

VERTICAL CHILDREN IN TORONTO

By

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Vertical Children in Toronto



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Abstract

This MRP seeks to explore the availability of public services and facilities designed to assist the needs of children in Toronto. Specifically examining neighbourhoods located in or near the central core consisting of mostly high-rise style housing, developed post-2000. Research is conducted in three parts: a literature review, an exploration of successful child-friendly initiatives from around the world, and a GIS mapping exercise of four new vertical neighbourhoods in Toronto. The mapping exercise found that while an extensive child-friendly infrastructure network does not guarantee a large population of children, a neighbourhood's lack of this network severely limits its ability to attract new families. The number of children living in a place is often used as a metric to measure success. A neighbourhood with a thriving children and youth population means an inclusive and sustainable neighbourhood for everyone.

Acknowledgements

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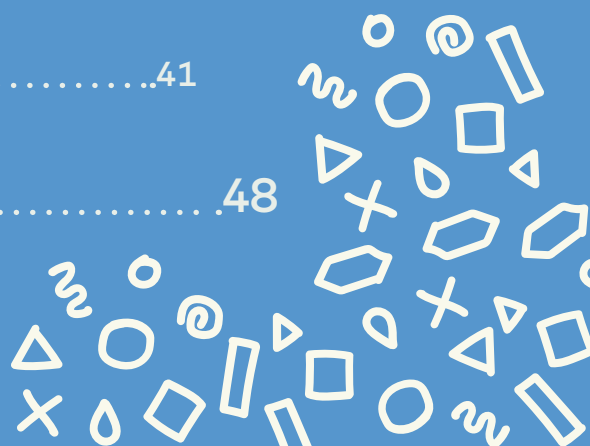
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Introduction

I grew up as a vertical child, an apartment dweller, in an established vertical neighbourhood. All necessary amenities for a successful upbringing were available within the community. Small local parks were substituted for backyards, apartment units were large enough to house more than two people, and neighbourhood services catered to all stages of life. Today, new vertical neighbourhoods are being developed at a rapid pace but they seem to have a specific resident in mind, whom most amenities are catered to. This MRP seeks to explore the availability of public services and facilities designed to assist the needs of children in Toronto. Specifically, my research will focus on neighbourhoods located in or near the central core consisting of mostly high-rise style housing, developed post-2000. Research will be split into three sections.

Section one will review the current academic literature on the state of development in Toronto, the shifting parental attitudes of children's independent play and mobility and, the declining health and social development of contemporary children. Section two will highlight successful child-friendly initiatives from around the world. Section three will focus on mapping the current inventory of child friendly infrastructure in downtown Toronto through GIS mapping tools and finally will end with a concluding section highlighting some of the findings the mapping exercise reveals. The purpose of this exercise is to illuminate Toronto's development priorities in the last 20 years and provide a snapshot of its current child-friendly infrastructure network. The availability of child-friendly infrastructure in Toronto's newest and most dense communities is an issue that if not addressed, may have serious economic, environmental, and health consequences in the long term, as I elaborate below.

For the purposes of this MRP, child-friendly infrastructure refers to the network of public spaces, services, streets and parks that make up the key features of a city built to service the unique needs of children. This network includes park space, daycares, schools, community centres, recreational services, public washrooms, playgrounds and active transportation initiatives (City of Toronto, 2016; ARUP, 2017; Kalinowski, 2017). Child-friendly infrastructure focuses on promoting connected, multifunctional, intergenerational, and sustainable public spaces for cities that families and communities can enjoy together (ARUP, 2017). Children's infrastructure can generate a substantial range of benefits for all urban citizens and is crucial for the maintenance of an inclusive, healthy, equitable, and resilient city. Below is a literature review that expands on this point children's infrastructure is critical for effective city building.



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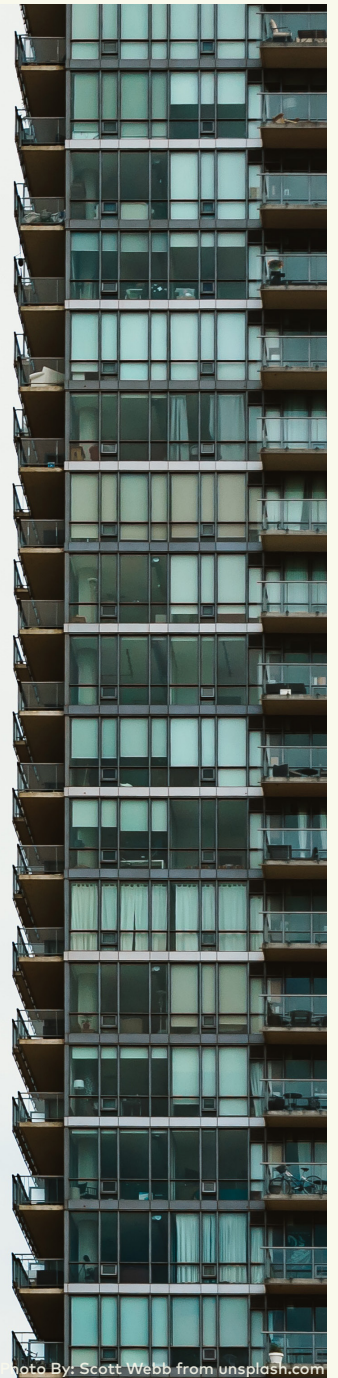
Literature Review

"By 2050 around 70% of the world's population will live in cities. The majority of these urban residents will be under the age of 18" (AURP 2017)

State of Development Trends in Toronto

High-rise development in Toronto has advanced at a breathtaking pace in the last two decades and has facilitated a dramatic increase of population in the central core (Preville, 2016). Though typically a more established lifestyle and development choice in South-East Asia, in recent decades, the growth of inner-city high-density apartment development in Europe, Australia and Canada has proceeded at an unprecedented rate (Karsten, 2015; Nethercote and Horne, 2016). Between 2006 and 2016, over 143,000 new dwelling units were constructed in the City of Toronto and 80% of them were in buildings of five or more stories (City of Toronto, 2017). Toronto's high-rise development boom is mirrored by the equally significant rise in population. From 2000-2016 the census metropolitan area of Toronto rose by nearly 250,000 people, from 2,481,494 to 2,731,571 and is expected to continue to climb (Statistics Canada, 2001; Statistics Canada, 2016). City officials conclude that if these population trends continue, the long-term demand for family suitable housing will exceed the anticipated supply (City of Toronto, 2017).

To accommodate Toronto's increase in population, high-rise infill development and the subsequent creation of vertical communities has become the predominant housing type (City of Toronto, 2017). This development preference can be seen in provincial planning policies during the early 2000 with the introduction of Smart Growth (Province of Ontario, 2002).



However, these new high-rise communities and their amenities have largely been geared toward the needs of two segments of the population, both with high levels of disposable income: empty nesters and double income no kid families, also known as DINKS (Fincher, 2004; Nethercote and Horne, 2016). Little to no attention has been paid to creating public spaces built with children in mind (Kalinowski, 2017). The needs of both children and families have been virtually ignored and these newly developed communities are lacking essential facilities, services, and appropriate play space for their family residents (Whitzman and Mizrachi, 2012). Child-friendly facilities and services are commonly lower in rank when compared to other infrastructure priorities like dog parks or other commercial interests (Dewi, 2012).

However, there is a disparity between the supposed target population of high-rises (DINKS and empty-nesters) and the actual population of high-rise living, which includes families with children as well (Karsten, 2015). In Toronto alone, the 2011 census pointed out that 10,000 more families with children and youth lived in high-rise buildings than in 1996 (City of Toronto, 2017). Several scholars contend that contemporary high-rise environments, in their current design, are not particularly welcoming to children's activities and they call to renovate the public realm to improve children's experience through promoting independent mobility, access to parks and community centres, and civic engagement (Dewi, 2012; Whitzman and Mizrachi, 2012; Nethercote and Horne, 2016; Ekawati, 2015).

In the last few years Toronto has

made strides to address these concerns. Informed by the city's Official Plan update (2015), and rooted in the city's desire to create an attractive and safe city where people of all ages and abilities can enjoy a good quality of life, in 2016 the City of Toronto drafted design guidelines titled, "Growing Up: Planning for Children in New Vertical Communities". The guidelines' goal is to integrate family suitable design into neighbourhood planning and direct how new vertical development can better function for larger households at three scales: the unit, the building and the neighbourhood (City of Toronto, 2016; City of Toronto, 2015). Inspired by these guidelines, this research project seeks to map and analyze the existing infrastructure for children's services and facilities that addresses children's specific needs in Toronto's new high-rise neighbourhoods. As mentioned earlier, the ultimate goal is to better understand the current availability of child-friendly infrastructure in those neighbourhoods, to explore if the guidelines are beginning to have an impact, and to speculate about future directions based on the current situation.



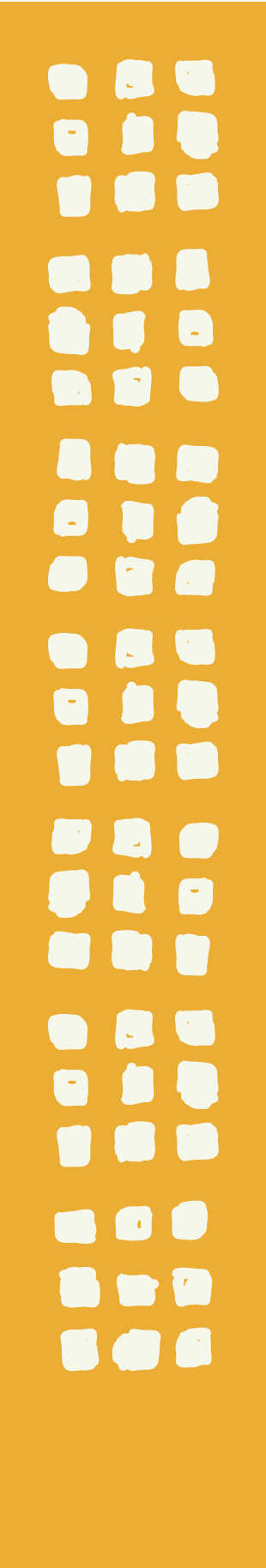
Photo By: Scott Webb from unsplash.com

The Shrinking of Children's Independent Travel Radius

In addition to the development and population growth trends just described, the time-space behaviour of children has changed considerably over the last decades. Children's play has shifted from an outside to an inside activity, where hallways and living rooms are transformed into play areas (Karsten and van Vliet, 2006). This shift in greater home freedom has significantly reduced a child's "daily territory", the area they are free to get around without adult supervision (Karsten and van Vliet, 2006; ARUP, 2017). Academics agree that the noticeable trend towards children being less present at play in the public spaces of Western cities is primarily caused by two parental concerns: traffic and personal safety (stranger-danger) (Valentine 2004, Bourke 2014, Prezda et al., 2005; Whitzman and Mizarachi, 2012).

Parental concerns over the safety of their children while outside has increased the involvement of parental supervision during children's activities and expanded the child's activity space. Today, parents are more likely to ferry their children across the city from activity to activity via personal vehicles (Karsten and van Vliet, 2006). Karsten and van Vliet suggest that "this archipelagic spatial activity pattern makes it difficult for today's children to form an integrated image of the city. Paradoxically, children's travel under escort to disconnected places has greatly expanded their activity space at the same time that the spatial range of their independent activities in their neighbourhood has greatly diminished" (2006:152). At the same time, the decreased use of local public space and neighbourhood parks has facilitated the transformation of these places into adult-





oriented spaces less appropriate for child usage, leading to further restrictions in the outdoor freedoms of children by their parents (Loukaitou-Sideris, 2003). This phenomenon is most evident in neighbourhood parks, where due to the drop in attendance many parents now consider these spaces to be too dangerous for children to explore without adult supervision, further reducing the park's attendance and eliminating its function as a child's domain (Prezza et al., 2005; Karsten and van Vliet, 2006; Hart, 2002).

In addition to decreased park attendance, studies on environmental attributes of active travel and children's independent mobility have identified key built environment signifiers — such as amount of road traffic, width of roadway, availability of footpaths, dangerous crossings, and poor maintenance of buildings and public spaces (dog muck, broken bottles, graffiti) — as being the largest factors for perceptions of danger (Prezza et al., 2005; Bourke, 2014; Farley et al, 2007). Recent scholarly research has begun to show a concern for the physical and social health implications of this abandonment of the public realm (ARUP, 2017). Despite the breadth of research on the subject and the voiced concerns from parents, policy-makers are slow to respond (Moore, 2017). Toronto City Council has yet to fund a vision zero initiative that would initiate speed reduction measures, study new safety crossing measures, and promote safe active transportation (Moore, 2017). Children and their preferred methods of play have and will continue to suffer from cities giving priority to private motorized vehicle transportation and other commercial interests when designing public spaces.

Declining Health and Social Development of Children

The importance of public space for children's social and physical well-being has been well documented (Freeman 2006; Gleeson and Sipe 2006; Sipe, Buchanan, and Dodson 2006; Watson 2006; Thompson 2007; Fincher and Iveson 2008; Freeman and Tranter 2011). Moreover, the lack of children's play infrastructure is of particular importance today, as the increasing rates of child obesity are becoming a growing concern in North America (Farley et al., 2007). Child obesity rates and related health problems have tripled globally since 1980, suggesting that they may be increasing at a faster rate than adult obesity (Lakshman, Elks, Ong, 2012). High-income countries' previous gains in life-expectancy are beginning to reverse as children are predicted to live shorter and less healthy lives than their parents, due primarily to their lower rates of physical activity and increased high caloric intake (ARUP, 2017; Frank, Engelke and Schmid, 2003). Globally, the number of overweight children under five is expected to reach 70 million by 2025, compared to 41 million in 2016 (ARUP, 2017). The need to tackle this issue lies not only in avoiding poor adult health, but also in preventing a variety of other potential acute health problems during childhood (Lakshman, Elks, Ong, 2012). Academics have linked the childhood obesity problem to decreased levels of physical activity in today's children (Wilks, Besson, Lindroos and Ekelund, 2011; Frank, Engelke and Schmid, 2003; Sipe, Buchanan and Dobson, 2006).

In addition to the physical health advantages, it is widely recognized that accessible public space plays an important role in children's social experience and connection to community (Hart 1992; Cohen 2005; Freeman 2006; Sipe, Buchanan and Dodson 2006, Watson 2006, Thompson 2007, Fincher and Iveson 2008). According to child psychologist Jean Piaget, children acquire experience while playing, find cause-and-effect relationships among interactions, and improve their mental abilities both cognitively and intellectually (Piaget,

1983). Play in public spaces also provides opportunities to interact with people of different social classes, cultures, and ages, which allows children to learn how to cooperate with them facilitating their acceptance into civil society (Hart, 2002; Dewi, 2012 and McGlone, 2016).

