

SCHOOLYARD PARKS: HOW THE ESTABLISHMENT OF A FORMAL PARTNERSHIP BETWEEN THE
TORONTO DISTRICT SCHOOL BOARD AND THE CITY OF TORONTO TO GREEN SCHOOLYARDS CAN
INCREASE ACCESS TO PUBLIC PARK SPACE ACROSS THE CITY

by

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ABSTRACT

Many built-up and high-density cities such as the City of Toronto are beginning to look at new strategies to increase parkland at a time when land is scarcer and more expensive to acquire. Schoolyards have been identified as underutilized public resources since many of them are deteriorating and predominantly asphalt. Some cities have established initiatives that revitalize public schoolyards into green spaces for student and community use, defined generally as ‘schoolyard parks’. Such initiatives are based upon public-private partnerships between city governments, school boards, park departments, and other stakeholders. This paper uses spatial analysis to estimate how much parkland Toronto District School Board schoolyards could contribute to Toronto’s park system if they were converted to schoolyard parks. It also reviews four schoolyard park programs in different cities to determine what kind of program structure would best suit Toronto, and it provides recommendations on how to implement such an initiative.

Key words: schoolyards, parks, green spaces, partnership, underutilized schools

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List of Abbreviations

BSI	Boston Schoolyard Initiative
DOE	City of New York Department of Education
DPR	City of New York Department of Parks and Recreation
DPS	Denver Public School Board
GSN	Grants for Student Needs
LLA	Learning Landscape Alliance
NIA	Neighbourhood Improvement Areas
OP	Official Plan
PF&R	City of Toronto Parks, Forestry and Recreation Division
TCDSB	Toronto Catholic District School Board
TDSB	Toronto District School Board
TLC	Toronto Lands Corporation
TPL	Trust for Public Land
UCD	University of Colorado Denver

1 INTRODUCTION

Growth in some North American cities has been increasing exponentially and Toronto is among the leaders. The pace of development has dramatically increased over the past decade with a more recent focus of intensifying existing urban areas. While growth gives rise to economic vitality, it puts a strain on existing infrastructure such as transportation systems, utilities, and water and sewage systems if their capacity is not increased with the population. Indeed, much of Toronto's infrastructure has not kept up with development and green infrastructure – parks and open spaces – is no exception. Other North American cities are facing the same challenge of meeting parks and open space needs, particularly in denser neighbourhoods where high growth, expensive land pricing, and increasingly limited space, impedes the process of acquiring new land for parks. Some cities in North America are implementing new strategies to address green space needs by linking existing open spaces into an expanded park system. Peter Harnik, a leading and long-standing researcher on urban parks, identifies a number of opportunities in cities that can contribute to park space. In particular, he identifies an apparent but often-overlooked possibility: "To many observers, schoolyards seem the best, most obvious source of park-like land to supplement the park systems of overcrowded cities. And they are – even if upgrading them into schoolyard parks is more difficult than it might seem." (Harnik, 2010, p110). To name a few, cities such as Boston, New York, Chicago, Denver, Phoenix, Houston, and Philadelphia have identified schoolyards as "underutilized resources", as many are only used a few hours a day by the school population and are otherwise locked or restrict community access (Harnik, 2011; Barker, 2013). Urban innovators have subsequently created programs to revitalize schoolyards and open them up to the community, thereby linking them to their parks systems through various partnerships. Toronto has the opportunity to learn and draw ideas from their successful initiatives and in turn, create a strategy that is unique to our parks and school system. This paper proposes to increase access to park space in Toronto through the greening and revitalization of public schoolyards into 'schoolyard parks'.

1.1 GROWING POPULATION – GROWING PARK DEFICIT

Between 2006 and 2011, the City of Toronto's population increased by 4.5%, which was more than five times the population growth reported by the Census for the City of Toronto in the previous five-year period (City of Toronto, 2012a). Currently, the City's 2014 population is estimated at 2,808,503 (City of Toronto, 2015a), which would indicate an estimated population growth of 6.8% since 2011. By 2041, the *Growth Plan for the Greater Golden Horseshoe* forecasts 3.40 million people and 1.72 million jobs in the

City of Toronto alone (Ibid). As the City has grown, the demographics of residents have also shifted with large portions of the population growing older, becoming more culturally diverse, becoming less physically active, and more families categorized as low-income (City of Toronto, 2013a). These changes in demographics as well as this projected future growth impacts Toronto's parks in a number of ways: the user experience and programming of parks will need to evolve according to the needs of the diversity of users; parks will need to re-establish their role as a resource for leisure and physical activity; and access to parks that are within walking distance will need to increase as the growing number of lower-income families will not necessarily have the opportunity to travel far to access green space.

In concurrence with population growth, development in the City of Toronto has been unprecedented. The City has lead Canadian municipalities in both residential and non-residential growth with over 195,400 residential units and 4.95 million m² of non-residential gross floor area proposed in the last five years (City of Toronto, 2015a). High-density condominium apartments continue to dominate the construction industry, as 80% of housing units completed between 2010 and 2014 were condominium apartments (Ibid). Notably, this booming high-rise residential market is supplying units that provide only small or nonexistent private open spaces (i.e. backyards). This housing trend, coupled with the increasing population, indicates that more people than ever before will be using Toronto's network of parks as their immediate access to greenery diminishes. This places more pressure on existing parks in high-density areas and even greater pressure on the City of Toronto to acquire more parks for residents in these densifying neighbourhoods.

The Downtown and Central Waterfront area contains the largest percentage of proposed development in all of the City's growth management areas (Ibid). As more people want to live and work downtown, parkland acquisition and maintenance in this area is becoming much more of a challenge for a number of reasons as outlined below:

- *LAND IS EXPENSIVE AND DIFFICULT TO FIND:* In some parts of downtown, land can go for \$30 to \$60 million an acre (as cited in the City of Toronto's *Downtown Toronto: Trends Issues Intensification*, p77).
- *THE CITY HAS TO PAY MARKET VALUE, EVEN FOR PUBLIC LAND*
- *THE ACQUISITION PROCESS IS SLOW AND RIGID:* City staff are not allowed much negotiating room to offer more than the appraised market value of land and the acquisition approval process can also take six months to a year, putting them at risk at being out-paced and out-bid by other buyers (as cited in the City of Toronto's *Downtown Toronto: Trends Issues Intensification*, p77).
- *THERE ARE MANY COMPETING DEMANDS:* The existing parks, many of which are smaller in size than other parts of the city, are strained as population and density rise. Finding room to accommodate all the things people want to do—play with their kids, walk their dog, read a book, play sports, retreat into nature, listen to a music performance—becomes more difficult.
- *CENTRALLY LOCATED PARKS WORK HARD:* Many parks are used by an increasing amount of residents, but also by workers and tourists. They are also the site of many events and activities throughout the year, causing extra stress on facilities.
- *HIGH-USE PARKS ARE COSTLY TO BUILD AND MAINTAIN:* Because of the amount of activity and intense use, high-use parks require high-quality materials and frequent upkeep.

Excerpt taken and modified from "Making Connections" Report by Garrett, J. (2015, p16)

Creative green space acquisition, planning, design and management strategies will be required for the City of Toronto, particularly in these high-density areas, to ensure that the growing population has access to parkland that meets their needs.

1.2 DETERIORATING SCHOOLYARDS & SCHOOL CLOSURES

Schoolyards have a history of being a space for play, recreation, and greenery within their communities. Unfortunately, many public schoolyards today consist of asphalt, few play structures, and limited green space, and these conditions have contributed to the underutilization of schoolyards by children and community members (Belcher, 2003). One reason for such bleak conditions is that maintaining green schoolyards that are used heavily by children is difficult without proper design, construction and maintenance protocols (Weiss, 2000). School boards have found it too costly to upkeep these poorly designed grass areas and thus, many schoolyards have been paved over with asphalt, likening their resemblance to jail-yards (Harnik, 2010).

Another factor that contributes to the underutilization of schoolyards is the increasingly structured programming of children's lives (Rivkin, 1997). A child has normally spent more than a third of its waking

hours in school but until recently, afterschool time was left fairly unstructured and many children were left to their own devices. Today, afterschool hours are often spent in childcare, participating in team sports, lessons, camps and in cars, shuttling children to and from their extra-curricular activities (Ibid). After all of that, whatever “free time” is left over is now predominantly spent indoors with children using various electronics to entertain themselves (Burdette & Whitaker, 2005; Rivkin, 1997). Neighbourhood play has also diminished as many parents work long hours and a lack of supervision has now been strongly associated with a culture of fear (Rivkin, 1997, Faber Taylor & Kuo, 2006). All of these factors have contributed to children’s loss of access to, and active participation in, green spaces.

Public schoolyards in Toronto are declining both in physical appearance and in numbers. Physically speaking, most schoolyards in the Toronto District School Board (TDSB) are outdated and have been deteriorating for a number of years. Many of them are also predominantly asphalt with few, old or no play structures to keep children engaged and active. As such, they do not benefit school children physically or psychologically, nor do they benefit the surrounding community and environment in any meaningful capacity. As a result of their condition, many schoolyards also do not contribute to the City’s ambition of increasing green spaces in urban environments at a time when acquiring land for parks is increasingly difficult.

The size of schoolyards and the number of school properties has also been decreasing over the last few years. In 2012, the TDSB announced that it was considering selling parts of their schoolyards in order to generate revenue for renovations and also to help pay down some of the Board’s capital deficit that had prompted the Ministry of Education to cut off funding for projects (Hammer, 2012). While the TDSB eventually rejected the idea, since then it has sold a few surplus school properties and severed pieces of schoolyards in a more discrete manner (City of Toronto, 2014a). Three years later, however, the TDSB has released a list of 130 schools that it has identified as being “underutilized” (meaning they are running at 65% capacity or less) that could be slated for closure (Howlett & Fatima, 2015). If these sites are then deemed surplus, it will result in the loss of green spaces now used by community members for leisure and recreational activities (City of Toronto, 2014a). While these properties are owned by the Toronto District School Board, they are still public assets and their important role as a community hub is a factor that ought to be given greater weight in future real estate decisions.

1.3 RESEARCH QUESTIONS

The purpose of the first two research questions is to quantify the potential role of the public schoolyard as formal green space, as well as *if* and *how* a potential initiative could benefit Torontonians:

- 1) How much total parkland would be added if:
 - a. All TDSB schoolyards were converted and added to parkland system?
 - b. If only underutilized schoolyards were converted and added to the system?
- 2) How many people would benefit from the increase in access to green space?

The third research question examines the feasibility of a potential initiative:

- 3) How do initiatives in other municipalities or jurisdictions green schoolyards and incorporate them into their park systems?

Ultimately, this research paper answers the overarching research question: *will converting schoolyards into schoolyard parks increase access to green space in Toronto?*

1.4 PAPER STRUCTURE

CHAPTER 2: BACKGROUND – Following this introductory chapter, the next chapter provides an overview of the current City of Toronto context from both a park/Parks, Forestry and Recreation perspective, and a TDSB perspective. The obstacles that each of these two groups is facing is presented to understand why these issues exist and how these obstacles can be overcome. Then the existing relationship between the City and the TDSB is examined in order to understand what policies and agreements are currently promoting a positive relationship between the two entities and what interests are impeding the establishment of a formal partnership.

CHAPTER 3: LITERATURE REVIEW – This chapter concisely explains the many environmental, health, economic, educational, and developmental benefits that green spaces provide. A brief survey of the current school greening initiatives in Toronto is then presented to [see] review how these programs implement their projects and at what scale.

CHAPTER 4: METHODOLOGY – This chapter explains in detail the methods used to complete the analysis portion of this paper. It describes how a geographic information system (GIS) was used to spatially present, analyze and interpret data on TDSB schools and Toronto's parks system for the first part of this paper's analysis. This chapter also describes the second analysis component of this paper, including the rationale and process undertaken to complete a review of case studies that have implemented schoolyard park initiatives.

CHAPTER 5: ANALYSIS – This chapter details the analysis process and the findings from the two methods. First, it describes and illustrates the possible contribution schoolyards can have to Toronto’s parks system if they were converted to schoolyard parks. Second, the comprehensive program review examines each case study to provide a foundational understanding of each program’s structure and the initiative’s successes and challenges.

CHAPTER 6: CONCLUSION – This chapter describes the concept of a ‘schoolyard park’ from the research and analysis presented in previous chapters, and then it explains how this concept can benefit the City of Toronto if applied.

CHAPTER 7: RECOMMENDATIONS – This last chapter sets out steps that the Ministry of Education, the TDSB, and the City of Toronto to implement to create a schoolyard park initiative for public schools across the municipality.

2 BACKGROUND

2.1 CURRENT OVERVIEW OF TORONTO PARKS

2.1.1 PARKLAND IN NUMBERS

The City of Toronto's Parks, Forestry and Recreation Division (PF&R) has a vision to turn Toronto into a "City within a Park". Currently the City's park system is made up of 1,600 parks that cover over 12.7% of the City's area (City of Toronto, 2013a). The 8,000 hectares of parks include the expansive ravine systems and other open spaces such as natural areas and parks, with features that include splash pads, basketball courts and ice rinks (Ibid). While the PF&R is in charge of managing all of this land, the Toronto and Region Conservation Authority (TRCA) owns approximately 46% or 3,700 hectares of Toronto's public parkland, most of which are the natural areas located along the ravine systems and Lake Ontario shoreline (see Figure 1) (Ibid).

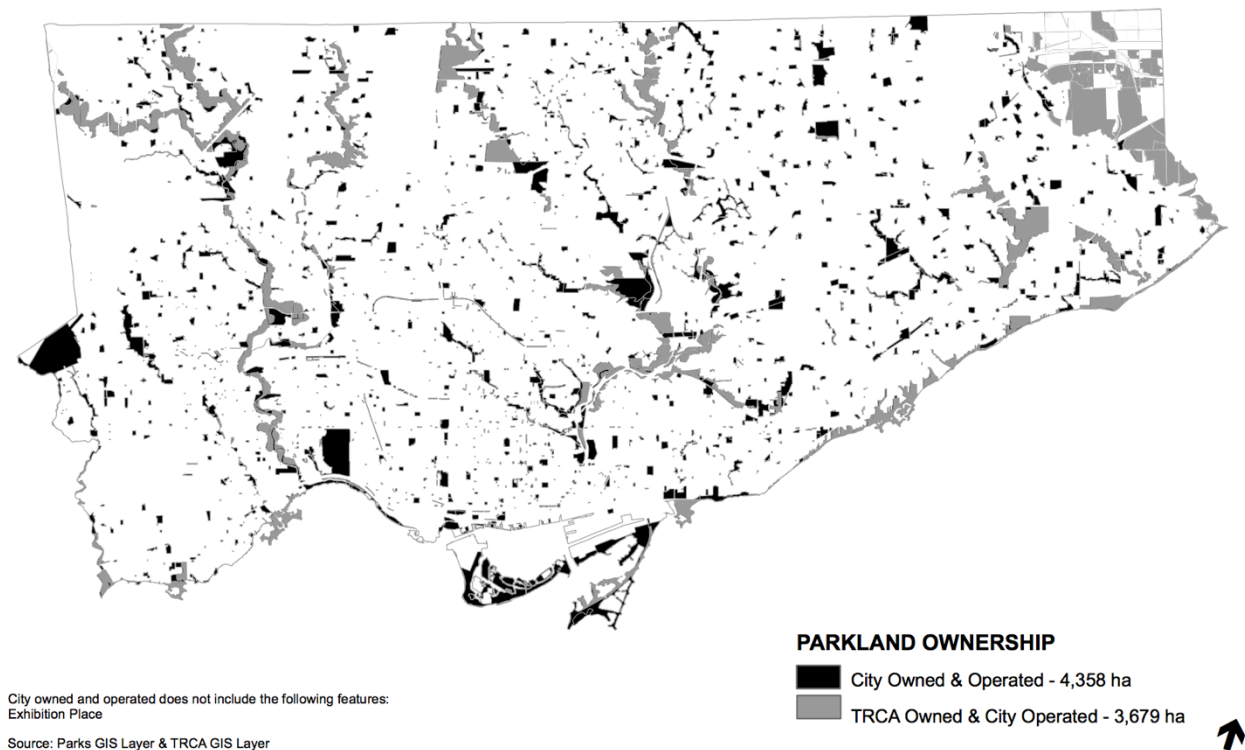


Figure 1: Map of City of Toronto Parks Systems Lands (City of Toronto, 2013a, p9)

As shown in *Figure 1*, the City of Toronto is indeed speckled with public parkland, but is all of this greenery enough? The traditional standard for parks that was first promoted by the U.S. National Recreation and Park Association in the early part of the 20th century was a target of 10 acres for every

1,000 persons (Evergreen, 2004). Using this ratio, some municipalities in Canada have established parkland standards to measure their effectiveness at meeting community green space needs even as they have created targets that are specific to their city (Ibid). In 2004, Evergreen Canada did a survey of municipalities with established parkland standards and compared their green space standards to their actual provision of green space (see Figure 2). As can be observed, Toronto is one of the few municipalities that does not have a municipal park standard.

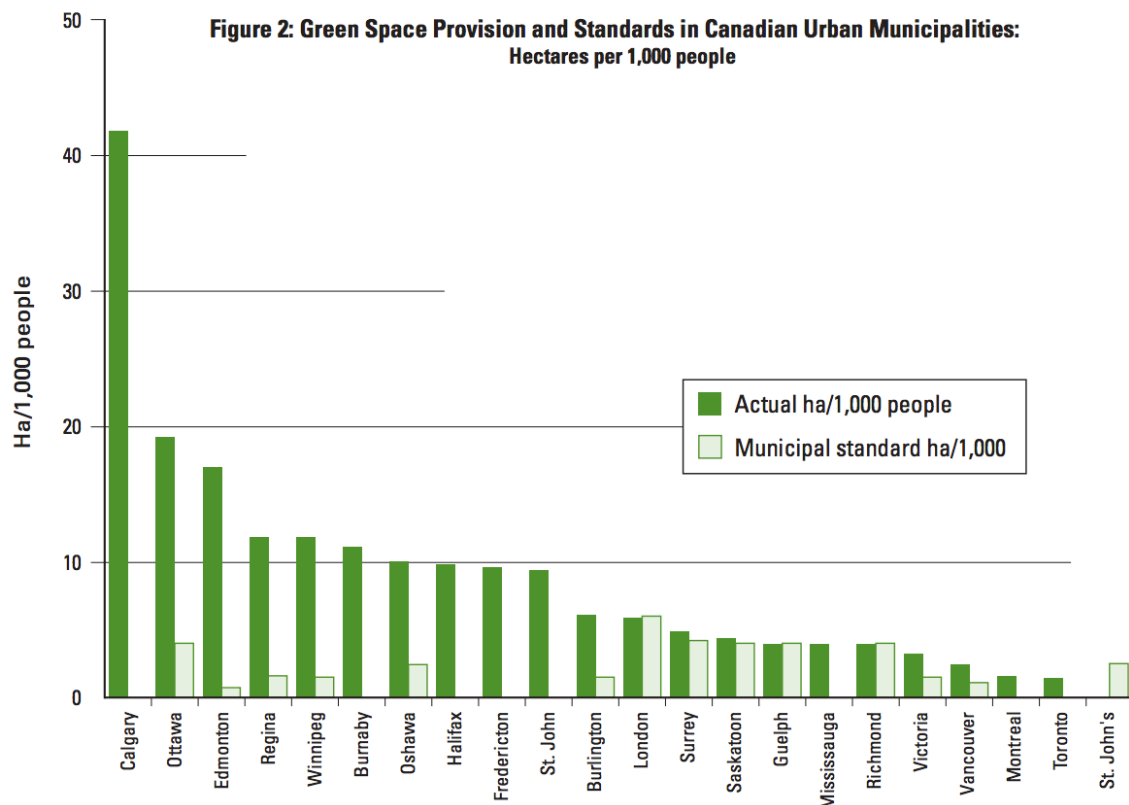


Figure 2: Green Space Provision and Standards in Canadian Urban Municipalities (Evergreen, 2004, p8)

Based on these numbers, it was found that the average park standard was 2.79 hectares per 1,000 persons. Using this type of measure, the City of Toronto in 2009 overall had a relatively good average of parkland compared to other North American cities (see Table 1):

CITY	Parkland in acres per 1,000 persons
Toronto	7.88
Ottawa	19.75
Montreal	2.96
Chicago	4.2
New York	4.6
San Francisco	7.0
Boston	8.3

Table 1: Acres of parkland per 1,000 residents in North American Cities

(As cited in Harvey (2010, p16): the Canadian numbers are from Our Common Grounds, page 18. and U.S. numbers are from Trust for Public Land, 2009 Park Facts, page 11.)

