A Place to Grow? A Comparative Content Analysis of London and Toronto Ontario and the Importance of Public Green Spaces for Community Well-Being During and After COVID-19

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

Abstract

Public green spaces represent key aspects of our communities for a variety of reasons. Evidenced through decades of planning scholarship, well established, attractive, and accessible public green spaces can promote community health and wellbeing while supporting other elements of healthy cities, like climate resilience and adaptation. However, when the coronavirus pandemic caused the safety of these spaces to come into question for fear of community transmission, questions regarding the accessibility, availability, and equity aspects of their planning and design came to the surface as well. The coronavirus had profound influence on the demand for public green space as necessary amenities and services had been shuttered, and those who lacked private yard space in denser urban communities longed for an escape from prolonged stay at home orders. As our public health and safety came to odds with each other, these areas began to populate, and cities struggled to grapple with overcrowding in public parks and open spaces. This illustrated systemic gaps that have been deeply ingrained in planning policy and practise for years when it comes to the adequate balance between the dispersion of these spaces and the densification of urban areas like London and Toronto. Historically, planning has come to focus on these spaces as a luxury for white affluent communities and a selling point for prime real estate while other vulnerable communities go underserved and lack access to safe, accessible, and attractive public green space. The findings demonstrate how the urban development has continued to exacerbate inequities in cities by facilitating a disregard for the importance of public green spaces in communities. This study found that this is due to a lack of policy direction and support in addition to a rationale behind public green space planning that does not take a holistic approach to aesthetics, luxury, climate resilience, and public health. This research showed how cities like London and Toronto have not prioritized a balance between space and density while they continue to rapidly grow and urbanize. By comparing both a mid and large sized city, this study was able to draw similarities and difference across urban contexts by focusing on the priorities and strategies for public health, growth, and public green spaces employed by either location. In the final phase of research, the study looked to world renowned examples for green planning like Vancouver and Copenhagen to identify applicable strategies that could work in either location. The results of these findings give key recommendations for how municipalities address this balance in post COVID-19 recovery. These recommendations consider the reprioritization of public green space in planning and practise to support a holistic approach to urban development, the establishment of clear definitions for the varying types and sizes of these spaces, a measurement to understand how much greenspace exists at a micro level, and a need for development applications to

respond to that measurement. These results indicate that the pandemic set off red flags for unbalance between space and place in dense urban centres yet provides a unique opportunity to move away from decades of poor planning decisions in the future.

Acknowledgements

To say I was a different person when I started my master's tenure at the University of Waterloo would be an understatement. I was wide eyed and anxious for the path that was ahead of me, overjoyed for the opportunity to study in a program like this, wondering what I did to deserve it. Although the time I have spent here, especially my time in person, has been short – the growth and inspiration this school has given me has been insurmountable. The path, not linear or smooth by any means, was an adventure of epic proportions. The School of Planning welcomed me with open arms, and from the feelings of imposter syndrome on the first day to the excitement of defending this thesis, every memory in between has been fundamental to who I am as a professional but most importantly as a person. I've learned more about how our communities shape who we are and will become both in and out of the classroom. I would like to acknowledge the faculty and staff in the School of Planning who made the third floor of EV3 my second home – comfortable enough for me to nap on the various spaces for public seating, on more than one occasion. I could float in and out of offices, down the hallway, and feel the comfort of waves and kind conversation with all who occupied the spaces whether we knew each other or not– a rarity in academia. To my supervisor, Jennifer Dean, who has single handedly doubled as my second mom, a fierce and resilient female figure who has gracefully guided me through this crazy process, I am forever grateful for your kindness, intelligence, and patience. To my committee, Dr. Jeremy Pittman and Carrie Mitchell, your support and hard work to make this the best it can has made all the difference. Additionally, I would like to thank my brilliant classmates I have been blessed with throughout this experience. The drive, determination, and willingness to succeed all my peers possess is unmatched and their unwavering support, love of Grad House, and genuine friendship has made my entire experience here that much better. I would also like to thank my best friends who have been by my side through every up and down since my undergraduate days, you know who you are, and you are irreplaceable. To my colleagues, Matt Johnston, Sergio Manchia, and Le'Ann Seely who took a chance on me while I finished up my academic journey, and who have provided me with nothing but support and encouragement, thank you endlessly. Finally, no string of words could ever do the gratitude I have for my family justice. I owe you everything and more, this is your win just as much as it is mine.

Dedication

Although this thesis speaks to the injustices around public green space planning in our cities today, it is not enough to bring change to the system all together. This thesis is dedicated to those left out of policy and plans, those whose voices go unheard, those whose cities don't support them, and those whose neighborhoods don't reflect them. To the ongoing efforts of grassroots organizations, community leaders, and the hope that lies in the hearts and souls of young urban thinkers – this one is for you. May we always reflect on planning's past, but never let it stop us from working towards a brighter future. Don't lose momentum despite the resistance, there is a world of change to make, and it starts with you. Fight the good fight, look for the good, and never stop learning.

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Chapter 1
Introduction

The Social Determinants of Health are described by the World Health Organization as "the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life." (World Health Organization, 2020). These can include social, economic, health, neighbourhood, cultural or education conditions which can be improved by investments in areas such as housing, income supports, and childcare, among others (World Health Organization, 2020). A key component to this framework is the accessibility, equity, and availability of public green space. One of the main issues that came out of the COVID-19 pandemic was the overcrowding of public green spaces, and this directly challenged that framework. During the research process, gaps quickly emerged regarding public green space accessibility, equity, and availability causing municipalities to act. The ability for public green spaces to serve as critical social infrastructure in communities was stripped and unstable.

The benefits of public green space dates back in planning scholarship to the industrial revolution era. During this time period, the biophilic elements of the countryside provided individuals with an escape from the dangers of polluted cities (Wolch, 1992). Features and characteristics of the idyllic countryside like open green spaces and vast natural landscapes have transcended planning practice and have since been incorporated into city planning for the purposes of climate change adaptation, public health, and aesthetic reasons (Maller, 2019). Examples of this are green roofs, abundant park spaces, and other green urban design elements like green facades and permeable streets inserted into our built environments. Aside from this, public green spaces have historically been used for areas of protest and unity like the Black Lives Matter (BLM) protests of 2020, social cohesion, and

feelings of belonging to foster interpersonal relationships making these spaces incredibly powerful in communities (Nooren, Tang, Dean, Glover, 2020). These spaces serve as necessary catalysts for community and individual well-being, as research has demonstrated the influence of public green spaces to improve mental health, foster social ties, and contribute to community life (Nooren, Tang, Dean, Glover, 2020).

Statistics Canada (2020) reported over 85% of Canadians live within a 10 minute walk to a local park or green space with 90% of this figure coming from large central metropolitan areas (CMAs), and 85% from midsized cities. However, only 20% of Canadians actually live within an amenity dense community, meaning that they reside a relatively short distance from necessary services like public green spaces (Statistics Canada, 2020). The same survey found that access to parks was strongly corelated to income level. Green space was more abundant for those with higher levels of income including private yard space (Statistics Canada, 2020). The data continued to reveal that there was a 20% discrepancy in public green space access between high income neighbourhoods and low-income neighbourhoods (Statistics Canada, 2020). Furthermore, 52% of individuals reported a decline in their mental health since the beginning of the closures and physical distancing measures (Brockbank, 2020).

In March of 2020, the coronavirus was officially declared a pandemic and countries all over the world declared states of emergency, closing all 'non-essential' services and facilities, and enforcing stay at home orders. In Ontario, this took effect on March 17th, extending past July 29th. As communities tried to slow the spread of community transmission, public green spaces were caught in the crossfire. When the Spring of 2020 ensued, people flocked to public green spaces as an escape from the stay at home orders, and those without yard space relied on these areas for necessary services they could no longer receive elsewhere. Although the widespread knowledge of the importance of public green space

had long been articulated, the true depth of understanding was revealed when certain City parks and green spaces became dangerously overrun fueling fear of community transmission. The goal of the closures sanctioned by governments and their public health officials was to limit the spread in communities to retroactively combat these overcrowded spaces. Placing our public safety and health at odds, dense communities struggled to grapple with restrictions for play equipment, sports courts, and public seating and washroom areas. These restrictions were met with unwavering criticism on all fronts and raised concerns over the equity aspects of these spaces. Additionally, as the availability, accessibility, adequacy of these spaces was questioned, public green spaces became center stage when discussing the lessons that could be learned from COVID-19 (Nooren, Tang, Dean, Glover, 2020; Uchiyama, Kohsaka, 2020).

Playgrounds and sports courts were closed with the exception of some public trails and pathways in the mid Spring of 2020. Much of the criticism spoke to the health and wellbeing benefits these places offered – especially in dense communities. Even those who aren't considered urbanists by trade recognized the value of these spaces, and the need to keep them open in order to protect the wellbeing of the community at a broader level. However, open spaces like Trinity Bellwood's remained incredibly busy and went viral for being overcrowded. Early in the research process it was observed that London and Toronto initiated coronavirus task forces that focused on initiatives to protect open space, strategize, and learn for recovery efforts. The timeline of the COVID-19 pandemic and the steps taken in each city revealed that there was a clear barrier to public green space access and availability during the COVID-19 pandemic for some communities which resulted in the overcrowding phenomena.

As spaces continued to be subject to overcrowding, the gaps in city planning that had been silently present for decades sat front and center. It became clear that urban development in cities had failed to equitably disperse public green spaces throughout communities resulting in inequitable access and availability (Uchiyama, Kohsaka, 2020). Additionally, the societal reaction to the influence of the coronavirus pandemic has illustrated how the definitions, values, and priorities for public green space in cities may be performative and problematic. One of the most important concerns raised by the pandemic was the fact that some communities do not have a sufficient amount of space to support their well-being, especially during times of crises. The overcrowding of public green spaces like Trinity Bellwood's in Toronto not only made existing inequities more salient, but amplified inaccessibility that most neighbourhoods face when it comes to public green space.

1.1 Implications for Planning

Throughout the pandemic, the design of our cities from streets to roads, to green space, has been challenged to ensure public safety and positive health outcomes. Green space is incredibly beneficial for positive physical and mental health, both of which have been compromised from COVID-19 due to isolation measures and closures of many necessary amenities and services (Sarkar, Webster, 2017). Although COVID-19 did not directly cause these gaps to form, it amplified them and illustrated the ways in which planning has long underserved communities when it comes to public green space. This study will discover the ways in which concerns around accessibility, availability, and equity aspects of green spaces were made salient, inequities exacerbated, as well as develop an understanding on the restrictions placed on these spaces. This research will look at various municipal plans, goals, and directives before, during and after the pandemic taken regarding public green space accessibility, availability, and equity.

As the coronavirus is a recent public health phenomenon, and rapid vertical growth in cities has only taken off in the last 20 years, relatively little research has focused on the future implications of unbalanced development. However, the coronavirus has single handily served as a warning for municipal, federal, and provincial planning bodies to rethink the importance of public green spaces and the role they play in vertical urban development. The proper dispersion, design, density/ green-space balance, and regulation of these spaces during public health crises is imperative for population health. This study provides tools and guidance for municipalities to address these spaces in future public health crises to better serve the population while seeking to improve public health outcomes.