Urban planners should be exploring ways to encourage more participation in physical and social activities among children, especially in high density neighbourhoods where there is a large concentration of infrastructure capital and where the largest population rises are likely to occur. The development of apartment neighbourhoods has created a different sense of community. Instead of a horizontally organized neighbourhood with streets and neighbouring gardens, children in apartment buildings live vertically and are not visible from inside the house or directly accessible for social interactions and play (Wekerle, 1976). High-rise dwellers socialize less with their neighbours than their suburban counterparts, which leads to a greater sense of mistrust and reduced child independence outside the home (Karsten, 2015; Bourke, 2014 and Karsten and van Vliet, 2006).

It is the collective responsibility of the planner, the city official, the developer, the teacher, and the neighbour to combat these insecurities and ensure children are extended the same privileges from an urban environment as everyone else: safe and clean streets, access to green space, clean air, things to do, the ability to get around, the freedom to see friends, and somewhere to call home (ARUP, 2017). The number of children living in a place is often used as a metric to measure success – if we build a city that allows children and youth to thrive, we are inherently building a more inclusive, sustainable city for everyone (City of Toronto, 2016).



Case Studies from Around the World

Other cities around the world have recognized the importance of incorporating child-friendly infrastructure into the planning and development of new dense urban neighbourhoods and have experienced considerable success, both in terms of subsequent economic benefits but also a noticeable rise in the population of young families moving into those areas. Three cities, in particular, have championed the goal of becoming more family friendly, each through different policy initiatives at the neighbourhood level. These neighbourhoods are: Southeast False Creek in Vancouver, Boulogne-Billancourt in Paris and Hammarby-Sjöstad in Stockholm. Below I briefly discuss the main policy interventions aimed at increasing the availability of child-friendly infrastructure each city has put in place, highlighting the inclusive housing policies in Southeast False Creek, childcare and education in Boulogne-Billancourt, and active greenspace development in Hammarby-Sjöstad. In each case study I identify the main policy initiative, contextualize the neighbourhood, illustrate how the policies are improving the lives of children and call to attention the overall impacts on the neighbourhood's success. In doing so, the case studies below allow me to provide concrete evidence of the tangible benefits progressive child-friendly infrastructure initiatives can have on a neighbourhood.

Southeast False Creek, Vancouver

Bringing Housing to the Forefront

Starting in the 1990's, the City of Vancouver has made a concerted effort to improve the living conditions for families in the downtown area as it densifies (Jaffe, 2014). In particular, the city has focused on enhancing the housing conditions and increasing unit sizes. Vancouver requires developers to set aside a share of housing units for families in high density developments —typically 25 percent (City of Vancouver, 1992). These family units are commonly grouped together closer to the street level, often in multilevel townhouse-type structures that form the base of most traditional residential towers (City of Vancouver, 1992).

Enforcing minimum numbers of family units (at least two bedroom, with three bedroom preferred) has helped create demand for central city schools, which can be “community hubs” through associated services such as after-hours childcare, excellent playgrounds, libraries, and community arts and recreation centres (Whitzman, 2007). The ground-level clustering makes backyard supervision and coming and going easier, and gives children peers in neighbouring units. Outside the individual unit, Vancouver has put in place mandatory per-unit requirements for indoor/outdoor amenity space tailored for the specific developmental stages of children (City of Vancouver, 1992). The High-Density Housing for Families with Children Guidelines require 1.0-1.5 metres per bedroom for pre-school and elementary/teenage play areas (City of Vancouver, 1992). Moreover, these guidelines place a

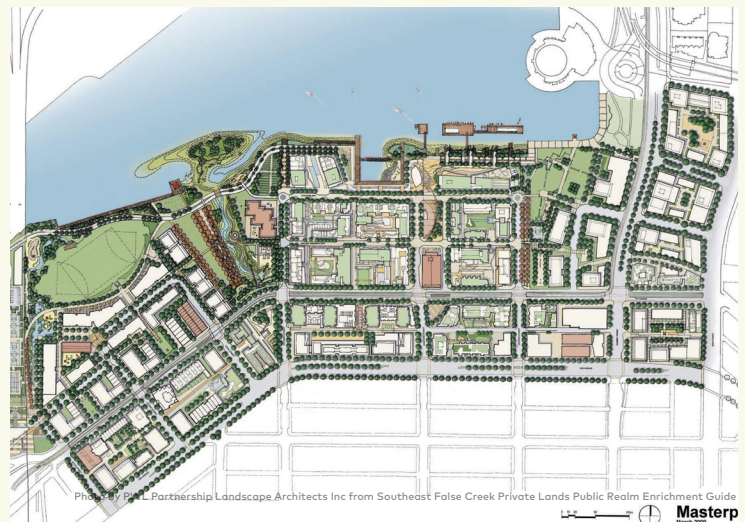
geographical requirement of 800 meters for necessary family services, including an elementary school and its outdoor play area, a daycare centre, an after-school care facility, a community centre and a grocery store (City of Vancouver, 1992). The emphasis is on effective access through a walking route that does not require children to cross a major, un-signalized traffic arterial (Whitzman, 2007). The culmination of Vancouver's social and housing policies provided the foundation for the success of the Southeast False Creek neighbourhood.

Southeast False Creek is a mixed-use community located on the South shore of the False Creek inlet, which separates the Central Business District from the greater Vancouver area. The neighbourhood's core was built on decommissioned industrial land to house athletes during the 2010 Winter Olympics.

Post Olympic games, the area has transformed into a thriving family friendly neighbourhood and has been highly studied as a model due to its environmentally friendly and livable community planning and design (Toderian, 2012; City of Toronto, 2017). A master plan for the area was passed during the conception of the Vancouver Olympics bid to facilitate the neighbourhood's transition from athlete's village to thriving community. This master plan included mandatory access to outdoor recreation space, community centres, transit, and affordable family sized housing units (City of Vancouver, 2007).

In particular, the plan has prioritized family housing specifying 25% of the housing units in the neighbourhood's core to be affordable or modest market family-sized rental units. The plan also encouraged family-friendly services on the ground floor. Services and facilities now available include the construction of a new Kindergarten-grade 7 school, three new childcare centres with a total capacity of 207 children, eight new family-care centres with a total capacity of 56 spots, and a new community centre (City of Vancouver, 2007). The area is also serviced by the Canada Line subway and by an extensive cycling network designed to reduce car-dependency and local congestion. The neighbourhood's proximity to the linear seawall along the waterfront, which is punctuated by a series of parks and open spaces, supports nature play, and provides opportunities for environmental

education for children and families (City of Toronto, 2017). Nine years after the end of the Winter Olympics, Southeast False Creek has successfully transformed into a vibrant mixed-use community with a total population of approximately 12,000 people.



Boulogne-Billancourt, Paris

Investing in Childcare and Education

Boulogne-Billancourt is a neighbourhood in the western suburbs of Paris, France, located approximately 8.2 km from Paris city centre. The neighbourhood is bounded by the 845 hectare Bois du Boulogne to the north, the 16th arrondissement to the east, and the looping Seine river on its south and west sides. Boulogne-Billancourt is Paris's most populous suburb and one of the most densely populated suburbs in Europe (Office de Tourisme de Boulogne-Billancourt, 2014). The neighbourhood is serviced by over a dozen parks, five metro stations, three cultural/community centres, and a system of connected pedestrian paths between residences.

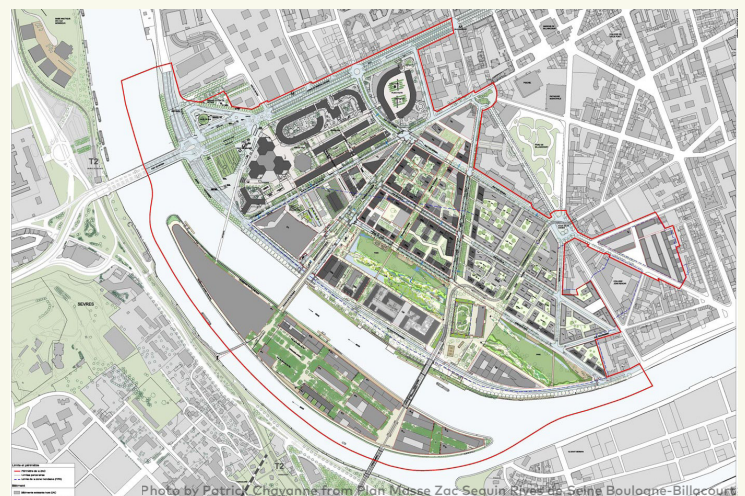
Formerly an important 20th century industrial neighbourhood, Boulogne-Billancourt has successfully transitioned into a thriving mid to high-rise mixed-use community in a post-manufacturing Paris. The departure of the Renault automotive plant, as well as the French film and aviation industry over the last 25 years, opened up a significant portion of land and allowed Boulogne-Billancourt to experiment with progressive planning policies designed to encourage young families to live and work in the area (Office de Tourisme de Boulogne-Billancourt, 2014). In order to achieve this, Boulogne-Billancourt has invested heavily in childcare services and youth education. The city currently devotes 25% of its annual operating budget to education, and to youth and childhood services (Ville de Boulogne-Billancourt, 2018). Since 2014, as part

of an ambitious educational program, the City has put in place a charter of well-treatment to better meet the needs of children. This charter, as well as its subsequent updates, has reconfirmed Boulogne-Billancourt's commitment to its youth, codifying the city's responsibility "to meet the expectations of each generation" and to "continue efforts to address early childhood care needs, including business-to-business crèches" (Ville de Boulogne-Billancourt, 2016). As a result, the commune has devoted 22 municipal facilities to early childhood care, as well as over 60 additional private or communal service facilities, making it a lot easier for parents to find a spot for their kids without much delay (Le Parisien, 2014 & Ville de Boulogne-Billancourt, 2018).

One of the most successful examples of these municipal buildings is the Giraffe Childcare Centre. The centre is located on the edge of the redeveloped Renault site and was completed in 2012 by Hondelatte Laporte Architectes. The centre houses a 60-bed daycare, 20-bed nursery, and a pop-up healthcare clinic. The facility is famous for its large-scale animal figures and whimsical design (Hondelatte Laporte Architectes, 2013). A giant yellow giraffe pokes its neck through the building's entrance while a standing bear watches over the double-tiered play areas. The playful design appeals to children and attempts to make the health care experience less intimidating by provoking a child's imagination and sense of wonder (City of Toronto, 2017 & Hondelatte Laporte Architectes, 2013).

Child-friendly initiatives like the Giraffe Childcare Centre have had a profound effect on the population of Boulogne-Billancourt. The commune experienced a boom in young families over the last 10 years and now houses one of the largest under 17 population in the suburbs of Paris (Paris Statistics, 2018). Moreover, it houses some of the largest per-capita percentages of under 17 populations in the Ile-de-France region (Paris Statistics, 2018). Boulogne-Billancourt understands the importance of the public realm for high-density neighbourhoods and has designed their space to become an extension of the home. The sheer number of child-specific facilities and availability of childcare services ensures equitable and convenient access for all

families in the neighbourhood. Boulogne-Billancourt's commitment to child-services has incentivized many young families stay and grow in the neighbourhood changing its overall demographic makeup and establishing a population base that is committed to staying long term (Ville de Boulogne-Billancourt, 2018).



Hammarby-Sjöstad, Stockholm

Fostering Play & Independent Exploration

Unlike Southeast False Creek or Boulogne-Billancourt, Hammarby-Sjöstad was never designed with children explicitly in mind but is yet an example of how to provide child-friendly play space. The neighbourhood is located south-east of Stockholm's central business district, and is bordered by lake Hammarby and the Sickla canal to the west and south, and by highways 222 and 260 to the north and east. Previously an industrial waterfront, redevelopment began in the mid-1990's in conjunction with an unsuccessful Olympic bid. The goal of the new community was to be twice as environmentally efficient as any other community in the world and incorporated principles of sustainability, including increased density, fewer cars, and lower environmental footprints into the neighbourhood's design (Inghe-Hellström, 1997). As a result, infrastructure implementations such as green car-free pedestrian corridors, an interconnected parks system, community-centric building design, and rigorous public space and sunlight standards can all be found (Gaffney, Huang, Maravilla, Soubotin, 2007).

These design choices under the banner of sustainability have attracted many families to Hammarby-Sjöstad (Berg, 2015). The area's system of connected parks and car-free corridors is used by children on their way to school or local shops due to the lack of car danger (Gaffney et al. 2007). Balconies and building entrances are angled toward the neighbourhood's parks and public spaces, encouraging a greater sense of community and increased supervision (eyes on the street). The abundance of high-quality natural park space provides many children with opportunities for educational interaction and imaginative play, opportunities crucial to healthy childhood development.

Hammarby-Sjöstad has developed into a vibrant mixed-use community, and has become an international model for sustainable urban design and child-friendly spatial planning (Gaffney et al, 2007). As of 2015, the area's total population was one of the highest outside the city's core and its under 10 population was significantly larger than the rest of the region (Jernberg, Hedenskog & Huang 2015). The area's focus on an environmentally self-sufficient and socially connected landscape has meshed perfectly with the principles associated with effective child-friendly play. The interconnected natural spaces help create a public outdoor living room space where recreation,

socialization, and play can all occur without the need for a private backyard (Karsten and van Vleet, 2006). These natural spaces facilitate unstructured play environments, encouraging children to take calculated risks developing their problem solving, coping, and conflict management skills (Whitzman & Mizrachi, 2012). The neighbourhood's car restrictions allow for children to exercise greater scales of independent mobility and independent play. The Hammarby-Sjöstad parks system also provides a variety of scales, styles, and experiences addressing the community's daily, weekly, and seasonal needs. As Hammarby-Sjöstad has shown, child-friendly infrastructure can be multifaceted and benefit residents of all ages. Its experience provides insight into the tangible effects of incorporating pedestrian centric spaces in an area's overall design.



What the Case Studies Suggest

Southeast False Creek's inclusive housing policies, Boulogne-Billancourt's commitment to childcare and education and Hammarby-Sjöstad's dedication to providing recreational space are three examples of neighbourhoods going out of their way to address the requisite needs associated with childhood. Through different policy implementations and initiatives, these neighbourhoods are trying to tackle the challenges facing contemporary urban children and their families. The effects of these policies are considerable, as each neighbourhood has seen a significant increase in the population of child residents. These case studies should provide ample evidence of the remarkable return on investment implementing child-friendly infrastructure policies can have on a neighbourhood. The case studies above also represent three foundations necessary for a successful child-friendly neighbourhood: namely, affordable 2+ bedroom units, accessible daycare and educational services, and plenty of flexible greenspace. This MRP will expand on the latter two foundations by mapping and evaluating the child-friendly services of Toronto's four newest urban vertical neighbourhoods.



