher)  
15. Lack of public support  
16. the strategy/initiative not sustainable  
17. Not considered a priority at the moment  
18. Lack of interest and/or knowledge from the consultants and the contractors

**Part 5: Site Design**

Water
5.11 Do you encourage reduction of potable water use for landscape irrigation? P__Y__N__

Jill: it’s pretty much done on a site by site specific need. I can’t speak for it generically across the city, because every site is different. Some sites are irrigated and some aren’t. Lakeside is innovative for using green water recycling for irrigation, it has the bioswale feature too.

Ruth: a lot of this is a function of the evolution of the knowledge base and as we’ve known more, more practices have been implemented, so our recent parks, they are all looking at sustainability.

Jill: we also have health standards to consider as well. For instance we were not able to harvest the rainwater from the roof of a recent building that we just constructed because of health standards. The whole issue about harvesting water that would go into a cistern and that cistern would let it go out into irrigation and if that water had been touched by birds and other factors do we really want that? So it is wonderful to think about cutting back on the amount of water use for irrigation, however there are other factors that sound really good, it is just that there is a tweaking that needs to go on.

5.11.1 If yes, is there a benchmark that you have predetermined? Y__N__

5.11.2 If yes, what percentage of reductions from this established baseline?

The above-mentioned initiatives/strategies were not implemented because:

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18. Lack of interest and/or knowledge from the consultants and the contractors

Soil and Vegetation

5.12 Do you incorporate development and implementation of an active management plan for the control and subsequent management of known invasive plants found on site? P__Y__N__

Jill: We would certainly like to run our plants list by forestry, because they are so well knowledgeable of what is considered invasive. We simply have so many park sites with wooded areas that already have huge amounts of invasive material, it’s a huge job. You would read it in the Natural Areas Survey, you read it in any
environmental management plan that we have produced to get rid of the invasive material that’s out there, it’s just that it is a big job, a huge job.

Ruth: we sprayed for Gypsy Moss in 2007 I think, so from a municipality perspective we are very active in controlling our invasive species but as Jill said it’s a mammoth job and we do work with our partners in Conservation Authority.

Jill: besides forestry often if we are putting in plants near a natural area, it is good to consult with Conservation Authorities because they know which species might not be appropriate because of the proximity

5.13 Do you incorporate the use of appropriate plants that are non-invasive and appropriate for site conditions, climate and design intent? P__Y__N__

Jill: besides forestry often if we are putting in plants near a natural area, it is good to consult with Conservation Authorities because they know which species might not be appropriate because of the proximity. This is what I do but I can’t speak for every project manager. It is a good practice.

5.14 Do you require the consultants to develop and implement a soil management plan prior to construction to limit disturbance, assist soil restoration efforts, and define the location and boundaries of all vegetation and soil protection zones? P__Y__N__

Ruth: erosion and sediment control is definitely part of what we do.

Jill: we would know from our detailed analysis whether or not we need to amend our soil so that would move more into our specifications during the preparation of contract documents.

We certainly define the location and boundaries of all vegetation and we are putting up the necessary hoarding before construction begins to define those limits whether it is an individual tree or the whole site. There would also be need for a siltation fence and there are officers that would check and make sure it has been installed correctly and maintained.

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Ruth: Jill given how you structured, given that you have project coordinators and project managers, isn’t there a hierarchy in place to make sure that everyone follows similar practice?
Jill: I think on paper, but in fact it’s just not catching everything. Not that there isn’t a desire, I’m just not convinced that this is happening all the time. Maybe some of the Engineering Technicians might not be as comfortable with working with invasive material, they might not know those, so it becomes a sort of knowledge based whether or not they are aware of it.

**Materials selection**

5.15 Do you eliminate the use of wood from threatened tree species? P__Y__N__

Jill: Our Forestry Section is very good at letting us know. We get kind of a heads up from forestry, on trees we should consider not using. We have information in the Natural Areas Survey about trees that are threatened. I don’t think there’s anything that is coming out that is telling us that.