1.2 Research Questions

Considering the conditions of urban planning in the current context of the public health crises, this research asks:

1 How did COVID-19 influence municipal responses to public green space access?

2 How can the urban development process better guide public green space access?

Objectives of these questions are:

(1) To explore the range of implications that COVID-19 had on public green space access in two sites: London and Toronto Ontario.

(2) To identify the limits of existing public space planning, policy and design that impacted municipal responses.

(3) To evaluate the existing priorities and mechanisms in Ontario that regulate urban development and public space as a community benefit.

(4) To examine ‘best practices’ in urban development strategies that positively impact public green space access.

To appropriately address these research questions, the methods employed were qualitative. The qualitative methods chosen were a plan and policy comparative analysis for London and Toronto. This was supplemented with an additional policy analysis of cities that were chosen for similar characteristics being density, population, geography, and growth rates as outlined in the Research Methods section in Chapter 3. These cities are well known for their effort in green space planning and those chosen were Vancouver, BC, and Copenhagen, DE.

1.3 Timing

A major part of the importance of this research is the timing. As society moves from single family suburban sprawl and into high density complete community living, it has never been more critical to understand the synergy between place and space. The coronavirus has demonstrated how our modern day understanding of urban planning and practice has been fragmented and inconsistent, as communities continue to grow up there is a need to determine regulations for space based on increased density. This research could not be properly conducted at the beginning of the pandemic as not enough evidence would be available to analyze how cities responded. Additionally, after the pandemic has been controlled would not be appropriate as the recommendations and conclusions could not be offered during a period where cities are determining a recovery strategy. This study must take place now based on the temporality of the literature, as the findings will be critical for rebuilding efforts in both subject cities and elsewhere. As rebuilding and recovering efforts slowly begin, this study would not be as relevant done retrospectively.

1.4 Organization

The Introduction, or, Chapter 1, outlined the key factors that influenced the research direction and the research question. In Chapter 2, the Literature Review will illustrate how planning scholarship has defined and researched different elements related to the research topic. This will generate an understanding of the role public green space plays in scholarship and the gaps in the research to date. Chapter 3 will focus on the research methods employed for this thesis. It will outline which qualitative methods were chosen, why they were chosen, and the justifications for locations and policy documents. From here, Chapter 4 will analyze policy documents for both the City of London and the City of Toronto. This section will identify key themes supporting the research question. This Chapter will also discuss the National and International Policy Analysis will examine both Vancouver, BC, and Copenhagen, DE. This analysis will look to 'best practises' for density and green space balance that may be applicable to both London and Toronto. Moving forward, Chapter 5 is a general discussion and set of conclusions drawn from the research. Additionally, this chapter covers limitations and directions for future research. Finally, Chapter 7 will discuss final conclusions and recommendations based on the findings.

Chapter 2
Literature Review: The Synergies Between Public Urban Green Space and Population Health

Across disciplines, many studies have examined the relationship between the health of communities and accessible and attractive public urban green spaces. Much of this literature speaks to the power of these spaces to function to improve quality of life, urban health conditions, and to mitigate climate change impacts. Broadly, public urban green space can be defined as "gardens, parks, greenways, and other areas with grass, trees, and/or shrubs" (Jennings, Bamkole, 2019). However, this definition does not explicitly include an urban or public element. These areas provide access to social interactions and recreational opportunities that connect individuals with nature in an otherwise urban environment. In this regard, green space is a multi-dimensional, generational, and cross-cultural concept. To this literature review public urban green space will be identified as "public green space", rural green space will be excluded as this study wanted to understand how these spaces are regulated in dense urban settings.

2.1 The History of Public Green Space Planning

The history of planning practise in urban and rural settings has transformed over the years, yet the influence of past urban theories on modern day planning interventions is profound. In the preindustrial era, the countryside was a means to leave the ills and crowded streets that existed within densely populated cities. As society socially and technologically advanced through the 21st century, the perspective of what cities could provide changed as well. Cities today reflect a past of planning ideas that impacted the social, cultural, and economic values of city dwellers, and most humans now opt to live in dense urban centres (Totaforti, 2020).

Ebenezer Howard spoke to the power of nature's amenities to influence and improve the social, physical, and economic health of the city (Clevenger, Andrews, 2017). His theories bridged the ideas of nature and community as one and offered evidence that the two could mutually exist reproducing positive health outcomes throughout the city (Clevenger, Andrews, 2017). The principles of the garden city for spatial and urban reform relied on community-based interventions and sustainable strategies to facilitate healthy urban environments with the goal of enhancing urban well-being for all. The polluted and unsanitary industrial landscape of the urban city endangered the community, specifically the working class, and the natural environment (Daniels, 2009). Howard's idea looked to mitigate the discontents of the city and liberate all who occupied it (Clevenger, Andrews, 2017). The garden city combined the most attractive elements of both the city and the countryside. Additionally, the City Beautiful Movement also attempted to use physical planning and urban design interventions to improve the quality of urban life. Characterized by streetscape design, public spaces and natural elements to the built environment, many advocates also called for the inclusion of parks and playgrounds in lower income neighbourhoods as a means of play for children (Daniels, 2009). The balance of development with nature and public space was a common denominator throughout most early planning theories as a functional means of creating a harmonized city where both humans and the natural environment could thrive. Additionally, over a century ago, Frank Law Olmstead emphasized the powers of urban nature to influence human health in ways man-built interventions could never (Akpinar et al, 2016).

Early planning scholarship noted the power of public spaces to create a sense of place and improve public health. Urban thinkers at the time saw the potential of these spaces to ensure long term economic, environmental, and social prosperity (Daniels, 2009). The synergy between environmental politics, urban nature and society still exists today and the philosophies that birthed early environmental planning movements are largely noticeable in modern planning policy, practise, and scholarship. Each of these ideologies and theories have influenced the planning profession to value the benefits of urban

green space on both spatial and temporal levels for the wellbeing of our cities. Many of these ideas whether intentional or not, exist within many cities' urban frameworks today (Stigsdotter, 2005).

2.2 Public Green Spaces and the Race Against Climate Change

Presently, the fears come not from an industrial city, but from the overwhelming production and consumption of goods, and the exploitation of the environment for human gain. The longstanding notion that the environment will continue to replenish itself has been popular for almost a century and the state of the ecological environment has never been in more danger (Wolch et al, 2014; Angelovski et al, 2018; Totaforti, 2020). Cities are becoming increasingly vulnerable to the impacts of climate change which has been building since the beginning of the industrial era (Rahman, Mohamed, 2015). Rising sea levels, warmer temperatures, species extinction, extreme and abnormal weather events, and the tension over scarce resources like clean water are all consequences of ignoring the finite nature of the natural environment (Hunter et al 2019). Recently, the economic impacts of climate change mitigation have made green infrastructure a strong consideration for vulnerable cities with limited funds. The ability of green infrastructure to regulate climate change impacts with techniques like storm water management, carbon capture, reduced urban heat island effects, and improving air quality have been increasingly favored (Anguelovski et al, 2018).

Researchers argue that modern forms of planning and design do not treat urban green space as an intervention for these issues but rather a highlight to urban neighbourhoods, neglecting to intertwine green space and environmental priorities and only reproducing systemic green space inequity (Haaland, Van Den Bosch, 2015). The technological advances made throughout the 2000's has left humans with the skewed perception that technology will protect humanity against the pressures of a changing and endangered climate. The amount of people living in urban areas will increase to 70% in 2050 from

50% in 2010, showing the need for sustainable development has never been more important than right now (Haaland, van den Bosch, 2015). However, green spaces are coming under pressure as urbanization increases and space becomes incredibly valuable and scarce (Taylor, Hochuli, 2017).

The negative impacts of urban development in cities are hard to ignore, rampant sprawling, crowding, high car dependency, and poor living quality and has numerous influences not only on the environment, but the health and wellbeing of residents. However, as science has expressed, threats to the environment are real and dangerous, making urban greening more popular (Wang, Berardi, Akbari, 2015). The benefits relating to improved air quality, carbon storage, noise reduction, stormwater management, pollution, and temperature control, and disease prevention makes public green space a mitigation technique (Wang, Berardi, Akbari, 2015). Academics highlight that between the Windsor-Quebec corridor, the number of daily temperatures above 30 degrees will only increase and the negative health impacts of this are extensive, especially for vulnerable populations (Wang et al, 2015). Research has shown that if cities increased urban green interventions by only 10%, the reduction in daily temperatures in cities could be at least .8 degrees (Wang et al, 2015). As literature continues to emphasise the insurance value of public green spaces, the more social and psychological benefits are beginning to gain wider recognition (Venter, Barton, Gunderson, Figari, Nowell, 2020 Hong, Lee, Jo, Yoo, 2019; Rahman, Mohamed, 2015).

In the last decade, the more latent outcomes of this intervention have begun to gain traction – the physical, social, and cognitive benefits of public green spaces have now become a hot topic for all green space advocates, thinkers, and place makers. Green urban design elements have now become popularized for their positive influence not only for climate change resilience, adaptability, and mitigation but also the overall look, feel, health, and structure of a neighbourhood and its residents (Giles-Corti et al, 2016).

In modern day academic literature on the relationship between humans the natural world, the term well-being has continually addressed the physical health benefits associated between the built environments. Only recently has literature begun to address well-being in relation to green space from a social, emotional, and cognitive perspective. Well-being is now defined by two main ideas, the concept of feeling well as well as the idea of functioning well (Aced, Marks, Cordon, & Thomson, 2008; Moorhead, 2011). These two domains reflect the physical model of health concerned with physical activity, disease, and immunity as well as the social model of health concerned with individuals' experiences and cognitive health within these contexts (Cattell et al., 2008). The term most used to describe the interventions taken in cities to incorporate the natural environment into the built environment is biophilic design.

2.3 The Biophilia Hypothesis

Biophilia, or the biophilia hypothesis, was an idea popularized by Edward O'Wilson in the 1960's and has initiated decades of research around the human relationship to the natural and built environment (Beatley, 2009; Joye, Block, 2011; Abdelaal, Soebarto, 2018). The evidence supporting biophilic designs span social, psychological, and pedagogical (Beatley 2009; McEwan et al, 2020). Biophilic design combines understood and lived spaces of places by incorporating natural elements into everyday design and the built environment (Totaforti, 2020). The biophilic hypothesis describes the relationship that exists between the physical, cognitive, social, and cultural elements of humankind and nature, revealing that biophilic elements may improve population health (Totaforti, 2020).

This mutually supportive relationship has transcended planning scholarship influencing attributes of architectural design (Abdelaal, Soebarto, 2018). However, the term continues to transform

according to the social conditions of society at the time, combing in elements of the nature to facilitate positive social, physical, and mental health in communities (Abdelaal, Soebarto, 2018: Reeve, Desha, Hargreaves, Hargroves, 2015; Sarkar, Webster, 2017). The biophilia hypothesis claims to trigger our rest and digest response, which means connectedness to nature through exposure has the ability to repress and improve our nervous system resulting in overall better health and ensuring long term resilience (Bolten, Barbiero, 2020). There is a wide range of literature across multiple disciplines that argues how urban nature plays a critical role in the past, present, and future of neighborhoods and their health. Biophilic design interventions present themselves as natural green space, parks, trails, gardens, etc., and has thus created a legacy for green planning and public health.