Photo by Zurna Creative from unsplash.com

Neighbourhood Analysis

Methodology

Population Density per Km²

% of 0-14 year olds

West Don Lands

Child-friendly infrastructure map of West Don Lands

Child infrastructure network & child concentration map of West Don Lands

Liberty Village

Child-friendly infrastructure map of Liberty Village

Child infrastructure network & child concentration map of Liberty Village

King-Spadina

Child-friendly infrastructure map of King-Spadina

Child infrastructure network & child concentration map of King-Spadina

CityPlace

Child-friendly infrastructure map of CityPlace

Child infrastructure network & child concentration map of CityPlace

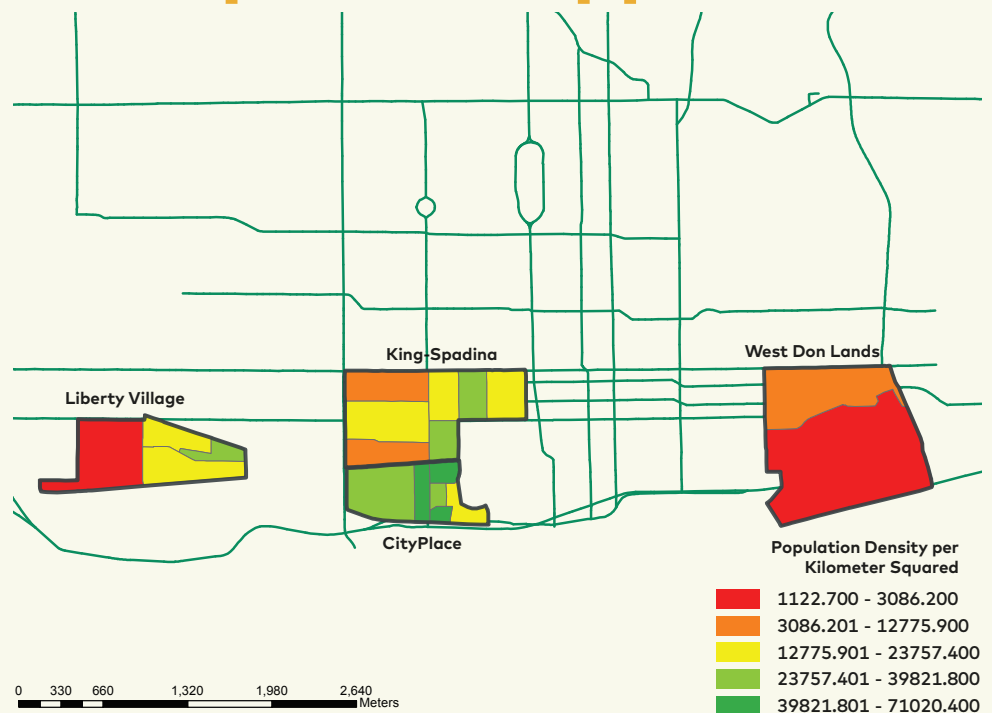
Methodology

In order to determine the network of existing child-friendly infrastructure in Toronto's newest vertical neighbourhoods, a GIS mapping exercise was conducted. All data included in the mapping was provided by Open Data Toronto, Open Data Canada or manually collected through information provided by the City of Toronto's website.

The first step involved creating a base layer in order to identify which areas were appropriate for examination, focusing on neighbourhoods near the central business district built post-2000's that featured high population densities. Property

data, 3D massing files and centreline files were combined to create a basemap for all buildings in Toronto (City of Toronto, 2018). Next, the data was filtered for height and property description. All buildings under 25 meters (82 feet) were eliminated. Assuming that each floor is 3m high, 25m would render a basemap of buildings 8 stories or taller. Buildings considered mid-rise or low-rise in the downtown core were

Population Density per km²



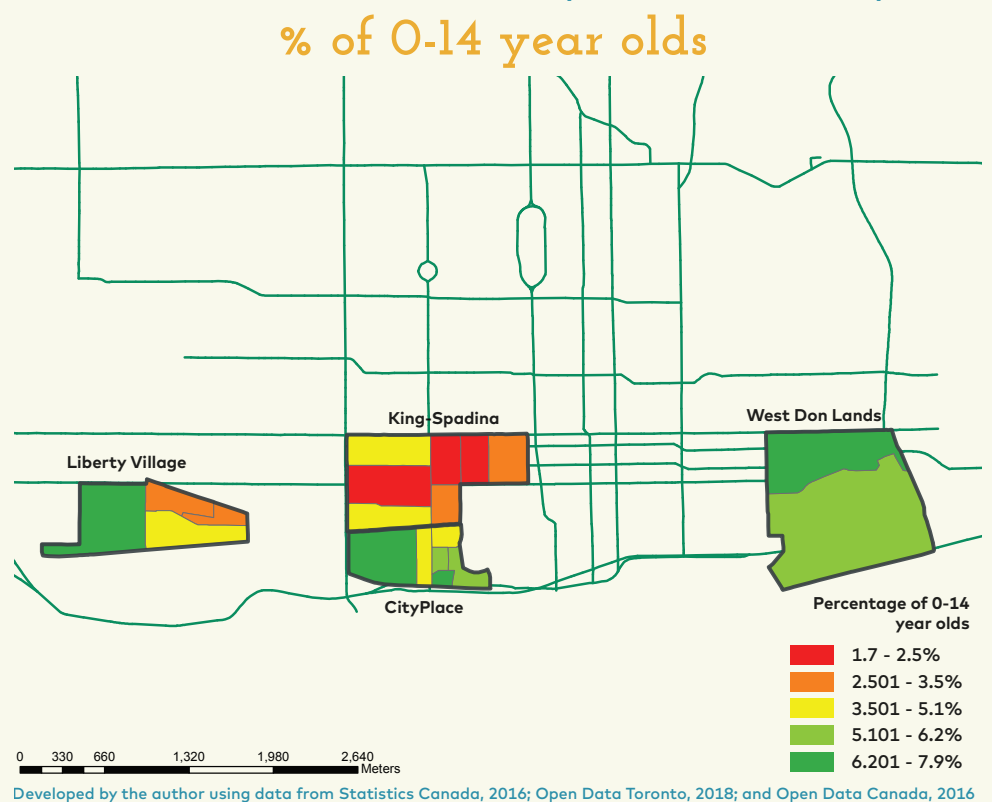
Developed by the author using data from Statistics Canada, 2016; Open Data Toronto, 2018; and Open Data Canada, 2016

eliminated. The remaining buildings were then cross-referenced with Toronto's property data address points and filtered for those under the description "High-Density Apartment" (City of Toronto, 2018). Unmatched building masses were then manually checked using Google Maps and recent development applications to make sure no apartments were missed. The resulting map provided four neighbourhoods of interest: West Don Lands, Liberty Village, King-Spadina, and City Place. Once the appropriate neighbourhoods were discovered, their corresponding Census Dissemination Areas were plotted to provide the demographic profile of each neighbourhood. Information about population density and percentage of population under 14 was extracted from the 2016 Canadian Census and mapped in a five-colour scale (Statistics Canada, 2016).

Next, a 500m buffer was projected from each high-rise apartment in each neighbourhood. The 500m measure was chosen as it represents a 7-10 minute walk for children (Loukaitou-Sideris, 2003). The walking distance falls within the borders of what researchers call the “popsicle test”, a mobility radius that is determined through an informal examination of whether a child is able to safely walk to the corner store, buy popsicle and return home before the popsicle melts (ARUP, 2017).

As previously stated in the introduction, child-friendly infrastructure refers to the network of public spaces, services, facilities, streets, and parks that make up

the key features of a city built to service the unique needs of children (ARUP, 2017). These services and facilities including — educational institutions, drinking fountains, public washrooms, licensed daycares, park space, active transportation routes, family and child programs, recreation equipment and community centres — were all pulled from the City of Toronto’s list of open data sets and the City of Toronto website, and then plotted



in each neighbourhood. All plotted points outside the buffer zones were removed. This network is critical in reversing the challenges contemporary vertical children are facing.

For the purposes of this report, educational institutions (City of Toronto, 2019) include all public and private educational institutions operating in Toronto. Post-secondary institutions were filtered out and all institutions outside the 500m buffers were eliminated. The drinking fountain dataset (City of Toronto, 2016) includes all drinking fountains that were deemed “operational” at the time of data validation (June 2016).

Drinking fountains are displayed with a blue circle. Public washroom facilities (City of Toronto, 2019) include all city owned washrooms operated by the Parks, Forestry and Recreation division of the City of Toronto and are displayed using a brown triangle. Daycare facilities (City of Toronto, 2017) include all facilities officially licensed to take care of children. The data set contains facilities that are licensed to care for children from ages 0-5. These facilities are coded with a black diamond. Park space maps the boundaries of all parks within the City of Toronto. Park space (City of Toronto, 2018) is coded in light green. The active transportation routes layer contains information from Open Data TO's Bikeways database (City of Toronto, 2018). The original data sheet was filtered to only show active transportation routes that included bike lanes, signaled bike routes, trail paths, cycle tracks, and major and minor multi-use paths. All trails are coded in blue. The family and child programs data (City of Toronto, 2018) includes the location of EarlyON Child and family centres. These facilities offer free programs to parents and caregivers and their children from ages 0-6. Family and child programs are displayed with a green cross. Recreational equipment was pulled manually by looking through the City of Toronto's playground database (City of Toronto, 2019). The recreational equipment layer includes parks public spaces that contain playgrounds, splash-pads, sports fields, and aquatic equipment or picnic facilities. The location of the equipment is mapped using the paired address provided by the city. All recreational equipment is coded with a purple square. Finally, public community centres and libraries were similarly gathered and mapped. Community centres are displayed with an orange hexagon (City of Toronto, 2019).



Photo by Diane Walton from unsplash.com



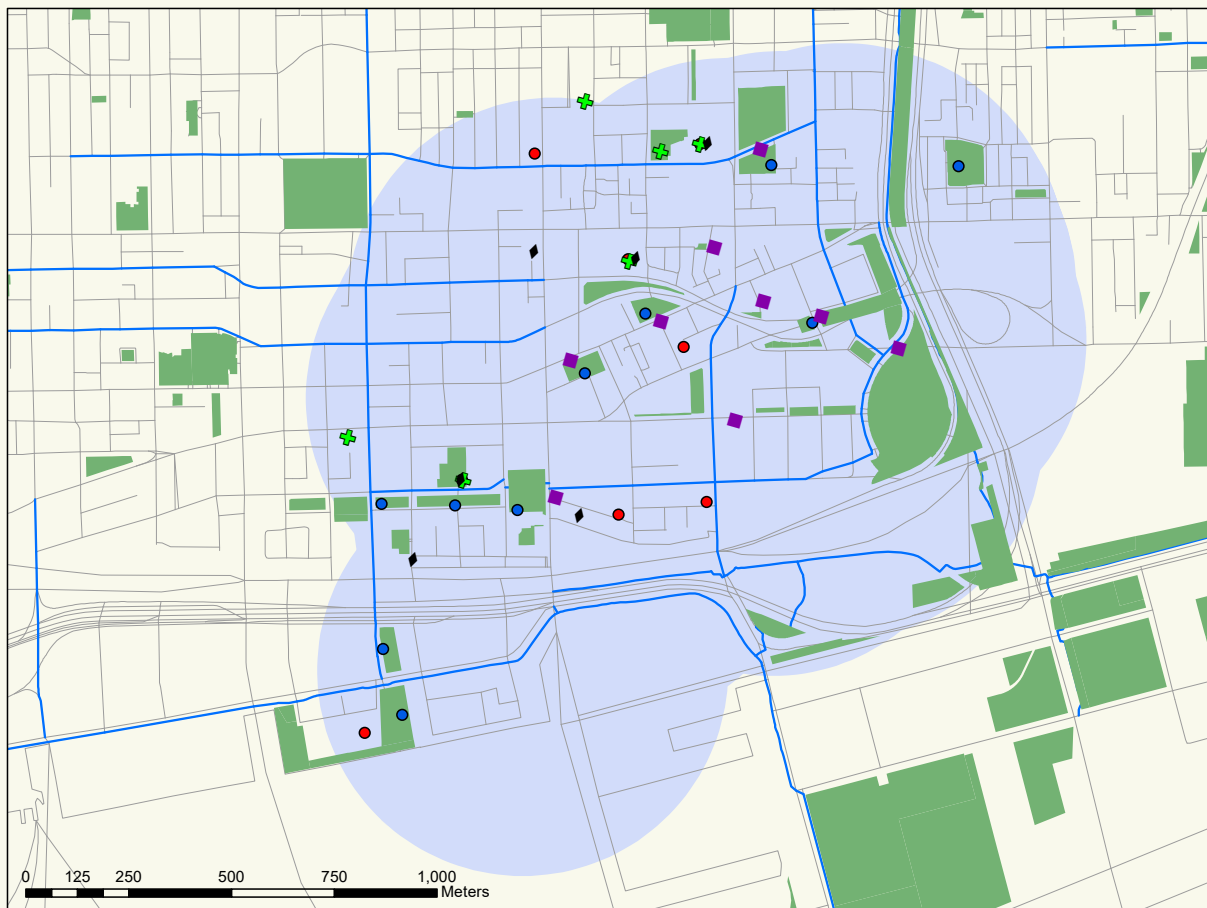
West Don Lands



Introduction

The West Don Lands is a 1.7 kilometres square (km²) brownfield remediation project located in the east end of Toronto's downtown. The neighbourhood is still in the middle stages of development and once complete will be a mixed-use, pedestrian-friendly community containing approximately 6,000 new residential units (Waterfront Toronto, 2019). The neighbourhood is bordered by the Don River to the east, rail tracks to the south, Parliament Street to the west and the Gardiner Expressway to the North. Development of the neighbourhood was accelerated in 2009 in anticipation for the 2015 Pan/Parapan American Games (Dunkleman, 2019). In particular, the Canary District within the West Don Lands was fast-tracked and acted as the Athletes' Village. The dorm-style residences were then converted into residential units and sold once the games ended (Waterfront Toronto, 2019).

Child-friendly Infrastructure Map of West Don Lands



Developed by the author using data from Open Data Toronto, 2018; Open Data Toronto, 2017 Open Data Toronto, 2016.

- | | | |
|---------------------------|------------------------------|---------------------------------------|
| Family and Child Services | Active Transportation Routes | Playgrounds and Recreation Facilities |
| Educational Institutions | Park Space | Public Community Centres |
| Licensed Daycare Centres | Public Washrooms | Drinking Fountains |

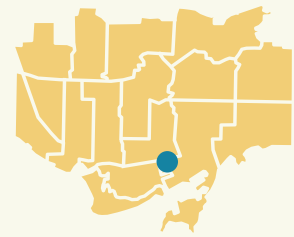
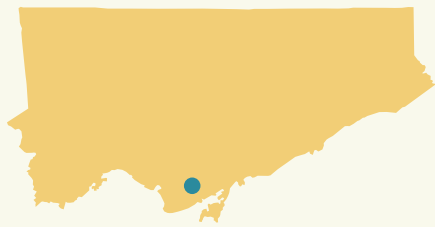
West Don Land Population Statistics

As of 2016, the area's population is approximately 5,600 residents with a population density of 4.8 people per metre² (4,802 per km²), the smallest in the study (Statistics Canada, 2016). The neighbourhood also has the oldest population among the four study sites with an average age of 38.5 years old, just under the citywide average of 40 (Statistics Canada, 2016). The child population, however, shows a very different story as the area houses the largest percentage of 0-14 year olds at 6.6% of the total population (Statistics Canada, 2016). A deeper examination reveals over half of the 0-14 population are in the 0-4 demographic (54%). Although the West Don Lands houses the largest children population percentage of Toronto's four vertical neighbourhoods (6.6%), it is still well below Toronto's average of 14.6%.