The above-mentioned initiatives/strategies were not implemented because:

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14. Lack of support from government (local/higher)  
15. Lack of public support  
16. the strategy/initiative not sustainable  
17. Not considered a priority at the moment  
18. Lack of interest and/or knowledge from the consultants and the contractors

Ruth: maybe we are not in a position to say that we don’t do this because are we are not reliant on consultants’ expertise?

Jill: well we are but they could have a lack of knowledge that might not be transferring over. I think it’s more likely number 6.

Ruth: but do we know that we are not doing this for sure?

Jill: I don’t think we do. I think it’s something that needs to come from the high level. It could be a global thing, it could also be a nationwide thing. The wood that might be coming from somewhere that’s hurting a rainforest we should not be using it. Can’t just blame consultants.

**Part 6: Construction**

6.5 Do you require that the construction contractors prevent and minimize discharge of construction site pollutants and materials to protect receiving waters (including surface water, groundwater, and combined sewers or stormwater systems), air quality, and public safety? P__Y__N__

Jill: we do, we write in our specifications that they have to. The minute we have a nearby creek or bioswale or any of these features we are certainly stating it in our specifications and it’s requirement for them.
Ruth: it is governed by a Provincial Regulatory Framework through the Environmental Protection Act so it all flows from our Provincial Legislation

6.6 Do you require that the construction contractors restore soils disturbed during construction in all areas that will be re-vegetated (all areas that will not be built upon) to rebuild soils’ ability to support healthy plants, biological communities, water storage and infiltration? P__Y___N__

Jill: we do expect them to restore or re-instate. I can’t say that it has been tested to prove whether it can do all those things, I can’t say we are testing it to ensure that. We require the contractors to strip off the topsoil and they would stockpile it and providing we are happy with the quality we would re-instate it again

The above-mentioned initiatives/strategies were not implemented because:

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14. Lack of support from government (local/higher)
15. Lack of public support
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Part 7: Operations and maintenance

7.5 Do you require that the consultants develop a site maintenance plan that outlines the long-term strategies and identifies short-term actions to achieve sustainable maintenance goals? P__Y___N__

Jill: I’d say no, have we ever? Yes but I’d say generally speaking we are not.

Ruth: when we deal with development applications when we take woodlands or parkland, we have for woodland a requirement that the developers’ consultant prepare a woodlot management plan that then we’d give to forestry to use because an expert has prepared it, it has been approved and it is the long term maintenance strategy.

7.5.1 If yes, for what period of time?

7.6 Do you provide space for collection of recyclable materials (including paper, glass, plastics, and metals) in outdoor areas to facilitate recycling and reduce waste generation and waste disposal in landfills? P__Y___N__

Jill: Yes. I don’t know if I’ve read it that it’s policy but it’s understood.

The above-mentioned initiatives/strategies were not implemented because:
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14. Lack of support from government (local/higher)  
15. Lack of public support  
16. The strategy/initiative not sustainable  
17. Not considered a priority at the moment  
18. Lack of interest and/or knowledge from the consultants and the contractors

For 7.1: Ruth: I think it is inherently built into the planning and design of these parks, because we are consulting the staff who’d undertake the maintenance in the end. So we are contributing to the process, it’s just that it’s not documented in any implementation document for each park site.

**Part 8: General questions**

**8.1** Based on these questions, do you feel your projects will be considered sustainable if they utilize the above-mentioned strategies/initiatives?

Ruth: I think because we have utilized the strategies we know that they are sustainable. Some of them are recent so we have yet to test

Jill: some of them were able to take on more of the strategies. Some have more priorities and the ability to take on more strategies.

Ruth: Given that the only one that we could not comment on was the aspect of the wood and given that we utilize the rest I think they would be considered sustainable.

From the procurement perspective it’d be good to think about specifications on other building material to make sure that they were prepared, development and manufactured in a sustainable way. If you look at just what we do from the planning or development perspective on the ground, it’s also about what flows into that park site.