Aside from the climate regulatory benefits green infrastructure gives to cities, one of the most notable in the history of biophilic design research is the recognition of the impacts it has on human wellbeing (Reeve, Desha, Hargreaves, Hargroves, 2015). The main purpose of this form of urbanism is to evoke physiological and cognitive responses from exposure to natural elements embedded within the built environment (Clenvenger, Andrews, 2017). This realm of urban planning optimizes design features that utilize natural environment elements strategically to provide benefits to those who come in contact with these areas (Beatley, 2011). The scholarship of biophilia has influenced a myriad of urban resilience in the long run by investigating this relationship (Mcewan et al, 2020). With growing populations and urbanization, inevitable pressures are becoming more severe (Reeve, Desha, Hargreaves, Hargroves, 2015). There is a critical connection between biophilic interventions and urbanism and its ability to respond to many of the issues facing 21st century cities today. The extensive range of benefits allows for cities to plan strategically to improve well-being and support resilience (Reeve, Desha, Hargreaves, Hargroves, 2015; Hunter et al 2019; Totaforti, 2020).

Research has investigated the inextricable linkages between public green spaces and health for many purposes over the years with many goals in mind. Individual intrinsic values of these spaces are paramount to overall positive health outcomes. From the Garden City, The City Beautiful movement, and the introduction of the Biophilia Hypothesis, today's design and space interventions incorporate the principles of these past planning paradigms with modern society influencing daily life through built form. Decades of research around biophilic design has proven its ability answer to the modern-day questions regarding sustainability, biodiversity, resilience, and mitigation but also wellbeing. The evidence supporting biophilic urbanism makes it one of the smartest strategies and green spaces one of our most valuable assets.

However, due to rapid urbanization, these green spaces are few and far between and have since been considered luxuries for neighbourhoods resulting in the unequal distribution and maintenance of these spaces as previously mentioned (Barbosa, Tratalos, Armsworth, Davies, et al, 2007; Shule, Gabriel, Bolte, 2017). Proximity to green spaces has resulted in higher property values disproportionally favouring white affluent neighbourhoods (WGBH Forum, 2018). In New York, studies have shown that there is a drastic difference in the number of available and/or quality of green spaces in Manhattan as opposed to the Bronx (WGBH Forum, 2018). This unbalanced and inconsistent greening of cities has negative consequences for the safety, security, health, and environmental quality of neighbourhoods and only encourages the gentrification of these spaces (Du, Zhang, 2020; Wolch et al, 2014). Current high density residential development and gentrification coupled with a history of inequitable urban planning ideologies like redlining and segregation have made access to public green spaces both an environmental and social justice issue (Wolch et al, 2014; Shule, Gabriel, Bolte, 2017; Beyer et al 2014).

2.4 Green Spaces and Social Wellbeing

2.4.1 Social Cohesion, Equity, and the "Green Space Deficit"

Literature describes community attachment and cohesion as an indication of one's connection and bonds to their community and neighbors (Arnberger, Eder, 2020). As numerous public health measures threatened or closed the normal day to day operations of many public spaces, many who relied on these spaces to feel a sense of social cohesion suffered (Borkowska, Laurence, 2020). Planning scholarship has illustrated that social cohesion is positively influenced by public green spaces and the biophilic qualities of these spaces have numerous implications on social and cultural aspects of cities (Jennings, Bamkole, 2019; Douglas et al, 2017; Angelovski et al, 2018). The impacts of isolation hit especially hard in dense cities where residents had access to minimal available private green space due to high-rise residential dwellings (Melcher, 2020). Those who once relied on these spaces lacked the necessary social interactions that strengthened social ties, well-being, and feelings of security within their communities (Borkowska, Laurence, 2020). Urban planning academia explains that a level of proximity, even 6ft apart, is crucial for physical and psychological health (Melcher, 2020). Existing research has discussed at length the idea that attractive public green space can serve as a necessary focal point for these interactions to take place, citing denser areas with rapid urbanicity needing a well-established relationship for wellbeing purposes (Groenwegen, Vandenberg, et. al, 2006).

Isolation and lack of social cohesion became a stark concern throughout the public health crises of 2020 and resulted from the sudden closures of many spaces which limited access to many basic needs (Shadmi et al, 2020). Jennings and Bamkole (2019) found that public green space can foster health promotion by mitigating any feelings of social isolation which, when untreated, can lead to further health complications (Douglas, Katikireddi, et al, 2020). Several other studies also found that prolonged isolation has been shown to increase the severity of health problems and even predisposes

individuals to premature mortality and morbidity (Pantell et al, 2013). As Montgomery (1995) noted, "it is the public realm and associated semi-public spaces which provide the terrain for social interaction and therefore transactions".

Important to understand is how crucial the social cohesion aspect of these spaces is to vulnerable populations. Public green space and its ability to foster social ties, provide avenues for physical and mental wellbeing through biophilic design and therapeutic landscape is a safe haven for marginalized communities where other services are not sufficient or absent within their neighbourhoods (Shadmi et al, 2020). Scholarship has demonstrated how neighborhoods equipped with attractive green spaces experience increased feelings of connectedness as opposed to neighbourhoods with a 'green space' shortage which are more likely to report higher feelings of loneliness and lack of supports (Maas et al. 2009; Shadmi et al, 2020). More often than not, the neighbourhoods that have the highest feelings of loneliness and lack of supports have "nature deficits" and are occupied by vulnerable and marginalized populations (Jennings, Bankole, 2019). Low income neighbourhoods experience the least amount of upkeep which results in a breakdown of social control and increases risk for criminal activity (Giles-Corti et al, 2016).

All things considered; the pandemic should be a lesson on the intrinsic value public green spaces have within communities for imperative social connection prompting academics and professionals alike to broaden the perspective on the role of these spaces within our cities (Jennings, Bankole, 2019). It's obvious that public green spaces provided necessary refugee services to those in dense urban areas in the short term, and the lessons learned from this can work to make these places safer and resilient against future public health shocks in the long term (Venter, Barton, Gundersen, Figari, Nowell, 2020).

Equity concerns surrounding urban green space speaks to the conditions disproportionally faced by vulnerable populations. This results from an unequal distribution of resources on the basis of race, religion, gender, sexual orientation, socioeconomic status, etc and are systemically reproduced through our planning system (Giles-Corti et al, 2016). As the impacts of COVID-19 threaten the imbedded social ties of communities, these concerns spread even deeper in regard to accessibility, availability, and equitable opportunity to protect themselves against the dangers of the virus (Du, Zhang, 2020). Historically, public green space has been unevenly distributed prioritizing more affluent neighborhoods resulting in environmental and social injustice (Groenwegen,, Vandenberg, et. al, 2006). This results in planning policy and practice executing public green space interventions as neighborhood luxuries which is continually reinforced by both the development and real-estate industry (WGBH Forum, 2018).

This disregard for public green space equity for marginalized populations in cities overlooks the important benefits of these spaces that are arguably more necessary for those who suffer disproportionally (Groenwegen,, Vandenberg, et. al, 2006). This “out of sight out of mind” mentality is not new, and very few communities have policies that require a balance of quality public green space with population density and growth (Sivaragah, Plummer & McGrath, 2020). Most often, low income and marginalized communities may have that is often poorly maintained in real life, located in unsafe areas of the city, often vandalized, or covered in cement (WGBH Forum, 2018). Studies on the implications of urban greening in vulnerable neighbourhood’s has shown that green space may have a eugenic component and the health benefits linked to these public spaces may be at its highest among disadvantaged groups (Braubach et al. 2017). Past literature and notable patterns in the current pandemic have shown that these socioeconomic synergies with accessible public green space redistribute poor health outcomes (Braubach et al. 2017).

The issue of public green-space equity is not one that has been introduced since the beginning of the pandemic, but one that has been ongoing and systemically reproduced for years through the planning system (WGBH Forum, 2018). Unfortunately, history has cultivated a legacy of neighbourhoods who are wealthier and whiter being noticeably greener (Angelovski et al, 2018). The COVID-19 pandemic has only magnified the severity of these inequities and disproportionally increased the pre-existing conditions faced by these individuals (Maroko, Nash, Pavilonis, 2020). For those who lack private yard space and relied on public green spaces to meet their physical, mental, and social needs are now more at risk for more serious health complications (Goldfinger, 2020; Zhuang et al., 2020; Douglas, Katikireddi, et al, 2020). Academics have increasingly called social sustainability one of the biggest issues with basic developments, as it is not an essential consideration when it should be (Du, Zhang, 2020).

2.5 Green Spaces and Physical Wellbeing

2.5.1 Health Promotion and Green Space Access

A study in Oslo revealed a 291% increase in outdoor recreation with a 19% total increase in visits to public green spaces since the beginning of the pandemic (Venter, Baron, Gunderson, Figari, Nowell, 2020). The closure of indoor recreational spaces opened the door to attractive natural environments as an alternative which showed the biggest increases in visitor numbers in many dense urban areas like Toronto Ontario (Honey Roses et al, 2020; Venter, Baron, Gunderson, Figari, Nowell, 2020; Azure, 2020). Literature explains that the popularity of high-density residential areas is rapidly increasing citing that over 50% of the world's population now gets their interactions with nature within their urban environments (McEwan et al, 2020).

Historically, familiarity with green spaces support healthy habits through nature connectedness (Holt, Lombard, Best, Smiley-Smith, Quinn, 2019; Braubach et al, 2017; Wolch et al, 2014). Venter et al (2020) found that during the COVID-19 pandemic, accessible open green space, in combination with social distancing measures, had the potential mitigate the negative health impacts of mobility restrictions for fear of disease transmission. This supports much additional research which has instantiated that green space and frequency of contact can help avoid attentional fatigue, decrease risk of neuro-cognitive illnesses, and increase resilience against cardiovascular mortality.(Braubach et al 2017; Shule, Gabriel, Bolte, 2017; Beyer et al 2014).

The benefits of physical activity, especially during times of isolation and physical distancing, has been thoroughly documented in existing research. When cities are equipped with attractive and accessible open green spaces, this encourages people to utilize them (Azure, 2020). These spaces provide therapeutic outlets where the physical wellbeing of residents is able to thrive by promoting opportunities to live an active lifestyle (Van den berg et al., 2020). Moreover, studies have found that physical activity in green spaces is actually more affective for overall positive health outcomes than recreation in grey areas like walking down the street (Venter, Baron, Gunderson, Figari, Nowell, 2020).

Poor living environments can exacerbate illnesses like cancers, diabetes, obesity, cardiovascular diseases and many others, researchers argue that urban green space has the ability to reduce the frequencies and severities of these health issues (Douglas et al, 2017). As the risks are higher for vulnerable populations, much research has shown green spaces accessible in lower income neighborhoods have been linked to reduced health complications from income deprivation (Braubach

et al. 2017). Despite popular belief, the absence of adequate space in cities has been shown to worsen health in urban environments rather than increase disease transmission (Stigsdotter, 2005).

Literature has demonstrated that when these valuable neighborhood spaces are not only available but equitable across cities, it can have numerous positive health outcomes population wide (Beyer et al 2014). Green spaces allow avenues to health promotion by mitigating health and social inequities especially during unprecedented times, these spaces of which have been historically inaccessible and inequitable (Anthun, Maass, Hope, Espnes, Bell, et al, 2019). Studies have proven that when planning combines the determinants of health with the built environment, the benefits are population wide (Braubach et al. 2017). When a neighborhood has access to green space, health promotion transcends the social gradient.