The population trends are interesting and could be explained through a few different speculations. Firstly, the West Don Lands is a new community, which only experienced a large availability of residences after the 2015 Pan-Am games and one year before the 2016 census data was collected, so residents simply might not have had enough time to establish a family beyond the birth of their first child. Secondly, of the four areas in this study, the West Don Lands has the largest network of early childhood services. The abundance of family and childhood centres, daycares and primary schools makes it an attractive neighbourhood for young families or couples who would like to start a family and still live within the downtown core. However, the area's lack of adolescent infrastructure may exclude more established families from moving into the new neighbourhood and force those with older children out. A comparison between the 2016 and the next census would provide a more accurate reading of the population trends occurring in the area.

Parkland and Public Space

The area is surrounded by 9.3 hectares of parks and public space, including Corktown Commons (the 7.3 hectare flood-mitigation centrepiece) and Underpass Park (a public art, play and recreation space housed under the Richmond and Adelaide overpasses). Furthermore, the walking radius for residents of the West Don Lands is also dotted with numerous pocket parks and public spaces including: Orphan's Green, Little Trinity Church, Parliament Square, Percy Park, Sackville Playground, Lawren Harris Square, David Crombie Park, Sumach-Shutter Parkette and the Lower Don Ravine system. The West Don Lands is also connected to both the Lower Don and Martin Goodman bicycle-separated trail system.



Population Statistics

2016 Population	Land Area	Population Density	% 0-14 years old	Average Age
5,619	1.17km ²	4,802.56 ppl/km ²	6.67%	38.48
Children per Daycare Facility	Children per Elementary School		Children per Playground	
34.17	34		41.67	

Active Transportation and Transit Network

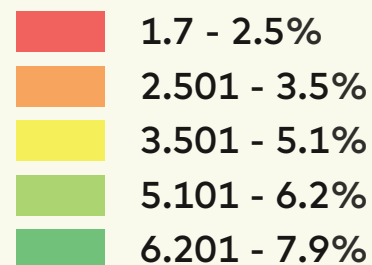
In both the area's Master Plan and in practice, transportation networks are pedestrian focused (Toronto Waterfront Revitalization Corporation, 2005). The area is well connected with active transportation routes running north-south and east-west. Painted bike lanes have been installed along the North-South streets of Cherry, River, and Bayview while Sumach, Mill, and the western portions of Adelaide and Richmond Street have painted east-west lanes. The West Don Lands has also implemented pedestrian-friendly street design around the Canary District. European style "Woonerfs" that blur the line between pedestrian, cyclist and motor-vehicles, encouraging drivers to slow down and be more aware has been the street design choice for many of the neighbourhood's interior streets (Waterfront Toronto, N.D). The area's prioritization of pedestrians has resulted in safer designed streets, encouraging a greater independent mobility radius for the neighbourhood's younger residents. Moreover, the strong network connections between the area's park system and these pedestrian-enhanced routes open up the possibility of effective child play without the need for a private backyard. The West Don Lands' goals of reduced private vehicle dependency continues with the recent addition of the three stop Cherry Street loop, connecting the area to the rest of downtown via the 504 King St streetcar. Other Toronto Transit Commission (TTC) routes include: 501 Queen St streetcar and the 75, 65 and 121 Busses. While the West Don Lands hosts the most robust network of active transportation infrastructure and the recent addition of the Cherry Street loop, the area is still one of the least transit serviced neighbourhoods in the study.

Child-friendly Infrastructure & Concentration of Children



Developed by the author using data from and City of Toronto, 2018; City of Toronto, 2017; City of Toronto, 2016; and Statistics Canada, 2016, Open Data Canada, 2016

Percentage of 0-14 year olds



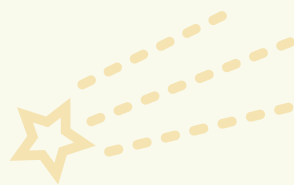
+ Family and Child Services	— Active Transportation Routes	■ Playgrounds and Recreation Facilities
● Educational Institutions	■ Park Space	⬡ Public Community Centres
◆ Licensed Daycare Centres	▲ Public Washrooms	● Drinking Fountains

Child Services

The West Don Lands is one of the most well serviced neighbourhoods for child-friendly infrastructure and programs, when considering both per capita and total numbers metrics. Services within the West Don Lands include eight educational institutions, six family and child program centres, ten drinking fountains, six child care facilities, nine playgrounds/recreational facilities, one private community centre. However the availability of public washrooms is absent as there are no publicly accessible washrooms within the neighbourhood. Most services are stationed along separated cycling routes promoting safe active transportation. The educational institutions in the area offer a variety of schooling types, from public elementary (Market Lane Junior and Senior school), Catholic (St. Paul's Catholic), to private (Afzal Islamic Montessori and Academy). Elementary educational

institutions dominate the West Don Lands leaving only one alternative educational facility as the local high school option (Inglennook Community School). These institutions surround the periphery of the buffered radius clustered along Shutter and Front Streets. The location of the educational institutions results in a longer travel distance from the most dense part of the neighbourhood, immediately west of Corktown Commons. The area's five elementary schools currently serve 34 school-aged children (5-14 years old) per elementary school. The relatively small number of children per school indicates there is considerable capacity for future growth. Moreover, the neighbourhood's precinct plan has also designated room for a co-located school, community centre and daycare at the south end of Mill Street once demand exceeds current capacity (Toronto Waterfront Revitalization Corporation, 2005).

The inner core of the neighbourhood hosts the majority of the playgrounds and recreation equipment. Their placement facilitates a short and easy walk time from the dense inner core of the neighbourhood. Daycare facilities in the West Don Lands are equally distributed ensuring all residents have an equal opportunity to access child care. The six facilities serve slightly above 34 children (0-4 years old) per facility. As discussed in the Boulogne-Billancourt neighbourhood case, the availability of daycare within a manageable walking distance for the child should be considered a significant pull factor for new families looking to move within the downtown core.



Conclusion

The West Don Lands is the newest neighbourhood in the study, yet one of the most supportive of children's needs. The area has a robust and well connected active transportation network, a pedestrian-centric public realm, accessible community amenities for all residents of the area, and a significant amount of parks and recreation space. West Don Land's success in establishing a sizeable child-friendly infrastructure network can arguably be attributed to its major construction period taking place after the establishment of development guidelines enforcing complete community initiatives. It is no wonder that within a year of the closing of the Pan-Am games, the West Don Lands already has the largest population percentage of youth amongst the four neighbourhoods. If the neighbourhood continues to place similar importance on access to child-friendly services and lively public spaces, one can surmise the percentage of large families in the area will only increase.

What makes this neighbourhood work for children?

- Active transportation network
- Accessible community amenities
- Green space
- Pedestrian-centric public realm

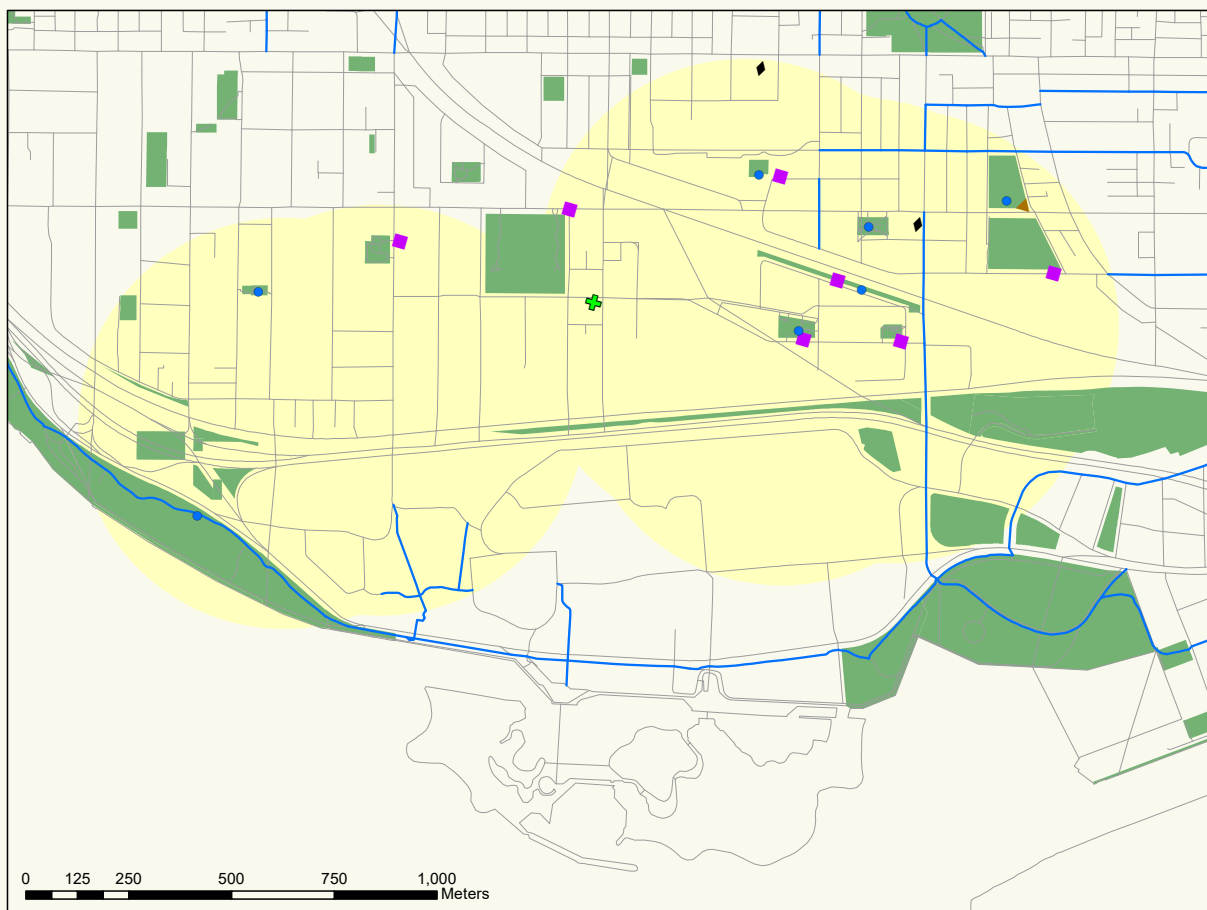
Liberty Village



Introduction

Liberty Village is the oldest and most established neighbourhood this study examines. Once a major industrial district due to its proximity to the rail tracks, by the 1980's the majority of manufacturing operations declined leaving the area neglected and abandoned (City of Toronto, 2005). Due to the low property values of the area, large scale residential development picked-up in 2000 as inexpensive brownfield remediation projects. By 2004, Liberty Village experienced a population boom and has continued to grow ever since. The area is characterized by adaptive reused loft space, creative industries, and early 2000's high-rise towers and townhomes. Liberty Village is bordered by rail tracks to the south and north-east, King St W to the north, and Dufferin St to the west. Liberty Village has a total land area of 0.59 km² (59 ht).

Child-friendly Infrastructure Map of Liberty Village



Developed by the author using data from Open Data Toronto, 2018; Open Data Toronto, 2017 Open Data Toronto, 2016.

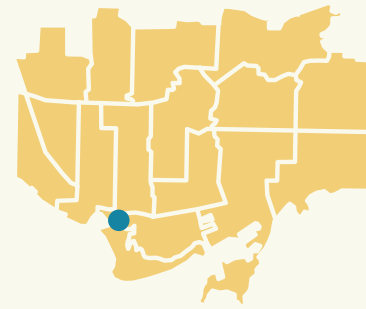
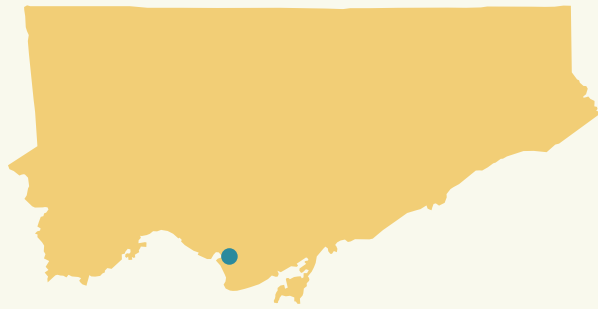
- | | | |
|---------------------------|------------------------------|---------------------------------------|
| Family and Child Services | Active Transportation Routes | Playgrounds and Recreation Facilities |
| Educational Institutions | Park Space | Public Community Centres |
| Licensed Daycare Centres | Public Washrooms | Drinking Fountains |

Liberty Village Population Statistics

As of 2016, the area's population is approximately 7,800 residents with a population density of 13 people per metre² (13,281 per km²), the second smallest in the study (Statistics Canada, 2016). The neighbourhood's average age is just over 32.5 years old, well younger than the city's average (Statistics Canada, 2016). The population is distributed unevenly with 96% of the population living in the dissemination areas east of Atlantic Avenue. The child population is the second lowest at approximately 4% of the total population (Statistics Canada, 2016). A closer examination of the child population reveals approximately 75% are under the age of four years old (Statistics Canada, 2016). These statistics indicate the area is still dominated by young professionals. Residents are either choosing to delay starting a family or only spending the few first years of parenthood in Liberty Village and leaving by the time the child is ready for school.

Parkland and Public Space

Parkland is mainly found around the edges of the neighbourhood, with Garrison Commons, Marlyn Bell Park and Stanley Park contributing the majority of greenspace for the area. Smaller pocket parks including Liberty Village Park, Gateway Park, and Bill Johnson Park service the most densely populated area. The area's connection to its greater park network however, is a little deceiving. In particular, the connection between the dense residential areas of East Liberty Village and the larger Garrison Commons, Marlyn Bell and Stanley Park are inaccessible. Access to the parks requires crossing over rail tracks or under expressways, both of which can decrease the level of perceived safety required for parents to permit independent mobility of children. Five of the seven playgrounds/recreation facilities are concentrated around the most densely populated area and provide accessible and varied styles of play at Liberty Village. Liberty Village Park in the heart of Liberty Village contains a playground and small field, and is connected to Gateway Park through a short private pedestrian-only corridor lined with small green spaces. The larger Stanley Park, north of the rail track, contains a larger playground, baseball field and basketball court. Overall, the area has been criticized for the general lack of a sufficient tree canopy and greenspace within the neighbourhood's boundaries (Hume, 2008).