Although this number is fairly high, it is important to keep in mind that the largest amount of parkland is in the ravine systems in the eastern and western portions of the city, as illustrated in *Figure 1*. While these areas of the City seemingly have adequate access to park space thanks to the ravines, the typology of the green space that the ravines provide may not actually serve the needs of the communities. Harvey argues, “Many neighbourhoods in these areas are low-income and have very high immigrant populations for whom large ravine parks are not ideal places to meet their needs for recreation or relaxation” (2010, p16). Toronto’s park spaces range in size and setting and they offer many features, facilities and amenities that aim to support and reflect their community needs (City of Toronto, 2013a). As such, they are classified into five park types that are based on size, facilities, and their role within the parks system: parkettes (typically < 0.5h), neighbourhood parks (typically > 0.5h), Community Parks (typically < 3h), District Parks (typically > 5h), and City Parks (typically > 15h) (Ibid, p57). The denser parts of the City, particularly downtown, have the least amount of parkland (*see Table 2*):

CITY OF TORONTO AREA	Parkland in acres per 1,000 persons
Scarborough	11.81
Etobicoke	10.13
East York	7.56
North York	7.43
York	4.67
Toronto	4.54

Table 2: City of Toronto breakdown of acres of parkland per 1,000 residents

(As cited in Harvey (2012, p16): Jim Byers, “Parks renaissance pushed for Toronto,” Toronto Star, May 9, 2007)

The City's overall parkland ratios seem to imply that the City overall has enough park space for its residents. However, this ratio does not reflect the different classifications of its park spaces nor can it measure if the needs of its surrounding communities are being met by their local parks. The "Local Parkland Provision Map 8B" in the City of Toronto Official Plan (2010a) uses this parkland ratio to illustrate what areas in Toronto are 'park poor' (see Figure 3).

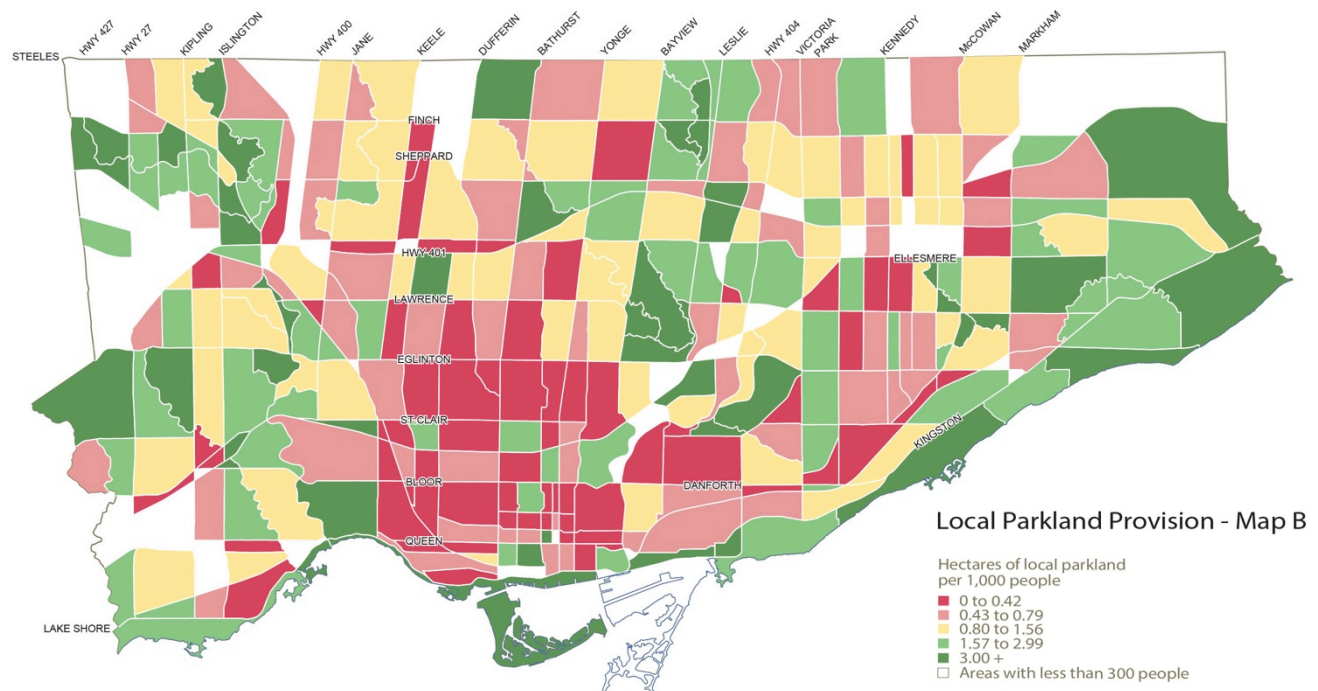


Figure 3: City of Toronto Local Parkland Provision (City of Toronto, 2010a, Map 8-B)

There are, however, a number of other limitations using the standard ratio of area to population. First, it does not take into account population density, which is a challenge that not only greatly affects the provision of parks to persons, but many other services. A city must provide necessary supports and services to their residents using a limited amount of money and land availability, and therefore it must prioritize such services based on need (Harnik, 2010). It is also not feasible or realistic for cities that are already built up to start converting thousands of acres into public parkland to meet a certain ratio (Ibid). Consequently, the ratio of park space to persons can be used as a tool to measure the overall amount of park space that a city has, particularly in certain neighbourhoods, but it should not necessarily be used as a standard to measure up to. Focusing on the needs of the community and programming existing green spaces to be more effective in meeting these needs is arguably a more important measure (Ibid).

Arguably, a better quantitative measure to use is the average distance to any park from any residence. Many North American cities such as New York, Calgary, London, Mississauga and Ottawa use this type of measurement to create a standard for park development based on a maximum distance to parkland. For example, the City of Ottawa's *Official Plan* (OP) has set a target that in residential areas all homes should be located within 400 metres of green space, or accessible in a 5-10 minute walk (City of Ottawa, 2003). The City of Mississauga has also identified a goal of bringing every resident within 400 metres of a public park outside of its designated Growth Areas (City of Mississauga, 2014).

Currently, the City of Toronto has no parkland target or standard, whether measured by ratio or distance, as the City argues that it is "neither appropriate nor practical" (City of Toronto, 2000, p6). However, the PF&R Division has mapped out the City's parkland based on a walking distance of 500 metres (*see Figure 4*). While it may seem that Toronto is adequately serviced by parks, as mentioned this measurement does not take into consideration the size of the park, the number of people using it, and if these parks are actually meeting the needs of Torontonians. Additionally, *Figure 3* above clearly illustrates which areas of Toronto are in need of parkland due to low provisions.

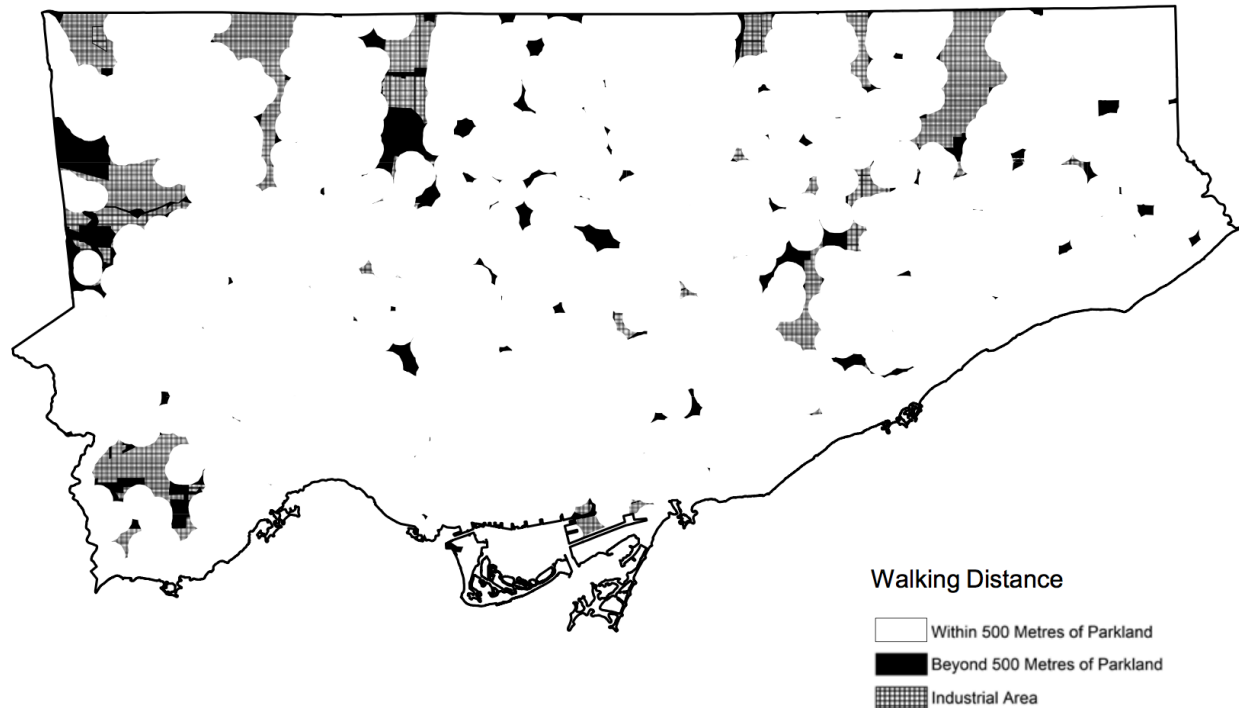


Figure 4: Walking Distance to City of Toronto Parkland (City of Toronto, 2013a, p9)

As part of this project's analysis, this paper will apply this tool of measurement to TDSB schools to determine how much of an increase in access to parks schoolyards could provide if they were included in this analysis.

2.1.2 POLICY CONTEXT

All planning documents from provincial to municipal levels speak to the protection and development of green spaces. The *Provincial Policy Statement* (Ministry of Municipal Affairs and Housing, 2014), the policy foundation for regulating the development and use of land in Ontario, asserts in s.15.1 that healthy, active communities should be promoted by:

(b) providing for a full range and equitable distribution of publicly-accessible built and natural settings for recreation, including facilities, parklands, open space areas, trails and, where practical, water-based resources.

The *Growth Plan for the Greater Golden Horseshoe* (Ministry of Infrastructure, 2006) more specifically recommends that municipalities should “develop a system of publicly accessible parkland, open space and trails” (s.4.2.1.4) and they are “encouraged to establish an urban space system within built-up areas, which may include rooftop gardens, communal courtyards and public space” (s.4.2.1.5).

The City of Toronto *Official Plan* (2010a) speaks to the importance of green spaces in a number of sections: s.2.3.1 *Green Space System and Waterfront* policies seek to preserve green space, ensure public access, and build connectivity; s.3.1.1 *Public Realm* policies support accessible parks, natural areas and open spaces to meet needs of recreation, nature and heritage; and s.3.2.3 *Parks and Open Spaces* policies seek to build the park system, and outline parkland requirements for new development. More specifically, in this last section the OP recognizes that growing the parks system requires:

- 1. (c) protecting access to existing publicly accessible open spaces, as well as expanding the system of open spaces and developing open space linkages; and*
- 1. (d) promoting and using private open space and recreation facilities, including areas suitable for community or allotment gardening, to supplement the City's parks, facilities and amenities.*

These sections in particular speak to “protecting, promoting, and using” publicly accessible and private open spaces, both of which the schoolyards of the TDSB fall under. The OP includes “school yards” in its definition of open spaces (s.3-6), so when the planning document is read, it can be assumed that any mention of open space in the OP indirectly references schoolyards.

In addition, *s.3.2.2 Community Services and Facilities* identifies schools as a community resource to be preserved and improved. It also speaks to the acquisition of school properties by the City in order to keep such lands accessible by the community:

2. Keeping surplus schools for community service purposes will be pursued where the need for such facilities has been identified as a priority. Where this is not feasible, alternate uses of closed schools must be compatible with the surrounding neighbourhood and should provide City residents with continued access to school playgrounds and playing fields.

2.1.3 FUNDING & EXPENDITURE

The Parks, Forestry and Recreation Division of the City of Toronto is the lowest funded parks and recreation department of a municipality within Canada when compared to other major cities in the country (see Figure 5). While it can be argued that the City must provide many other services to a very large population, providing green infrastructure to residents is evidently a very low priority.

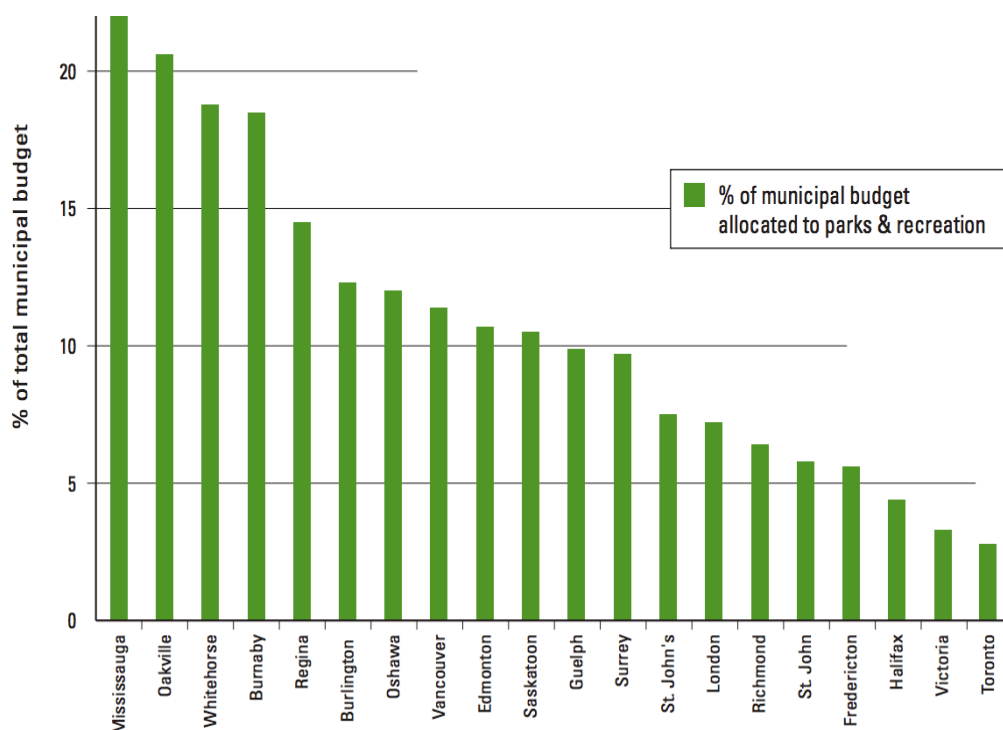
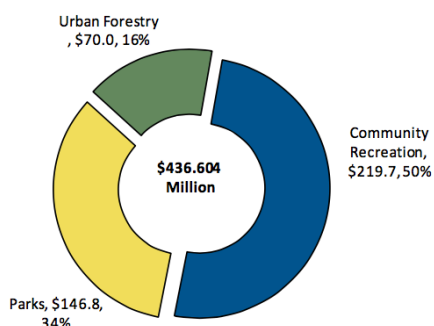


Figure 5: Parks & Recreation Budgets as a Percentage of Total Budgets in Canadian Urban Municipalities (Evergreen, 2004, p11)

PF&R provides a wide variety of leisure and recreational opportunities for all Toronto residents through operating and maintaining parks, playing fields, playgrounds, recreation centres and amenities, along with trails, forests, meadows, marshes, and ravines (City of Toronto, 2015c). The 2015 operating budget for

PF&R was \$436.604 million and it is broken down by services, with Community Recreation taking 50% of the budget, followed by Parks with 34%, and Urban Forestry at 16% (see Figure 6) (Ibid).

2015 Budget by Service \$436.604 Million



2015 Budget by Funding Source

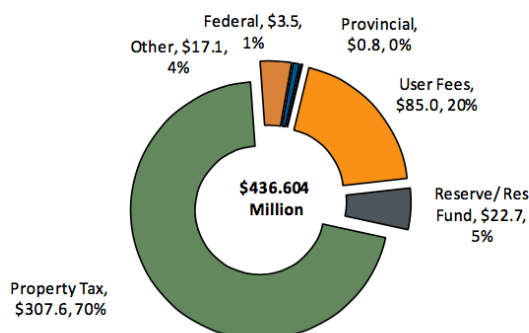
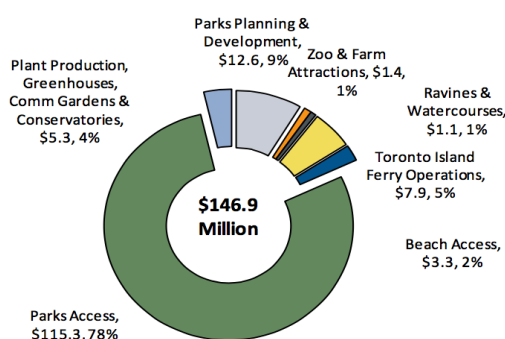


Figure 6: Parks, Forestry and Recreation Operating Budget Breakdown and Budget Funding Sources (City of Toronto, 2015c, p3)

The Community Recreation department delivers recreation programs and services, and it develops and repairs recreational facilities. The Urban Forestry department maintains and enhances the City's trees. The Parks department implements the *Parks Plan* that guides the design, development and service standards of new parks, and maintains and repairs existing parks (see Figure 7).

Service Budget by Activity



Service by Funding Source

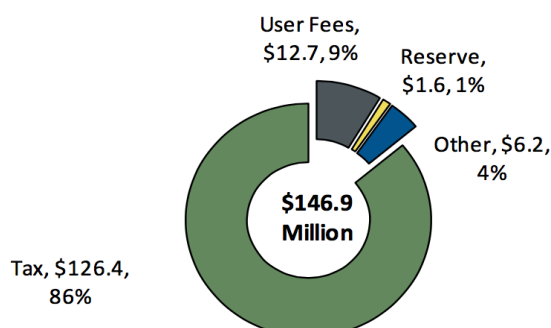


Figure 7: Parks Department Service Budget and Funding (City of Toronto, 2015c, p34)

The operational impact of new recreation facilities and parks totalled \$2.108 million in 2015 (City of Toronto, 2015c). Consequently, an additional \$1.322 million of funding will be needed for the maintenance of the new parks and park enhancements (Ibid). Based on the PF&R's 2015 Service Performance review, it cost approximately \$14,396 per hectare to maintain parkland in 2014 (Ibid). With an expected cost increase of 2% each year due to cost-of-living adjustments, as well as the department's

objective of acquiring and adding more parkland to the 4,398 hectares already maintained, the City will need to find more sources of funding to maintain old and new parks (Ibid).

2.1.4 PARKLAND ACQUISITIONS STRATEGY

The City's capital budget for acquiring new parks or making improvements to existing parks is supplemented a number of ways. The *Planning Act* establishes the authority for municipalities to require a parkland dedication or cash-in-lieu payments as a condition of development or redevelopment of land under *Sections 42* (development), *51.1* (subdivision) and *53* (consent) (City of Toronto, 2010c). The amount of dedication required depends on the type of development and deposited into various parkland reserve funds. The policy tools to acquire parkland amounts are outlined in the box below:

SECTION 42

- *Section 42* of the *Planning Act* allows the City to require 5% of the land area for residential developments be park space or 2% for commercial/industrial projects. If this generates too small a piece of land for a usable park OR the development site is deemed unsuitable for a park, the City can take cash-in-lieu of parkland, with payment equaling the value of the land that would have been provided. This money is split 50/50 between citywide and district accounts and split 50/50 again between land acquisition and park improvements.
- Downtown is designated a Parkland Acquisition Priority Area, which means the City uses the Alternative Parkland Dedication Rate allowed under *Section 42*. In Toronto, the City takes 0.4 hectares per 300 dwelling units, but the Planning Act allows up to 1 hectare to be taken. In priority areas, any cash received above 5% of the land area goes towards parks or park improvements in the vicinity of the development.

DEVELOPMENT CHARGES

- The *Development Charges Act* allows the City to require payments from developers to help cover some of the growth-related infrastructure costs associated with development. This money can be used for park improvements, but not land acquisition.