The closure of public spaces during the pandemic for 'social distancing' resulted in a reduction in accessible pathways to crucial social and public health infrastructure for communities. Racial minorities suffered disproportionately and more died from the disease as a result (Hong et al, 2019). These statistics are corelated with these populations living in densely urban areas lacking adequate green space because these folks often reside in high rise dwellings. Vulnerable populations have typically occupied "park desert" neighbourhoods, the existing infrastructure for public use is usually dominated by cement and inadequate play equipment putting their health at an additional risk (WGBH Forum, 2018).

2.6 Green Spaces and Mental Wellbeing

2.6.1 Stress, Depression, Anxiety and Mental Fatigue Mitigation Through Interaction and Exposure

COVID-19 put intense strain on the mental health and wellbeing of those in densely populated cities like Toronto, where lockdowns preceded one another. An international survey relayed that over 60% of respondents valued public space more than before the pandemic as a means of fresh air, positive physical and mental health outcomes, and an escape from isolation (Kleinsteuber, 2020). A separate survey from Statistics Canada illustrated that 52% of respondents reported decreased mental health because of the distancing and stay at home orders put in place (Kleinsteuber, 2020). In both surveys, those who cited a lack of use of these spaces reported the reasoning being a lack of accessible space or fear of COVID-19 transmission.

Biophilic urban environments not only serve aesthetic purposes in their communities and pathways to physical activity but also serve as a way to serve upstream determinants of health to promote positive cognitive health outcomes (Beyer, Kaltenbach, Szabo, Bogar, Nieto, Malecki, 2014). Studies show that green urban environments have the potential to reduce feelings of anger, violence, stress, and depression while simultaneously improved feelings of peace, tranquility, calming (wolch et al, 2014; Douglas et al, 2017). In this regard, urban green space has the ability to mitigate systemic health inequities faced by vulnerable groups (Beyer, Kaltenbach, Szabo, Bogar, Nieto, Malecki, 2014).

Stress Reduction

As previously mentioned, academic research has now demonstrated widely that urban green space is conducive to more than just the physical health of residents and cities as a whole. Urban green space has been shown to reduce stress by “enhancing satisfaction, attachment, and [fostering] a sense

of responsibility" (Groenwegen,, Vandenberg, et. al, 2006). Proximity to these spaces can reduce feelings of anger and tension as a result of increased social support, sense of community, attachment, and place (Groenwegen,, Vandenberg, et. al, 2006; Maas, Dillen, Verheij, Groenwegen, 2009; Joye, Block, 2011). Scholarship has focused on the opportunities that exist within urban green spaces to relax, recharge, and reconnect has demonstrated that stress levels actually increase when the amount of urban green space in their neighborhoods decreases (Thompson et al 2021).

In some reports, green space showed strong positive effects on stress levels even for only 5 minutes of exposure (Thompson et al, 2012; Roe, Aspinall, Thompson, 2017). In more vulnerable areas, when equipped with attractive and accessible green space, individuals are more capable to combat life's problems, then those in less vulnerable areas with less green space (Roe, Aspinall, Thompson, 2017). Overall, much existing literature on the synergies between green space and stress speaks to its ability to facilitate a higher quality of life for residents, especially for more vulnerable populations (Maas, Dillen, Verheij, Groenwegen, 2009; Holt, Lombard, Best, Smiley-Smith, Quinn, 2019).

A study in the Netherlands found that these spaces can serve as a buffer to mental strain and societal pressure which other studies have also found (Wolch et al, 2014; Wood et al, 2017; Joye, Block, 2011; Beyer et al 2014). A study in Daejeon City South Korea revealed that short visits more frequently to these spaces resulted in improved thinking capacity supporting emotional wellbeing over long periods of time (Hong, Lee, Jo, Yoo, 2019). Research has shown that because of the propensity of these areas to foster social ties, urban green space plays a significant role in reducing stress by fostering a mentally restorative environment (Douglas et al, 2017; Angelovski et al, 2018). Stress and mental pressure can reproduce a number of severe health complications like cardiovascular decline, autoimmune deficiencies, and increase the severity of certain cancer types (Stigsdotter, 2005). The overwhelming evidence behind public green space and stress reduction shows that more green space

has resulted in a reduced number of stress leaves, sick days, and poor quality of work in urban environments (Akpinar et al, 2016).

Depression, Anxiety, and Mental Fatigue

The prolonged stay at home orders notably raised everyday stressors like money issues, health concerns, and mental well-being by a significant amount increasing risk of developing more severe mental illnesses like depression and anxiety (Beyer et al 2014). The closing of public green spaces was initially noble in the pursuit of reduced community transmission of the coronavirus disease; however, this initiative only worsened these symptoms (Shadmi et al, 2020). Visiting urban green space has been shown to give individuals space to reflect which reduces negative or intrusive thoughts (Hong, Lee, Jo, Yoo, 2019; Roe, Aspinall, Thompson, 2017; Hong, Lee, Jo, Yoo, 2019; Akpinar et al, 2016). As previously discussed, those who are more vulnerable in society suffered disproportionately throughout the duration of the pandemic, and feelings of depression and isolation were only higher for this population (Honey-Roses et al, 2020). Additional research has demonstrated that the number of mental health benefits reaped by vulnerable populations can be up to 40% more (Roe, Aspinall, Thompson, 2017).

Proximity to these spaces is enough to contribute to positive neuro cognitive benefits significantly reducing depression (Groenwegen,, Vandenberg, et. al, 2006; Maas, Dillen, Verheij, Groenwegen, 2009; Braubach et al. 2017; Douglas et al, 2017). However, direct contact with the natural environment can have a more significant impact, enough to alleviate these feelings all together albeit for the time spent exposed to this environment (Braubach et al. 2017; Hong, Lee, Jo, Yoo, 2019). Scientifically exposure to green space contributes significantly to the parts of the brain that represses

depressive symptoms thus reducing the neurological activity that causes these intense emotions (Braubach et al. 2017; Akpinar et al, 2016; Van Den Berg et al, 2019).

The act of visiting public green space overtime can increase coping mechanisms and strengthen the ability to deal with these heavy emotions like depression, anxiety, as well as ongoing mental fatigue (Hong, Lee, Jo, Yoo, 2019, Beyer et al 2014; Roe et al 2017). As feelings of isolation increase, mental fatigue and attention problems can occur for those working at home or learning from home (Hong, Lee, Jo, Yoo, 2019). Research on attention restoration theory exhibits that natural environment exposure can restore these neurological deficits influenced by stay-at-home orders (Tull et el, 2020). Similar research has spoken to the scenery associated with urban green spaces to be conducive to feelings of productivity and worker happiness (Wood, Hooper, Foster, Bull, 2017).

These studies indicate the relevance urban green spaces considering how fast paced and demanding dense urban environments can be. As this chapter has illustrated, literature overtime has shown the that the biophilic hypothesis has merit (Grinde, Patil, 2009).

2.7 Key Takeaways

Given the overwhelming scholarly evidence for green space interventions, there are many lessons the urban planning profession can adopt. There is an abundance of studies that cite high density urban development as a barrier to adequate green space access (Wood, Hooper, foster, Bull, 2017). When coupled with a pandemic, physical distancing in these cities with minimal open space can present challenges and overcrowding (Melcher, 2020). This allows infectious diseases to thrive given close contacts, spreading through the urban network (Sarkar, Webster, 2017).

Several articles cited that urban green space is incredibly democratic and cuts across social, cultural, and economic barriers to health promotion. Although, given the historic nature of urban green space planning and its relation to spatial segregation, there is a lack of green space equity in many cities. The majority of literature doesn't agree and cites that green space access should be a high order need in modern day planning to ensure social sustainability (Du, Zhang, 2020). In a study that focused on culturally and demographically diverse cities like Oslo, successful green urban planning was dependent on the basis that it supported these diversities through accessibility, equity, and recreational considerations (Venter, Barton, Gunderson, Figari, Nowell, 2020).

This finding suggests that biophilic design interventions like public green spaces require additional input from the general public on the importance of these spaces as it relates to their health and well-being in orderly to properly serve the needs of the entire population. Green space literature suggests that past planning ideologies to support community wellbeing are continually reinforced when green space is accessible, equitable, and available to residents. This reinforces eyes on the street, fostering social cohesion, community engagement and emotional bonds to one's neighborhood (Anthun et al, 2019). Public green space actively reinforces the Anthropocene by supporting healthy bodies and healthy minds (Clevenger, Andrews, 2017)

2.8 Limitations and Research Gaps

Despite mounting evidence, there are still substantial gaps in literature on the connections between public green space and health. Most literature lacks public input regarding the value placed on these spaces in neighborhood's aside from their well-documented benefits addressed by scholars across disciplines. Many perspectives were city-wide and did not focus on individual group perspectives, especially during times of crises (Du, Zhang, 2020). Literature remains consistent that statistically

significant relationships exist but it's unclear as to which type of green space is the best for dense urban environments. Current research during the pandemic shows that there will be greater demand for more smaller parks throughout the community post COVID-19 (Honey Roses et al, 2020). Additionally, much scholarship has not decided whether proximity to these spaces is enough as opposed to exposure. McEwan et al, (2020) says just a little bit while an vs providing a range of them (Wood et al, 2017) vs overwhelming amount say it's not enough to just be green (Akpinar et al, 2016, Ryan et al 2014).

Being just green enough requires a balancing act between space and density, and no consensus of how to mitigate any unintended consequences like gentrification currently exists in scholarship (Wolch et al, 2014). Some articles suggest greening prompts gentrification, naturalizing the exclusion of the lower class showing that the need to fit an urban health agenda into modern day planning frameworks is met with unclear direction (Wolch et al, 2014; Anguelovski et al, 2018; Jennings, bamkole, 2018). While the majority of scholarship agrees that the benefits of urban green space transcend the social gradient, many argue that there are deeper social, gendered, racial, and generational experiences that are not accounted for in literature specific (Shule, Gabriel, Bolte, 2017; Gillis, Gatersleben, 2015).

Although green space can be used as a public health, economic, and social recovery tool, its evils should not be ignored (Angelovski et al, 2018). Others document the benefits spanning across sizes and types yet note the importance of small local parks which are sometimes undervalued (Wood, Hooper, Bull, 2017). Current research conducted during the height of the pandemic estimates that there will be greater demand for more smaller parks throughout the community which supports past scholarly evidence (Honey Roses et al, 2020). Interesting to note is how Joye (2011) noted that these health benefits achieved through exposure to green space may not be exclusive to just green space, but from

a change of scenery all together. The definition of green space is also very broadly defined and general making it difficult for cities to form policy decisions around what would be best for their communities (Taylor, Hochuli, 2017).

Chapter 3
Methodology

3.1 Objectives and Purpose

This study provides recommendations to make public green space planning consider the complexities regarding public green spaces and their benefits to ensure they are accessible, available, and equitable for all in the future. The following objectives were employed to address this concern:

(1) To explore the range of implications that COVID-19 had on public green space access in two sites: London and Toronto Ontario.

(2) To identify the limits of existing public space planning, policy and design that impacted municipal responses.

(3) To evaluate the existing priorities and mechanisms in Ontario that regulate urban development and public space as a community benefit.