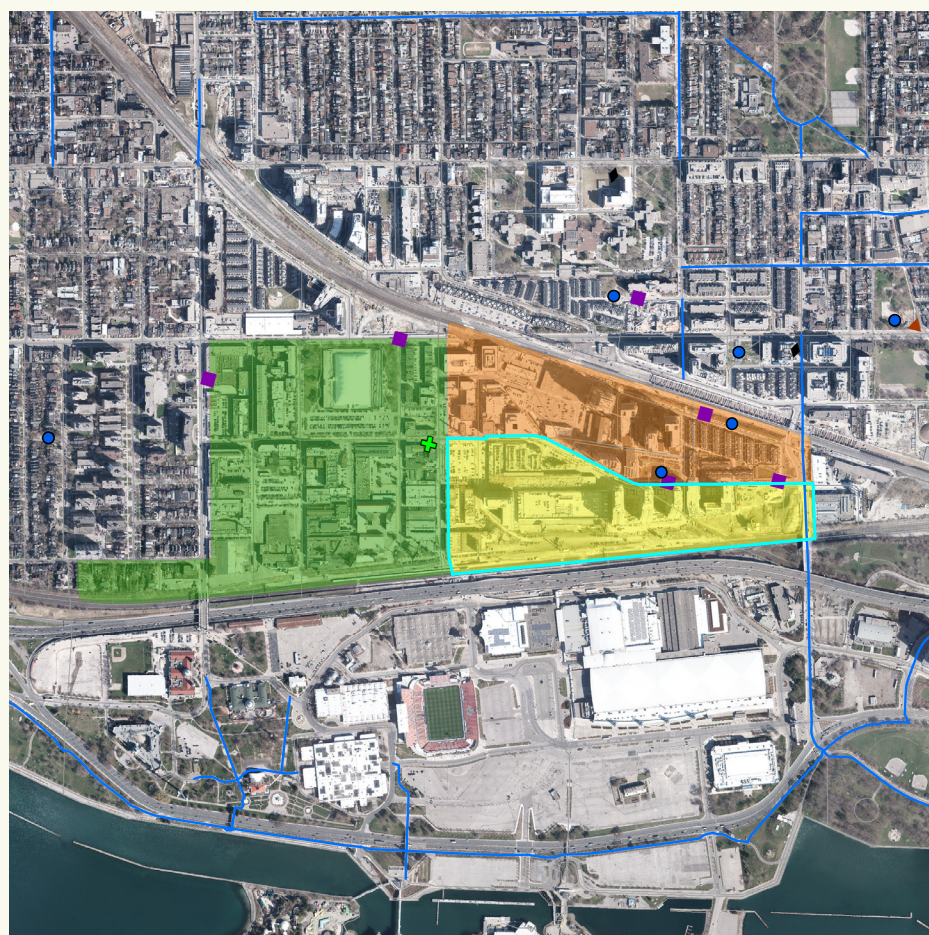
Population Statistics

2016 Population	Land Area	Population Density	% 0-14 years old	Average Age
7,836	0.59km ²	13,281.56 ppl/ km ²	4.10%	32.76
Children per Daycare Facility	Children per Elementary School		Children per Playground	
120.00	N/A		40.00	

Active Transportation and Transit Network

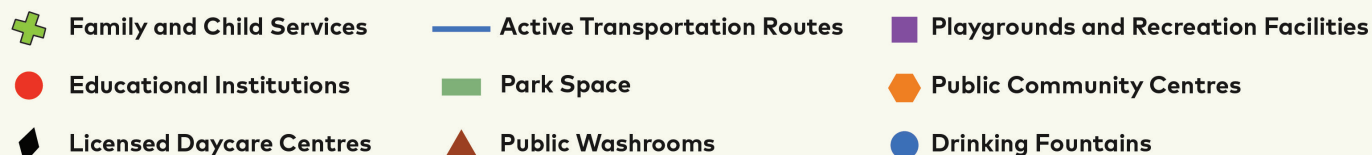
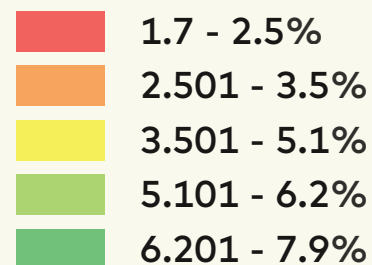
An active transportation network is almost completely missing from Liberty Village. The network contains one separated bicycle lane on Sumach Street, connecting as far south as the Martin Goodman trail along Toronto's waterfront, and a shared east-west lane along Adelaide St W. The streets within the neighbourhood boundaries of Liberty Village have no active transportation or pedestrian-safety improvements to encourage children's independent mobility. Liberty Village is directly serviced by the 63 Ossington Ave bus, which loops through the perimeter of the highest residential density area, while its northern-most border connects to the central business district via 504 King St streetcar, and its southern-most border connects to the 509 (Queens Quay) and 511 (Bathurst St) streetcars. The area is also serviced by the 29 Dufferin St bus on the western-most edge. Although the local transit system is more robust in terms of overall quantity of rapid transit lines, the location of its stations exhibit that same problem as the parks system. The criss-crossing of rail corridors and expressways make the stations difficult and unpleasant to get to. Liberty-Village is also the furthest from Toronto's CBD and thus requires the longest transit ride of all four neighbourhoods.

Child-friendly Infrastructure & Percentage of Children



Developed by the author using data from and City of Toronto, 2018; City of Toronto, 2017; City of Toronto, 2016; and Statistics Canada, 2016, Open Data Canada, 2016

Percentage of 0-14
year olds



Child Services

Child-friendly services within Liberty Village's 500m radius include: two daycare facilities, one child and family care service, one public washroom, six playgrounds/recreational facilities, seven drinking stations, zero schools and zero community centres. Liberty Village has the lowest total number of services in the study area (10 services and facilities in total). It is clear that the area was not planned or developed with children or young families in mind. The area is devoid of any substantial active transportation network, support services for young or working families, or basic education services. Moreover, the service levels (understood as number of children per facility) of the programs that are available are arguably the lowest among worst of the four neighbourhoods in this study. Available accessible daycare amounts to 120 children per facility, while the absence of any educational facility within 500m makes the area an education desert. In comparison, no other neighbourhood within this study has a service level of over 100 children per daycare facility.

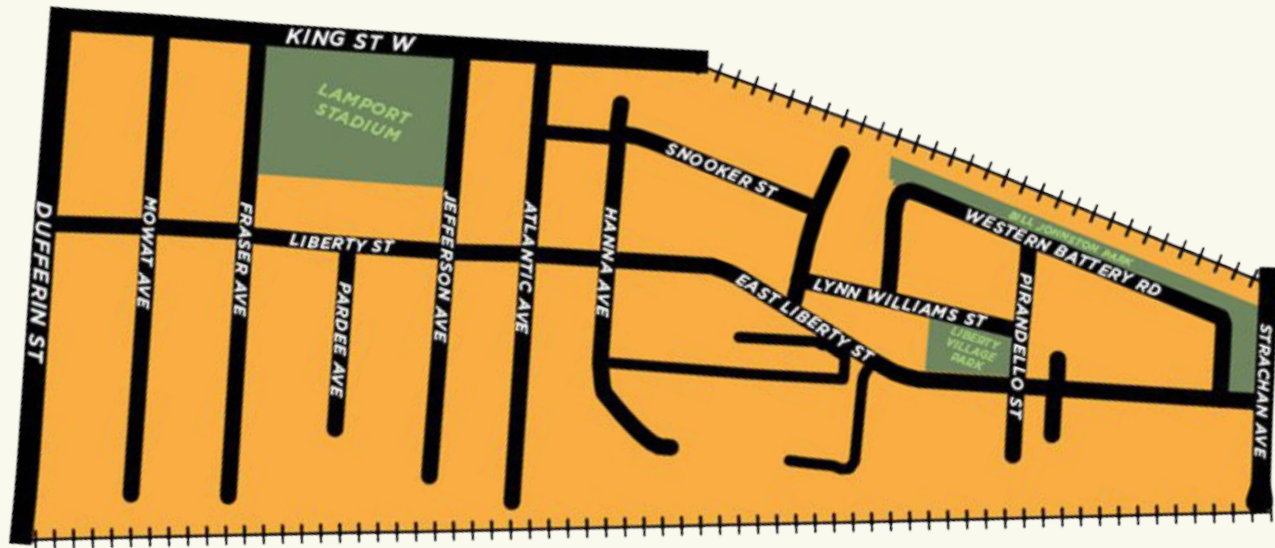


Photo by Jelly Brothers from jellybrothers.com

Conclusion

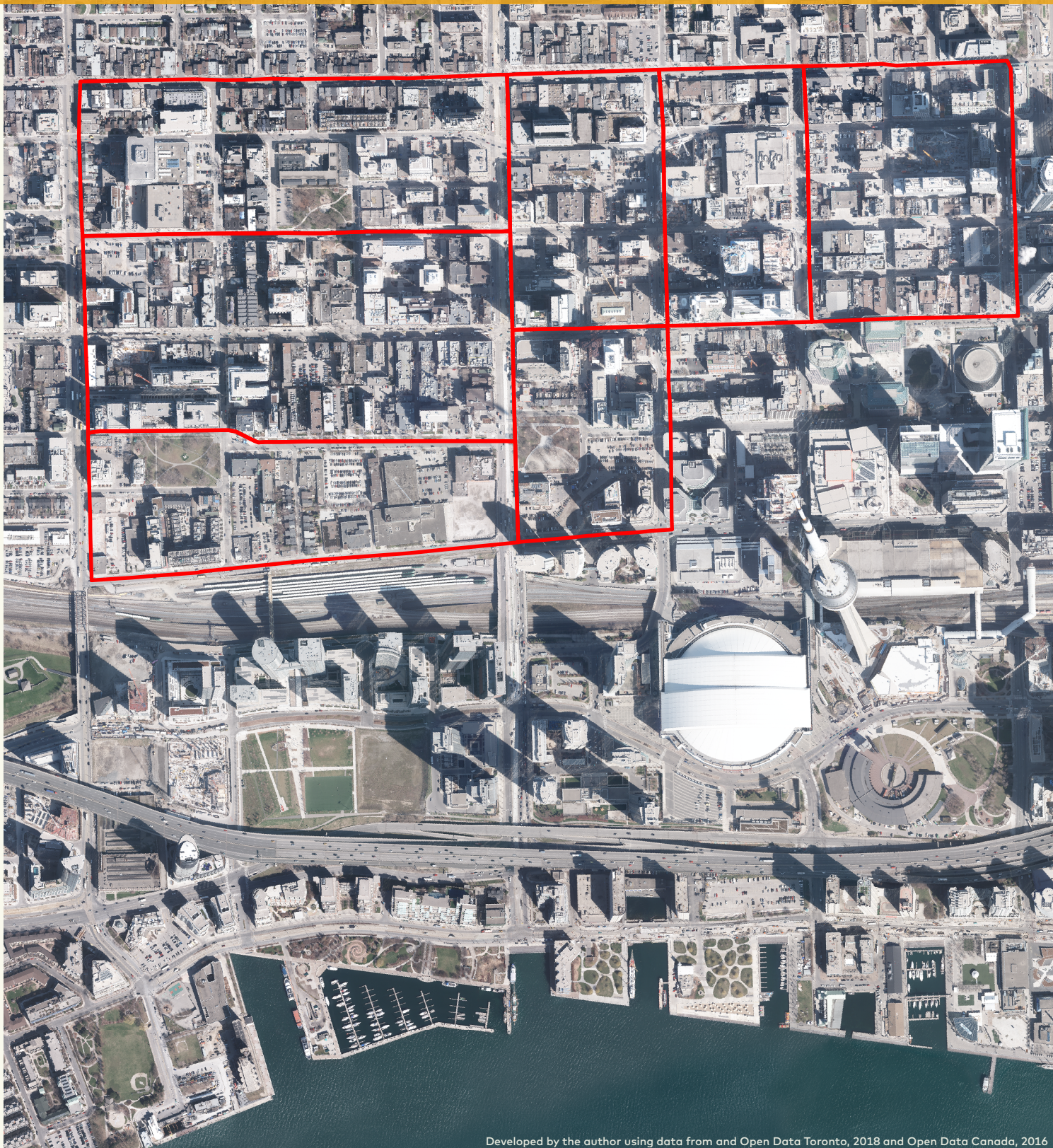
With the current service make-up in the area the low child population demographics make perfect sense and will continue to remain low until these service needs are met. The Liberty Village Master Plan and subsequent residential towers were the first of this study's four neighbourhoods to be built. Their planning and construction happened before the drafting of Toronto's Official Plan policies and Vertical Development Guidelines. The area exhibits a noticeable absence of age-friendly planning and remains homogenous in its age demographics.

There is still time for Liberty Village to improve. There is still significant development interest and an abundance of large under-utilized lots in the central and western portions of the neighbourhood. The area's position between two rail corridors acts as a natural traffic reduction measure and with minor pedestrian-focused interventions can be transformed into a one of the more successful neighbourhoods for child mobility. The main east-west thoroughfare, Liberty St, can easily be transformed to give priority to pedestrians and cyclists, while the laneways abutting the rail tracks to the north and south can be shutdown to cars creating an active transportation loop. Moreover, daycare and family services can be incorporated into the base of new residential towers or within new adaptive reuse office space. Finally, a redevelopment of the under-utilized Allan Lamport Stadium could help to bridge the green space deficit the neighbourhood currently experiences.

What makes this neighbourhood work for children?