SECTION 37

- *Section 37* of the *Planning Act* allows the City to negotiate money for community benefits from developers in exchange for approving increases in the height or density above what current zoning allows. This is a tool designed to help address the impact of high-density development with benefits tied to the area surrounding the development. In downtown, parks and open space improvements accounted for the largest number of Section 37 agreements. (as taken from: City of Toronto. Downtown Toronto: Trends Issues Intensification. By Thomas Ostler with gd Economics. 2014. P. 51)

Excerpt taken from "Making Connections" Report by Garrett, J. (2015, p14)

As of September 2013, the balance in the Parkland Acquisition Reserve Funds was \$101.9 million, of which \$3 million was committed by Council for parkland acquisition (City of Toronto, 2013c). Additionally, in the Parkland Development Reserve Funds there was a balance of \$69 million at the end of September 2013 (Ibid). In the last three years, developers have paid the City \$298.5 million for parks compensation (Lorinc & Noble, 2015). However, it is unclear what happens with all the money that is being poured into the ever-growing parkland acquisition reserve funds; “there’s no analysis of where the money comes from, how it is spent and whether these investments in Toronto’s public open spaces conform to council’s long standing parkland provisions, which are laid out in the Official Plan” (Ibid, para. 7). Moreover, it has been found that even though development rates have been at an all time high the past few years and subsequently parkland sums generated are at an all time high, the rate of land acquired for parks has actually diminished. From 1998 to 2009, the City averaged 19 ha of parks purchased per year, but since 2009 the figure has dropped by half to 9.2 ha per year (Ibid). City Staff outline a number of reasons for this. While there may be money to acquire parks, there is not enough room in the budget for operating and maintaining the new parks (Ibid). Further, the City cannot compete in the downtown real estate market where an acre of land can sell for \$30-\$60 million. These challenges demonstrate the need for a City-wide strategy that includes a financing structure based on the City’s various parkland funds, and that speaks to a new approach of obtaining and maintaining parkland that does not necessarily force the City to compete on the open market for more land.

2.2 CURRENT OVERVIEW OF TORONTO DISTRICT SCHOOL BOARD

The TDSB is one of the largest landholders in the Greater Toronto Area, second only to the City’s Parks, Forestry, and Recreation Division with, some 588 school properties that total over 5,000 acres (Volz, 2009). These properties serve approximately 245,000 students each year.

2.2.1 FUNDING & EXPENDITURE

THE MINISTRY OF EDUCATION

The Ministry of Education provides the bulk of operating funds to Ontario’s 72 district school boards through the annual Grants for Student Needs (GSN), also known as “the funding formula” (Ministry of Education, 2015a). This grant, consisting of two major allocations (school operations and school renewal), is projected to total \$2.38 billion in 2015-16 (Ibid).

For the year 2014–2015, the Ministry of Education introduced the School Board Efficiencies and Modernization strategy to provide incentives for boards to make more efficient use of school space (Ministry of Education, 2015b). It decreases funding grants that support the operation of school space in underutilized schools to incentivize the boards to seek out additional community partnerships (Ministry of Education, 2014b). This action seems to demonstrate that the Ministry is open, willing, and encouraging the development of partnerships between school districts and community groups.

Additionally, beginning in 2014, the Ministry of Education pledged to make a large new investment totalling \$1.25 billion in funding for school improvements for the next three years; \$250 million of this was allocated to the TDSB in 2014-2015, and \$500 million will be allocated in 2015-2016 (Ministry of Education, 2014a). This “School Condition Improvement Funding Program” identifies the renewal needs of all school board districts in Ontario through the “Condition Assessment Program” (Ministry of Education, 2015e).

THE TORONTO DISTRICT SCHOOL BOARD

The TDSB’s current operating budget is \$3.06 billion and its capital budget is \$190 million (TDSB, 2014a). The TDSB obtains most of its funding from the Province through the GSN grant mentioned above, and it is generated primarily by the number of students enrolled in a school. The TDSB also generates additional revenues to support core operations through such things as tuition fees from international students, rental and permit income, cafeteria income and bank interest income (Ibid). The Board also provides a budget allocation to schools on a per pupil basis for classroom programs, and the school principals, in consultation with school staff and parents, have the discretion on how to best use these funds to support school improvement plans (Ibid).

The Board is running a projected deficit of \$16.5 million for 2015-2016 (Ibid) and the aging school infrastructure is contributing to deferred maintenance tasks that are now exceeding \$3 billion (Toronto Lands Corporation, 2015). As a result, there have been changes to the funding structures to ensure that overall operating costs are reduced year over year (TDSB, 2014). This is one of the main motivations for the TDSB to seriously consider selling a number of school properties that have been deemed underutilized. In 2014-2015, the Ministry reduced funding for low enrolment schools by \$10 million under the School Operations Grant to pressure the TDSB to begin selling schools that were no longer running near capacity, and it slashed the School Renewal Grant by 67% (Ibid).

2.2.2 SURPLUS & UNDERUTILIZED SCHOOLS

Declining enrolments and a provincial funding formula that is based on pupil enrolment has put the TDSB under pressure to sell off surplus property to pay for capital and overdue maintenance repairs. At the very start of 2015, a commissioned report entitled “Review of the Toronto District School Board” was submitted to the Ontario Minister of Education, which outlined a number of major issues within the Board (Wilson, 2015). In response to the review, Minister Liz Sandals issued 13 directives that Toronto District School Board (TDSB) Trustees had to comply with by February 13, 2015. As part of Directive Nine, Sandals directed the TDSB to indicate how the Board intends to reduce underutilized space across its school, which are defined as schools that are running at 65% capacity or less (Sandals, 2015). The TDSB responded to this directive on January 28, 2015, releasing a list of 130 schools that were deemed underutilized and potentially under review for possible closure (City of Toronto, 2015d). A week later, the TDSB released a second list of 60 schools for possible closure by 2021 as part of an approved 10-year capital plan (Ibid).

According to *Section 194(3) of the Education Act*, once an underutilized school property is reviewed and it is determined that the property is no longer required to meet the long-term accommodation needs of its students, it is then declared “surplus” and transferred to the Toronto Lands Corporation (TLC) to be sold (TLC, 2015). The “Toronto Lands Corporation was created in April 2008 with a mandate to optimize value obtained through redevelopment and/or sale of TDSB properties that are no longer required to meet the long term accommodation needs of the Board” (TLC, 2014, p1). The TDSB assigns properties for the TLC to manage and these include closed schools, the sale of schools, schools that continue to be leased, vacant schools, and some sites that are used for TDSB administration or plant operations (Ibid). As of August 31, 2014, a total of 65 sites have been sold since its establishment (Ibid). Roughly half of these properties were sold to developers and the other half were sold to other school boards and public agencies (Warzecha, 2014).

While the TDSB has been under scrutiny for years by the provincial governments for not closing schools as enrolment declined, and though it may seem like selling school properties is one of the few viable and practical solutions for the TDSB, selling school properties may have numerous negative impacts on the community at large. The Elementary Teachers of Toronto found that the majority of the 60 schools under review served vulnerable populations: 68% of the 48 elementary schools ranked above the board median for high socio-economic need; 40% rank among the 20% most highest-in-need schools for at-risk students

in the City, and 45% of the schools are located in communities of such great need that they already receive extra funding through the “Model Schools for Inner Cities” program in order to build outreach and provide services and supports to their communities (Brown, 2015).

As such, many of these schools also act as vibrant community hubs in their neighbourhoods, particularly those located in vulnerable neighbourhoods by providing space and facilities for childcare, family centres, and community programming; “48% of the elementary schools targeted also have child-care centres, at least 77% house community programs, and 27% have parenting centres, which the ministry does not count as part of the school’s “utilization rate,” the key trigger for a school to be reviewed for closure.” (Brown, 2015, para. 25). Moreover, in the next few years increased enrolment in elementary schools is projected to occur (Ibid). Forecasted change in birth rates and migration rates will have a large impact on school access, and consequently school funding. “Elementary enrolment has increased by approximately 570 students between 2010-2011 and over the next 10 years, growth is projected to be in the range of 5,000 to 7,000 students” (TDSB, 2014a, p6). Many councilors, parents, and community members fear that once a school property is sold, it can never be reacquired.

2.3 CITY OF TORONTO AND TDSB RELATIONSHIP

2.3.1 POLICY CONTEXT

Two sections of the City of Toronto’s *Official Plan* (2010a) provide policy guidance on the preservation of school lands. s.3.2.2. *Community Services and Facilities* expresses Council’s understanding that schools are a source of valuable community open spaces. It states that:

3. Shared use of multi-service facilities will be encouraged. Shared use of municipal and/or school facilities, places of worship and lands for community service purposes will be particularly encouraged. The addition of other uses on school sites, including other community service facilities, residential units or office space, is permitted provided all uses can be adequately accommodated.

4. Council recognizes that schools are an integral community resource that serve not only as learning institutions but also as socio-cultural centres and a source of valuable community open space. The City will encourage and promote the shared use of schools, parks and public open space. The City will consider acquiring publicly owned school sites, shown on Map 7, for parks and open space purposes should they no longer be needed as learning institutions.

Further, s.3.2.3.1 *Parks and Open Spaces*, declares that:

Maintaining, enhancing and expanding the [parks] system requires the following actions: [...] (c) protecting access to existing publicly accessible open spaces, as well as expanding the system of open spaces and developing open space linkages; and (d) promoting and using private open

space and recreation facilities, including areas suitable for community or allotment gardening, to supplement the City's parks, facilities and amenities.

In November 2013, City Council passed a resolution asking City staff to look at ways to save TDSB green open spaces and to work with the TDSB to alter the province's capital funding of schools "to ensure that when school properties are an essential part of the open space/network that they are retained as such" (City of Toronto, 2013b, p3). On June 18, 2014, the TDSB agreed to a "partnership" with the City of Toronto regarding infrastructure funding for school grounds (TDSB, 2014):

[It was] resolved that the Director enter into discussions with City of Toronto staff and appropriate provincial government representatives to:

- 1. develop options for generating sustainable school infrastructure funding, while preserving school sites as important educational assets for future generations;*
- 2. ensure that playing fields and green space are preserved;*
- 3. generate funding to support infrastructure investment needed in Toronto District School Board schools to support the City's Official Plan and significant population growth.*

More recently, in February of 2015 Council established a new *City-School Boards Advisory Committee*, made up of elected representatives from the City and the School Boards, mandated to create better strategies that mitigate concerns and negative impacts related to the use and disposition of school properties. It is hoped that the Committee will develop...

"a new multilateral, consultative relationship for the City of Toronto, the School Boards and the Province of Ontario with respect to schools lands disposition that:

- a) takes into consideration the full value of schools as community assets, in addition to their value as educational institutions;*
 - b) provides a viable framework for retaining public ownership of former school properties when there is agreement among the parties that the site should be retained; and,*
 - c) identifies additional capital funding sources for school renewal in Toronto."*
- (City of Toronto, 2015b, p1).

Although the *City-School Boards Advisory Committee* is an excellent step for improving the City and TDSB relationship, it has not yet reported any strategies that speak to the above issues. These excerpts demonstrate that while the TDSB and the City of Toronto are beginning to adjust policy to establish some kind of partnerships, these initiatives are still in exploratory stages and accordingly do not hold much authoritative power. The TDSB has been selling, and is still considering the sale of, numerous properties or sections of schoolyards with little regard for these budding partnerships or for the vital role their schools play in communities. The TDSB and City of Toronto have yet to implement strategies that change the current approach of disposing school properties in order for other public entities to have the opportunity to acquire them more easily.

2.3.2 SCHOOLS AS COMMUNITY HUBS

All levels of government and all community members recognize that schools and their schoolyards are “community hubs”. As seen above in section 2.1.2 of this paper, the City of Toronto *Official Plan* recognizes that publically funded schools are a community resource and play a significant role in Toronto’s neighbourhoods. The City is promoting community hubs that provide childcare, recreation and other health and social services to surrounding residents (City of Toronto, 2010a).

Over recent years, School Boards and the Ministry of Education have completed a number of reports and have established a few new programs that recognize and support schools as community hubs. In 2004, the Province provided school boards with funding under the *Community Use of Schools*, a program that makes school spaces more affordable for use by community members, and another program called the *Priority School Initiative* that offers free space for community use in 220 schools located in high-need neighbourhoods across Ontario (Johnston, 2009). However, funding for either of these programs has “flat-lined” or diminished over the past few years (Ibid).

In 2006, the TDSB and the Toronto Catholic District School Board (TCDSB) prepared a joint proposal entitled “The Made in Toronto Solution” that recommended integrating schools within the community as “hubs for learning” through school renewal (TDSB & TCDSB, 2006, p3). The recommendations are based upon a partnership between the City of Toronto and the School Boards that include permitting the use of school facilities for community activities on a broader basis and pooling their resources together in order to provide better multi-purpose facilities to communities (Ibid). This report is a key document that demonstrates that both the City and the TDSB have recognized that by pooling their efforts into a formalized partnership, schools can be renewed to become so much more than just spaces for learning. Although the report sites this proposal as a possible “win-win-win” solution between the City of Toronto, Schools Boards, and the Province (Ibid, p3), nothing has been found that came out of this proposal since the report was first released in 2006. The recommended joint approach remains valid.

Recently in 2015, the Ontario government identified the establishment of Community Hubs as a priority action for the development of vibrant neighbourhoods within the province (Government of Ontario, 2015). The Provincial Government will be undertaking a review of provincial policies and “developing a strategic framework...which will include working across sectors and through partnerships, to enhance the use of community assets” (Ministry of Education, 2015d, p8). In response, the Ministry of Education declared that it will support this initiative by making funding and other resources available “to assist

school boards with retrofitting and modifying facilities where a viable community hub partner has been identified” (Ministry of Education, 2015d, p8). Though no numbers or figures seem to have been reported and no formal programs or partnerships have been established as of yet besides the City-School Boards Advisory Committee, the strong written support of all levels of government could now facilitate the development of a formal partnership between the TDSB and the City to protect and maintain school properties as community assets.

However, the potential to establish and expand community hubs will be diminished unless schools and schoolyards are fully evaluated as the public assets that they are before they are closed or deemed as surplus and sold. As mentioned, many schools provide more than just a space for education, particularly for vulnerable neighbourhoods, and this also holds true for schoolyards where community members should be able to access the open spaces before and after school hours and participate in leisure or active recreational activities. Yet even these spaces can be defined as underutilized as many of them offer few or old amenities and little to no green space and therefore do not draw in community members to use the space. Thus, schoolyards also have the potential to contribute more to the community than they do currently.

2.3.3 CURRENT JOINT USE AGREEMENTS

The City and the local school boards have a history of cooperation and shared use of schools for recreation, childcare, family centres, and other community uses – for a fee. The Ministry of Education has recognized the importance of schools to their communities and the new *Community Planning and Partnerships Guideline* reflects this concept. It encourages school boards to focus on sharing facilities with community partners and establish effective planning with community partners, including decisions about underutilized space (Ministry of Education, 2015c). Likewise, the TDSB recognizes that neighbourhood schools are hubs of the community and therefore they must ensure that school space is accessible and affordable. Organizations and agencies, and community groups may acquire a permit from the TDSB to use their classrooms, gyms, auditoriums, sports fields and other spaces throughout the year when they are not being used for school activities (TDSB, 2013). The TDSB also has 66 pools in its schools that can be used by the community after school hours; 31 are managed by the TLC and 33 are managed by the City’s PF&R Division (City of Toronto, 2012b). The TLC was assigned these pools in 2008 as the TDSB could no longer fund these pools and was considering closing them (Ibid).

The City's use of the TDSB pools is governed by an agreement first developed in 2003, where the City funds and provides community swimming opportunities after school hours, on weekends, and all summer (Ibid). In addition, there are currently 172 different school board facilities that are used by the City and they are secured through a variety of agreements (Ibid). For example, through a "shared use agreement" with the TDSB, the City leases school board facilities and pays per square foot so that PF&R can use some schools for City programs (City of Toronto, 2014b). In 2013, the City spent \$14.805 million to use TDSB space for PF&R and Children's Services programs, of which \$0.675 million is for "Exclusive Use" space under negotiation such as community recreation offices (Ibid).

All of these policies that support joint use agreements and community use of school space demonstrate that there are already active partnerships between the City and the TDSB. Therefore it is possible to direct these alliances into more formal, long-standing policy-based collaborations for protecting and revitalizing schoolyards.

2.3.4 SCHOOL LANDS PROPERTY ACQUISITION FRAMEWORK

Critics of closures often fear the loss of school properties as the loss of public assets. For example, Clandfield and Martell argue that under the current neoliberal policy regime, school sites are "just property, a disposable public asset, and a potential public liability if they do not yield a return on their investment" (2010, p11). However, critics of school closures do not propose strategies for cash-strapped municipalities to acquire such properties (Rasanu, 2012), and thus the literature to date is of limited utility in identifying precedents or solutions for school acquisition policies.

Toronto City Council adopted the *School Lands Acquisition Framework* to identify and prioritize properties that become available for sale by local school boards (City of Toronto, 2010b). This was in response to the provincially mandated disposition process that school boards must follow. After a school is declared surplus, under *Regulation 444/98* of the *Education Act*, it is required that these schools are first offered to school boards and other public entities for purchase or lease (Ibid). If no offer is submitted or agreed upon by the entities within 90 days, the property is then disposed of on the open market. This process is challenging for public entities in two major ways: firstly, the TDSB/TLC offer the school lands at "fair market value", prices that the cash-strapped City or other public agencies can hardly meet; and secondly, the 90 day circulation period is not enough time for public agencies to cobble together huge sums of money (Ibid; City of Toronto, 2015b). As land prices keep increasing in the City of Toronto, it will become even harder for public entities to compete with deep-pocketed developers.

When PF&R staff receive notice of surplus schools being sold, they evaluate the school sites on a case-by-case basis for suitability for acquisition. One of the key assessment tools is a measurement of the amount of local parkland per 1,000 persons relative to other parts of the city (City of Toronto, 2014a). Other assessment criteria include proximity to other parkland, recent residential growth, natural heritage significance, and available acquisition funding (Ibid). Leading parks advocates (such as Harnik, 2010; Garvin, 2011; Evergreen, 2004) tend to agree that there is no one-size-fits-all solution or standard of ideal service provision rates, making the task of determining which school lands the City should acquire on a limited budget even more difficult.

2.4 SHARED INTERESTS, DIFFERING PRIORITIES

In light of the policy statements and joint use agreements, it is clear that the TDSB, the Ministry of Education, and the City of Toronto have similar interests in preserving and encouraging the use of schools as community hubs, but at the same time they have differing priorities that affect this ambition. These interests and priorities were summarized in the “Made in Toronto Solution” Report (TDSB & TCDSB, 2006, p9) and are outlined below:

Interests of the Ministry of Education	<ul style="list-style-type: none"> • Ensure our schools are safe, modern and conducive to a proper learning Environment. • Ensure all children have access to adequate programs and facilities including, for example, gyms, pools and computer rooms, regardless of their parents' economic situation. • Keep good schools open. • Encourage the efficient development of public infrastructure. • In addition, the Province has already recognized in a number of different ways that Toronto is unique and often requires unique solutions and approaches.
Interests of the School Boards	<ul style="list-style-type: none"> • Obtain funds to acquire school sites and build schools in growth areas in the City of Toronto, not now provided by the provincial education funding model. • Replace and refurbish aging active schools that are physically deteriorating. • Refurbish and retrofit schools with modern energy-efficient systems and designs. • Expand newer school buildings that are serving a growing student population. • In recognition of these needs, the school boards have a number of joint ventures under way, which depend on the provincial funding model to provide cash flow. • The School Boards have some surplus facilities that are not appropriate for use by students, and which may be suitable for disposition or for other public sector uses.
Interests of the City of Toronto	<ul style="list-style-type: none"> • Preserve existing schools so that the fields can be used as green or recreational space and the buildings used to house community and social services. • Preserve publicly funded schools operating in existing neighbourhoods as learning institutions for local residents and access points for other community services. • Prevent re-development of surplus school sites. <p>The City's Interests as outlined by City Staff in their March 10, 2015 Staff Report (2015b, p1):</p> <ul style="list-style-type: none"> • Schools as spaces for child care and early learning • School lands as green space • Schools as sites for non-educational services and programming • Schools to serve growth areas

Table 3: Breakdown of interests regarding school properties between the Ministry of Education, School Boards, and City of Toronto (TDSB & TCDSB, 2006, p9)

The report speaks to the development of a “multilateral” policy approach to maintain public assets and finance the capital renewal of schools, and its directives have now been passed down to the City-School Boards Advisory Committee to find this elusive “solution” (TDSB & TCDSB, 2006). While the goals of all levels of governments are clear, the means of achieving them are not. The City does not discourage the closure of schools altogether and recognizes that some schools may not represent a significant

community asset. However, the City does maintain that certain processes of school disposition should be amended (City of Toronto, 2015b). As discussed, the Ministry's funding formula for school boards is based on student enrolment and accordingly, the financial support for TDSB schools has significantly diminished since the Ministry identified that the Board was holding in its possession a large number of underutilized schools. This has forced the TDSB to begin reviewing each of these schools for possible closure in order to pay for its backlog of maintenance and large deficit.