(4) To examine 'best practices' in urban development strategies that positively impact public green space access.

3.2 Research Design

A comparative study design was chosen as the appropriate methodology for this research and utilized qualitative methods in the forms of policy and document analyses. Justification for the study sites, rationale for the methods chosen, as well as the benefits, and limitations of the study are included below.

A qualitative exploratory approach was selected because this perspective looks to understand the social world (Sadovnik, 2007). Additionally, the descriptive nature of the study design allows for this research to determine if there is evidence for a geographical variation in the results which supports the objectives that cross compare policies in London and Toronto (Farthing, 2016). Through this approach, research was conducted in a natural setting to attempt the meanings attached to planning

systems in Ontario based on a collection of sources readily available to me that continues to support the research objectives despite public health guidelines and restrictions (Creswell &Creswell, 2018).

This approach supports the research objectives by cross comparing different locations over multiple phases which can illustrate a dynamic process that are responsive to local situations (Sadovnik, 2007). Comparative case studies require multiple methods, so this type of research creates holistic accounts of broad and complex results that emerge from data analysis (Creswell &Creswell, 2018). In this regard, the study will be using key documents like official plans, strategic plans, supporting studies, and city council minutes as representations of city priorities. These are critical to the study design as the results from the three phases of data collection will reveal how these priorities have transcended policy, influencing communities.

Phase one draws on comparisons between a mid and large sized city by employing a policy analysis to determine the priorities before and during the pandemic to understand the parallels between different contexts responses to COVID-19 within Ontario. Policies serve as ruling documents for city planning operations (Farthing, 2016). Supporting studies and secondary plans are critical to the research as they supplement bigger policy documents like official plans (Farthing, 2016). Policy analysis is a tool used in and out of academia that allows researchers to relate to the broader social world (Farthing, 2016). By utilizing this method, it allowed the study to capture the values and priorities in London and Toronto at the present time, in this case, the time of pandemic. Site specific context is required in order to understand the processes that led to the overcrowding of green spaces. Policy analyses examine how and why cities and governments enact certain policies. Policy analysis assumes that there are accessible texts with applicable information and data about a particular phenomenon (Kleinheksel. Rockick-Winston, Tawfik, Wyatt, 2020). This research takes an approach which looks at the values at stake,

how these are values are politically generated and prioritized, and the which voices are incorporated (Browne, 2019).

Mainstream policy studies examine the 'interaction of values, interests and resources guided through institutions and mediated through politics' (Browne, 2019). By employing this method of plan policy analysis, this research understands the justification for green space planning in cities and identify areas for improvement in order to be resilient in future health crises. Without the luxury of a longitudinal study design, this is a relevant way to obtain relative reactions as they happen.

The results of this research evaluate the desired impacts of the changes made to the regulation of these spaces and inform recommendations in conjunction with the interviews on how cities can and should approach public green spaces moving forward.

3.2.1 Phase 1: Policy Analysis of City Documents in London and Toronto Ontario

In both cities, after all resources were collected, the next step was to understand the planning framework, priorities, and themes for each research site as of right. This involved an analysis of three ruling documents in the City of London, six for the City of Toronto as well as council minutes in both cities over a set period of time. This answers research question one and supports objective one and two by focusing on the pandemic at a local level in both cities from a past, present, and future policy perspective. The following documents were utilized within this phase:

London Ontario City Documents	**Toronto Ontario City Documents**
The 1989 Official Plan (By-law 1284-227)	Toronto Official Plan

The London Plan (2016)	Growing Up Urban Design Guidelines
The London Strategic Plan (2019)	Pet Friendly Design Guidelines for High Density Communities
City Council Minutes	Parks and Recreation Facilities Master Plan 2018-2038
	Parkland Strategy (2019)
	Privately-Owned Publicly Accessible Spaces (POPS): Final Report and Urban Design Guidelines
	City Council Minutes

Table 1: List of Policy Analysis Documents

The next step was to determine the timeline of the COVID-19 pandemic that happened within each city and if it influenced any of the respective documents that were in place. This involved utilizing a mix of public health documents and media sources to determine a course of events. The findings were then put into a document organized month by month. To understand of how decisions were made based on this course of events I then focused on City Council meetings. City council meetings were initially found on each city's website. There, meetings were limited to the time frame of January 2020-February 2021. In lieu of interviews, city council minutes gave insight on a municipal level as to how either location reacted to the pandemic as well as including a critical public component through outreach initiatives by either city or various community organizations.

To understand the COVID-19 influence in either study location, a detailed review of all city council meetings from the beginning of the pandemic to present was conducted. On each cities website, the advanced search feature for each city meeting information system was utilized to focus on meetings that involved the term 'COVID-19'. From here all remaining meeting minutes were read through for

applicability to the research objectives. Any meetings that directly spoke to the planning, design, and/or policy direction for public green spaces for community well-being was included. Meetings that cited the impact on green spaces, commentary from the public regarding the accessibility of PGS, and future initiatives were included for analysis.

3.2.2 Phase 2: Policy Analysis of the Province of Ontario Urban Development System

The second phase employed a content analysis of a secondary level of policy documents that examined the existing urban development system in Ontario. This represented an objective representation of how well policy around the development patterns within our cities governs and supports public green space access, availability, and equity within the province (Farthing, 2016). This phase answered research question two and support objective three by indicating the role that urban development has in green space planning. The following documents were examined during phase two of the study:

Jurisdiction	**Documents Analyzed**
Ontario	Development Charges Act – Planning Act R.S.O 1990
	Section 37
	Section 42
London	Development Charges
Toronto	Section 37 Implementation Guidelines
	Chapter 415 of the Toronto Municipal Code: Development Charges

Table 2: List of Secondary Policy Analysis Documents

3.2.3 Phase 3: National and International Policy Analysis

Locations

Phase two of this research looks to a national and international city whose prioritization of green space despite high density development would be a best practice both cities could refer to.

Vancouver is a nationally recognized city for its ambitious green targets and initiatives to create a livable, balanced, and sustainable environment. Similarly, Copenhagen is also internationally renowned for its efforts in sustainable planning. Both encourage high density livable environments with excellence in public green space management.

Best Practice #1: Vancouver

Firstly, Vancouver was chosen as the Canadian example because it is a rapidly growing city that is widely recognized for its efforts in the climate change movement and sustainable urban planning on not just a national skill, but across the globe (City of Vancouver, 2015a). Since 2011, the city has seen a 4.6% population increase to 631,486 people (Statistics Canada, 2016c). During the COVID-19 pandemic, the city saw a 38% increase in visitors to parks within the city (CTV News, 2021). In 2017, it was reported that the city contained enough green space that there was 1 acre for every 100 persons in the city which works out to about 40.4m2 per person (Vancouver Public Space Network, 2017). This is slightly below London at 65.4/sq.m per capita and above Toronto at 28/sq.m per capita as mentioned previously.

Location #2: Copenhagen, Denmark

The second city chosen for an international example was Copenhagen, Denmark. Copenhagen has been recognized as a 'Green Capital' since 2014 for its efforts to protect, preserve, and incorporate urban nature into every aspect of urban development. The European Commission "Green Capitals" were first awarded in 2010 and twelve cities have been awarded the title (European Commission, 2021a). The commission examines all countries submissions to determine which city has the best social, economic, and environmental sustainability practices and policies (European Commission, 2021a). Those who win each year are called 'Green Capitals' and their initiatives are looked to as 'best

practices' across Europe and Internationally. For inclusion in this study, all cities were all analyzed from the most recent to find a city that resembled both Vancouver, London, and Toronto in terms of population size or geography.

Copenhagen has a substantial city center populated by 632,340 people in 2020 with a population density of 7,190.4/sq.km just above Vancouver at 5,492.6/sq.km, and Toronto at 4,334.4/ sq.km, and London at 186/sq.km (Statistics Denmark, 2020; AdminStat, 2018; Statistics Canada, 2019a, Statistics Canada, 2019b, Statistics Canada, 2016a). The population resembled both Vancouver and London, while the location resembled both Vancouver and Toronto on a harbourfront. As of the application in 2014, Copenhagen had many goals and targets that are still in the works like 'Co-Create Copenhagen' that outlines target for the municipality and broader city area into 2025 (European Commission, 2012a).

Because some of the policy documents in Copenhagen were unavailable due to time, location, and language, which are all downfalls of this method, some commentary and media pieces were also analyzed to support the chapter (Creswell&Creswell, 2018). This phase will also satisfy research question two and support objective four by outlining best practices that can be applied to the urban development and green space planning systems that operate in Ontario. Phase three analyzed the following documents:

City of Vancouver City Documents	**City of Copenhagen City Documents**
Greenest City Action Plan	Co-Create Copenhagen 2015-2025
Community Amenity Contributions (CAC)	Eco-Metropolis (2015)
Development Cost Levies (DCL)	Urban Nature in Copenhagen (2017)

Density Bonusing	The Finger Plan (1940's-present)

Table 4: List of National and International Policy Documents

Comparison between Research Sites

The findings from Vancouver and Copenhagen included a combined assessment of all policy documents. Municipal and regional plans are examined to understand how public green space is prioritized differently in each city included in the study. A major part of this comparison work was to highlight how public green space is incorporated into urban development through development charges or community benefits. Utilizing the two 'best practice' examples, phase three analyzed which strategies or policy tools may be applied to the Ontario research sites based on the emerging themes from the first phase. The parallels between all four locations generated a set of recommendations for cities like Toronto and London in order to balance space and density for public health and community well-being. The research design and its desired outcome are shown in the illustration below.

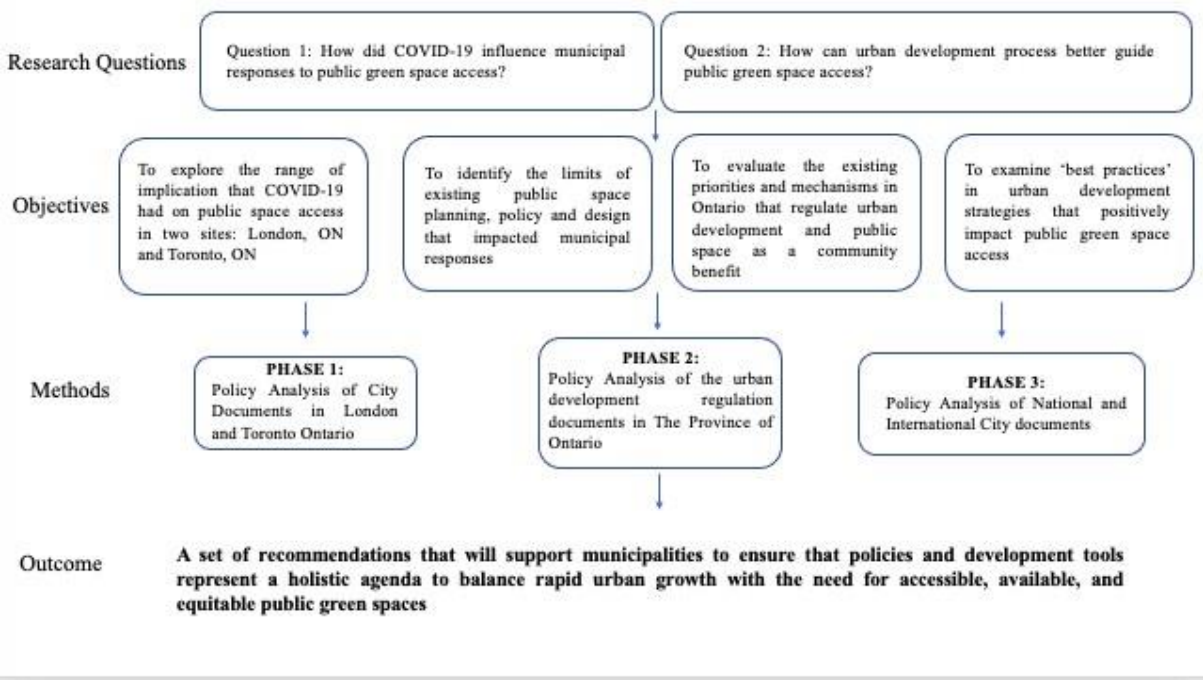

Figure 1: Overview of Research Design

3.3 Study Location

3.3.1 City of London

The City of London is identified as Southwestern Ontario's economic and entertainment center as the 6th largest city in Ontario behind Toronto, Ottawa, Mississauga, Brampton, and Hamilton (City Population, 2020). Full of heritage and diverse cultural characteristics, London has excelled in the health care sector as well as being home plentiful business and academic opportunities. There are several academic institutions and colleges within the city, two of biggest ones being the University of Western Ontario and Fanshawe College (The University of Western Ontario, n.d). Often referred to as "The Forest City", London is characterized as a mid-sized urban center with over 490 natural amenities and public green spaces (The University of Western Ontario, n.d).