Jill: From a site design point of view, there is a lot of good headings here, it is just there are other things that help, for instance, site furnishings, what are being offered in the park and bike racks. If we are offering bike racks then we are obviously encouraging people to bike to our parks, we are encouraging them to consider other ways to get around so that helps back into healthy living. One plan we did not talk about is the Cycling Masterplan, so obviously we know there a designated route nearby or not.

**8.2** Overall, would you consider the Sustainable Sites Initiative as an effective guideline and evaluation tool for your projects?

Ruth: when we mention the word sustainable, the four pillars come to mind for me and what’s not covered in these questions are the social, cultural and the economic pieces.
Interviewee Information: Vaughan

Name: Martin Tavares, Vivien Lee
Title: Construction Coordinator & Landscape Architect

SEMI-STRUCTURED INTERVIEW QUESTIONS

Part 1: Municipality Organizational Structure

1.13 Please provide the title and the organization of the department responsible for the development of the City/Town’s parks and open space.

   Parks development

1.13.1 Please provide the duties associated with the staff in your department.

1.13.2 Please provide the certification/credentials required for the positions listed.

   Vivien: 11 with a student for the summer

1.13.3 How many certified landscape architects are in your department?

   Martin: Currently there are 4 licences LAs; we don’t need to use our stamps here so full member with a stamp would be 4

1.14 Which department is responsible for the operation and maintenance of your parks?

   Martin: Parks Operation and Forestry

1.14.1 Where does the above-mentioned department stand with respect to your department?

   Martin: we are sub-departments under the commission of the community services

1.15 Does the City/Town have an active Sustainability Office or Department?

   Martin: No

1.15.1 What is the role of the above-mentioned office/department?

1.15.2 Is the above-mentioned office/department directly involved with your departments’ projects? If so how?
1.16 Does the City/Town have a sustainability strategy document/policy?
Martin: Currently there is Green Directions Vaughan and it is essentially a sustainability environmental master plan.

1.16.1 If so, when was it published?
Martin: April 2009 and can be found on our website

1.16.2 When was this document last updated?
Martin: No, I don’t believe it has

Part 2: Park Standards and Classification

2.16 Does your department have a Parks Standard Manual?
Martin: There is no standard manual.

2.16.1 If so, when was this document published?

2.16.2 When was this document last updated?

2.16.3 What information is included in this document?
Martin: What we typically do is we construct to standards based on engineering or Ontario Standard Specs and Details. We have our own standard drawings and specifications that we have put together ourselves but there isn’t a full manual. There is a certain philosophy that we use in designing parks and when we submit proposals to consultants we ask that they satisfy certain requirements to incorporate sustainable stormwater management practices. We don’t specify what they are, we assume they are using best practices within the industry. And then based on what we deal through our operations department, because operations is maintaining, they are allowed to comment and we kind of know what is allowed and what typically isn’t allowed in designs.

Vivien: now we typically get suggestions or comments from other departments once we have a design and a concept.

Martin: Our document is essentially circulated to all departments within the commission and also to engineering. So engineering will look at their manual for SWM and essentially ask the question are you satisfying subdivision requirements? And then the block engineer who reviews the full development of the subdivision also has to provide certification of our design. So we get a park block we then fit the design based on the programs and our SWM practices need to be looked at to make
sure we are not overland flowing onto the adjacent property, if there a major or minor storm events we are capturing the water on site.

2.17 Do you have an official park classification system?

Martin: Yes we do and I have it here. This is the most revised and it is dated May 3rd, 2010. It is still a draft because it is with our new OP. Previous to this there was an OP 600 which talked about classification as well and the classifications have changed. We are currently trying to reduce the number of park types.

2.17.1 If so, could you explain how you classify your parks?

Martin: On this document there are 4: regional, district, neighbourhood and public squares. At one time there used to be parkettes but parkettes are kind of like these dead spaces that are usually just a pathway and a bench. So public square, the idea is that it is of a substantial size; it is also geared towards high intensity development so that we are not creating traditional sports field park sites but these are more built up areas, perhaps it is more hardscaping. And this goes into size, land requirements, access and location within the development.