The TDSB's "Pupil Accommodation Review" that is used to determine if a school should be disposed of is based on the assessment of a school's usefulness by the number of students enrolled while also taking into consideration program viability and the physical condition of the school (City of Toronto, 2015b). The accommodation review takes into consideration the value of the school to the community as the third and second last criteria for evaluation, but the program emphasizes that the school's value to the student takes priority over any other considerations (Ministry of Education, 2009). The funding formula/GSN on the other hand does not at all consider the value of schools and schoolyards to community members outside of its educational use (City of Toronto, 2014a). Even though the TDSB and the Ministry recognize a school's importance as a community resource, the current process of school disposition "impedes integrated strategic planning, partnership development and collaborative efforts to retain school board lands as vital public assets. It also undermines the objectives of the Official Plan, local service delivery and place-based planning" (City of Toronto, 2010b, p4). Once schools are deemed surplus, the procedure followed by the TDSB largely leaves the interests of the City and other public entities out of the picture since it does not favour these groups who would seek to keep these properties for the benefit of the community (City of Toronto, 2015b).

While it is clear that the TDSB and the City have begun efforts to align their actions to serve their shared interests, in difficult situations that requires the TDSB to sell their properties, the Board is still resorting to pointing to their sole legislative role as a provider of education. At a recent community consultation in the winter of 2015 where a TDSB schoolyard was subdivided as part of it was deemed "surplus", the TLC reiterated the clear distinctions of roles and responsibilities between the City and the TDSB; the TDSB's sole role is to provide educational services to school age children and they are not mandated to create public parkland under any legislation (TLC, 2015). Community members may only use schoolyards at the discretion of the School Board and it is the City's responsibility to provide and manage parkland (Ibid). Unfortunately, legislative distinctions of who owns and maintains certain public green spaces mean little to community members whose primary concern is having access to public amenities. The City argues that

“[t]he debate over school closures (“no school should be sold” versus “all educationally underutilized schools should be sold”) needs to be replaced with a nuanced conversation about the diverse roles that schools may play in communities, and the complementary roles for governments and other stakeholders in supporting and maintaining these facilities in the public realm” (City of Toronto, 2015b, p10). Therefore, not only do the interests and the actions of all three government bodies need to be aligned, but their roles as providers must also be modified so that they can share in the responsibilities of providing services for the greater good of the public.

3 LITERATURE REVIEW

3.1 BENEFITS OF GREEN SPACE

Urban forests and parklands have been found to provide many health, environmental and economic benefits to surrounding communities. Turning schoolyards into greener community spaces can be an invaluable tool to increase these positive impacts for students, the community, and City at large.

3.1.1 ENVIRONMENTAL

“Public parks and [green spaces] play a critical role in supporting biodiversity and providing important ecosystem services in urban areas” (Barbosa et al., 2007, p1). These natural ecosystems serve many functions including food production for animals, insects and humans, erosion control, cleaner water as roots trap contaminants before they flow into water supplies, and cleaner air as trees and other vegetation filter out pollutants and produce oxygen (Bolund & Hunhammar, 1999). In addition, green spaces also provide other services that mitigate the negative, physical effects of urban environments such as reducing storm water runoff, reducing energy costs through shade, minimizing the urban heating island effect by replacing asphalt with natural vegetation cover, and improving aesthetics (McAuslan, 2007). School properties and open public space surfaces are particularly hot places and have been described as “heat islands, areas of higher temperature than the surrounding landscape” due to the material composition of their surfaces (Moogk-Soulis, 2010). Schoolyards are most commonly comprised of asphalt, steel, tar and chip roofs, and mowed turf, and these are some of the most heat-absorbent materials used in urban environments (Ibid). Through various studies it has been found that the shade provided by trees is a simple yet very effective heat mitigation strategy (Ibid; Akbari, Pomerantz & Taha, 2001; Rosenzweig et al., 2006).

3.1.2 HEALTH

Public parks are often the only contact and interaction many people have with the natural environment and thus it is argued that urban green spaces can have a profound affect on the mental and physical well-being of people (Barbosa et al., 2007). People increasingly spend more time indoors and are less physically inactive due to work, stress, attachment to technology, and dependency on cars (Bedimo-Rung et al., 2005). This sedentary lifestyle has been linked to a number of physical and mental health diseases such as obesity, type 2 diabetes, depression and mental fatigue (Stigsdotter et al., 2010). Contact with nature has been found to positively impact physical and mental well-being (Stigsdotter et al., 2010;

Morris, 2003; Kessel, 2008). Researchers from a wide range of disciplines have suggested that urban green spaces improve mental functioning, mental health and well-being (Taylor, Kuo & Sullivan, 2001; Karp, Paillard-Borg, Wang et al., 2006), and serve as a resource for physical activities, which subsequently has been shown to reduce diseases such as diabetes, heart disease, osteoporosis and fall-related injuries (Kahn, Ramsey, Brownson et al., 2002; Stigsdotter et al., 2010). In addition, studies have shown that exposure to natural features reduces stress and promotes relaxation (White, Alcock, Wheeler, & Depledge, 2013; Bowler, Buyung-Ali, Knight, & Pullin, 2010).

3.1.3 ECONOMIC

Trees have been described as “the only capital expenditure that increase in value and effectiveness over time” (Moogk-Soulis, 2002, p16) and consequently public parks have been proven to provide economic value to urban areas in a number of ways including property values, tourism, health, business vitality, clean water, clean air and relief from traffic and noise (Harnik, 2006; Fausold & Lilieholm, 1999). Green spaces can provide a city with two direct sources of income: (1) an increase in property value and consequently an increase in property taxes due to a property’s close proximity to an aesthetically pleasing natural amenity, and (2) an increase in sales taxes as parks can draw visitors and tourists (Harnik & Welle, 2009). Green spaces can also provide direct savings to cities and residents by (1) providing free recreational space, (2) mitigating negative health issues and consequently providing savings in healthcare costs, (3) providing energy savings through shading, and (4) managing stormwater runoff (Harnik & Welle, 2009; Alexander & McDonald, 2013).

3.1.4 ACCESSIBILITY & QUALITY

Residential proximity to parks has proven to be a critical determinant of park use and amount of leisure exercise for children and adults; people who have good access to green space are more likely to use it (Cohen et al., 2006; Kaczynski & Henderson, 2007; Lee & Moudon, 2008) and people who regularly use parks get more exercise than people who do not (Cohen et al., 2007; Giles-Corti et al., 2005). There is also a relationship between the distance from one’s home to the nearest green space and health; the further the distance is from one’s home to the greenest green space, the more stress they are likely to experience (Stigsdotter et al., 2010). Furthermore, the quality and conditions of parks is an equally important factor of park use. Parks and other green spaces are a focal point of any neighbourhood and they provide a window into the characteristics and demographics of a surrounding community:

A schoolyard is a school’s ‘external environment’, whether large or small, beautiful or unsightly, actively used or completely abandoned. Whatever its condition, a schoolyard is an indicator of

the health of the surrounding community, and each has a powerful impact on the other. An unimproved or degraded schoolyard sends a negative message about the school and the neighborhood in which it is situated. A dynamic and active schoolyard adds to the vibrancy of both. (Menino, 2000, p11).

Research has shown that the more aesthetically pleasing a park is, the more likely people are going to use it (Kondo et al., 2009); larger parks with more facilities and amenities, and parks that are well maintained are considered to be more attractive and have greater appeal to the community (Kessel et al., 2009; Giles-Corti et al., 2005). Conversely, fewer facilities and poorer conditions have a negative impact on the use of green spaces, as places in disrepair are less likely to be visited and contribute to a perceived sense of a lack of safety (Kessel et al., 2009).

3.2 GREENING SCHOOLYARDS

Schoolyard greening is not a new concept as by 1996 there were more than 40 organizations devoted to sponsoring or implementing schoolyard greening programs across the United State (Rivkin, 1997). Most of these projects have been, and currently are, of local or state scope, but in Canada the schoolyard greening initiatives that have been found are on a site-by-site basis. Public schoolyards are in essence publically owned, which means they should be one of the easier spaces to revitalize for the public. They are properties that do not necessarily need to be acquired in order for them to be added to a city's green space network.

In addition to all of the benefits of green space that have been cited above, there are a number of reasons as to why greening a schoolyard is particularly important for schools and their students. Schoolyards and their facilities/amenities can be used as a tool and as a space to teach while simultaneously promoting cognitive and social development in children.

3.2.1 EDUCATIONAL BENEFITS

Schools are educational spaces by definition and few actions would re-enforce this mission more than providing the opportunity for learning to permeate into the natural environment as supported by environmental education (Tooke, 2011). Studies have shown that a positive relationship between outdoor curricula in naturalized environments and learning exists; children with outdoor classroom curricula demonstrated an increased ability to think creatively and critically, and they performed better on standardized academic tests in various subjects if lessons were integrated into outdoor curricula (Ballantyne & Packer, 2002; Lieberman & Hoody, 2000; Dymont & Reid, 2005). Moreover, it has been

found that children who had more contact with nature scored higher on tests of concentration and self-discipline—the greener, the better the scores (Wells, 2000). It was also indicated that teaching in natural learning environments or outdoor classrooms provided benefits that extended past the curriculum such as reducing student behavioural issues and discipline problems, increasing student collaboration, teachers reviving their passion for learning and teaching, and improving interactions among students and teachers (Dyment & Reid, 2005; Boston Education Development Center, 2000).

3.2.2 DEVELOPMENTAL BENEFITS

Recent research shows that the natural environment has profound effects on adults and in particular children, as it hugely and positively impacts a child’s physical and psychological well-being that cannot be replicated in any other setting (White, 2004; Wells & Evans, 2003). For example, it was found that children who lived near nature had lower levels of behavioural issues, anxiety and depression, indicating they were more psychologically at ease and happier than their peers with homes farther away from nature (Wells and Evans, 2003). Naturalized schoolyards support a child’s cognitive development as it provides a variety of materials that engage all the senses – sight, touch, taste, smell, and hearing (Rivkin, 1997). Furthermore, children with symptoms of ADHD are better able to concentrate after contact with nature (Faber Taylor et al. 2001), and children who play regularly in natural environments are much healthier, show better coordination, balance and agility, and are sick less often (Fjortoft, 2001).

Studies have also observed that children who learn and play in green spaces engage more in creative forms of play than in built spaces (Faber Taylor & Kuo, 2006). This can be associated with the importance of risk and challenge in a natural landscape (Ball, Gill & Spiegel, 2008), as children need to have opportunities to test their limits through play, and to ultimately grow in a way that develops “good judgment, persistence, courage, resiliency, and self-confidence” (Finch, 2012, p2).

3.2.3 SCHOOL GREENING INITIATIVES IN TORONTO

Although the TDSB and the City of Toronto currently do not have a citywide school greening initiative, the TDSB has made some efforts to implement school greening initiatives on a more site-to-site basis. The EcoSchools program was developed by the TDSB “to make environmental awareness and action an integral part of everyday school life” (TDSB, 2015). The program focuses on waste minimization, energy conservation, school ground greening, and ecological literacy and assists schools with implementing these measures by guiding staff and students on how to run schools in a more sustainable manner (Ibid). Schools who would like to be a part of this program are required to have an “EcoTeam” and action plan as

part of their application to register and receive “Ecoschool Certification” (Ibid). All schools, new and returning, must apply to register every year. There are five certification guides that schools can use to assist in the application process and a number of other guides for implementing waste management, school ground greening, and building community capacity. While all of these resources reflect an organized and committed program, they also suggest a rather arduous process for yearly certification. Furthermore, a school community collectively decides whether it wants to be a part of this program and then takes the initiative to apply, indicating that those schools who apply have the capacity and resources to do so. This process thus may leave out schools with vulnerable communities as they are more likely to not have the resources to apply, yet on the other hand such schools are more likely to need such a program.

Another school greening initiative that has been established for some time now is the Toyota Evergreen Learning Grounds program. Since its establishment in 1991, the program has helped over 3,000 schools across Canada green their schoolyards and it has also developed a number of guides for designing, implementing and managing green schoolyards, as well as a number of research reports and policy briefs on the topic’s importance (Evergreen, 2015). Schools must apply to the program for funding grants and they can be offered up to \$3,500 (Ibid). However, grants are limited and the program, along with the individual schools rely on donations from the public, foundations, and businesses. In 2013, Evergreen partnered with the TDSB to create a design guide called the “Landscape and Child Development: A Design Guide for Early Years-Kindergarten Play-Learning Environments”. This resource provides guidelines for schools to design outdoor play spaces that meet the developmental needs of young children (Evergreen & TDSB, 2013). While this program and its guidelines have been valuable to many schools across Canada, the lack of consolidated efforts across an entire district forces individual schools who wish to be greened to work in isolation. This individualized and site-by-site effort does not allow for an equitable approach to greening schoolyards, and again, the schools that need to be revitalized the most are more likely to not have the resources to do so.

3.3 GAPS IN THE RESEARCH

While there is much evidence that shows the numerous benefits of green space, there is no standard method among Canadian municipalities for defining green space in their jurisdiction (Evergreen, 2004). For example, some municipalities may include cemeteries or natural reserves or they will not include areas owned by conservation authorities. This makes the task of identifying trends in urban green space

inventories, and making comparisons among municipalities, particularly difficult (Ibid). Further, municipalities tend to limit parkland standards to a measurement of acres per 1,000 people or proximity to parks using buffers ranging from 250-500 metres to represent a certain amount of walking distance.

“While green space amount and proximity to residents are important concerns, these traditional standards do not take into account other factors such as:

- *quality of landscape design;*
- *ecological health and biodiversity;*
- *appropriateness of design for diverse users and activities;*
- *interpretive and educational programming; and*
- *amount of green space in the surrounding region.*

Although these issues are often addressed in other municipal planning and strategy documents, or on a case-by-case basis for individual parks, they are generally not consolidated into an overarching system by which municipalities can evaluate progress and assess needs” (Evergreen, 2004, p9).

Overall, the City of Toronto lacks park policy that consolidates standards of the above-mentioned factors. In order to meet the needs of a particular community, some park planning should understandably be done on a site-by-site basis. However, the absence of standards that speak to quality, biodiversity, programming, size, and access to green space in any area gives municipalities like the City of Toronto leeway to not attain park goals that ensure all of its residents are adequately served by park space that meet their needs. Revitalizing schoolyards could provide the City with the opportunity to improve quality, amount, and access to parks through a citywide initiative that could set goals, evaluate process, and assess needs for parks and their communities. This paper will provide the City of Toronto with a preliminary analysis of *if* and *how* schoolyards could provide additional park space to Torontonians, and it will provide case study examples of citywide initiatives that have successfully met their park goals by converting schoolyards into schoolyard parks.

4 METHODOLOGY

This research paper used two methods of analysis to answer the overarching research question; *will converting schoolyards into schoolyard parks increase access to green space in Toronto?* The first method used spatial analysis to map the geography of schoolyards in the TDSB. The second method completed a comprehensive review of schoolyard-to-park initiatives that have been established in different cities across the United States in an effort to provide more green space for their citizens.

4.1 GEOGRAPHIC INFORMATION SYSTEM MAPPING

This paper, from a geographic perspective, first encompassed the City of Toronto as a whole, and then it looked at areas of the City where parkland is needed most. These priority areas are identified as Neighbourhood Improvements Areas – neighbourhoods that have a low “equity score” based on 15 criteria that includes health, economics, political participation and education – and “low parkland provision areas” as defined by the spatial analysis completed by PF&R in *Figure 3*. Only Toronto District School Board properties – both elementary and secondary – were used in this spatial analysis.

In order to inform a strategy to increase green space in the City by turning schoolyards into schoolyard parks, a spatial inventory of schoolyards was completed. This analysis will answer the following research questions:

1. How much total parkland would be added if:
 - a. All TDSB schoolyards were converted and added to parkland system?
 - b. If only underutilized schoolyards were converted and added to the system?
2. How many people would benefit from the increase in access to green space?

Using the program ArcMap 10.3.1, the “Toronto District School Board Locations” shapefile data set from the City of Toronto’s Open Data Catalogue was used to plot the locations of all of the TDSB’s elementary and secondary schools on a map. The size of each school site was then determined using the Teranet data set shapefile called “Toronto Assessment 2012” that contained all of the site areas of each property in the City in metres squared. The select by location function was then used to identify lot boundaries from the Teranet data shapefile that intersected with the TDSB school board points. This created a third data set layer that had only the location and areas of TDSB school properties. Out of 585 TDSB schools that were within the TDSB data set, only 533 TDSB schools were located on a parcel of property and so these 533 properties were used to calculate the areas of the TDSB schools.

This step was repeated for the locations of the TDSB schools that were declared “underutilized” on January 28, 2015 by the TDSB. Using the list provided by the Globe and Mail of these underutilized schools, the names/data of the underutilized school sites were selected in the attribute table of the “TDSB Locations” data set, and then exported into another layer. Then, using the same process above, the areas of the underutilized school properties were determined by using the “Toronto Assessment 2012” data set. Only 122 underutilized school locations were located using the TDSB data set available and only the total areas for 118 of these underutilized schools were found and mapped. These 118 underutilized properties were used to calculate the areas of the underutilized TDSB schools.

The data provided by “Toronto Assessment 2012” gave only the total area of every school property and there was no data set available that measured only the area of the schoolyards/green space or building footprints of TDSB schools. In order to use a number that more closely represented the area of a schoolyard rather than using the total area of a school property, 12 randomly selected TDSB schools were taken from all over the City of Toronto. Using the measuring tool on ArcGIS Online and the aerial imagery basemap that the program provided, the total area of each school property was measured followed by the total area of each school building. *(N.B. the area measurements for total property area, school building area, and school green space area were all approximations).* The area of each school building was then subtracted from the total area of the school property. The result was an approximation of the total area of green space for each property (these calculations are outlined in *Table 4* in section 5.1.1 School Property Composition of this paper).

Two other data sets were downloaded from the City’s Open Data Catalogue, the “Neighbourhood Improvement Areas” (NIA) shapefile and the “Parks” shapefile, in order to see where all the TDSB schools were located in relation to each of these identified areas. Toronto’s “Total Population By Dissemination Area for Census 2011” was also layered onto the map using a shapefile exported from Simply Map.

Buffers of 400 metres were then created around all underutilized TDSB schools to represent the standard of a 5 to 10-minute walk used by other municipalities in their park standards. Following this, using the “select by location” tool, the buffer layer and the census population layer were selected to analyze the number of people that would fall within this buffer. It is important to note that for this step, only dissemination areas that had their centroids located within the buffers were taken into account. The second option that was not used was to take into account any dissemination area that touched or fell within a buffer. This option took into account entire portions of dissemination areas that fell outside of

the buffer and therefore skewed the data much more (*see APPENDIX A for a comparison of options*). By using the first option where only the dissemination areas that had their centroids located within buffers, a slightly more accurate representation of the number of people living within the buffers was obtained.

Lastly, since there is currently no publically available data on Toronto's parkland provision, the "Local Parkland Provision - Map 8" from the City of Toronto's Official Plan (2010a) was georeferenced to create a base map on top of which the locations of the underutilized schools could be mapped. This was done to illustrate where the underutilized schools are located in reference to areas in Toronto that have a low or high parkland provision.

4.2 PROGRAM REVIEW

The second component of analysis of this paper is a comprehensive review of policy-based initiatives that have been implemented across four cities in the United States in an effort to provide more green space to their residents. The purpose of this comprehensive review is to gain an understanding of the frameworks of these initiatives in order to potentially apply aspects of their frameworks to a program that is unique to Toronto. This analysis will answer the third research question: *How do initiatives in other municipalities or jurisdictions green schoolyards and incorporate them into their park systems?*

The four cities and their programs that were reviewed are Boston, New York, Denver, and Houston. These four cities were chosen through an initial sweep of many different initiatives that were mentioned in Harnik's 2011 article "Learning to Share: Designing Schoolyards for More Than Just Recess". These initiatives were then reviewed in greater detail as they had the most publically available information and research found online. The review examined each program using four indicators that would help the City of Toronto and TDSB understand the frameworks of each initiative:

1. When was it established and why?
2. What kind of partnership framework does it follow? (*this includes frameworks for funding, implementation/process of the program, and operation and maintenance*)
3. Successes of the program
4. Challenges of the program

The information and data gathered for this comprehensive review were found on the Internet through Google, Google Scholar, and Ryerson online database searches. Information was obtained from reports of special-purpose bodies and municipal government bodies, consultant briefs, media reports as well as program websites. There was limited academic literature that spoke to these programs in greater detail than the sources just listed.