In 2016, the population sat at 383,822 and since has had one of the fastest growing population rates in all of Canada in 2020 at 2.3% (Statistics Canada, 2016a; CBC, 2020). In 2017, the population was just over 400,000 and it is believed to be well over 435,000 by 2035 (The London Plan, 2019). London has a population density of 185.6 per square kilometer, and the largest portion of the population is aged 15-64 years which is almost 67% of the entire population (Statistics Canada, 2016a). 1 in 3 Londoners were born between 1980 and 2000 and the average aged person around 40 years old (Statistics Canada, 2020). According to the 2016 census, the average after tax income for individuals in the City of London is $36,680 and the prevalence for low income after tax throughout the entire city is 17%, which is higher than the provincial average at 14%. (Statistics Canada, 2016a). The participation rate is 63.8%, employment rate is 59.2%, and the unemployment rate is 7.3% (Statistics Canada, 2016a).

Statistics Canada (2016a) census also reported that 60% of Londoners living alone or with one other person, and just over 90,000 residents live in an apartment building or other attached dwelling which limits their access to private green space. The City of London has approximately 2650ha of parkland within city boundaries as of 2020, with a population of 404,699 in 2017, this results in 65.4 sq.m per capita (Statistics Canada 2016a).

The justification for the selection of The City of London is that the City has branded itself as the 'Forest City' based on its extensive network of green space that exists throughout the city. Additionally, having the second fastest growing population in Canada has prompted an urban development boom throughout much of the downtown core as evidenced by 38.2% of all building in London in 2020 as infill or intensification in the downtown core (De Bono, 2021). London is seeing an increase in development proposals that contain residential high-rise projects of 25 storeys or more which come with 150+ new units each (Read, 2021). As the downtown continues to grow, it has becoming increasingly protective of its agricultural borders prompting the Ontario Federation of Agriculture to call for an up not out approach to development (Read, 2021). Upon initial review of green spaces that exist throughout the city as noted below shows that some areas have more green space than others.

Figure 2: Green Spaces Across City Planning Districts (Neighbourhoods) (City of London, n.d)

Utilizing the NeighbourGOOD map showed a surface level depiction of how green some neighbourhoods were, as green space varied across the city. This variation had a lot to do with space,

the predominantly single residential neighbourhoods on the outskirts of the downtown were equipped with more amenities than the downtown core. Upon closer inspection of these neighbourhoods, several areas of the downtown had significantly more green space than others. In the Old South neighbourhood, Wortley Village, occupied by those with high socioeconomic status is positioned against the Thames and has several public green spaces fairly distributed throughout. This neighbourhood has made its rounds winning countless awards from the Canadian Institute of Planners being named as the nation's best neighbourhood in 2013 (Carruthers, 2013). Carling Heights however, just north of the Old South neighbourhood, has one of the lowest incomes in the city with a large proportion of renters (City of London, 2016).

This initial analysis shows that although London categorizes itself as a Forest City, there are discrepancies in equitable dispersion and access of green spaces in the downtown core, especially when neighbourhoods are occupied by those of lower socio-economic status and higher disposition to multi-unit dwellings. Worth noting is the lack of information regarding neighbourhood profiling in relation to green space that exists in the City of London.

3.3.2 City of Toronto

The City of Toronto is the largest city in Canada with a population of 2,731571 in 2016 growing by over 45,000 in 2019 which has more than doubled in the past 50 years (City of Toronto, 2019). As the fourth largest city in North America, Toronto is Canadas's hub for finance, business, and innovation and comes in third for largest tech sector in North America (City of Toronto, 2020b). The Population of Toronto is expected to continue growing, hitting 3.5 million by 2030 (City of Toronto, 2019). Situated on the northwest shore of Lake Huron, The City of Toronto covers 641sq.km (City of Toronto, 2020a). With over half of the population identifying as a visible minority, Toronto has one of the most diverse populations in all of Canada (City of Toronto, 2019). Individuals aged 25-29 make up the largest

portion of the population and the average age of the population is 40 years old, and the average after tax income in 2015 was 41,462 (Statistics Canada, 2016b). From 2009 – 2019, the growth rate across all employment industries in the city was nearly 22% (City of Toronto, 2020b). However, a survey conducted in 2020 showed that the city has one of the highest unemployment rates in the country at 11.5% above the provincial average of 9.1% (Statistics Canada, 2020; Robertson, 2020).

As a large urban center, the City is home to four major universities York, Ryerson, UofT, and OCAD University, as well as Northeastern Private School and four colleges, Centennial, George Brown, Humber, and Seneca (City of Toronto, 2018). The City welcomes over 27 million visitors a year, leading tourism in the country (City of Toronto, 2021). Currently, Toronto consists of over 1,600 parks, over 8,000 ha of land, and 200km of trails with a population density per square kilometer that sits at 4334.4 (City of Toronto, 2020a; Statistics Canada, 2016b). Although, as of 2020 40 of Toronto's 140 neighbourhoods suffer from a lack of accessible green space with an average of less than 12sq.m/per person compared to the City average which is 28sq.m/person (Brockbank, 2020; City of Toronto, 2018b). Open green space covers nearly 13% of all land area in the city and over the next 15 years is expected to decrease from an average of 28sq.m/person to 21sq.m/ on average per person as a result of a growing population. (City of Toronto, 2018b). One could argue that additional measures exist particularly in Toronto's official plan like POP's; however, findings suggest these spaces are hardly able to accommodate even a small amount of growth as they are usually manifested as improved walkways or pedestrian connections and streetscape improvements.

Similarly, some residents also suffer from a lack of green space availability as many areas see less than 4m of green space per person specifically around the core of the city (Parkland Strategy, 2019). This is problematic as COVID-19 protocols require a 6m distance between residents to "slow the spread". In this figure, it's obvious that higher density locations lack public green space. In figure 3, there are less parks in these areas, and communities like Rosedale-Moore Park and Bridle Path neighbourhoods are seen to be well equipped with private green space. Neighbourhoods like Kensington-Chinatown occupied by those of lower socioeconomic status are in an area that does not have enough space per person (TO Core, 2016). This is like denser communities like neighbourhoods like King-Spadina located in the core where 82% of residents live-in high-rise dwelling units (TO Core, 2016). Choosing cities that are heavily dense or going to be in the coming years was critical to this study.

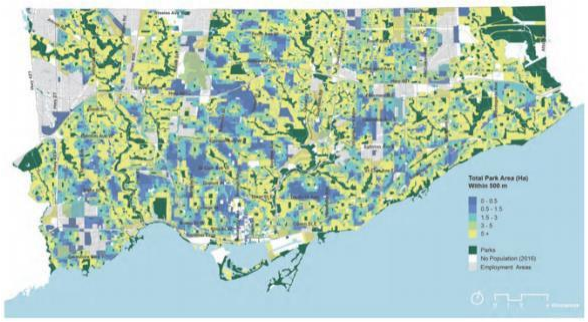

Figure 3: Total Park Area within 500m (Toronto) (Parkland Strategy, 2019)

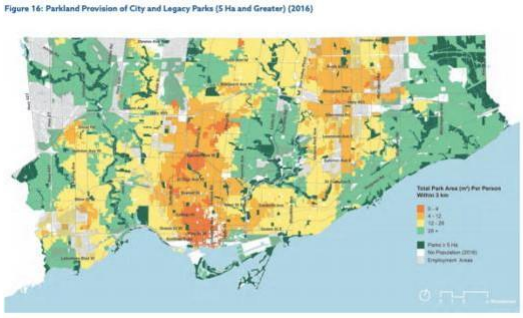

Figure 4: Parkland Provision (Toronto) (Parkland Strategy, 2019)

	City of London	City of Toronto
Population (2016)	383,822	2.93 million
Population Change 2011-2016	4.8%	4.5%
Public Green Space/ person	28sq.m	65.4 sq.m
Average Age	40 years old	40 years old

Table 5: Site Specifics (Statistics Canada, 2016a; Statistics Canada, 2016b)

Figure 5: Study Locations (Google Maps, 2021)

3.4 Comparative Content Analysis

In comparative content analysis, different texts may be viewed to determine a level of similarity or dissimilarity across research sites and how the specific context of these locations influence policy (Goodrick, 2014). In general, there are several stages involved with content analysis, decontextualization (identifying meaning units), recontextualization (including + excluding), categorization (identifying groups), and compilation (drawing realistic conclusions) are all steps in the process (Bengtsson, 2016). This comparative analysis utilized manifest content analysis is used within this research by identifying how many times a term is used in an official plan (Bengtsson, 2016).

This method is simply used to understand surface level details about a phenomenon, and in the way it was used in this research, makes it easier to determine the prevalence (Kleinheksel. Rockick-Winston, Tawfik, Wyatt, 2020). The rationale for the selection of this method lies within the research questions and objectives. As both questions and their subsequent objectives demand the synthesis of city documents to understand the effectiveness of policy, comparative content analysis was appropriate

as this is the core directive of this level of analysis (Goodrick, 2014). Comparative content analysis typically looks to answer how and why questions in research to determine why certain outcomes exist or happen (Goodrick, 2014). This type of analysis is beneficial because it can illustrate policy from a level of retrospect and inform subsequent phases of research (Goodrick, 2014). Specifically for planning scholarship, comparative content analysis can help readers better understand the influence of different policies in a development context across spatial scales which is useful in determining recommendations for the main study locations, London, and Toronto Ontario.