- Traffic calming measures

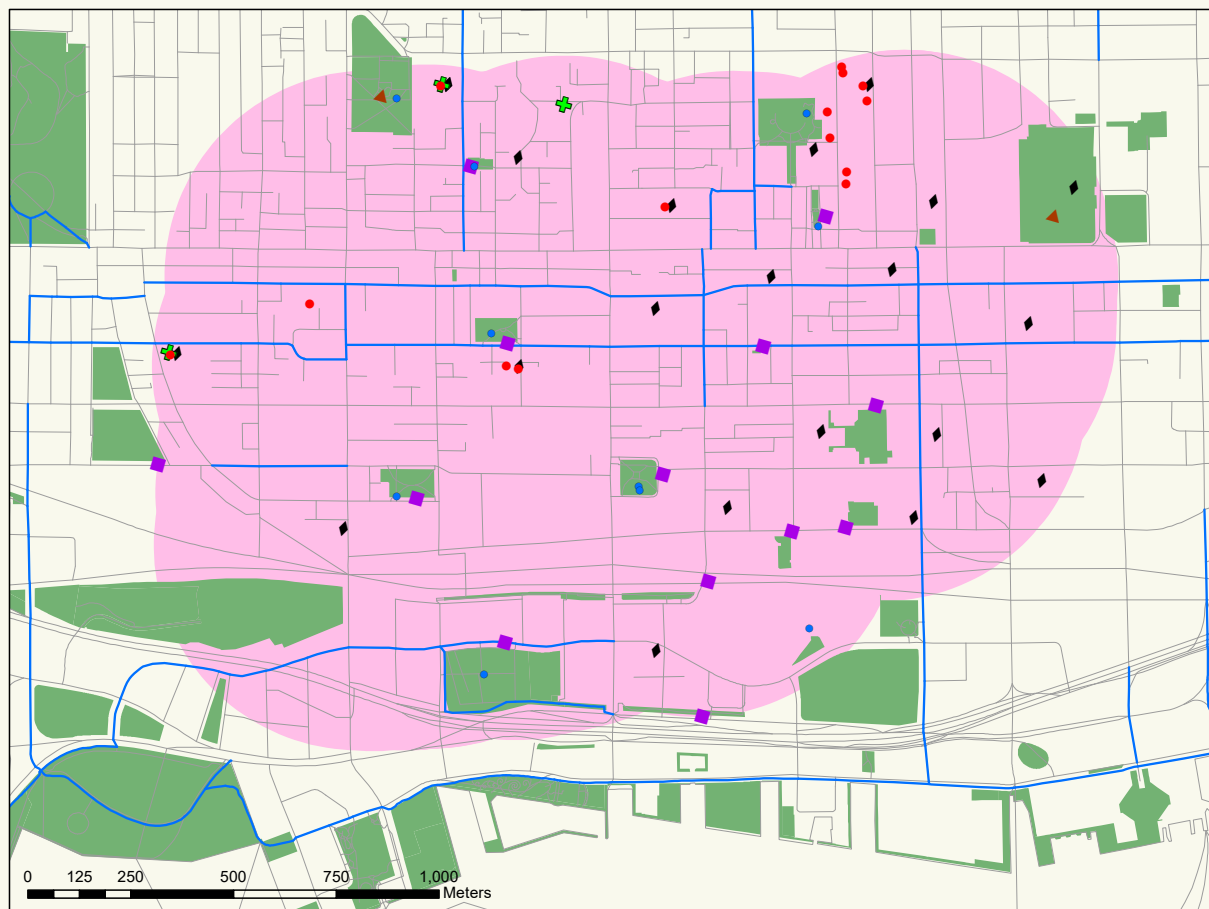
King-Spadina



Introduction

The King-Spadina neighbourhood is a unique mixed use area in Toronto, with a large concentration of jobs in the culture sector, growing residential communities, historic and well-used parks, animated commercial main streets, lively arts scene and vibrant nighttime economy (City of Toronto, 2018). The area is also a successful example of Toronto's late 1990's regeneration policies as the area transformed from a declining manufacturing and textiles hub to the fastest growing mixed-use neighbourhood in the city (City of Toronto, 2018; CMHC, 2003). The regeneration policies eliminated density restrictions and instead regulated the building's built form, mainly in the form of height restrictions (CMHC, 2003). The lift on regulations allowed developers to easily adaptively reuse historic buildings into residential space and increase the density of new residential towers, inflating their return on investment and creating a development boom that is ongoing 20 years later (CMHC, 2003). The King-Spadina neighbourhood is bordered by Queen St to the north, Front St to the South, Simcoe St to the north-east, John St in the south-east and Bathurst St west. The total land area of the neighbourhood is 0.82 km² (82 ht).

Child-friendly Infrastructure Map of King-Spadina



Developed by the author using data from Open Data Toronto, 2018; Open Data Toronto, 2017 Open Data Toronto, 2016.

Family and Child Services	Active Transportation Routes	Playgrounds and Recreation Facilities
Educational Institutions	Park Space	Public Community Centres
Licensed Daycare Centres	Public Washrooms	Drinking Fountains

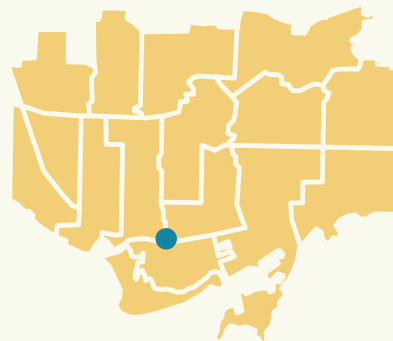
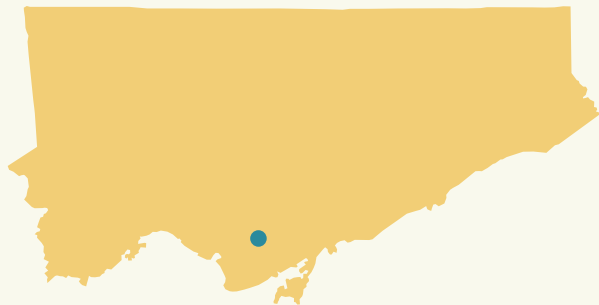
King-Spadina Population Statistics

As of 2016, King-Spadina's population is approximately 14,838 residents with a population density of 18.1 people per metre² (18,095 per km²), the second largest and second most dense in the study (Statistics Canada, 2016). The neighbourhood's average age is just over 33.5 years old and well below the city average of 40 (Statistics Canada, 2016). The area's child population is the lowest of all four study areas at just under 3% of the population under 14 years old (Statistics Canada, 2016). Moreover, the distribution of children ages is significantly skewed toward the 0-4 year old demographic (72%). The 5-9 year old demographic is the second largest (20%) and 10-14 year olds the lowest (8%) (Statistics Canada, 2016). These statistics indicate, similar to Liberty Village, the area is still dominated by young professionals. Residents are either choosing to delay starting a family or only spending the few first years of parenthood in King-Spadina and leaving by the time the child is ready for school.

Parkland and Public Space

The spatial layout of parkland and public space for the area is as follows: the larger parks border the north and south edges of the neighbourhood, while the inner core is dotted with smaller pocket parks and squares. The large parks include Alexandra and Grange Park, and Nathan Phillips Square in the north and Garrison Commons, Canoe Landing and Roundhouse Park in the south. They contain the majority of the sports facilities and act as regional parks servicing a multitude of communities. The location of these larger parks can represent a challenge for young families as, although they are within the 10-minute walking buffer, the connecting street grid contains heavy vehicle and pedestrian flow along narrow sidewalks that are unfavourable to child mobility.

The dense residential core of King-Spadina is immediately serviced by Clarence Square, Victoria Memorial Square, St. Andrews Playground. The majority of the area's residential towers are within a 300m walk of one of these three parks. The 13 playground/recreation facilities are distributed evenly throughout the neighbourhood providing accessible active play for the entire neighbourhood. The frequency and even distribution of playground and recreation facilities create service levels of 32 children per facility, the lowest of all neighbourhoods (City of Toronto, 2018; Statistics Canada, 2016).



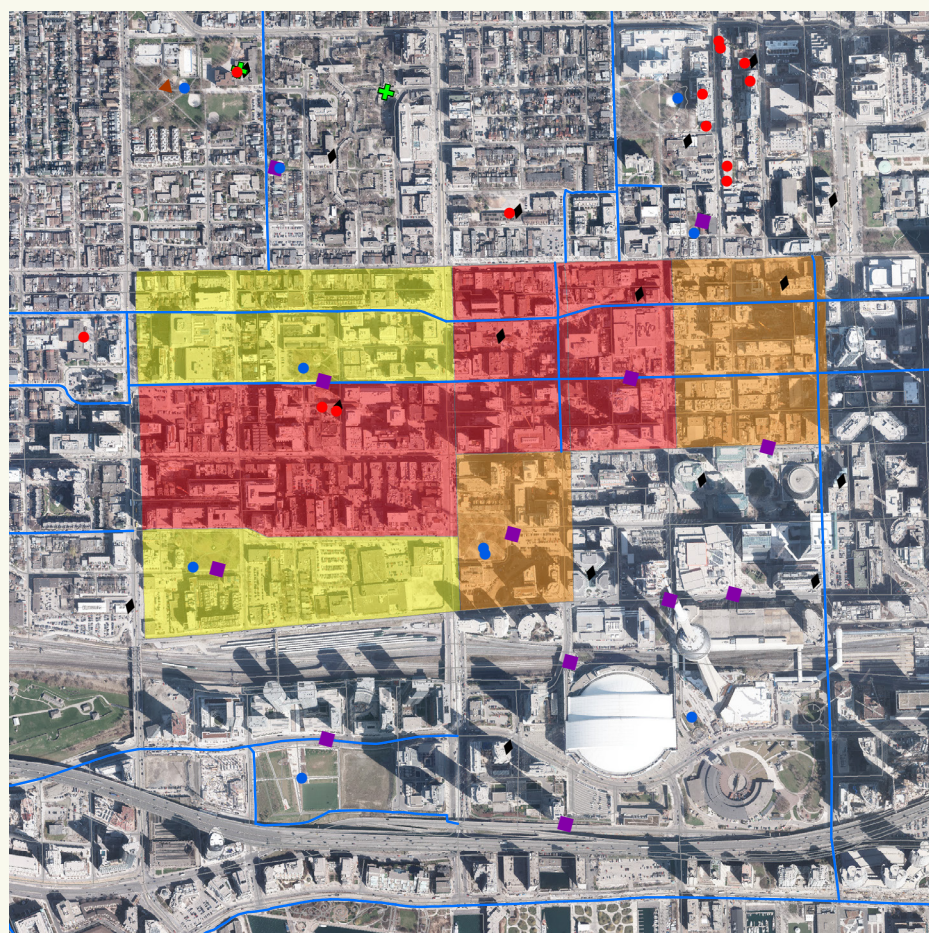
Population Statistics

2016 Population	Land Area	Population Density	% 0-14 years old	Average Age
14,838	0.82km ²	18,092.12 ppl/ km ²	2.83%	33.68
Children per Daycare Facility	Children per Elementary School		Children per Playground	
15.25	23.00		32.31	

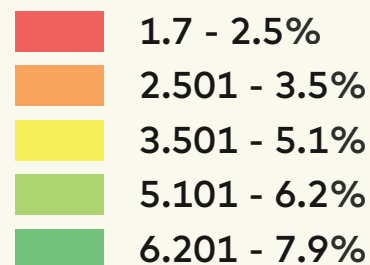
Active Transportation and Transit Network

The area is well connected with active transportation routes running north-south and east-west. Protected and painted bike lanes have been installed along the North-South streets of Peter, and Simcoe St, while protected east-west bike lanes have been installed along Richmond and Adelaide St. The area is also the most well serviced neighbourhood by public transportation. The King Street Pilot currently runs through the heart of the neighbourhood. The pilot is a year long test to provide rapid surface transit along King St by closing the street to cars (City of Toronto, 2018). The pilot has significantly reduced travel times in the area while simultaneously increasing average daily ridership. The pilot will be reevaluated in 2019. Additional streetcar lines also run along Queen St (501), Bathurst St (511) and Spadina Ave (510). Moreover, within walking distance of the neighbourhood is three subway stations St. Andrew, Osgoode and St. Patrick connecting the area to the Yonge-University subway line. The area's location, immediately west of the central business district, results in higher traffic volumes than any other neighbourhood (Open Data, 2018). The street grid's design is vehicle centric, especially along the one-way streets of Richmond and Adelaide, where vehicles can reach speeds of 50km+. The neighbourhood's sidewalks are narrow, crowded and often interrupted by high-rise developments still under construction - factors not conducive to a child's mobility.

Child-friendly Infrastructure & Percentage of Children



Percentage of 0-14
year olds



Developed by the author using data from and City of Toronto, 2018; City of Toronto, 2017; City of Toronto, 2016; and Statistics Canada, 2016, Open Data Canada, 2016

 Family and Child Services	 Active Transportation Routes	 Playgrounds and Recreation Facilities
 Educational Institutions	 Park Space	 Public Community Centres
 Licensed Daycare Centres	 Public Washrooms	 Drinking Fountains

Child Services

Child-friendly services within King-Spadina's 500m radius include: 20 daycare facilities, 3 child and family care service centres, 2 public washrooms, 13 playgrounds/recreational facilities, 10 drinking stations, 5 elementary schools, and zero community centres. King-Spadina is the most well serviced neighbourhood in this study, both in terms of absolute numbers and service/population ratio. As a result, the support system for young families is abundant compared to the other downtown neighbourhoods. There is ample room for new families to move into the neighbourhood as the number of available daycare facilities within an accessible walking distance is one per every 15 children. Moreover, residents have multiple schooling options as the area is serviced by five elementary schools (one facility for every 23 school aged children) (City of Toronto, 2018; Statistics Canada, 2016). Schools are primarily located along the neighbourhood's active transportation network and within close proximity to a large park and daycare centre.