4.3 LIMITATIONS

The limitations of this study include data and time. Spatial data analysis was restricted by the lack of available data for Toronto's parkland provision, as well as a lack of more up-to-date total population data as the last census was completed in 2011. Based on the growth statistics of the City, it can be assumed that the population in most areas of the City has increased since 2011 and thus the population numbers captured within the school buffers do not necessarily reflect the numbers of today. As well, the school buffers could not take into consideration only the population located within its boundaries as the population data could only be gathered using entire dissemination areas that fell within the buffers. This affected the number of residents captured within the buffers (*see Appendix A*).

Another restriction was that there was no data set available that had the composition of school properties in terms of the size of schoolyards, green space or school building areas of TDSB schools. Therefore, the ArcGIS Online mapping system and measurement tool was used to find an approximation of the average school building size and amount of green space since it was difficult to tell the boundaries of the actual schoolyards. No other analysis similar to this was found and thus in the short time and data available, only a sample of schools and their estimated measurements were used to calculate an approximation of school property composition. The calculations for total green space areas used approximated numbers and they did not account for *all* of the TDSB schools, underutilized or not, as the property areas could not be found for a few TDSB schools. Thus, these calculations only provide a very general understating of the composition of school properties.

Lastly, the program analysis was limited by both the lack of academic and professional literature that spoke to detail about the programs. Media reports were used to supplement some of the information that was difficult to acquire or was found lacking.

5 ANALYSIS

5.1 SPATIAL ANALYSIS

5.1.1 *SCHOOL PROPERTY COMPOSITION*

When determining the composition of school properties based on the total area of each property and area of each school building, the calculations were broken down by total school property area minus school building area for the 12 school samples. For the purposes of this paper, the remaining space/land of the school properties was deemed “green space”, even though some of this land may include parking lots, cubicles, and asphalt play areas such as basketball courts. However, all of these uses have the potential to be converted, revitalized and incorporated into a greener schoolyard or schoolyard park and thus this paper has identified and named these areas as school “green space”. These calculations are outlined in *Table 4* below:

TDSB School	Total Property Area (m ²)	School Building Area (m ²)	School Green Space Area (m ²)	Percentage of Total Property Area
King Edward Junior and Senior Public School	13,330.7	3,334.9	9,995.8	Building: 25% Green Space: 75%
Chalkfarm Public School	16,453.2	2,706.2	13,747.0	Building: 16% Green Space: 84%
Baycrest Public School	21,892.8	2,251.5	19,641.3	Building: 10% Green Space: 90%
Westway Junior Public School	25,006.2	2,935.4	22,070.8	Building: 12% Green Space: 88%
Owen Public School	19,890.3	5,524.3	14,366.0	Building: 28% Green Space: 72%
Park Lane Public School	23,662.5	2,461.7	21,200.8	Building: 10% Green Space: 90%
Bessborough Drive Elementary and Middle School	13,351.2	2,854.0	10,497.2	Building: 21% Green Space: 79%
Pape Avenue Junior Public School	10,423.4	2,690.6	7,732.8	Building: 26% Green Space: 74%
Heydon Park Secondary School	5,437.6	1,254.9	4,182.7	Building: 23% Green Space: 77%
Clinton Street Junior Public School	13,493.2	3,122.1	10,371.1	Building: 23% Green Space: 77%
Parkdale Junior and Senior Public School	13,884.7	6,026.1	7,858.6	Building: 43% Green Space: 57%
Ogden Junior Public School	6,908.7	1,517.9	5,390.8	Building: 22% Green Space: 78%
<i>Total Averages of these 12 schools</i>	<i>15,311.21 (Median: 13,688.95)</i>	<i>3,056.63 (Median: 2,780.10)</i>	<i>12,254.58 (Median: 10,434.15)</i>	<i>Building: 20% Green Space: 80%</i>

Table 4: TDSB School Properties' Composition Calculations

Based on the sample of twelve TDSB schools, it was found that the average size of a TDSB school property is 3.79 acres (15,311.21 m²), the average school building footprint is 0.75 acres (3,056.63 m²), and the average school green space 3.03 acres (12,254.58 m²). In other words, on average a TDSB school

property is comprised of 20% school building and 80% green space. Therefore, the amount of potential green space that a school has to offer its students and the surrounding community is rather significant; a Toronto neighbourhood park is classified as usually being anywhere between 1.2 to 7.4 acres (City of Toronto, 2013a) and each school could potentially provide around 3 acres of green space or parkland.

5.1.2 POTENTIAL SCHOOL GREEN SPACE PROVISION

Using these calculations of average school green space amount and average school building size, generalizations were made about the TDSB school system across the City of Toronto. The average school building area was multiplied by the total number of schools (533) that had known property areas. This number of total school building areas was then subtracted from the total area of all TDSB schools from the same data set. The resulting number was an approximation of the total area of schoolyards in the TDSB. See calculations below:

CALCULATIONS FOR TOTAL SCHOOLYARD AREA FOR ALL (533) TDSB SCHOOLS

- $3,056.63 \text{ m}^2$ [average school building area] x 533 [schools]
- = $1,629,183.79 \text{ m}^2$ [total area covered by school buildings in the TDSB]
- $13,558,872.05 \text{ m}^2$ [sum of areas of all TDSB school properties] - $1,629,183.79 \text{ m}^2$ [total area covered by school buildings in the TDSB]
- = $11,929,688.26 \text{ m}^2$ [total green space area for all (533) TDSB schools]

CALCULATIONS FOR TOTAL SCHOOLYARD AREA FOR ALL UNDERUTILIZED (118) TDSB SCHOOLS

- $3,056.63 \text{ m}^2$ [average school building area] x 118 [underutilized schools]
- = $360,682.34 \text{ m}^2$ [total area covered by school buildings in the TDSB]
- $3,234,647.37 \text{ m}^2$ [sum of areas of underutilized TDSB school properties] – $360,682.34 \text{ m}^2$ [total area covered by school buildings in the TDSB]
- = $2,873,965.03 \text{ m}^2$ [total green space area for all underutilized (118) TDSB schools]

OTHER SPATIAL MEASUREMENTS/DATA ACQUIRED FROM GIS MAPPING:

- Total Area of all (533) TDSB Properties: $13,558,872.05 \text{ m}^2$
 - Mean: 25,438.78
 - Standard Deviation: 14,610.97
- Total Area of all (118) Underutilized Schools: $3,234,647.37 \text{ m}^2$
 - Mean: 27,412.27
 - Standard Deviation: 16,341.10
- 34 underutilized schools in Neighbourhood Improvement Areas

- (138 schools in total located within NIA)
- Number of underutilized schools located within or very close to park poor areas: 70
- Number of people the underutilized schools could serve:
 - Sum of population: 471055
- Number of people the underutilized schools located within low parkland provision could serve:
 - Sum of population: 327002

It was found that in total, (533) TDSB schools could provide approximately 2,947.89 acres (11,929,688.26 m²) of potential green space. In other words, the TDSB and City of Toronto have the opportunity of adding almost 3,000 acres of parkland to the City's park system if they were to convert every TDSB schoolyard into a schoolyard park. If the TDSB and the City were to only convert the green spaces of schools that were deemed underutilized, the 118 schools could potentially provide 2,873,965.03 m² of green space, or 710.17 acres of parkland to the City. This is still a rather significant amount as 70 of these 118 underutilized schools are located within or right next to areas that have been measured by the City as having the two lowest parkland provision levels (*see Figure 8*).

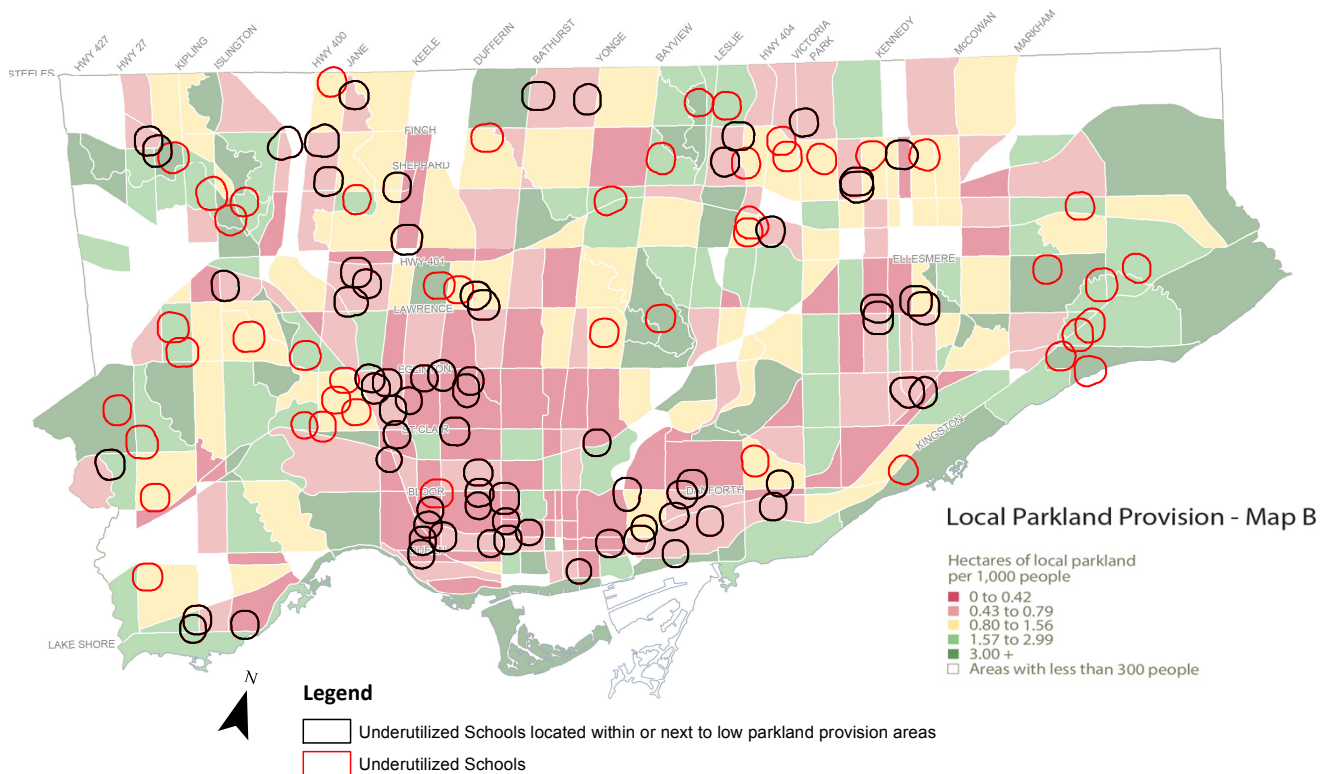


Figure 8: Underutilized TDSB Schools with 400m buffers

In order to illustrate where the underutilized schools are located in reference to areas in Toronto that have a low or high parkland provision, the two lowest levels of parkland provision that were focused on in this analysis was “0 to 0.42” and “0.43 to 0.79” hectares of local parkland per 1,000 people.

Using the “Local Parkland Provisions – Map 8” from the City of Toronto’s *Official Plan* (2010a), the total green space area of all underutilized TDSB Schools located within or right next to the two lowest parkland provision levels (0 to 0.79 hectares of local parkland per 1,000 people), was calculated below:

- $3,056.63 \text{ m}^2$ [average school building area] x 70 [underutilized schools located within or next to low parkland provision areas]
 $= 213,964.10 \text{ m}^2$ [total area covered by school buildings in the TDSB]
- $1,693,173.38 \text{ m}^2$ [sum of areas of underutilized TDSB school properties located in low provision areas] – $360,682.34 \text{ m}^2$ [total area covered by school buildings]
 $= 1,479,209.28 \text{ m}^2$ [total green space area for all underutilized (70) TDSB schools located within or next to low parkland provision areas]

These 70 schools alone could provide approximately 365 acres of green space to these areas that are in the greatest need of parkland (0 to 0.79h). Furthermore, not only are 60% of underutilized schools located within low parkland provision areas, many of them are also located in areas that the City has identified as NIAs; in total, 34 underutilized schools are located within NIAs (*see Figure 9*).

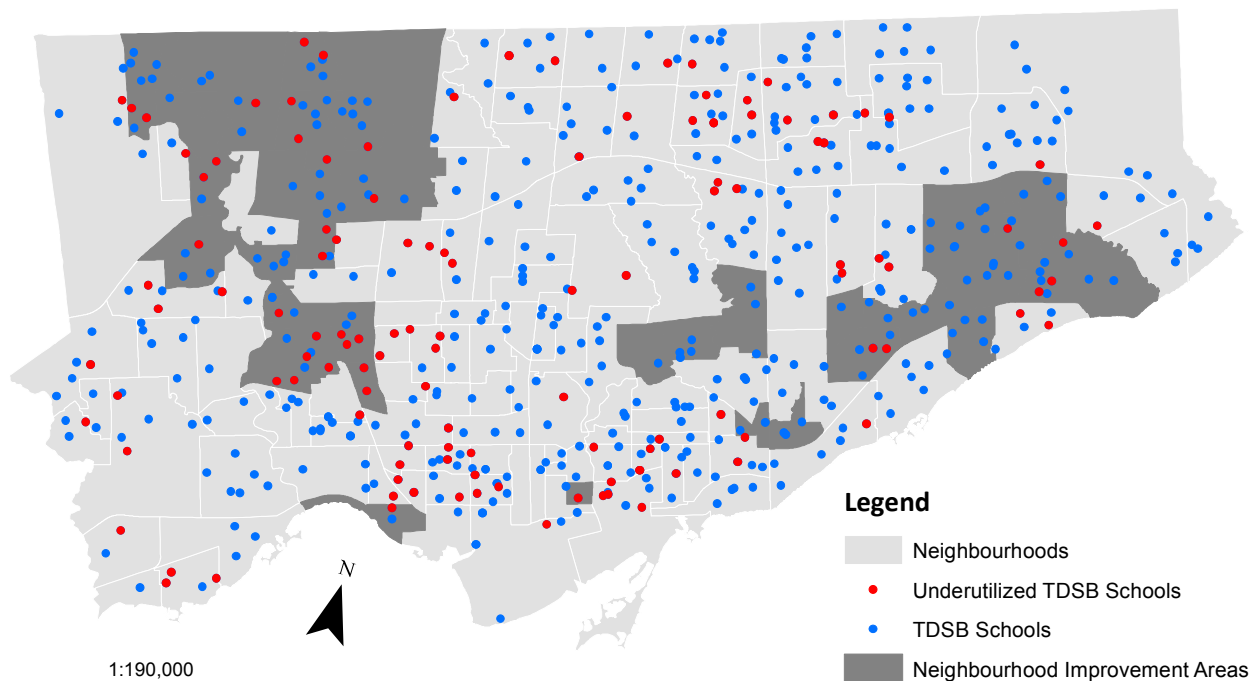


Figure 9: TDSB Schools located within Neighbourhood Improvement Areas

By converting these 118 underutilized schoolyards across the City into schoolyard parks, within a 5-10 minute walk (400m radius) of these schools, 471,055 Torontonians would gain access to these revitalized green spaces. If the City and TDSB were to only convert the 70 underutilized schools located in areas that have the two lowest parkland provision levels, 327,002 residents would still be able to walk under 10 minutes to their local school for green space (*see Figure 8*).

5.2 COMPREHENSIVE REVIEW OF PROGRAMS

5.2.1 BOSTON: BOSTON SCHOOLYARD INITIATIVE

PURPOSE OF THE PROGRAM

The Boston Schoolyard Initiative was established in 1995 under the direction of former Mayor Thomas Menino to improve the “deplorable” conditions of the public school grounds that deteriorated because of serious neglect (Took, 2011). Boston had observed that its schoolyards were barren and underutilized by the community (Meyer, 1997). Before the initiative, only locally inspired and fundraised schoolyard revitalizations projects were carried out in Boston, leaving out the majority of communities who did not have the community capacity or funds to carry out such projects. This eventually led to the argument that since public schoolyards are public facilities, the City of Boston should shoulder some of the responsibility for improving these spaces (Ibid). Research regarding the high rates of childhood obesity strongly suggests implementing comprehensive strategies through changes in directives, programming, and planning that increases opportunities for children to participate in physical activities (Nakashian, 2008). This initiative was created as a strategy to help mitigate this epidemic and to respond to community needs. The goal of the program, fully controlled by the school system, is to provide “clean, safe and green” schoolyards (City of Boston, 2000, p7).

PARTNERSHIP FRAMEWORK

Structure & Funding: The Boston Schoolyard Initiative (BSI) is based upon a public-private partnership between the City of Boston (in particular the Departments of Neighbourhood Development and Basic City Services), the Boston Public School Board, and the Boston Schoolyard Funders Collaborative. The Boston Schoolyard Funders Collaborative was created to facilitate the funding process of the initiative and it brings together a diverse group of private funders and donors that invest in the schoolyards and their various education programs (The Boston Schoolyard Initiative, n.d.). The private sector often has the perception that directly paying the City or School Board to fix something that their taxes should cover is unreasonable. However, the Collaborative provides a venue for pooling donations into a privately held

fund, whether it is cash or particular features such as a play structure, and then dispersing them to fund capital and maintenance costs. The Collaborative also works with the City to establish policies for the initiative and to oversee budgets and work plans (Ibid). The program was only supposed to run for five years with the City investing \$10 million in that period, but due to the continued support from both private funders and the public, the program is ongoing (Kaboom, BSI, n.d.). The annual investment in the BSI is estimated at \$1.2 million from the City and \$600,000 from the Funders Collaborative, with the Collaborative also investing another \$600,000-\$800,00 in education programs (Ibid). Schoolyard groups that seek financial support for their schoolyard initiatives have their funding needs met by the Collaborative. Planning grants are awarded to schoolyard groups based on Requests for Proposals, where the schools hire a part-time professional community organizer to coordinate community involvement and outreach, build human capacity, and to help establish a schoolyard group (Meyer, 1997).

Implementation: The BSI identifies four phases of their implementation process that places a heavy emphasis on school and community participation in all stages of design, development and maintenance. The first phase is *Community Organizing* and it involves bringing together a “local constituency” that will assess community needs, lead and facilitate building community consensus on the design of capital improvements, and assist with ongoing programming and maintenance (Ibid). The second phase is *Designing Improvements* where a project manager from the Boston Public Facilities Department and a landscape architect are contracted by the City and assigned to a schoolyard project. A Master Plan is created with students and local community members that will guide construction and future renovations. Common elements of BSI schoolyards include outdoor classrooms, green areas, play equipment, and sustainable practices such green roofs and recycled rubber surfaces. The third phase is *Construction* where the schoolyard group, the City departments, and the School Board first approve the construction documents, and then these documents are put out to tender (Kaboom, BSI, n.d.). Community participation is strongly encouraged in the construction process to lower costs and foster a sense of local ownership.

Operation & Maintenance: Once construction is completed on any schoolyard, the Funders Collaborative establishes a *Shared Maintenance Protocol* that is specific to each site. Under all Protocols, the schoolyards are maintained by custodial staff, friends groups, and a specially trained union crew that travels from site to site (Meyer, 1997). The crew receives training from the Parks Department and is in charge of ongoing maintenance of the schoolyards while communicating with the local schoolyard group. A “Friends of the Schoolyard” group of volunteers is created for each schoolyard that has the interest,

knowledge and capacity to help with maintenance, improvements (such as bulb planting and seasonal cleaning), and to assist in implementing ongoing educational programs (Ibid).

SUCCESES

Since 1995, the BSI has transformed a total of 88 schoolyards into centres for play, learning, and the community. By 2009, 71 revitalized schoolyards increased access to green spaces and play structures by 125 acres and served more than 90,000 children under the age of 14 in these neighbourhoods (Kaboom, BSI, n.d.). Students at schools with BSI projects were found to have improved math scores, fewer suspensions, and greater attendance than schools without BSI projects (Lopez, 2009). Overall, the BSI projects had significant, positive impacts on students and communities with 100% increase in physical activity, 63.2% improved student behaviour, and 73.7% improved relationships with parents and the community (The Boston Schoolyard Initiative, n.d.). Members involved in the BSI largely attribute the success of the program to community engagement at all stages and strong Mayoral support (Lopez et al., 2008; Kaboom, BSI, n.d.).

CHALLENGES

The BSI's main challenge was convincing the School Board that the program had the capacity to improve their schoolyards and that a partnership between public and private sectors was possible and needed to realize this goal (Nakashian, 2008). The Mayor also faced challenges in allocating money and authority across public and private sectors (Ibid). The funds and community involvement to maintain the schoolyards are also not assured.