3.4.1 Manifest and Latent Content Analysis

Latent and manifest content analyses are methodological approaches within the field of content analysis. Manifest is primarily used with research that is easily observable without the need to identify a hidden meaning (Kleinheksel. Rockick-Winston, Tawfik, Wyatt, 2020). There are several stages involved with content analysis, decontextualization (identifying meaning units), recontextualization (including + excluding), categorization (identifying groups), and compilation (drawing realistic conclusions) are all steps in the process (Bengtsson, 2016). For this research, policies were reviewed using manifest content analysis, which was able to identify how many times a term is used to make a generalization of how it is prioritized within respective policies. This is illustrated in the matrix located in the results chapter, which indicated how often each term was cited throughout each document analyzed.

This method is simply used to understand surface level details about a phenomenon, and in the way it was used in this research, makes it easier to determine the prevalence (Kleinheksel. Rockick-Winston, Tawfik, Wyatt, 2020). Latent content analysis on the other hand searches for a deeper meaning within the text being studied based (Kleinheksel. Rockick-Winston, Tawfik, Wyatt, 2020). This was a significant tool in this study because it helped to better understand why the prevalence of

certain terms did not indicate their importance or connection to a certain rationale like public health. Latent content analysis was utilized after the initial manifest analysis was conducted. Once the number of times a term was used was recorded, a latent analysis studied each citation to determine the underlying meaning and the overall priority each term took in policy (Kleinheksel. Rockick-Winston, Tawfik, Wyatt, 2020).

3.5 Benefits and Limitations

This research will demonstrate how available public green spaces are conducive to community well-being and will provide recommendations for municipalities to use in future public health crises. Academically, this study may also inform future research on the design and functionality of public green spaces to ensure equilibrium. Researchers can take the findings from this study and apply the methods and concepts it to other municipalities for other community benefits like affordable housing and heritage conservation. Additionally, one benefit from a comparative study analysis is to identify areas of concern within the planning framework that are consistent across spaces in the province. Another benefit of the study is the ability to see how similar jurisdictions govern urban development in a way that supports PGS so that both cities in question may be able to adopt certain strategies.

Although there are many positives to employing a qualitative comparative study, there are several drawbacks with this course of research. Many qualitative study designs including policy research are specific to the locations in questions so findings may not be generalizable, and data collection is time consuming and often limited (Sadovnik, 2007). Comparative study designs require a variety of data to be retained over a long period of time in multiple places which can make research lengthy and difficult. In the case of plan and policy analysis, some sources may be protected and unattainable or difficult to understand without an interpreter leaving gaps in knowledge for the

researcher (Creswell &Creswell, 2018). Plan and policy analysis prove to be difficult as some information may be missing, inaccurate, or incomplete (Creswell &Creswell, 2018).

Chapter 4
Results

London Ontario was selected to understand how public green spaces are valued in a city that has more low-mid-rise residential development but growth that will demand higher density in the coming years to deal with demand. Additionally, Toronto was chosen as a higher density and larger context to draw on how it handles a balance between space and place for more individuals who lack private yard space, which resulted in the overcrowding of public green spaces. Results will be addressed thematically, first the definitions attributed to public green spaces and their level of prevalence in ruling documents followed by the justification for their prevalence. This will be preceded by an overview of how COVID-19 unfolded in either location or the influence it had on these documents. This is chapter will continue with an additional policy analysis of the documents that govern urban development in both locations as well as the province of Ontario and end with two best practice examples the research locations can draw from.

4.1 Phase 1: Policy Analysis of City Documents in London and Toronto Ontario

4.1.1 Defining Public Green Spaces, the Level of Prevalence, and Justification

To determine the level of prevalence that outlined the priority for public green spaces throughout these plans in The City of London and the City of Toronto, and the search terms ‘green space’ ‘park’ ‘parks and ‘health’, ‘well-being’ ‘public green space’ were utilized.

The following documents were analyzed in their entirety:

	Documents Analyzed	Year of Publication	Intent of Document	Prevalence of Key Search Terms	Justification for the Inclusion of Public Green Spaces
London	The 1989 Official Plan (By-law 1284-227)	1989	"Objectives and policies to guide the short-term and long-term physical development of all lands within the boundary of the municipality. It provides direction for the allocation of land use, provision of municipal services and facilities, and preparation of regulatory by-laws to control the development and use of land" (City of London, 1989)	Park/Parks – 376 Public Green Space/Green Space – 0 Health/ Well-being - 14	-Importance of Natural heritage for conservation -Linkages between spaces
	The London Plan (2016)	2016	"A guide city-building over the next twenty years." (City of London, 2016)	Park/Parks – 377 Public Green Space/Green Space – 127 Health/ Well-being - 117	-Importance of Natural heritage for conservation -Environmental Sustainability
	The London Strategic Plan (2019)	2019	"Sets our direction for the future. It identifies City Council's vision, mission, values, and strategic areas of focus. It also identifies the specific outcomes, expected results, and strategies that Council and Civic Administration will deliver on together over the next four years." (City of London, 2019)	Park/Parks – 2 Public Green Space/Green Space – 0 Health/ Well-being - 15	-Climate Change -Natural Heritage -Recreation
	Laying the Foundation: Ideas for Action to Power London's Community Recovery from COVID-19'	2020	Directing recovery strategies for a post pandemic London (City of London, 2020b)	Park/Parks – 20 Public Green Space/Green Space – 2 Health/ Well-being - 44	-Aesthetics -Economic Recovery
Toronto	Toronto Official Plan	2019	"Intended to ensure that the City of Toronto evolves, improves and realises its full potential in areas such as transit, land use development, and the environment." (City of Toronto, 2019)b.	Park/Parks – 2 Public Green Space/Green Space – 38 Health/ Well-being - 15	-Recreation -Importance of Natural Heritage for conservation -Climate Resilience -Economic Growth
	Growing Up Urban Design Guidelines	2020	"Speak to the collective responsibility to address quality of life for children and youth in vertical communities. This includes ensuring the provision of safe streets to support children's independent mobility, parks, schools, community facilities, retail and amenities in addition to a diversity of housing sizes to accommodate larger households, including multi-generational households with seniors." (City of Toronto, 2020e)	Park/Parks – 41 Public Green Space/Green Space – 2 Health/ Well-being - 24	-Accessibility -Aesthetics/ Marketability - Vertical Growth
	Pet Friendly Design Guidelines for High Density Communities	2019	"To guide development in a direction that is more supportive of a growing pet population, considering opportunities to reduce the current burden on the public realm, and provide needed pet amenities for high density residential communities." (City of Toronto, 2019c)	Park/Parks – 49 Public Green Space/Green Space – 4 Health/ Well-being - 16	-Accessibility -Aesthetics/ Marketability - Vertical Growth
	Parks and Recreation Facilities Master Plan 2018-2038	2018	"20-year plan that will guide long-term planning for new parks and expansion and improved access to existing parks. It will aid in the decision-making and prioritization of investment in parkland across the city." (City of Toronto, 2019d)	Park/Parks – 636 Public Green Space/Green Space – 4 Health/ Well-being - 16	-Natural Heritage and conservation -Climate Resilience -Recreation -Vertical Growth
	Parkland Strategy (2019)	2019	"Looking at the next 20 years to support city parkland and to guide the long-term planning goals for the city" (City of Toronto, 2019e)	Park/Parks – 936~ Public Green Space/Green Space – 0 Health/ Well-being -14	-Aesthetics -Accessibility -Vertical Growth
	Privately-Owned Publicly Accessible Spaces (POPS): Final Report and Urban Design Guidelines	2014	"Need to increase public realm simultaneously to ensure a balance of density and place" (City of Toronto, 2014)	Park/Parks – 76 Public Green Space/Green Space – 4 Health/ Well-being -2	-Climate Resilience -Aesthetics -Pedestrian Connectivity
	Mayor's Economic and Social Recovery Task force' final summary of recommendations	2020	"This group will connect with social agencies to ensure that they are being included in the city's emergency management operations and advocate for the resources they need to help seniors and vulnerable people through an extended COVID crisis" (Mowat, Rafi 2020b)	Park/Parks – 2 Public Green Space/Green Space – 2 Health/ Well-being -74	-Availability -Climate Resilience -Aesthetics -Pedestrian Connectivity -Public Health

Table 6: Policy Document Matrix

City of London

As the matrix illustrated, the number of times Park/Parks was cited throughout the analysis in the City of London was notable as it accounted for over 75% of all citations gathered. However, upon further inspection, the 1989 Plan focused a lot on the natural heritage features that existed in the city at the time and spoke more to the linkages between them to ensure a smooth and connected system that would be a staple for their city in the later years. The justification was supported with policies to ensure the health of these ecological systems that would in turn support human health by ensuring that spaces provided would be of a certain size. Green space was not cited once throughout the entire document and health and well-being were cited a collective 14 times speaking to the health of ecosystems and biodiversity, ensuring that human made hazards and activities would not disturb or endanger these spaces.

Similar to the London Plan approved in 1989, The London Plan in 2016, as amended, also focused heavily on the importance of natural heritage systems but did not discuss the concept of human health as much as its predecessor. Park/parks was still the most commonly cited term at 64% of all citations. Green space was cited a total of 127 times defining these spaces as the 'spine of the city' as catalysts to healthier lifestyles.

The Strategic Plan (2019) focuses more on what these spaces can do for Londoners, citing the importance of recreation, however it is unclear if these spaces include different types of public green spaces explicitly. The concept of natural heritage and climate change work together throughout this document to promote opportunities for recreation to improve overall health through community centers

and places for people to gather. The general intent of these policies is to bring people closer, and health was cited the most at 88%.

City of Toronto

In order to capture how the city addresses public greenspace on a city-wide level, the first 5 chapters of the Toronto Official Plan were examined which were adopted by City Council in February of 2019. The Plan defines green space as being "made up of parks and open spaces, the natural heritage system and a variety of privately managed but publicly accessible spaces" and cites that these spaces are "an integral part of our quality of life and social well-being. It provides opportunities for recreation, relaxation and experiencing nature in peace and quiet and contributes to Toronto's competitive advantage as a place to invest." (City of Toronto, 2019b). Green Space was cited at a rate of 69% throughout these chapters, speaking to landscaped streets, healthy natural environment features, infrastructure supporting climate change resilience, and "green spaces of all sizes and public squares that bring people together and a wealth of recreational opportunities that promote health and wellness" as important aspects of a city like this (City of Toronto, 2019b). Notable themes included economic growth, climate resilience, the conservation and health of natural heritage features as well as neighbourhood aesthetics and cohesion.

In the Growing Up Urban Design Guidelines, accessibility was a more prominent theme. This spoke mostly to the issue of these spaces not being centrally located to serve as an anchor and organize the neighbourhood (City of Toronto, 2020e). At 61%, park/parks were cited the most speaking to the need for close walking distances to amenity spaces as more people decide to live in higher density environments (City of Toronto, 2020e). However, the inclusion of these spaces in neighbourhoods ensured a better looking landscape and attractive communities for those who seek high rise dwellings

which could result in the gentrification of green spaces for the purpose of marketability as witnessed throughout literature.

The Parks and Recreation Facilities Master Plan focused more on the hard landscapes that make up community spaces throughout the city. The Plan itself builds on several others that predated it and cites how Toronto's population will see growth by almost half a million (over 40% in the downtown core) over the period of the plan's implementation, citing that this will be primarily coming from infill and intensification (City of Toronto, 2019d). Parks is once again cited the most at over 95% focusing mostly on the need for spaces to be accessible for those of all abilities and ages, to compliment neighbourhoods and increase economic prosperity in the downtown through urban development (City of Toronto, 2019d).