2.18 Do you have a sustainability guideline to follow for the City/Town’s parks and open space projects?

Martin: Right now there is no formal guideline. One is being put together by our department. We did have a newsletter that went out last year that talked about a toolkit for sustainable environmental design for parks. It was essentially a wishlist of what we want to do; rain harvesting, xeriscapes, car pooling in some of our park site that have parking like our district and regional parks, reducing potable water, incorporating for bicycle pedestrian transit, universal accessibility nodes etc. So this kind of tells us, it is like a pre-document of what we want to do. The document that we are working on now is more like a checklist guide.

2.18.1 If so, is this document specifically written for your department?

Yes

2.18.2 If not, would you be interested in having such a document to guide your projects?

2.19 Are there any other sustainability guidelines that you follow for the development of your projects (Sustainable Sites Initiative, LEED ND, etc)?

Yes

2.19.1 If so, please list.
Martin: We look at documents in isolation. Low Impact Development document through the TRCA. There is a document that we have referenced in conceptual discussions; It is the City of Toronto’s roads, parking, etc.

Vivien: The ASLA also have their own sustainability guide online which also speaks to the initiatives that we can refer to.

2.20 What is your definition of sustainability?

Martin: working towards minimizing waste, the amount of maintenance, social capital management, having people take ownership of spaces, educating people on what is sustainable and what is green. When it comes down to park development and openspace development, certain things like function of certain facilities within the park.

Vivien: preservation of habitat and reducing our water consumption and conservation of our water and resources and site restoration. Just minimizing impact on our habitat.

Part 3: Site selection

3.13 Within the City/Town boundaries, are there any locations that have been identified by the Ministry of Agriculture as Class 1 Agricultural land?

Martin: I know within the OP it talks about Greenbelt protections lands and there are portions within the city to the north that no longer fall under development. At one time people had application in for development and they were allowed based on the old OP and now with the new OP certain requirements where they can’t construct are originally as planned.

3.13.1 If so, do you allow development to take place on these identified locations? P__Y__N__

Martin: It is a policy in our OP

3.14 Do you protect floodplain function by limiting new development within the 100-year floodplain for waterways of all sizes? P__Y__N__

Martin: it is a requirement that the 100 yr floodplain is essentially noted and no development happens within that boundary.

3.15 Do you protect areas that contain wetlands, including isolated wetlands from development? P__Y__N__

Martin: Yes, again this is also policy. We have essentially a working relationship with the TRCA. They definitely provide comments, they will review areas that are
sensitive and the City of Vaughan has regulated areas that are noted for TRCA. Where we fall into play, we essentially look at park development within these new subdivisions. They have already gone through that process and where we are building a park and it is within a regulated area, even though if it is classified as parkland and essentially been cleared or been fenced off by the developer for us to develop, we still need to go through the TRCA and advise them of what our plans are and then they will comment on whether there are certain requirements that we have to satisfy.

3.16 Do you preserve endangered animal/plant species identified by the province or on the International Union for Conservation of Nature Red List of Threatened Species as critically endangered or endangered? P__Y__N__

Martin: Yes we do

The above-mentioned initiatives/strategies were not implemented because:

19. Limited budget
20. Lack of support from government (local/higher)
21. Lack of public support
22. the strategy/initiative not sustainable
23. Not considered a priority at the moment
24. Lack of interest and/or knowledge from the consultants and the contractors

Part 4: Pre-design assessment and planning

4.7 Do you conduct an accurate and detailed assessment of site conditions and explore options for sustainable outcomes prior to design? P__Y__N__

Martin: Yes. We asked that anybody that is hired as the consultant or if we are doing work in house, that site be reviewed. The sites that we are getting are essentially designated for parkland development, we go out and we assess it. If it is a retrofit project, we then look at existing conditions and assess existing conditions. So where we have to say remove structures and we look at what is existing, we need to look at best practices for sediment control or tree preservation. So is it policy? It is standard practice

4.8 Do you require a multidisciplinary team of professionals experienced in sustainable practices to collaborate on the design, construction and maintenance of the site in an integrated design and implementation process? P__Y__N__

Martin: No. we ask for sustainable methods.