5.2.2 NEW YORK: SCHOOLYARDS TO PLAYGROUNDS PROGRAM

PURPOSE OF THE PROGRAM

The Schoolyards to Playgrounds program in New York was established in 2007 as the City had the lowest number of acres of green space per person than any other large U.S. city (New York City Global Partners, 2013), and this was especially true for low-income neighbourhoods (The Trust for Public Land, n.d.). Many of these low-income and park poor communities also had schools with no playground facilities. Mayor Bloomberg's PlaNYC goal was to have every New Yorker live within a 10-minute walk of a park or playground. To address this need for green space, that City identified schoolyards as an underutilized resource as they were only used a few hours a day by the school population. The rest of the time the surrounding communities were not able to access these spaces as they were locked every evening, weekend and all summer (Ibid). The program not only revitalizes elementary and middle schoolyards but

it also converts them into community playgrounds for use by the general public beyond regular school hours.

PARTNERSHIP FRAMEWORK

Structure & Funding: The Program is based on a public-private partnership between the Department of Parks and Recreation (DPR), the Department of Education (DOE), and the non-profit partner, the Trust for Public Land (TPL), “which works in cities across America to conserve land in order for people to enjoy local parks, playgrounds, and natural areas” (Ibid, p2). The DOE provided the land and onsite maintenance, the DPR had the expertise in landscape design and construction, and the TPL had experience in renovated schoolyards. The program is entirely funded by the City with the Mayor initially allocating \$117.2 million in capital funding in the first five years to revitalize 221 of 290 schoolyards, and \$14.5 million per year to cover ongoing maintenance costs (Ibid). However, due to the economic downturn in 2008, funding was reduced – but not eliminated. The TPL raised \$8.5 million to provide private matching dollars for some of the schoolyard improvements (The Trust for Public Land, n.d.).

Implementation: Using a GIS mapping program, 290 schoolyards were selected for conversion as they were located in neighbourhoods that had poor access to park space but that had a high number of children (New York City Global Partners, 2013). The sites were assessed and classified into one of three categories: C1 no improvements required; C2 new equipment required; C3 larger capital improvements required (Ibid). C1 sites were opened immediately to the community as they did not require any improvements, while C2 and C3 sites received around \$400,000 and \$1.2 million for renovations, respectively (Ibid). From start to finish, the three partners of this initiative have varying responsibilities on a site-to-site basis. The design phase is 4-6 months and includes community consultations that bring together school administration, children, parents, neighbours and community groups to work with a landscape architecture team provided by the DPR to design a schoolyard that reflects their needs. The DPR is in charge of managing the design, bid and award, and construction of 137 schoolyard sites before turnover to the DOE, while the DOE is in charge of the same processes for 30 schoolyard sites (Ibid). The TPL leads the community design and construction process for 123 sites. The bid and award phase can take 6-8 months, where design documents are reviewed and then awarded to a contractor while the construction phase can also take another 6-8 months (Ibid). Common elements of the projects include trees, gardens, synthetic turf fields, and play equipment.

Operation & Maintenance: Upon completion of construction, the DOE and the school’s custodial staff assume the responsibility of operating and maintaining the schoolyards. The TPL also leads

workshops for school custodians, principals and parent coordinators to teach programming and facilitate stewardship (New York City Global Partners, 2013). The school and community set their park hours and who is responsible for locking the schoolyard gates; usually the custodial staff opens and closes the schoolyard gates from 8am to dusk during the week when school is not in session. On weekends and during the summer the schoolyards are also open from dawn until dusk with the responsibility being shared between the staff and community groups.

SUCCESESSES

Since inception, the Schoolyards to Playgrounds program has added more than 150 acres of playground space and up until 2013, the number of New Yorkers within a ten-minute walk of a park increased by more than 500,000 people (Ibid). By 2011, 49 neighborhoods had increased access to playgrounds that met the City standard as measured by the number of children under 14 per playground in a given neighbourhood (Ibid). A study in 2011 that evaluated three schoolyard sites before and after the initiative found that the use of the new schoolyards went up 28-65% depending on the users (school children or community members) (Taplin, 2011). Members of the program attribute the success of this program to community participation in the design process and the strong Mayoral support that provides the bulk of the funding for the program (The Trust for Public Land, n.d.).

CHALLENGES

Some of the challenges faced by the program varied site-by-site such as unforeseen construction costs due to basic infrastructure upgrades not included in the budget. Concerns from community members in many neighbourhoods included noise, vandalism, and negative behaviours, but the police and fire departments were asked to join in on some of the consultation processes to address some of these security concerns (New York City Global Partners, 2013). Design strategies also addressed some of these concerns. In addition, because the program is run by the community and school board, challenges arose from custodians who did not want to handle the extra responsibility of park maintenance, and from community members who wanted the schoolyards locked early as they did not want youth playing at night (Harnik, 2011).

5.2.3 DENVER: LEARNING LANDSCAPES

PURPOSE OF THE PROGRAM

The Learning Landscapes program was developed from a grassroots initiative that successfully transformed two underutilized Denver Public School schoolyards into vibrant community spaces. Many

Denver schoolyards resembled “prison yards” and they were not a conducive environment for play or learning (ActiveEnvironments, 2013). A parent at one of the public elementary schools initiated and led the effort to revitalize the school’s playground. She was also a professor at the University of Colorado at Denver (UCD) and engaged her landscape architecture students to help design a playground tailored to the needs of the school and members of the community. They ultimately developed a model that they called a “Learning Landscape”, which “is an outdoor area that supports physical activity, learning, and improved social interaction” (Kaboom Denver, n.d., p1). The successful transformation of this first schoolyard in 1998 was then tested out on a second elementary school that was located in a community with fewer resources than the first but in dire need of renovations. Through hard work and determination, local leadership was rallied, political interest was gained, funds were raised through public and private donors, and ultimately the schoolyard was transformed. It became the model of community mobilization and a catalyst for the development of the formal program.

The two schoolyard transformations inspired key public and private sectors leaders to form the Learning Landscape Alliance (LLA) in 2001 and its goal was to recreate these successes at 22 other underserved schools in the City of Denver. A number of factors lead to the creation of the “Learning Landscapes” Program: (1) derelict and aging elementary school infrastructure, (2) community needs were not being met which lead to a community-based initiative, (3) the University of Colorado required its architecture students to take on a real-life civic engagement project, (4) the elimination of school busing programs meant that more students were going to schools in their own neighbourhoods again, and (5) funding from the city, state and non-profits made it possible to start and implement the program (ActiveEnvironments, 2013).

PARTNERSHIP FRAMEWORK

Structure & Funding: The Learning Landscapes program is a public-private partnership that identifies as having a top-down and bottom-up approach to implementation. At the top level are the Denver Public School Board (DPS), the UCD, the City and County of Denver, and private foundations. In the middle are the community based and neighbourhood organizations, and the individual elementary schools. At the bottom level are the children, youth, parents and community members (Ibid). A unique partner in this initiative is the UCD where the College of Architecture and Planning entered into a formal agreement in 1999 with the DPS to plan, design, and help build Learning Landscapes at DPS elementary schools (Ibid). Denver’s Office of Economic Development awarded LLA a total of \$5.1 million in the first three years beginning in 2001 and the LLA raised a total of \$9 million in that same time period (Kaboom, Denver,

n.d.). Converting each school costs around \$450,000 and funding for each schoolyard can be broken down roughly by program partner contributions: City of Denver \$140K, the DPS \$160K, the DPS in-kind donations \$40K, Foundations \$80K, individual volunteer donations \$50K, and elementary school donation \$10K (Harnik, 2011). The school community is required to raise 1-2% of the cost of the project while the rest of the partners individually do not contribute more than 25% of the cost of any playground renovation (Kaboom, Denver, n.d.). After 22 schools in underserved communities were revitalized by 2003, the DPS Board proposed bond measures for \$39 million to begin expanding the Learning Landscapes program to every DPS elementary schoolyard. It was approved and 24 additional sites were revitalized. Voters again expressed their satisfaction with the program by passing another bond in 2008 for \$29 million so that the remaining 37 schoolyards in the school system could become Learning Landscapes (ActiveEnvironments, 2013).

Implementation: The Learning Landscapes Program is largely a community undertaking as local residents provide input during the design process and then participate in the building process. The UCD students first help community members redesign their schoolyards to reflect their needs. Then each school must form a Learning Landscape Team comprised of students, parents and community members, to assist with the design and programming decisions, and to assist with ongoing maintenance upon project completion. The construction phase also involves heavy community involvement as a volunteer build day is established for every project to develop “a sense of ownership and civic pride” (Ibid). Common elements of Learning Landscapes include irrigated and drained areas with a field, play structures, hard surface court, public art works, habitat areas, shade structures, and a community gateway that symbolically invites the community in (Harnik, 2011).

Operation & Maintenance: The DPS is responsible for maintaining the schoolyards and it costs roughly \$25,000 per site per year, including activities such as re-seeding, fertilizing, and watering (Kaboom, Denver, n.d.). However, it is assumed that the community and the Learning Landscape Team will continue to help and share in the responsibility of maintaining the new schoolyards. In almost all cases, continued community engagement has been impactful as an estimated \$26,000 worth of labour and materials is contributed by volunteers at each site per year (Kaboom, Denver, n.d.). In order to obtain state funding to design and build the projects, the schools are required to open the schoolyards to the community after school hours and on weekends.

SUCSESSES

Between 2001 and 2013, \$49 million was raised to convert 96 DPS elementary schools to Learning Landscapes (ActiveEnvironments, 2013). These projects now serve more than 46,500 students daily and over 500,000 city residents (Ibid). In 2010, a study was completed to evaluate whether the schoolyard redevelopment lead to an increase in use and physical activity levels in children. Observations were made before and school hours and it was found that the renovated playgrounds had significantly higher levels of physical activity than schoolyards that had not yet been renovated (Brink et al., 2010). It was also found that both boys' and girls' physical activity rates were significantly higher in areas of the schoolyard that had soft surface structures such as grass fields or play equipment (Ibid). Another added benefit that grew from the initiative was that the Learning Landscape schools that decided to implement gardens had less vandalism and generated greater school/community involvement in using, maintaining, and managing the schoolyards.

CHALLENGES

One key challenge of the program was the capacity of the ground crews of the DPS to maintain certain aspects of the sites that were beyond their expertise. For example, many of the crews were not trained to care for the natural grasses and plants, and so over time and with DPS funding, Learning Landscapes took over the responsibility for overseeing the maintenance that is beyond the capability of the DPS crews (Kaboom, Denver, n.d.). Another challenge is because this initiative is community-based, the support from neighbours may not always be there if locals leave and others move in who do not have the same attachment or sense of stewardship to these local schoolyards. Additionally, since the schoolyards are funded by the DPS, school closures would completely cut the funding of these spaces and the maintenance would then fall completely on the community (Ibid). To mitigate school closures particularly in high-needs areas, the DPS and the Denver Park and Recreation Department are beginning to work much more closely to develop more integrated master plans that consider the broad park system and playground needs of each community (Ibid).

5.2.4 HOUSTON: SCHOOL TO PARK PROGRAM

PURPOSE OF THE PROGRAM

The SPARK program has a long history of transforming schoolyards into community parks in Houston. It was first founded in 1983 as one of the initial responses to a report completed by City and County, which stated that Houston would need at least 5,000 acres of additional parkland in order to measure up to other U.S. cities standards (Spark School Park Program, n.d.). The City reasoned that the fastest and most cost effective way of increasing park acreage was using already available public land such as schoolyards.

During the program's first 25 years it converted 203 schoolyards into "SPARK Parks" and it was not until 1996 that the program was finally assigned under the jurisdiction of the mayor (Harnik, 2011).

PARTNERSHIP FRAMEWORK

Structure & Funding: The SPARK program is a public-private partnership between the City (Department of Housing and Community Development), 14 School Districts within the Houston-Harris County area, as well as businesses, non-profits, and at times, the University of Houston School of Architecture (Spark School Park Program, n.d.). A typical SPARK park costs between \$75,000 and \$100,000 to build. The City of Houston provides approximately 50% of the funding in the form of Federal Block Grants that schools must first qualify for by being located in areas where the population is defined as having low or moderate income (Harnik, 2011). A school must then apply to join the program and it must outline how the school and school board will help plan and fund their required \$5,000 contribution for each individual project. In addition, two of the four county commissioners commit \$5,000 to parks in their jurisdictions and corporate sponsors for each school donate an additional \$5,000 (Ownby, 2005). The SPARK program with the City selects around 10-15 sites per year depending on the site's needs, location, and the ability and willingness of the community to be involved in the project (Spark School Park Program, n.d.).

Implementation: Once the City and SPARK program select a site, a SPARK committee for the school is formed, which includes parents, teachers, neighbourhood leaders, and other community and staff members. The committee and community members then work with an architect that is either provided by SPARK, is a volunteer from the community, or a few master of architecture students from the University of Houston who take on the design aspect of the project as part of their curriculum (Ownby, 2005). Upon completion of the design plans, the construction documents are put out to bid and contractors are hired by the school district. Community members and students are also encouraged to assist in the construction process to facilitate stewardship and build a sense of ownership. No artificial turf is allowed to be used and common elements of a SPARK park are play equipment, picnic tables, outdoor classrooms, native trees and gardens (Harnik, 2011).

Operation & Maintenance: In addition to being solely responsible for the ongoing maintenance of the SPARK park, the school district is also in charge of providing other secondary services associated with the program such as printing SPARK's business materials, networking, and basic problem solving (Spark School Park Program, n.d.). Classes, parents and neighbourhood groups may volunteer to take care of the

natural vegetation found in the parks. The schools are required to leave the parks open to the public during non-school hours and on weekends for ten years (TPL, 2015).

SUCSESSES

Since 1983, the program has turned more than 200 schoolyards into neighbourhood parks (TPL, 2015). The SPARK parks serve over 317,000 people, 130,000 of which live in areas that do not have any other access to parks and open space closer than half a mile from their homes (TPL, 2015). A study completed by the TPL in 2015 assessed the conditions of the SPARK parks and their effects on the neighbourhood. It was found that 86% of users reported that SPARK parks were the primary park they visited and 58% of users did not visit other parks (TPL, 2015).

CHALLENGES

There were a couple notable challenges that needed to be addressed when creating and refining the SPARK program. One was that it was difficult to develop agreements and partnerships between different organizations that have differing priorities and therefore strong leaders, such as the mayor and school board trustee, which in this case were instrumental (Ownby, 2005). A second challenge was that the community and school board needed to be on board with having school properties openly accessible by the public. Liability issues were a concern for the school board until the state of Texas agreed to legally protect schools and cities from certain incidents that could occur on public grounds (Harnik, 2011).

5.2.5 KEY FINDINGS

Upon review of these initiatives, a number of similarities can be identified that contributed to the successful implementation and on-going operation of these programs. The first is the reason why these initiatives were established in the first place; all of the programs were initiated because all four cities realized they were growing in population and in density but the development of parks was not keeping pace with this growth. As a result, Boston, New York, Denver, and Houston had low ratios of parkland to people and this limited access to parkland was contributing to the decline of the physical and mental health of their residents. In order to add more parkland in their already built-up urban centres, the four cities chose to convert public schoolyards into schoolyard parks as these spaces were already considered public assets. As in many other North American cities, the schoolyards in Boston, New York, Denver, and Houston were all described as barren, derelict, and predominantly asphalt. These spaces were thus identified as being underutilized as they were lacking interactive play and education facilities/structures, and green space.

The framework for the four initiatives are also fairly similar since they are all public-private partnerships that involve strong participation and leadership from their respective city mayors, various city departments, and their local public school boards. Most notably, strong mayoral support, particularly through policy development and funding, was essential to the fruition of the programs as in the United States the mayor has governance over the public school boards. Interestingly, only New York's initiative involves the City's parks department within the partnership framework. All initiatives rely on private sector entities such as non-profits, foundations, businesses, and private donors to help fund the programs.

The last but most important factor in all four initiatives is community engagement. They all greatly attribute the success of each program to community involvement at every stage of the projects including fundraising, design, construction and maintenance. They argue that not only does this create new schoolyard parks that met the particular needs of the community, involving students, residents, and local groups in the implementation and maintenance of the program, but it also develops community capacity, stewardship, and a sense of pride and ownership.

Where the initiatives differ depends upon who are the major stakeholders in the partnerships, which entity funds the majority of the initiative, and which entity maintains the schoolyard park once renovations are completed.

6 CONCLUSION

6.1 DEFINING THE CONCEPT OF A 'SCHOOLYARD PARK'

The outdoor spaces associated with a public school are meant to serve the recreational needs of students, but they can do so much more than that. Schoolyards are predominantly flat, open spaces and the “great schoolyards – the rare ones that have healthy grass, big trees, a playground, and sports equipment – seem a lot like parks” (Harnik, 2012, p110). Green spaces such as parks have been shown to improve mental and physical health, foster the protection and development of the natural environment, and provide significant economic benefits to citizens, communities, and cities as a whole. Green schoolyards in particular have been found to positively impact the cognitive, social, and behavioural development of children.

However, maintaining schoolyards to the standards of parks is expensive and school boards have found it difficult to rationalize spending money on horticulture for the greater benefit of the community rather than spending their tight budgets on necessary maintenance and to school improvements (Ibid). School boards are also uneasy in regards to opening up their schoolyards the public due to liability, insurance, safety, and supervision issues, and they are also reluctant to give up control of their schoolyard to city parks departments who can offer maintenance help (Ibid; Marrow & Frost, 2012).

The unfortunate reality of many North American schoolyards is that they resemble parking lots more than parks. These poor conditions only further deter community members from using these spaces. In the United States, it is very common for school districts to lock their school grounds and keep them closed from the public. In this American context, Harnik describes the potential of a “schoolyard park” as “a space reserved for school-children during the school



Figure 10: TCDSB Private Property Sign

hours and used by the whole community at other times” (2012, p111). Although most public school boards in Canada do not lock their school grounds, many of them are fenced off with closed gates and have discouraging signage posted around the property (see Figure 10).

These restricting designs have been shown to have a negative impact on the use of schoolyards. For example, in 2010 in the City of Toronto, Hillcrest Junior Public School locked one of the major entranceways into its schoolyard, which was highly used as community path that linked one side of the neighbourhood to another. The school attached a sign reading “Private Property: No Trespassing”, leaving only one entrance open to the schoolyard for one part of the community (Schabas, 2010). The school parents and community members understood keeping gates locked during school hours but they were upset by the negative impacts the sign and the physical barriers would have on community access to the schoolyard during non-school hours. After a few months of having the community link barred and providing only a single access point, the schoolyard became deserted and began attracting negative behaviour from teenagers (Ibid). Tensions such as this between communities and the TDSB have only grown worse due to the TDSB identifying a number of school properties as underutilized and/or surplus. The jurisdictional distinction of whether a public green space is a City-owned park or a TDSB-owned playing field is of little matter to the surrounding community who are chiefly concerned about having access and use of such an amenity.

6.2 HOW TORONTONIANS CAN BENEFIT FROM SCHOOLYARD PARKS

As has been demonstrated through the City of Toronto’s Parkland Provision Map, there are many areas in the City that are in need of parks. However, the City is facing a number of challenges that impede parkland development which include scarcity of available land for acquisition, expensive land pricing, and a slow and rigid acquisition process. Other high density and built up cities in North America have very similar issues and they have begun developing creative strategies such as repurposing already existing green space to meet their parkland needs. A trending strategy over recent years has been to convert schoolyards into schoolyard parks. Schoolyards have been identified by park scholars, advocates, non-profit groups, and local park staff as underutilized resources due to their lack of amenities and greenery. Cities such as Boston, New York, Denver and Houston have created initiatives to take advantage of these existing ‘public’ spaces and formalize them into schoolyard parks. Many of Toronto’s public schoolyards can also be deemed underutilized and in fact, TDSB schools and schoolyards are under threat of being sold due to this very issue. Therefore, the City of Toronto and the TDSB have the opportunity to learn and draw upon ideas from other city initiatives to create their own strategy that revitalizes schoolyards into schoolyard parks.

For the context of Toronto, this paper defines “schoolyard parks” as a schoolyard space that is open to the public before and after school hours, and that has similar amenities to “neighbourhood parks” such as playgrounds, gardens, and naturalized areas. This is because schoolyards have been found to be similar in size and with the potential to carry the same role as “neighbourhood parks” in the City of Toronto.