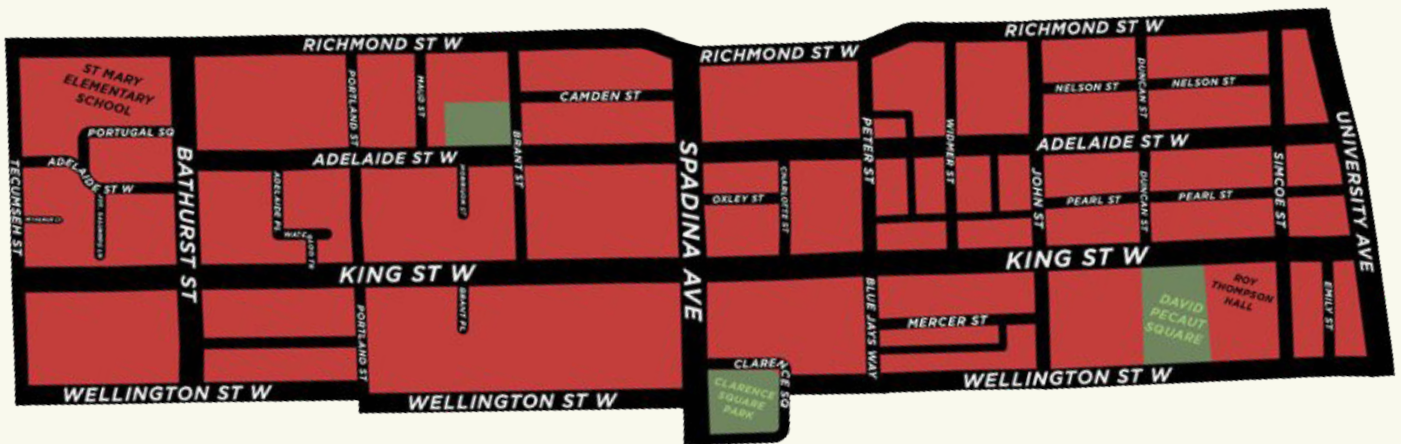


Photo by Jelly Brothers from jellybrothers.com

Conclusion

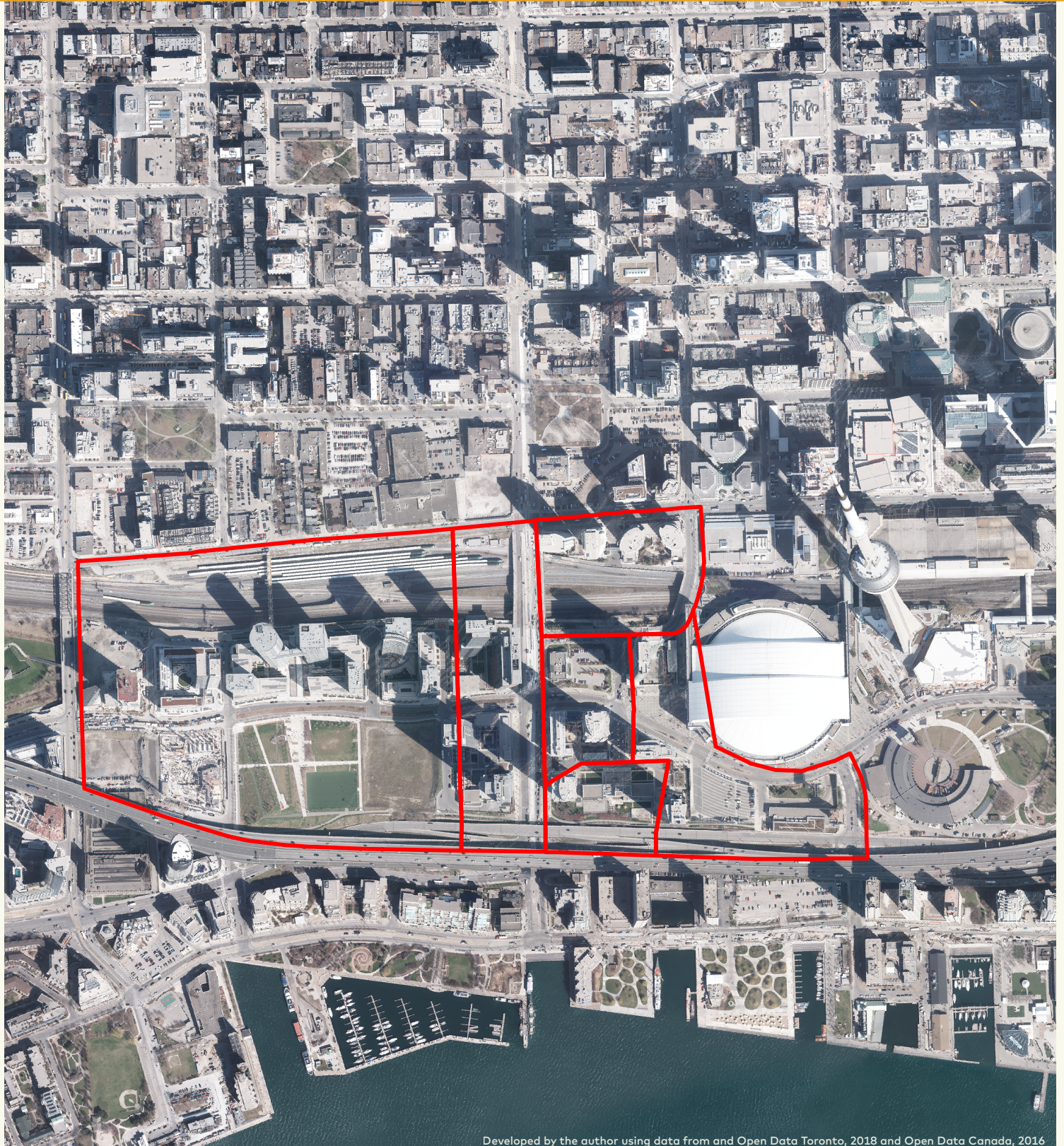
The demographic make-up of King-Spadina is a little perplexing. The neighbourhood looks to be well serviced to attract and support a larger family population. There are ample daycare and educational facilities, an abundance of after school playground and recreation facilities, and a central location that drastically reduces a parent's commute time. However, King-Spadina still experiences some of the lowest youth numbers of any neighbourhood in this study.

Perhaps one explanation is that King-Spadina was the only neighbourhood in this study where regeneration was not paired with a neighbourhood specific master plan (CMHC, 2003). Services and facilities were added on an ad-hoc basis with seemingly little direction given to the connection between services or the public realm for the area's residents (CMHC, 2003). This lack of direction can still be experienced in the neighbourhood's prioritization of moving vehicles and pedestrians along its street-grid. Moreover, important factors that go beyond the scope of this MRP — like housing unit size and floor-plan — may not make King-Spadina a suitable option for families looking to move into the downtown core. These unaccounted for factors may supersede the number and quality of child-friendly services and facilities within King-Spadina. Efforts have been made in the past few years to establish better connections within the public realm and improve the pedestrian experience (City of Toronto, 2017). A King-Spadina Secondary Plan that seeks to improve the public realm and update house policies will be submitted to council early 2019 (City of Toronto, 2017).

What makes this neighbourhood work for children?

- Child care amenities and education
- Transit connectivity
- Parks and recreation facilities

CityPlace

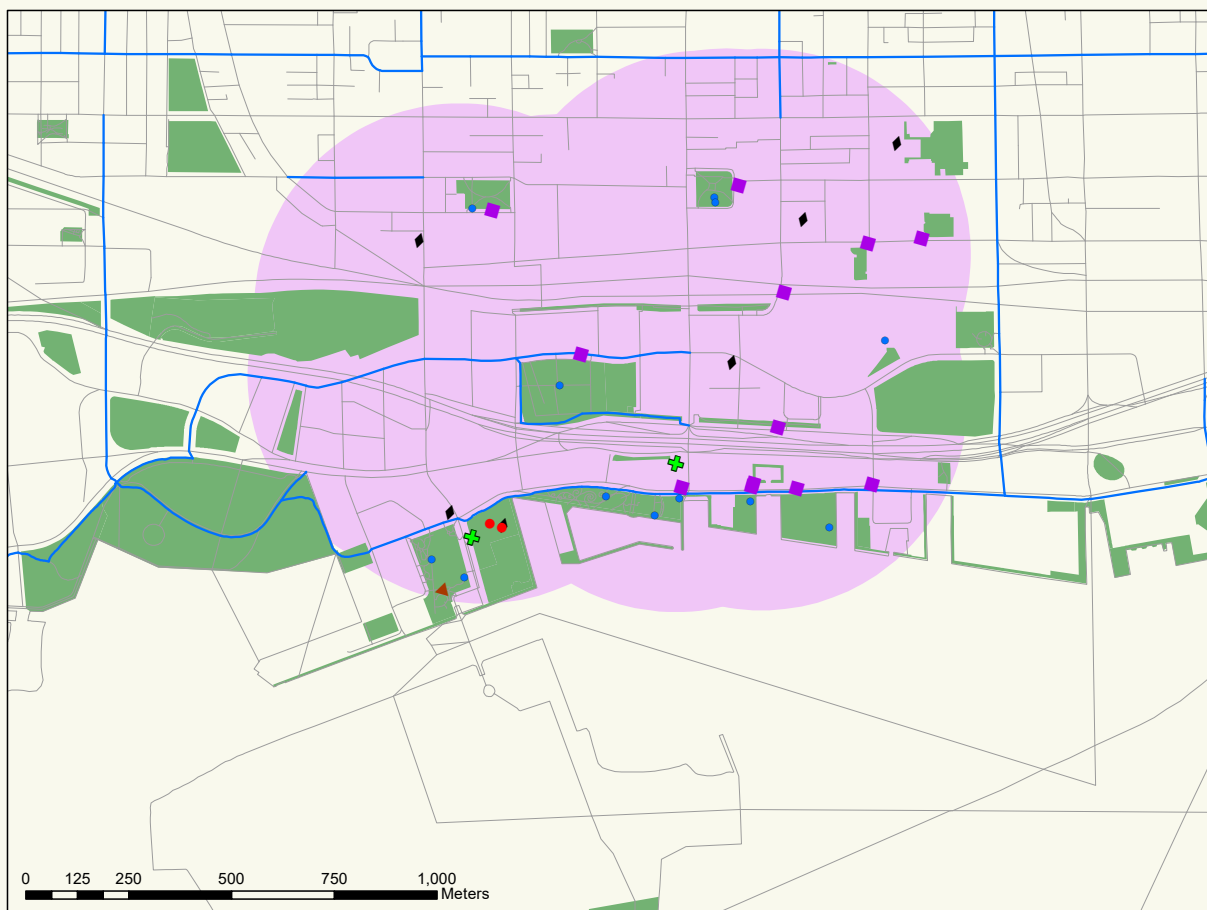


Developed by the author using data from and Open Data Toronto, 2018 and Open Data Canada, 2016

Introduction

Toronto's CityPlace neighbourhood is built on the former CN railway Spadina Street Yards. The area operated as a large switching yard and industrial port from 1851 until the 1960's (Dunkelman, 2019). By the late 1990's and after civic redevelopment projects in the northern portion of the former rail-yards took place, the Crown sold the future site of CityPlace to Concord Apex Developments and development started in 2001. CityPlace is bounded by Blue Jays Way to the east, Lake Shore Boulevard to the south, Bathurst Street to the west and Front Street E to the north. The area is 0.4 km² (40 ht) making it the smallest area in the study.

Child-friendly Infrastructure Map of CityPlace



Developed by the author using data from Open Data Toronto, 2018; Open Data Toronto, 2017 Open Data Toronto, 2016.

- | | | |
|---------------------------|------------------------------|---------------------------------------|
| Family and Child Services | Active Transportation Routes | Playgrounds and Recreation Facilities |
| Educational Institutions | Park Space | Public Community Centres |
| Licensed Daycare Centres | Public Washrooms | Drinking Fountains |

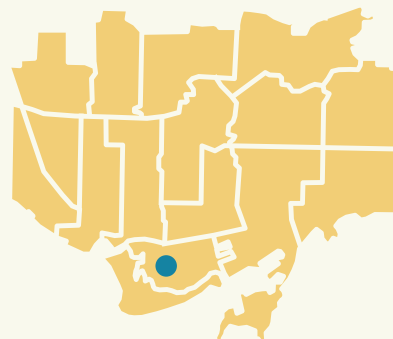
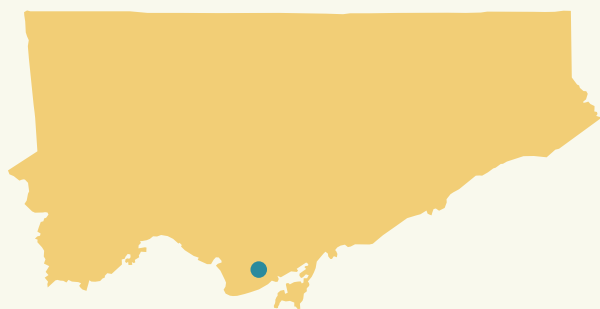
CityPlace Population Statistics

As of 2016, CityPlace's population is approximately 15,043 residents with a population density of 37.6 people per metre² (37,607 per km²), the largest and most dense in the study (Statistics Canada, 2016). The area also houses the youngest average resident at 32 years old, eight years younger than the city average (Statistics Canada, 2016). The area's child population is among the highest in the study at 6.45%, slightly below West Don Lands (Statistics Canada, 2016). Moreover, the distribution of children ages is similarly distributed as West Don Lands with over half the child population in the 0-4 year old demographic (60%). The 5-9 year old demographic is the second largest (24%) and 10-14 year olds is the lowest (16%) (Statistics Canada, 2016). The children population is evenly distributed between the neighbourhood's dissemination areas (DA), with each DA ranging from housing 4.5 - 8% children. The more even distribution of children across the neighbourhood's area suggests families are comfortable enough to grow anywhere in CityPlace as a whole, as opposed to have preference for a particular area of the neighbourhood only.

Parkland and Public Space

The neighbourhood is serviced by a large park, Canoe Landing, in the middle of the neighbourhood's core, adjacent to the area most densely populated by children. Additional large parks flank the eastern (Garrison Commons and Coronation Park) and western boundaries (Roundhouse Park), while a series of medium-sized parks and public spaces line the entire southern border (Little Norway Park, Toronto Music Garden, HTO parks, and Spadina Wetlands). The neighbourhood is also within walking distance to 2 linear parks (Northern and Southern linear park) and smaller parks, including Victoria Memorial Square and Clarence Square Park. The centrally located Canoe Landing Park is the most accessible to the community, provides

flexible community amenities to suit daily needs and is large enough to accommodate seasonal large-gathering events. The connection to the rest of the park system to the south is impeded by the underpass of the elevated Gardiner Expressway. The journey under the Gardiner may discourage some families from using the recreational facilities in the area. To further enhance the connectivity of CityPlace to the Harbourfront parks, city officials must find a way to reduce the perceived danger of under-expressway crossing.