Vivien: for example, we ask for a balanced site which is a sustainable initiative, we ask for SWM but we done specifically ask for items like you need to have a bioswale, green roof. We don’t have a checklist but we make suggestion in our RFP of objectives.
Martin: we talk about using various systems that mimic the natural processes rather than saying let’s put CBs in everywhere to capture and send water out into a SWM system. We are trying to hold and reduce the amount of flow off-site. I don’t think we go that far to say you need to be experienced in sustainable practices; we kind of assume that they are coming to the table with information, or background that they have somewhere else. So when we talk about sustainable or bioswales or LID, I think everyone has their own attitude of what is right and also what works. In some cases the general idea is that yes you want to reduce the amount of water but only if it is going to be safe and it is not going to affect the adjacent property or the well-being of the users of the park block.

There is an RFP that goes out and we typically ask for what we want and these are the objectives and what we are trying to show. Then they will provide us with examples of parks that are related in size and type and then we’ll base our scoring criteria on what we see in the proposals. So if someone is saying “oh I do a lot of this” and there are these green initiatives within the design they’ll score higher because it is what we want to do, but if no one is providing that information we can’t score them poorly

The above-mentioned initiatives/strategies were not implemented because:

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21. Lack of public support
22. the strategy/initiative not sustainable
23. Not considered a priority at the moment
24. Lack of interest and/or knowledge from the consultants and the contractors

Part 5: Site Design

Water

5.16 Do you encourage reduction of potable water use for landscape irrigation?
P__Y__N__

Martin: No. right now our standards won’t allow that to happen. We talk about it but there are certain requirements that we have to satisfy and building the facilities requires that there is a servicing requirement for all the parks, engineering as well, public works. So there are these other departments that come into play about what is allowed. We have mechanical systems that are in place that prevents contamination of the water system but we definitely use potable water. There has been discussions about irrigation and for even water play systems to use a recycling system where you’d create a cistern and then for water play especially because it is always on that you’d have recycling of that water but that water has to be treated with Chlorine or however.

5.16.1 If yes, is there a benchmark that you have predetermined? Y__N__
5.16.2 If yes, what percentage of reductions from this established baseline?

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20. Lack of support from government (local/higher)  
21. Lack of public support  
22. the strategy/initiative not sustainable  
23. Not considered a priority at the moment  
24. Lack of interest and/or knowledge from the consultants and the contractors

Martin: The perception right now is that there is a limited budget and I don’t want to say right now it is not considered a priority but we are in a situation where it is not going to change because there isn’t an interest to change it from the other end.

Vivien: we are also limited by the plumbing codes and regulations.

Martin: That as well, because at the end of the day we do talk to engineers and answer their questions. Now I do know that other municipalities are using a recycling system for their water play and they are getting around it somehow.

**Soil and Vegetation**

5.17 Do you incorporate development and implementation of an active management plan for the control and subsequent management of known invasive plants found on site? P__Y__N__

Martin: I don’t think we formally incorporate an active management plan. I know for the city overall, for all development sites it is required and it is policy but for parks specific, we are getting sites that are open fields that are sodded or seeded. Within forestry there will be policy about invasive species.

5.18 Do you incorporate the use of appropriate plants that are non-invasive and appropriate for site conditions, climate and design intent? P__Y__N__

Martin: Yes we do. There is a list of preferable plant material that has been put together by the Forestry department. Based on the proposals that we get in, we ask for non-invasive and native plant material.

5.19 Do you require the consultants to develop and implement a soil management plan prior to construction to limit disturbance, assist soil restoration efforts, and define the location and boundaries of all vegetation and soil protection zones? P__Y__N__

Martin: any time we have a park that has sensitive plant material or areas that are sensitive due to topography, we defiantly put in a management plan. We have to have
sediment control measures and those areas that are environmentally sensitive typically also involve TRCA and they will come in with requirements as well. So it depends on the site.