6.2.1 POTENTIAL INCREASE IN QUALITY OF LIFE

Green spaces and urban parks have been found to provide numerous and various types of benefits to those who frequent them. Researchers from a wide range of disciplines have found that urban green spaces can improve mental health and well-being by reducing diseases such as depression, ADHD, and mental fatigue. They also serve as spaces that promote physical activity, which in turn has been shown to positively affect physical well-being by reducing diseases such as obesity, type 2 diabetes, and heart disease. Contact with natural environments has also shown to greatly reduce stress and promote relaxation, key factors that have been shown to negatively affect mental and physical well-being. From an environmental standpoint, increasing green spaces can mitigate the negative, physical effects of urban environments such as reducing storm water runoff, reducing energy costs through shade, minimizing the urban heat island effect, and improving aesthetics. Economically speaking, public parks have been proven to benefit urban areas in a number of ways including increasing property values, tourism, and business vitality. They have also been shown to reduce government expenditure on health services by improving factors such as cleaner air and water, and overall physical and mental well-being. Lastly, it has been found that the more green, aesthetically pleasing, and large a park space is the more likely the community will use it.

6.2.2 POTENTIAL INCREASE IN AMOUNT OF GREEN SPACE

As this comprehensive program review has indicated, revitalizing schoolyards brings the community’s value and use of a schoolyard to the forefront, thereby (re-)establishing a schoolyard’s role to equally serve the needs of students and the community. Turning Toronto’s schoolyards into schoolyard parks can provide the TDSB (and other School Boards) with more justification to protect and keep their schools and schoolyards. Additionally, due to the TDSB’s deficit and decreased funding, an initiative similar to the ones reviewed above that incorporates a number of partners for maintenance and funding could provide the TDSB with a solution for financing schoolyard improvements. Equally, the City of Toronto would benefit from such an initiative, as more parkland would not necessarily have to be acquired in order to increase park access. The spatial analysis demonstrated that if all (533) TDSB schools converted their

schoolyards to schoolyard parks, almost 3,000 acres of parkland could be added to Toronto's park system; if only underutilized schoolyards were converted, 710.17 acres could still be added. The analysis also showed that 60% of underutilized schools are located within areas that have been labeled as the two lowest parkland provision levels, and these 70 schools could provide approximately 365 acres of green space to these areas that are in the greatest need of parkland. Approximately 327,000 residents in these areas alone could gain access to green space from such an initiative. Therefore, the amount of parkland that could be added to the City of Toronto by turning schoolyards into schoolyard parks is substantial and the associated benefits of green spaces can be significant to many residents.

7 RECOMMENDATIONS

Based on the comprehensive review of schoolyard park initiatives, as well as the opportunities and challenges in Toronto for implementing such an initiative, two recommendations are presented. The first recommendation is to *establish a park goal* for the City of Toronto and the second recommendation is to *establish a City of Toronto, Toronto District School Board, and Ministry of Education formal partnership*. The steps for implementing the recommendations are outlined and summarized below:

Establish a Park Goal

Parks, Forestry and Recreation Division, along with other City Divisions and public landholders, to create a City of Toronto Park Goal that will realize the PF&R's vision of being a "City within a Park".

Establish a Formal Partnership

1. Align interests and priorities of the Ministry Education, TDSB (or other school boards), and the City of Toronto. The Ministry and TDSB should:
 - a. Establish schools as community hubs
 - b. Reform the funding structures to continue to reflect student enrolment, but to prioritize and maintain the funding of schools located in low parkland provision areas
 - c. Reform the assessment process of TDSB schools to equally weigh student enrolment and community utilization of school properties
 - d. Provide price breaks on surplus school properties to other government, public, or non-profit entities
2. Redefine complementary roles and responsibilities of the Ministry, School Boards (specifically, the TDSB) and the City of Toronto
 - a. Establish a funding agreement between City of Toronto and TDSB
 - i. City of Toronto to use parkland reserve funds to help fund revitalization and maintenance costs of schoolyard parks
 - b. Establish a maintenance protocol between government entities and other potential stakeholders
 - i. PF&R to provide TDSB caretaking staff with training on how to maintain schoolyard parks
 - ii. PF&R to provide staff to assist with capital projects, repairs and on-going maintenance
3. Identify other potential partners for project implementation, funding, and on-going maintenance
 - a. TDSB EcoSchools Program
 - b. Toyota Evergreen Learning Grounds Program
 - c. Park People
 - d. Other public and private partners

If the TDSB were to provide space for parkland, a win-win situation would occur between all three government entities, with each entity accruing a number of benefits:

TDSB & Ministry of Education

- Obtaining funds for schoolyard revitalization improvements and on-going maintenance
- Acquiring additional staff from the City for maintenance help
- Potentially decreasing the number of supports and services for students as student behaviour, learning, cognitive development, and mental health issues have been found to improve with access to green space
- Renewing curriculums to include outdoor components and re-inspiring teachers

City of Toronto

- Acquiring hundreds of acres of parkland without the need to purchase them all
- Being able to use reserve funds for the construction and maintenance of numerous projects across the City instead of purchasing one or two extremely expensive park spaces for the same amount
- Acquiring park spaces (schoolyard parks) that are already located in prime areas for people to access
- Acquiring park spaces that will highly unlikely have any remediation costs associated with them

7.1 ESTABLISH A PARK GOAL

Other than the Boston Schoolyard Initiative, all other initiatives or their cities reviewed in this paper had parkland goals or targets to meet. For example, some goals were to provide every New Yorker a park or playground within a 10-minute walk, to add an additional 5,000 acres of parkland to Houston, or revitalize/green a target number of schools every year. As the City of Toronto does not currently have any goal or target for its parkland system as do most other municipalities in Canada, establishing a parkland goal can be a valuable tool that drives programs and policies. Goals and targets provide a rationale for the creation of programs, it supports a program's structure, it drives action, mobilizes stakeholders, and it holds programs accountable. With no goal or target to reach, committees and programs are less likely to succeed in affecting change, as there is no measure for improvement. Additionally, a goal or target can rally together support – both in participation and finances – from a variety of individuals and groups since they can see how their support will be effectively utilized. Therefore, if the City of Toronto is to adopt and realize the vision of being “a City within a Park”, the Parks, Forestry and Recreation Division must communicate with other City Divisions and public landholders to establish a park goal that everyone can support. Specifically, the broader City Divisions and Council members, the TDSB, and the Province must adopt this vision and agree to establish a park goal. At a minimum, the City should commit to not going below the current ratio of parkland to people as Toronto continues to intensify.

7.2 ESTABLISH A FORMAL PARTNERSHIP

While the City of Toronto and the TDSB already have established partnerships for joint use agreements and community use of certain school spaces such as pools, and they have recently created a City-School Advisory Committee, there is much more to be done. The joint use agreements provide a good starting point for applying an initiative across the entire City at various TDSB school sites. In addition, the Advisory Committee is poised to set recommendations on how to develop “a new multilateral, consultative relationship for the City of Toronto, the School Boards, and the Province of Ontario with respect to schools lands disposition” (City of Toronto, 2015b, p1). However, a formal partnership structure has yet to be developed by the Advisory Committee, and for the purposes of implementing a schoolyard park initiative, a “consultative relationship” between these three actors may not be enough. All four initiatives reviewed had on-going and active participation from both their school board and their city, whether it was through the design, construction, funding and/or maintenance of the schoolyard parks. All initiatives also credited “strong mayoral support” as a key contributor to the successes of the initiatives.

Firstly, in order to establish successful partnership among different entities, the priorities and interests of each group must be aligned to the same purpose and goals of the initiative. As reviewed, the Ontario Ministry, School Boards, and the City of Toronto, are in agreement that the school system should expand into growth areas and the schools should provide children with spaces for learning, as well as non-educational services, programs and facilities. All three government entities have published reports and meeting minutes that encourage the use of schools by community members and promote establishing schools as community hubs. However, the current policies in place by the Ministry and the TDSB in regards to funding and assessing their schools do not heavily consider a school’s role within the community, and therefore do not consider schools as a community hub as a priority. As mentioned, the City has repeatedly made efforts to address these differences over the last few years, calling for discussions and collaborations between the TDSB and the City to find ways to alter the funding structure of schools, to ensure that school green spaces are preserved, and to assist with generating funding to support infrastructure investment of TDSB schools (City of Toronto, 2013b, p3; TDSB, 2014).

The Ontario Ministry of Education and the TDSB must first recognize schools as community hubs in their policies and continue to promote their establishment. The Ministry and the TDSB must then reform/revise their assessment and funding processes of TDSB schools to support an alignment of interest and priorities between the three government bodies. These changes include: the assessment of

school utilization based on student enrolment and equally communities' utilization of schools; and the funding structure of schools to reflect student enrolment and to continue to provide funding for 'priority' schools located in NIAs and areas with the lowest provision of parkland. However, this is dependent on the City to help fund the construction and on-going maintenance of such schools. If the Ministry and TDSB remain adamant about selling school properties, two recommendations are proposed. The first is that only the schools located within areas that have the highest level of parkland provision are allowed to be surplus and sold. The second is to provide other government, public, or non-profit entities price breaks or discounts on surplus schools in order to make a real effort to have school lands remain public.

Secondly, the alignment of interests and priorities will require the roles and responsibilities of the Province, TDSB, and City of Toronto to be redefined so that they may mutually support each other in their endeavor to retain and maintain schools as educational and community facilities in the public realm. Funding and maintenance agreements between the TDSB and City of Toronto should be developed to share the costs and responsibilities of implementing and operating schoolyard parks. The City has long benefited from having public schoolyards provide open space to surrounding communities, at no expense. It is in the City's interest, on behalf of its under-served residents, to support the TDSB when both entities are currently facing challenges that can be simultaneously addressed through a partnership. The TDSB has ownership over schoolyard space but the limited funding from the Province and the TDSB's deficit and maintenance backlog does not provide any room in the capital or operating budgets to renew schoolyards. The City has large sums of money within its parkland reserve funds, however, it is finding it a challenge to acquire new park space because of limited land availability and high land prices. By bringing these two entities together to a common goal of schoolyard greening, a win-win situation would occur: the TDSB would provide the land that could be turned into a schoolyard park and retain ownership over it, and the City could help fund renovation and maintenance costs through its parkland reserve funds instead of spending huge sums of money on acquiring new land. In return for providing schoolyards as formal parkland for the greater community, TDSB schools would then have schoolyards that provide their students with natural, interactive and engaging landscapes that can enhance their learning and development. The City would obtain many acres of parkland that would most likely not have to be remediated (as with many other non-residential sites in Toronto), and most of these new parks would already be located in ideal places, i.e. residential areas where they would provide the most benefit. A maintenance protocol and agreement would be created where the City's role could be to provide TDSB

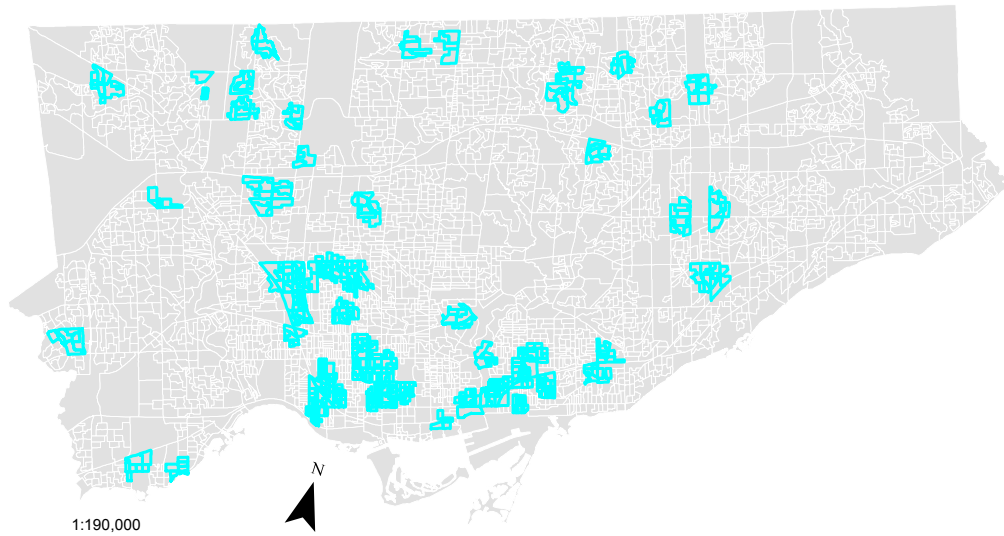
caretaking staff training on how to care for the schoolyard parks to PF&R standards, and where the PF&R could also provide ongoing maintenance support to share these responsibilities.

Thirdly, other potential partners could and should be included in a schoolyard park initiative. Public-private partnerships were established in all of the reviewed initiatives, and the Canadian Council for Public-Private Partnerships (2011) argues that these types of partnerships are an important funding and development strategy for governments across all jurisdictions that have capital projects to complete. Two schoolyard greening programs have already established partnerships with the TDSB: the EcoSchools program that was developed and is run by the TDSB, and the Toyota Evergreen Learning Grounds program. Both programs have years of experience greening TDSB schoolyards on a site-by-site basis, making them excellent potential partners who could assist with the design, funding, construction, and/or maintenance of the schoolyard parks. Another potential partner could be Canada's first citywide park organization located in Toronto. "Park People" is an independent charity that supports "community parks groups [by] bringing them together with city staff, funders, businesses, and other partners to host events, plant more trees and gardens, build new infrastructure, steward volunteers, and transform parks into dynamic community hubs" (Park People, 2015). This potential private sector partner could mobilize private sector funders and facilitate community involvement in projects.

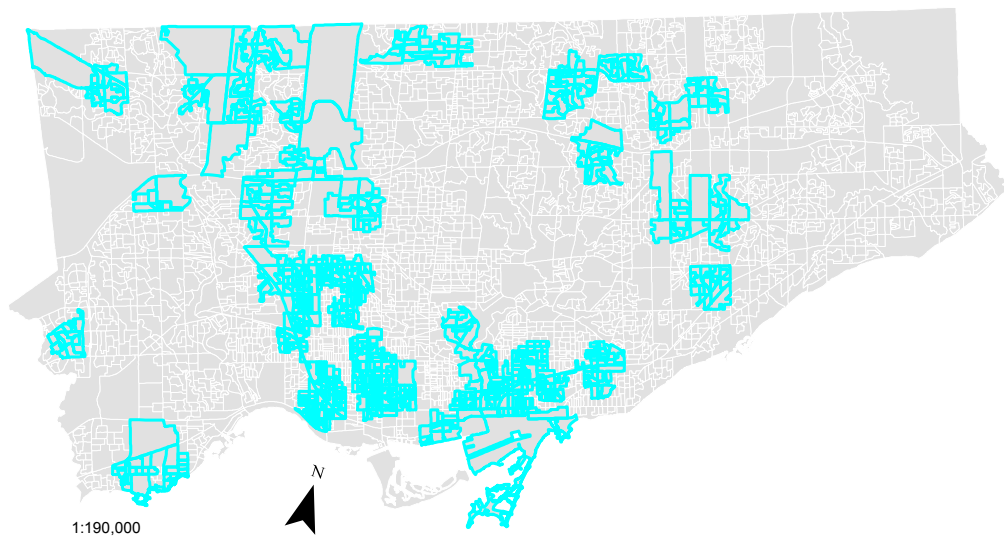
Ultimately, creating a multiagency schoolyard park initiative requires a shared agreement on the value of city-wide schoolyard parks, a city park goal, alignment of interests and priorities on implementing this goal, clarity of authority and partners, and on going acceptance of roles and responsibilities. This type of initiative is not only beneficial to students, but is also valuable to school boards, community residents and the City. It is particularly urgent that schoolyard parks be established before underutilized schools are deemed surplus, as once they are disposed of and the land is developed for other purposes, it will be extremely difficult and costly to acquire the land again for open green space purposes. By converting underutilized and regular TDSB schoolyards into schoolyard parks, the social value of the property will increase due to the many benefits it would provide students, the community, and the City, making it much more difficult for the Ministry to require schoolyards to be sold in the future. Green spaces are prized public assets and the ones that currently exist must be protected and maintained to benefit generations to come.

Appendix A

Option 1 – *centroid* as source layer for underutilized schools in low parkland provision areas



Option 2 – *intersect* as source layer for underutilized schools in low parkland provision areas



References

- ActiveEnvironments. (2013). *Learning Landscapes*. Retrieved January 20, 2016 from <http://www.active-environments.com/schoolyards/learning-landscapes/>
- Akbari, H., Pomerantz, M., & Taha, H. (2001). Cool surfaces and shade trees to reduce energy use and improve air quality in urban areas. *Solar Energy*, 70(3), 295-310.
- Alexander, C. & McDonald, C. (2013). *Special Report TD – The Greening of New York City: Lessons from the Big Apple*. TD Economics. Retrieved on January 26, 2016 from <https://www.td.com/document/PDF/economics/special/GreeningofNYC.pdf>
- Ball, D., Gill, T., & Spiegel, B. (2008). *Managing risk in play provision: Implementation guide*.
- Ballantyne, R. and Packer, J. (2002). Nature-based excursions: School students' perceptions of learning in natural environments. *International Journal of Geographical and Environmental Education*, 11(3), 218–36.
- Barbosa, O. et al. (2007). Who benefits from access to green space? A case study from Sheffield, UK. *Landscape and Urban Planning*, 83(2), 187-195.
- Barker, D. (2013). *Best Practice: Converting Schoolyards to Community Playgrounds*. New York City Global Partners' Innovation Exchange. Retrieved February 20, 2015 from http://www.nyc.gov/html/ia/gprb/downloads/pdf/NYC_Parks&Rec_Schoolyards.pdf
- Bedimo-Rung, A. L., Mowen, A. J., & Cohen, D. A. (2005). The significance of parks to physical activity and public health: a conceptual model. *American Journal of Preventive Medicine*, 28(2), 159-168.
- Belcher, S. (2003). *Ecological Schoolyards Landscapes of Empowerment*. (Doctoral dissertation, Virginia Polytechnic Institute).
- Bolund, P., & Hunhammar, S. (1999). Ecosystem services in urban areas. *Ecological Economics*, 29(2), 293-301.
- Boston Education Development Center. (2000). *Schoolyard Learning: The Impact of School Grounds*. Retrieved on January 22, 2016 from www.edc.org/GLG/schoolyard.pdf
- Bowler, D. E., Buyung-Ali, L. M., Knight, T. M., & Pullin, A. S. (2010). A systematic review of evidence for the added benefits to health of exposure to natural environments. *BMC Public Health*, 10(1), 456.
- The Boston Schoolyard Initiative. (n.d.) *The Boston Schoolyard Initiative: An Overview*. Retrieved February 20, 2015 from <http://www.schoolyards.org/research.html>
- Brink, L. A., Nigg, C. R., MR Lampe, S., Kingston, B. A., Mootz, A. L., & van Vliet, W. (2010). Influence of schoolyard renovations on children's physical activity: the Learning Landscapes Program. *American Journal of Public Health*, 100(9), 1672-1678.

- Brown, L. (2015). *Majority of schools on TDSB hit list in poorer neighbourhoods*. The Toronto Star. Retrieved on January 23, 2016 from <http://www.thestar.com/yourtoronto/education/2015/02/09/majority-of-schools-on-tdsb-hit-list-in-poorer-neighbourhoods.html>
- Burdette, H. L., & Whitaker, R. C. (2005). A national study of neighborhood safety, outdoor play, television viewing, and obesity in preschool children. *Pediatrics*, 116(3), 657-662.
- City of Toronto. City Planning Division. (2010a). *Official Plan*. Prepared by G. Wright.
- The Canadian Council for Public-Private Partnerships. (2011). *A Guide for Municipalities*.
- City of Boston. The Boston Schoolyard Initiative. (2000). *Designing Schoolyards & Building Community*. Retrieved February 20, 2015 from <http://www.schoolyards.org/pdf/Designing%20Schoolyards%20and%20Making%20Community.pdf>
- City of Mississauga. Community Services Department. (2014). *Master Plan for Parks and Forestry: Final Report*. Prepared by Dillon Consulting Limited. Retrieved February 26, 2016 from <http://www7.mississauga.ca/Departments/Rec/future-directions/pdf/2014-master-plans/parks-forestry-master-plan.pdf>
- City of Ottawa. Planning and Development. (2003). *Official Plan*.
- City of Toronto. (2000). *Official Plan Policy Approach to Parkland Acquisition City-Wide Applicability*. Retrieved January 23, 2016 from <http://www.toronto.ca/legdocs/2000/agendas/council/cc/cc000607/plt5rpt/cl011.pdf>
- City of Toronto. City Planning Division. (2010a). *Official Plan*.
- City of Toronto. (2010b). *School Lands Property Acquisition Framework and Funding Strategy*. Staff Report. Retrieved February 20, 2015 from <http://www.toronto.ca/legdocs/mmis/2010/ex/bgrd/backgroundfile-29044.pdf>
- City of Toronto. (2010c). *City of Toronto Parkland Acquisitions from 1998-2009*. Staff Report. Retrieved on January 26, 2016 from <http://www.toronto.ca/legdocs/mmis/2010/pe/bgrd/backgroundfile-30041.pdf>
- City of Toronto. Social Development, Finance & Administration Division. (2012a). *2011 Census: Population and Dwelling Counts. Background*. Retrieved on January 22, 2016 from http://www1.toronto.ca/city_of_toronto/social_development_finance_administration/files/pdf/2011-census-background.pdf
- City of Toronto. (2012b). *Toronto District School Board (TDSB) and City of Toronto (City) Agreement for City's Use of School Pools (2012-2017)*. Retrieved on January 30, 2016 from http://www.torontosportscouncil.com/multimedia/4/tdsbpoolsagreement2012_2017.pdf
- City of Toronto. Parks, Forestry and Recreation Division. (2013a). *Parks Plan 2013-2017*.