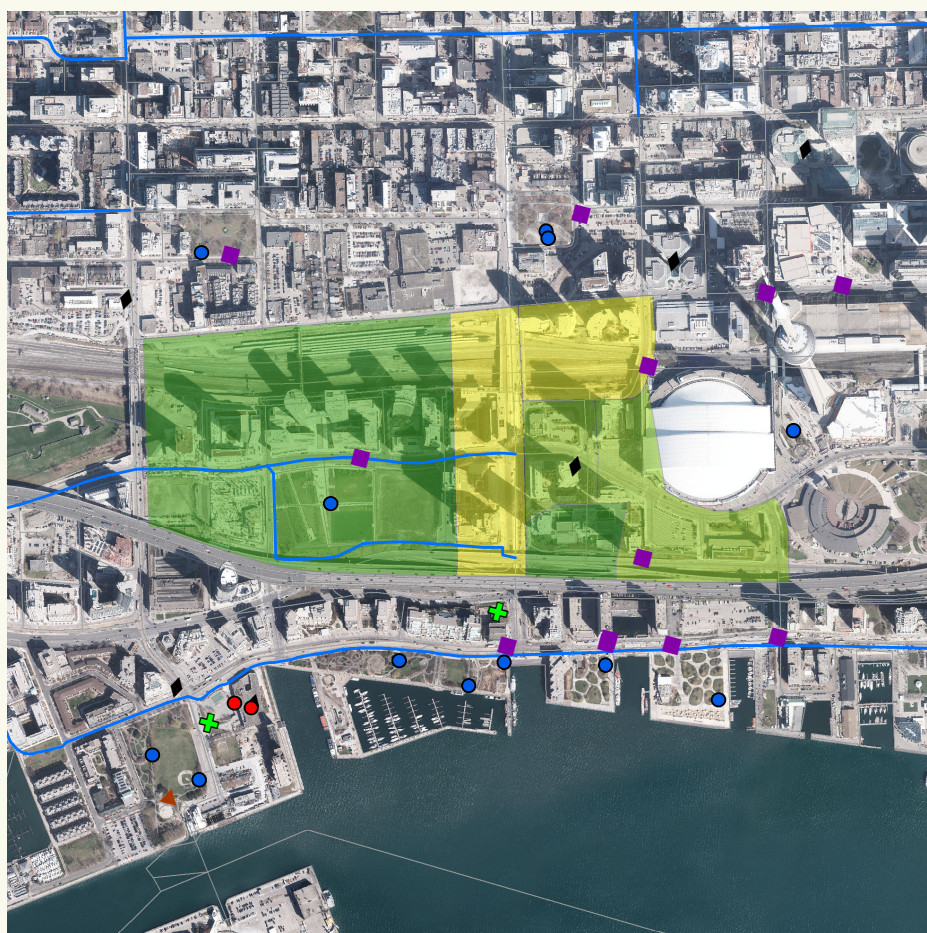
Population Statistics

2016 Population	Land Area	Population Density	% 0-14 years old	Average Age
15,043	0.40km ²	37,607.50 ppl/ km ²	6.45%	32.00
Children per Daycare Facility	Children per Elementary School		Children per Playground	
97.50	390.00		88.18	

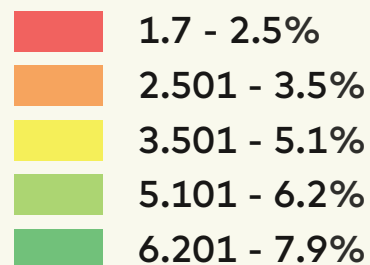
Active Transportation and Transit Network

The active transportation network within CityPlace includes a separated east-west cycle lane along Fort York Blvd and the Martin Goodman trail along Queens Quay. However, the area is missing a north-south connection as the Simcoe St cycle lane lies approximately 50m outside the neighbourhood. CityPlace's public transit network includes the 509 (Queens Quay), 510 (Spadina) and 511 (Bathurst) streetcars and the 121 Fort York Blvd bus. The King Street pilot is on the northern-edge of the walking radius. Similar to Liberty-Village, the neighbourhood's positioning between the CN rail corridor and the Gardiner Expressway make connecting to the east-west rapid transit lines a little problematic for young families. When compared to the King-Spadina neighbourhood directly north, this lack of accessible connections to rapid transit stations puts CityPlace at a noticeable disadvantage. To combat the disconnection and to encourage more active transportation, pedestrian-safety interventions — including widened sidewalks and a fuller tree canopy to physically separate children from the street — have been installed along the neighbourhood's major east-west arterials (Fort York Blvd & Iceboat Terrace) and along smaller north-south connectors.

Child-friendly Infrastructure & Percentage of Children



Percentage of 0-14
year olds



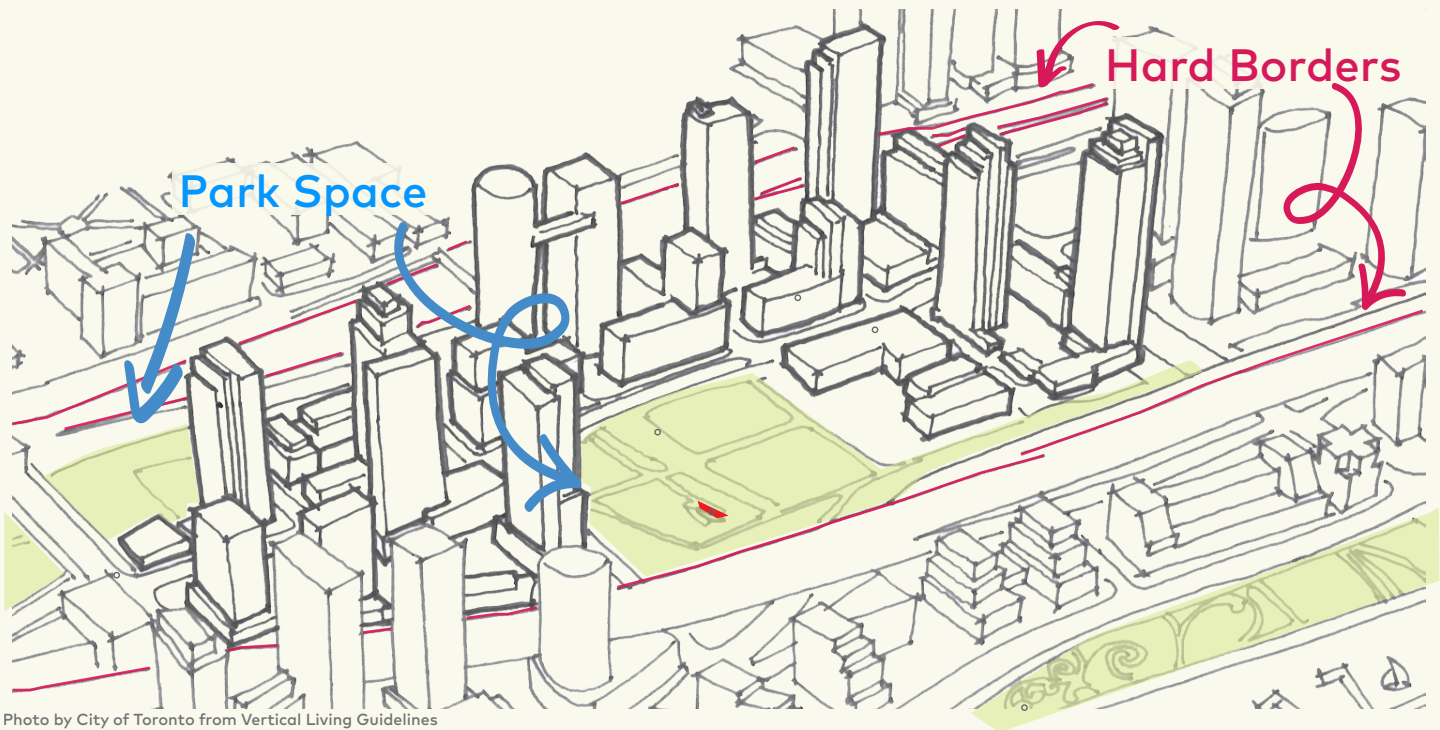
Developed by the author using data from and City of Toronto, 2018; City of Toronto, 2017; City of Toronto, 2016; and Statistics Canada, 2016, Open Data Canada, 2016

Family and Child Services	Active Transportation Routes	Playgrounds and Recreation Facilities
Educational Institutions	Park Space	Public Community Centres
Licensed Daycare Centres	Public Washrooms	Drinking Fountains

Child Services

Child-friendly services within CityPlace's 500m radius include: 6 daycare facilities, 2 child and family care service centres, 1 public washroom, 11 playgrounds/recreational facilities, 12 drinking stations, 2 elementary schools and 0 community centres. The large number of children has crowded the existing services. Service ratios for CityPlace include one daycare facility per 98 children, while the one elementary school has to accommodate all 390 school aged children. However, the neighbourhood is already adapting to the children population and construction is currently underway for two new elementary schools (one catholic, one public) in the lot next to Canoe Landing. The schools will be joined by a community centre and daycare facility, and are set to open September 2019 (Novakovic, 2015). The co-located child care facilities, schools, and community services and facilities allow for an efficient school commute and minimize trips for families with multiple children at various educational stages (City of Toronto, 2017).

The public art displayed around CityPlace also fosters a sense of delight and whimsy for children. Art installations within Canoe Landing and around the Harbourfront parks are designed at a child's scale encouraging a child's imagination and sense of play. These art displays also help orient children by creating a sense of place, inclusivity and a feeling of belonging (City of Toronto, 2017).



Conclusion

Despite having some of the lower service levels, understood as number of children per facility, (97.5 children per daycare facility, 390 children per elementary school and 88 children per playground), CityPlace has still one of the highest population percentages of children and the largest total number of children. The neighbourhood's small footprint ensures facilities are co-located or within a short walkable distance, reducing commute-induced stress felt by parents. The area's commitment to public art and its proximity to the installation-rich Harbourfront creates a sense of wonder and comfort for children who may otherwise be intimidated by the imposing heights of the vertical neighbourhood (City of Toronto, 2016). With a continued commitment to improving the public realm, especially in and around the Gardiner Expressway and the grand opening of the new community and education facility, it is likely families attraction to CityPlace will continue to rise.

What makes this neighbourhood work for children?

- Large centrally located amenity space
- Co-located schools and community centre
- Sense of whimsy in public art and seasonal installations



Photo by Andrew Seaman from unsplash.com

In Conclusion

Development trends, as well as provincial and municipal planning strategies have been promoting high-density communities around Toronto's downtown core for the last twenty years (City of Toronto, 2017; Province of Ontario, 2014). Toronto's new vertical neighbourhoods are typically built on former industrial brownfield developments and look to promote a modern cosmopolitan lifestyle (IBI, 2005; Toronto Waterfront Revitalization Corporation, 2005; Dunkelman, 2019). Developments have classically focused on a specific clientele with disposable income and small spatial needs. The most dense neighbourhoods studied in this MRP include: Liberty Village, King-Spadina, CityPlace, and West Don Lands. While these communities have, across the board, attracted a resident population that is well below the city's average age, these neighbourhoods in general are struggling to attract a healthy mixture of other age demographics, such as children and youth. In particular, the population percentage of residents under 14 years old is, in the most successful neighbourhood studied, (West Don Lands) 6.6%, half the Toronto-wide average (14.6%).

This research project emerged to examine how successful these new neighbourhoods have been at installing infrastructure to suit the unique needs of children. This infrastructure is as important as transportation, energy, water, and waste infrastructure, as they all support urban functions and the city's ability to attract and sustain strong, healthy, family-orientated communities (ARUP, 17).

The mapping exercise undertaken for this MRP produced interesting results. Firstly, each neighbourhood's major period of construction was directly correlated with the percentage of 0-14 years olds living in the area. By examining the peak period of construction against the proportion of child residents, it was evident that the more recent the neighbourhood was developed, the higher the percentage of children living in that area is. The most recently developed neighbourhood, West Don Lands, houses the largest percentage of children, followed by CityPlace, King-Spadina and finally Liberty Village. One explanation could be the introduction of municipal and provincial development guidelines and policies focused on complete communities between the construction of the first two neighbourhoods (Liberty Village and King-Spadina) and the most recent two (West Don Lands and CityPlace). These policies — put in place between 2006 and 2018 — advocate for diverse land uses, a range and mix of housing types, high-quality public open space, and easy access to local stores and services (City of Toronto, 2015; Province of Ontario, 2006). It is important to note, however, that development in all four neighbourhoods has not stagnated and the construction dates only reflect approximate date ranges for a large portion of each area's construction. This means that each neighbourhood, informed by the Growing Up Guidelines, and with buy-in from



Photo by Vitaliy Paykov from unsplash.com

the development community, community organizations, and government can transform their neighbourhood into one that accommodates people of all ages and abilities. One only needs to look at the success of neighbourhoods like Southeast False Creek, Boulogne-Billancourt or Hammarby-Sjöstad to observe the tangible effects planning for children can have on a neighbourhood. All three case studies started in similar circumstances to Toronto's four neighbourhoods but decided to invest in services and facilities that either satisfied a unique need of families with children (Boulogne-Billancourt) or facilitated an easy transition for them into the neighbourhood (Southeast False Creek & Hammarby-Sjöstad). With the introduction of the Vertical Design Guidelines, one should expect development in the four neighbourhoods to better incorporate the perspectives of children.

Secondly, the study suggests that the total amount of child-friendly services and facilities within a neighbourhood may not directly influence the percentage of child residents. The prevalence of these services alone is apparently not enough to attract or sustain a sizeable child population. Illustrated in the case of King-Spadina, other factors besides physical infrastructure that have not been examined in this study may have a greater influence on a family's decision regarding where to raise children. The King-Spadina neighbourhood contains the highest total number of child-friendly services and facilities, and the lowest numbers of children per daycare, playground, and elementary school.

This availability could encourage families in search of child-friendly infrastructure to take advantage of the neighbourhood's existing assets, yet King-Spadina houses the lowest child resident percentage. To fully understand why King-Spadina has experienced this we must acknowledge the limitations of this MRP. The absence of income, unit size, and affordability data limit this study's ability to understand the full picture of why some neighbourhoods are more successful than others at attracting children and young families.

Factors including family income, available unit sizes, and an area's affordability need to be incorporated into this study to provide greater insight into neighbourhood choice. As a result, this MRP can only provide a current snapshot of the child-friendly services and facilities provided in each neighbourhood and speculate on the reasons for success or lack thereof.

While an abundance of child-friendly services and facilities is not a direct indicator of a high children population, the absence of this infrastructure severely limits a neighbourhood's ability to attract new families or retain the residents who are thinking of starting families. Liberty Village contains the weakest network of child-friendly infrastructure and the second smallest proportion of children relative to its population. Further study into Liberty Village's age demographic breakdown reveals 3/4 of their child population is 0-4 years old. Liberty Village is also the most established neighbourhood, coming upon its 20th anniversary since its revitalization's master plan was constructed (IBI Group, 2005). After all this time, the neighbourhood has yet to establish a family base. Liberty Village should serve as a concerning example of the dangers of not planning for or accommodating children.

Children have classically been excluded from city planning and have suffered considerably (Freeman 2006; Whitzman et al. 2010). The autonomy and freedoms children experience are shrinking and their health and informal opportunities for social development are deteriorating (Farley et al. 2003; Lakshman et al., 2012). As Toronto continues to build up as opposed to out, planning for children should be of the utmost importance. Research has illustrated that the installation of a child-friendly infrastructure network can help promote the independent mobility of children, improve children's health, and stimulate social development (Gleeson and Sipe, 2006; ARUP, 2017; Karsten and van Vilet, 2006). Moreover, the presence of

children in the public realm is an indicator of an overall healthy and vibrant community (City of Toronto, 2016). The presence of children residents is a catalyst for continued public and private development in community facilities, parks, and schools (City of Toronto, 2016). Besides the direct benefits to children themselves and their families, these investments ensure a neighbourhood remains healthy and livable long after the first wave of buyers and renters leave.

Toronto is already off to a great start at incorporating children into neighbourhood planning in high density areas. The creation of the Growing up Guidelines in 2017 has provided city builders with complete community goals at the unit, building, and neighbourhood level. However, these guidelines are still only recommendations and it is up to the developer to opt in or out. Toronto could make significant strides by requiring developers to incorporate the Growing Up Guidelines into every development, ensuring the newest housing stock is accessible to children and families. At the neighbourhood level, changes need to be felt within the city's budget. Commitments to vision zero policies, affordable child care, and an expansion of the active transportation network and public realm must be realized through significant government investment. Equally important, the City should work directly with young families and children in areas with challenges similar to Liberty Village, in order to build on the experience and knowledge of potential users when planning for child-friendly high-density neighborhoods. By making available an evidence-based snapshot of the city's current inventory of child-friendly infrastructure, this research hopes to contribute to increased investment on children in Toronto's newest neighbourhoods. If children are not designed into our cities, they are designed out. They are deprived of contact with the material world, with nature, with civic life and with their own capacities (ARUP, 2017).

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