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**Materials selection**

5.20 Do you eliminate the use of wood from threatened tree species? P__Y__N__

Martin: there is nothing that I have seen that talks about that for construction. If you are talking about building or forming material or wherever they are using it for the construction of the park block, we don’t have anything that is specific to that.

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Martin: 5.5 there is no list that is provided to us of those species.

**Part 6: Construction**

6.7 Do you require that the construction contractors prevent and minimize discharge of construction site pollutants and materials to protect receiving waters (including surface water, groundwater, and combined sewers or stormwater systems), air quality, and public safety? P__Y__N__

Martin: Yes

6.8 Do you require that the construction contractors restore soils disturbed during construction in all areas that will be re-vegetated (all areas that will not be built upon) to rebuild soils’ ability to support healthy plants, biological communities, water storage and infiltration? P__Y__N__
Martin: Yes

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Martin: the assumption is that it is a standard practice within the industry. Anytime we are dealing with a landscape architect, or an environmental planner, the assumption is that these things are important. When we deal with other, there is no desire to care, so we then police it because we are essentially landscape architects and we say this important because vegetation needs to be supported by proper nutrients, viable land, or soil. So we simply just don’t backfill with fill and try to sod on that. There is no policy but it is kind of standard practice. There are specifications that talk about what to do.

**Part 7: Operations and maintenance**

7.7 Do you require that the consultants develop a site maintenance plan that outlines the long-term strategies and identifies short-term actions to achieve sustainable maintenance goals? P__Y__N__

Martin: No. Have you seen anything Vivien?

Vivien: No. not within our RFP

Martin: there is an establishment requirement but not a long term maintenance requirement. Once we construct a park it then is turned into our Operations department and is left as is.

7.7.1 If yes, for what period of time?

7.8 Do you provide space for collection of recyclable materials (including paper, glass, plastics, and metals) in outdoor areas to facilitate recycling and reduce waste generation and waste disposal in landfills? P__Y__N__

Martin: Yes. It is policy.

The above-mentioned initiatives/strategies were not implemented because:

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Martin: 7.1 when we do new things, we try and advise why we are doing it but if we are installing plant material, perennials or shrubs, the understanding is that they need to be maintained by other so there is no formal document or policy put together.

**Part 8: General questions**

**8.1** Based on these questions, do you feel your projects will be considered sustainable if they utilize the above-mentioned strategies/initiatives?

Martin: if we utilize everything in this document, I believe yes. If I was going to say everything that we do today, I’d say no. There are certain things like for example if we look at materials more specifically about using, you have wood here, but there is a discussion in our department about using PVC vs. high density polyethylene. For PVC there is by-products, issues with manufacturing the product but it’s standard practice. When we talk to general contractors and consultants they typically automatically specify PVC because that is what they use. If we were going to change and be very specific about what we allow for construction or even say a percentage of material has to have a percentage of recyclability or it is recycled. We ask for playground equipment to meet those requirements but other things like any kind of metal that we use for building a shade structure, it is never asked. It is assumed that we have standards that need to be satisfied and we need to have an engineer signed off on these structures.

Vivien: I think as soon as we have established our checklist and apply it to the project, we can start evaluating our parks and the sustainability criteria. Right now there is no criteria to base it on and you can’t really rate it right now.

Martin: Overall in your questions you are touching the surface and not going to much into detail but I think if you did that it’d be a massive package. I think generally it is very comprehensive.

**8.2** Overall, would you consider the Sustainable Sites Initiative as an effective guideline and evaluation tool for your projects?

Martin: I’d say it is helpful. I’m not sure how effective it is as a tool. Just thinking if we went through this there is no system available but it definitely helps. There is definitely more than one way to build a park and there are some things that you could really focus your attention on to make it more sustainable.