- City of Toronto. Member Motion to City Council. (2013b). *MM41.38 Motion without Notice: Preserving Green Space including the Bannockburn Site*. Motioned by Councillor Karen Stintz, seconded by Councillor Josh Colle. Retrieved February 20, 2015 from http://harbordvillage.com/centraltech/CityCouncilMotion-KarenStintz_preservinggreen space_Nov13-2013.pdf
- City of Toronto. (2013c). *City of Toronto Parkland Dedication Reserve Funds*. Staff Report. Retrieved January 26, 2016 from <http://www.toronto.ca/legdocs/mmis/2013/bu/bgrd/backgroundfile-62799.pdf>
- City of Toronto. (2014a). *Update on surplus TDSB and TCDSB School Board Properties*. Staff Report. Retrieved February 20, 2015 from <http://www.toronto.ca/legdocs/mmis/2014/ex/bgrd/backgroundfile-68705.pdf>
- City of Toronto. (2014b). *Update on the Re-negotiations of the Community Centre Exclusive Use Agreement between the TDSB and the City of Toronto*. Staff Report. Retrieved on January 22, 2016 from <http://www.toronto.ca/legdocs/mmis/2014/gm/bgrd/backgroundfile-70045.pdf>
- City of Toronto. Demographics. (2015a). *How Does the City Grow?*. Retrieved February 25, 2016 from http://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/SIPA/Files/pdf/H/HDCG_Final_Revised_accessible.pdf
- City of Toronto. (2015b). *Schools As Community Assets: A Policy Agenda for the City-School Boards Advisory Committee*. Staff Report. Retrieved February 20, 2015 from <http://www.toronto.ca/legdocs/mmis/2015/ex/bgrd/backgroundfile-77897.pdf>
- City of Toronto. Parks, Forestry and Recreation. (2015c). *Toronto 2015 Budget*. Retrieved Sep 24, 2015 from <http://www.toronto.ca/legdocs/mmis/2015/bu/bgrd/backgroundfile-75454.pdf>
- City of Toronto. (2015d). *Schools as Community Assets: A Policy Agenda for the City-School Boards Advisory Committee*. Staff Report. Retrieved on January 26, 2016 from <http://www.toronto.ca/legdocs/mmis/2015/ex/bgrd/backgroundfile-77897.pdf>
- Clandfield, D and Martell, G. (Eds). (2010). The school as community hub: A public alternative to the neo-liberal threat to Ontario schools. *Our Schools, Our Selves*, 19(4), 7-74.
- Cohen, D. A., Sehgal, A., Williamson, S., Sturm, R., McKenzie, T. L., Lara, R., & Lurie, N. (2006). *Park use and physical activity in a sample of public parks in the city of Los Angeles*. Presentation.
- Cohen, D. A., McKenzie, T. L., Sehgal, A., Williamson, S., Golinelli, D., & Lurie, N. (2007). Contribution of public parks to physical activity. *American Journal of Public Health*, 97(3), 509-514.
- Dymont, J. E., & Reid, A. (2005). *Breaking new ground? Reflections on greening school grounds as sites of ecological, pedagogical and social transformation*. (Doctoral dissertation).
- Evergreen. (2004). *Green Space Acquisition and Stewardship in Canada's Urban Municipalities*. Retrieved on February 25, 2016 from <http://www.evergreen.ca/downloads/pdfs/Green-Space-Canada-Survey.pdf>

- Evergreen & TDSB. (2013). *Landscape and Child Development*. Second Edition. Retrieved on January 20, 2016 from <http://www.evergreen.ca/downloads/pdfs/Landscape-Child-Development.pdf>
- Evergreen. (2015). Greening School Grounds. Website. Retrieved on January 20, 2016 from <http://www.evergreen.ca/our-impact/children/greening-school-grounds/>
- Faber Taylor, A., Kyo, F.E. and Sullivan, W.C. (2001). Coping with ADD: the surprising connection to green play settings. *Environment and Behaviour*, 33(1), 54-77.
- Fausold, C. J., & Lilieholm, R. J. (1999). The economic value of open space: A review and synthesis. *Environmental Management*, 23(3), 307-320.
- Finch, K. (2012). But... but... but... Isn't it dangerous? Risk and reward in nature play. *Green Hearts Institute for Nature in Childhood*.
- Fjortoft, I. (2001). The Natural Environment as a Playground for Children: The Impact of Outdoor Play Activities in Pre-Primary School Children. *Early Childhood Education Journal*, 25(2) 112-119.
- Garrett, J. (2015). *Making Connections*. Park People. Retrieved February 14, 2016 from http://parkpeople.ca/wp-content/uploads/2016/01/Making-Connections_web.pdf
- Garvin, A, and Brands, R. (2011). *Public Parks: The Key to Livable Communities*. W.W. Norton and Company: New York.
- Giles-Corti, B., Broomhall, M. H., Knuiman, M., Collins, C., Douglas, K., Ng, K., ... & Donovan, R. J. (2005). Increasing walking: how important is distance to, attractiveness, and size of public open space?. *American Journal of Preventive Medicine*, 28(2), 169-176.
- Government of Ontario. (2015). *Community hubs in Ontario: A strategic framework and action plan*. Retrieved on January 26, 2016 from <https://www.ontario.ca/page/community-hubs-ontario-strategic-framework-and-action-plan>
- Hammer, K. (2012). *TDSB nixes plan to sell off parts of schoolyards*. The Globe and Mail. Retrieved January 20, 2015 from <http://www.theglobeandmail.com/try-it-now/?articleId=5547182>
- Harnik, P. (2006). *The Excellent City Park System: What Makes it Great and How to Get There*. The Trust for Public Land. Retrieved January 23, 2016 from http://cloud.tpl.org/pubs/ccpe_excellentcityparks_2006.pdf
- Harnik, P., & Welle, B. J. (2009). *Measuring the economic value of a city park system*. Trust for Public Land. Retrieved January 23, 2016 from <http://cloud.tpl.org/pubs/ccpe-econvalueparks-rpt.pdf>
- Harnik, P. (2010). *Urban Green: Innovative Parks for Resurgent Cities*. Washington: Island Press.
- Harnik, P. (2011). *Learning to Share: Designing Schoolyards for More than Just Recess*. City Parks Blog. The Trust for Public Land. Center for City Park Excellence. Retrieved January 22, 2016 from <https://cityparksblog.org/2011/05/02/learning-to-share-designing-schoolyards-for-more-than-just-recess/>

- Harvey, D. (2010). *Fertile Ground for New Thinking: Improving Toronto's Parks*. Metacalf Foundation. Retrieved on February 26, 2016 from <http://metcalffoundation.com/wp-content/uploads/2011/05/fertile-ground-for-new-thinking.pdf>
- Howlett, K & Fatima, S. (2015) *One in five Toronto schools targets for possible closing*. The Globe and Mail. Retrieved on February 24, 2016 from <http://www.theglobeandmail.com/news/toronto/one-in-five-toronto-schools-underused-tdsb-says/article22695328/>
- Johnston, L. (2009). *Progress and Pitfalls: A Review of Community Use of Schools and Access to Municipal Spaces*. Social Planning Toronto. Retrieved on February 18, 2016 from <http://www.socialplanningtoronto.org/wp-content/uploads/2015/06/Progress-and-Pitfalls-A-Review-of-Community-Use-of-Schools-and-Access-to-Municipal-Spaces.pdf>
- Kaboom. Boston Schoolyard Initiative. (n.d.). *Boston, Massachusetts: Boston Schoolyard Initiative. Play Matters: Best Practices*. Retrieved February 10, 2016 from https://media.kaboom.org/docs/documents/pdf/playmatters/Play_Matters_Boston.pdf
- Kaboom. Denver. (n.d.). *Denver Colorado: Learning Landscapes*. Play Matters: Best Practices. Retrieved February 10, 2016 from https://media.kaboom.org/docs/documents/pdf/playmatters/Play_Matters_Denver.pdf
- Kaczynski, A. T., & Henderson, K. A. (2007). Environmental correlates of physical activity: a review of evidence about parks and recreation. *Leisure Sciences*, 29(4), 315-354.
- Kahn EB, Ramsey LT, Brownson RC et al. (2002). The effectiveness of interventions to increase physical activity: a systematic review. *American Journal of Preventive Medicine*, 22(4), 73 – 107.
- Karp, A., Paillard-Borg, S., Wang, H. X., Silverstein, M., Winblad, B., & Fratiglioni, L. (2006). Mental, physical and social components in leisure activities equally contribute to decrease dementia risk. *Dementia and geriatric cognitive disorders*, 21(2), 65-73.
- Kessel, A., Green, J., Pinder, R., Wilkinson, P., Grundy, C., & Lachowycz, K. (2009). Multidisciplinary research in public health: a case study of research on access to green space. *Public health*, 123(1), 32-38.
- Kondo, K. et al. (2009). Association between daily physical activity and neighborhood environments. *Environmental health and preventive medicine*, 14(3), 196-206.
- Lee, C., & Moudon, A. V. (2008). Neighbourhood design and physical activity. *Building research & information*, 36(5), 395-411.
- Lieberman, G. A., Hoody, L., & Lieberman, G. M. (2000). *California student assessment project-The effects of environment-based education on student achievement*. State Education & Environmental Roundtable.
- Lorinc, J. and Noble, K. (2015). *Parks in Crisis Part 2: How the money flows*. Spacing Toronto. Retrieved Nov 2, 2015 from <http://spacing.ca/toronto/2015/04/14/parks-crisis-part-2-money-flows/>

- Lopez, R. et al. (2008). The Boston Schoolyard Initiative: A Public-Private Partnership for Rebuilding Urban Play Scapes. *Journal for Health Politics, Policy and Law*, 33(3), 617-638.
- Marrow, M. W., & Frost, N. (2012). Finding space to play: legal and policy issues impacting community recreational use of school property. *St. Paul, MN: Public Health Law Center*.
- McAuslan, J. A. B. (2007). *Exploring the Socioeconomic, Schoolboard, and School Specific Factors Affecting the Urban Forest on Properties of the Toronto District School Board*. (Doctoral dissertation, University of Toronto).
- Meyer, K. (1997). *The Boston Schoolyard Initiative: An American City's Approach to Sustainable Schoolyard Development*. Presentation. Retrieved January 2, 2016 from <http://files.eric.ed.gov/fulltext/ED443266.pdf>
- Ministry of Education. (2006). *Community Use of Schools Program*. Retrieved Nov 2, 2015 from http://faab.edu.gov.on.ca/Memos/B2006/B_13.pdf
- Ministry of Education. (2009). *Pupil Accommodation Review Guideline*. Retrieved on February 29, 2016 from <https://www.edu.gov.on.ca/eng/policyfunding/reviewGuide09.pdf>
- Ministry of Education. (2014a). *Grants for Student Needs Funding and Regulations for 2014-2015*. Retrieved Nov 2, 2015 from <https://www.edu.gov.on.ca/eng/funding/1415/2014B04En.pdf>
- Ministry of Education. (2014b). *Technical Briefing: 2014-2015 Grants for Student Needs*. Retrieved Nov 2, 2015 from <https://www.edu.gov.on.ca/eng/funding/1415/webcast2014.pdf>
- Ministry of Education. (2015a). *2015-2016 Education Funding: A Guide to the Grants for Students Needs*. Retrieved Sep 24, 2015 from <http://www.edu.gov.on.ca/eng/funding/1516/2015GSNGuideEN.pdf>
- Ministry of Education. (2015b). *Education Funding, Technical Paper: 2015-2016*. Retrieved Sep 24, 2015 from <http://www.edu.gov.on.ca/eng/funding/1516/2015TechnicalPaperEN.pdf>
- Ministry of Education. (2015c). *Community Planning and Partnerships Guideline*. Retrieved Sep 24, 2015 from <https://www.edu.gov.on.ca/eng/funding/1516/2015B9appenBEN.pdf>.
- Ministry of Education. (2015d). *Grants for Student Needs Funding for 2015-2016*. Retrieved Nov 2, 2015 from <https://www.edu.gov.on.ca/eng/funding/1516/2015B7EN.pdf>
- Ministry of Education. (2015e). *Update on the School Condition Improvement Funding Program and the Condition Assessment Program*. Retrieved January 12, 2016 from <https://www.edu.gov.on.ca/eng/funding/1516/2015SB04EN.pdf>
- Ministry of Education. (2015f). *Community Planning and Partnerships Guideline*. Retrieved on January 15, 2016 from <https://edu.gov.on.ca/eng/funding/1516/2015B9appenBEN.pdf>
- Ministry of Infrastructure. (2006). *Growth Plan for the Greater Golden Horseshoe*.

- Ministry of Municipal Affairs and Housing. Provincial Planning Policy Branch. (2014). *Provincial Policy Statement*.
- Moogk-Soulis, C., BOT, M., & Reg, O. T. (2010). *Schoolyard and Public Space Heat Islands*.
- Morris, N. (2003). Health, well-being and open space. *Edinburgh: Edinburgh College of Art and Heriot-Watt University*.
- Nakashian, M. (2008). *The Boston Schoolyard Initiative: A Study of Its Schoolyard Renovations-- Disseminating Lessons Learned from a Case Study Analysis of a Successful Active Space Redevelopment Program. Program Results*. Robert Wood Johnson Foundation.
- New York City Global Partners. (2013). *Best Practice: Converting Schoolyards to Community Playgrounds*. Retrieved January 20, 2016 from http://www.nyc.gov/html/ia/gprb/downloads/pdf/NYC_Parks&Rec_Schoolyards.pdf
- Ownby, K. (2005). *School Park Playgrounds Program*. Retrieved on January 20, 2016 from http://actrees.org/resources/local-resources/greening-success-stories/school_park_playgrounds_program/
- Park People. (2015). [Website]. Retrieved on January 21, 2016 from <http://parkpeople.ca/>
- Rasanu, S. (2012). *The Acquisition and Redevelopment of Surplus Schools in Toronto, Ontario: An Assessment of the City of Toronto's School Lands Property Acquisition Policy*. School of Urban and Regional Planning Queen's University.
- Reed, M. (2008). Stakeholder participation for environmental management: A literature review. *Biological Conservation*, 141(10) 2417-2431.
- Rivkin, M. (1997). The schoolyard habitat movement: What it is and why children need it. *Early Childhood Education Journal*, 25(1), 61-66.
- Rosenzweig, C., Solecki, W., & Slosberg, R. (2006). Mitigating New York City's heat island with urban forestry, living roofs, and light surfaces. *A report to the New York State Energy Research and Development Authority*.
- Sandals, L. Ministry of Education. (2015). [no title]. Retrieved on October 20, 2015 from <http://www.edu.gov.on.ca/eng/policyfunding/memos/jan2015/EnclosureTDSB.pdf>
- Schabas, J. (2010). *Battle brewing over school playground*. Spacing Toronto. Retrieved on February 2, 2016 from <http://spacing.ca/toronto/2010/09/07/battle-brewing-over-school-playground/>
- Spark School Park Program. (n.d.). [Website]. Retrieved on January 20, 2016 from <http://sparkpark.org/about/>

- Stigsdotter, U. K., Ekholm, O., Schipperijn, J., Toftager, M., Kamper-Jørgensen, F., & Randrup, T. B. (2010). Health promoting outdoor environments-Associations between green space, and health, health-related quality of life and stress based on a Danish national representative survey. *Scandinavian Journal of Public Health*.
- Taplin, D. (2011). *The Trust for Public Land. Schoolyard Playground Evaluation*. Retrieved on January 20, 2016 from <http://www.actknowledge.org/resources/documents/SchoolyardPlaygroundEvaluation.pdf>
- Taylor, A. F., Kuo, F. E., & Sullivan, W. C. (2001). Coping with ADD: The surprising connection to green play settings. *Environment and Behavior*, 33(1), 54-77.
- Taylor, A. F., Kuo, F. E., Spencer, C., & Blades, M. (2006). Is contact with nature important for healthy child development? State of the evidence. *Children and their environments: Learning, using and designing spaces*, 124.
- Tooke, K. (2011). *Schoolyard Renovations In The Context Of Urban Greening: Insight From The Boston Schoolyard Initiative, Boston, Massachusetts*. (Doctoral dissertation, University of Massachusetts Amherst).
- Toronto District School Board. (2013). *Community Use of Board Facilities (Permits)*. Retrieved on February 23, 2016 from <http://www2.tdsb.on.ca/ppf/uploads/files/live/92/175.pdf>
- Toronto District School Board. (2014a). *Financial Facts: Revenue & Expenditure Trends*. Retrieved September 24, 2015 from http://www.tdsb.on.ca/Portals/0/AboutUs/Budget/FinancialFacts_2015.pdf
- Toronto District School Board. (2014b). *Summary of Decisions. Regular Meeting*. Retrieved on February 23, 2016 from <http://www.tdsb.on.ca/leadership/boardroom/agendaminutes.aspx>
- Toronto District School Board. (2015). *The TDSB EcoSchool Program*. Retrieved on February 22, 2016 from <http://schools.tdsb.on.ca/elizabethsimcoe/EcoSchool/TDSBEcoSchools.htm>
- Toronto District School Board & Toronto Catholic District School Board. (2006). *Made in Toronto Solution*. Retrieved on February 10, 2016 from <http://www.toronto.ca/legdocs/mmis/2014/ts/bgrd/backgroundfile-66455.pdf>
- Toronto Lands Corporation. (2014). *Revised Service Agreement*. Retrieved on January 20, 2016 from <http://www.torontolandscorp.com/wp-content/uploads/2014/10/2014-11-26-TDSB-TLC-Revised-Service-Agreement.pdf>
- Toronto Lands Corporation. (2015). *Bannockburn School Site Community Consultation*. Meeting Notes. Retrieved on January 26, 2016 from <http://www.torontolandscorp.com/wp-content/uploads/2014/10/2016-01-568-APPENDIX-C-MeetingSummary-FINAL.pdf>
- The Trust for Public Land. (n.d.). *New York City Playgrounds*. Retrieved on January 20, 2016 from <https://www.tpl.org/our-work/parks-for-people/new-york-city-playgrounds%20>

- The Trust for Public Land. (2015). *Assessment of Spark School Park Projects: Finding and Recommendations Report*. Retrieved on January 20, 2016 from http://sparkpark.org/wordpress/wp-content/uploads/2014/03/TPL-SPARK_Park_Report.pdf
- Warzecha, M. (2014). *From school to subdivision: TDSB sites in West Toronto sold to developers*. Retrieved on January 20, 2016 from <http://news.buzzbuzzhome.com/2014/09/tdsb-toronto-etobicoke-lands.html>
- Weiss, J. (2000). *Sustainable Schools*. IssueTrak: A CEFPI Brief on Educational Facility Issues. Retrieved February 2, 2016 from <http://www.cefpi.org/pdf/issue11.pdf>
- Wells, N. & Evans, G. (2003). Nearby Nature: A Buffer of Life Stress among Rural. Children. *Environment and Behaviour*, 35(3), 311-330.
- Wells, N. M. (2000). At home with nature effects of “greenness” on children’s cognitive functioning. *Environment and Behaviour*, 32(6), 775-795.
- White MP, Alcock I, Wheeler BW, Depledge MH. (2013). Would you be happier living in a greener urban area? A fixed-effects analysis of panel data. *Psychological Science*, 24(6), 920-928.
- White, R. (2004). Interaction with Nature During the Middle Years: Its Importance to Children’s Development & Nature’s Future. *White Hutchinson Learning Group*. Retrieved February 20, 2015 from <https://www.whitehutchinson.com/children/articles/downloads/nature.pdf>
- Wilson, M. (2015). *Review of the Toronto District School Board*. Retrieved on October 20, 2015 from <https://www.edu.gov.on.ca/eng/new/2015/TDSBReview2015.pdf>
- Volz, B. (2009). *Exploring Applications of a Tree Inventory Database as a tool for the Toronto District School Board Grounds Division*. University of Toronto.