The Pet Friendly Design Guidelines for High Density also has park/parks as the most popularly cited search term at 71% of the total in the document. Alongside the Growing Up Guidelines, the city also has the 'Pet Friendly Design Guidelines for High Density Communities' which employs "Pet Friendly Design Guidelines and Best Practices for New Multi-Unit Buildings". The Plan indicates that in high density communities, parks are heavily used and relied on (City of Toronto, 2019c). Guidelines and suggestions relating to parkettes, and proximity measures of 5-10 minute walking distances were also specified but because of pet ownership and community health was not explicitly stated (City of Toronto, 2019c).

The Parkland Strategy also saw park/parks as the highest cited search term at over 98% of the total results. The Plan emphasizes the need for the network of parks to grow as the city does and mentions that the way the City will do this is through development charges, subdivision, and consent under The

Planning Act (City of Toronto, 2019e). Within the Strategy itself, it speaks largely to the inclusion of public green space throughout communities stating that "They contribute to a livable and vibrant city with inclusive, attractive, resilient, and welcoming places for people of all ages and abilities" (City of Toronto, 2019e). Important to note is that the Strategy explicitly identifies "parkland provision, the impact of growth, park range and distribution, equity, access and connection, and climate change" as key drivers for the success of communities (City of Toronto, 2019e). The Plan cites vertical growth as a strong component to the need for more public green spaces and the provision of existing park spaces in the city as more people will over run existing spaces (City of Toronto, 2019e).

A key component of urban development in Toronto is Privately-Owned Publicly Accessible Spaces (POPS). POPs are negotiated between a private developer and the city as part of the application process and characterized as 'community benefits' under 'Section 37' requirements as stated in the Planning Act (City of Toronto, 2014). These spaces are privately owned but accessible to all the public and are meant to enrich the dense urban environments that accompany high rise developments (City of Toronto, 2014).Within this document, Parks is once again cited the most at 92% speaking mostly to the need to design attractive pedestrian spaces that complement the urban design elements of the development. Density and balance are not discussed as rationale consists mostly discussed in relation to weather protection, aesthetic appeal, and as an amenity service for residents and pedestrians.

Overall, it was apparent that the City of Toronto actively acknowledged that the city is growing up at a pace that is unprecedented against existing public spaces. Within the documents analyzed for both locations, 3,002 search terms were identified. Park/parks was cited 83%, Public Green spaces was cited the least at 0.6% with health/well-being coming in second at 11%. Across both sites, Green space was largely undefined in most plans. The majority of policies in the City of London specified green spaces

as largely open, free spaces and trail systems without identifying the nuances that exist and the different variations of green space that can be implemented into a city. Toronto identified green space with more detail, citing their abilities to liven a neighbourhood aesthetically, socially, and a community on a broader scale financially and environmentally. This included parkettes and other biophilic interventions that are unique to dense urban cores. London mentioned these things to a minimal degree citing the importance of natural heritage, environmental conservation, and the protection of these areas more often than the social and neighbourhood aspects of these spaces at a higher level of priority.

Although both locations had similar levels of prevalence to how often terms were cited, the definitions of what constituted public green spaces was very different. In the City of London, the acting Official Plan, The London Plan 1989 identifies a healthy city as

"one that supports the health of those that live in it. It can do so because of how it is planned and developed – offering such things as active mobility options, quality parks and recreational facilities for active and passive recreation, a clean and healthy environment, accessible health care facilities and services, protection from natural hazards, and safe and secure places. It can also do so through the culture of a city, whereby the community is conscious of health and always striving to improve it" (City of London, 1989).

Moving forward to 2016 and the new Official Plan identifies green space on a level that focused more on natural heritage than its 1989 counterpart.

"a system of public parks and recreational areas, private open spaces, and our most cherished natural areas", "natural heritage and recreational spine of our city", "public and private lands; flood plain lands; lands susceptible to erosion and unstable slopes; natural heritage features and areas recognized by City Council as having city-wide, regional, or provincial significance; lands that contribute to important

ecological functions; and lands containing other natural physical features which are desirable for green space use or preservation in a natural state" (City of London, 2016).

The Toronto Official Plan defines green space as being "made up of parks and open spaces, the natural heritage system and a variety of privately managed but publicly accessible spaces" and cites that these spaces are "an integral part of our quality of life and social well-being. It provides opportunities for recreation, relaxation and experiencing nature in peace and quiet and contributes to Toronto's competitive advantage as a place to invest." (City of Toronto, 2019b). This relates more to the past London Official Plan, reinforcing the themes that were apparent throughout Toronto's ruling documents.

Out of all documents analyzed both locations lacked considerations for how to balance growing populations and the need for space other than citing that it was necessary considering the societal shift to higher density living. Additionally, both cities cited the need for centrally located parks, however only Toronto made several points regarding proximity and catchment tools. Additionally, singular justifications were consistent across both locations rather than complex and multi-dimensional approaches to the provision, design, and implementation of green spaces in dense communities. Overall, both cities did not include direction and policy tools to support balanced communities moving forward for the purpose of population health which was a rationale left out of policy documents or combined under umbrella concerns like climate resilience, natural heritage, aesthetics, recreation, and economic prosperity and considered a result rather than a concern. As research has indicated however, there is merit in including public health in its own right in conjunction with other city priorities as mentioned. As the pandemic has indicated, our health is a central pillar to the success of our communities'. The social aspect of these spaces including health and well-being was not a priority in any policy documents reviewed.

4.1.1 The Impact of Covid-19 and Municipal Approaches

All ruling policy documents analyzed were not able to anticipate the impacts of the COVID-19 pandemic in 2020. To determine how these documents may have been adjusted or updated to respond to the public health crises, an analysis of the events and major policy decisions that occurred over the course of the pandemic during the timeline of this study beginning in January 2020 to February 2021.

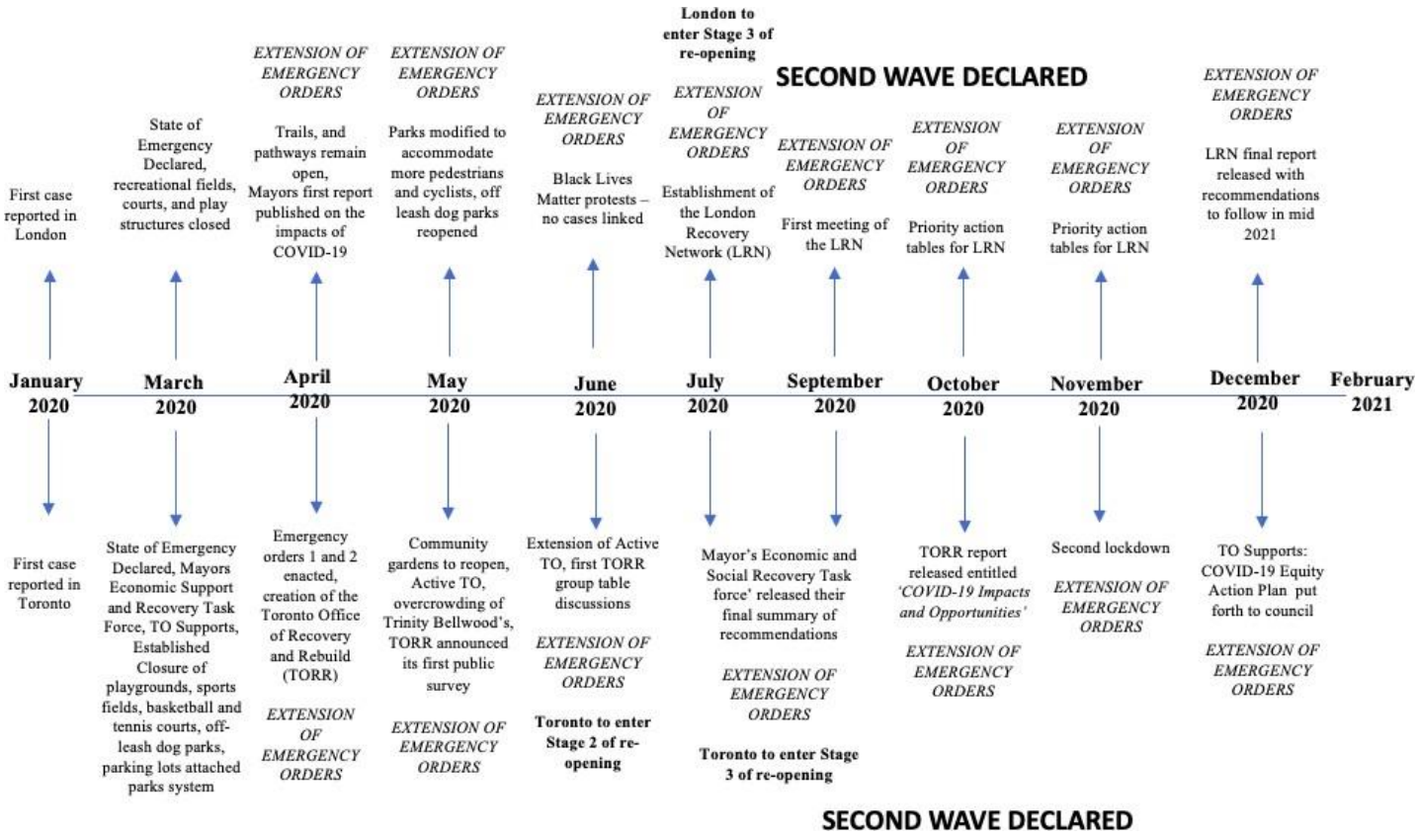

Figure 6: Timeline of the COVID-19 Pandemic

City of London

In City of London, the first case of COVID-19 reported was on the 31st of January 2020 (Wang, 2021).Since the first reported case in the city, London has had over 6,000 cases and over 180 deaths (Middlesex-London Health Unit, 2021). Most cases have been between 20-29 years of age and the over 5,600 of those cases were never hospitalized (Middlesex-London Health Unit, 2021). The number of cases past 2,000 just this past December during the second wave (Middlesex-London Health Unit, 2021). The city is now seeing the impacts of six different long term care facilities experiencing outbreaks with three other facilities outbreaks declared "over" (Middlesex-London Health Unit, 2021).

This policy analysis was conducted to understand the municipal approaches taken by the City of London during the COVID-19 pandemic with respect to public green spaces, however, its noted that the city faced a myriad of other issues varying in severity. In the City of London, over 30,000 jobs have been lost, tourism dropped by over 50%, and transit ridership dropped by 60% (City of London 2020b). COVID-19 also impacted marginal populations disproportionality with 32.4% of cases visible minorities who represent just over 17% of the overall population of the city (City of London 2020b). Additionally, housing affordability and availability became a large concern. One-bedroom rentals was under 1% across the city, every other dwelling type sat just around the 1.8% availability rate (City of London 2020b). Poverty and homelessness which has always been a massive challenge for the city, was only exacerbated.

To understand the municipal approaches taken by the City of London during the COVID-19 pandemic, the initial search utilized the city council meeting database on the cities website. At first look, the database showed that there were 1,878 meetings publicly available. The meetings were limited to the years 2020-2021 to align with the timeline of the COVID-19 pandemic. This resulted in 179

meetings at the time of this report. The search was then limited to meetings that included the word "COVID-19" which resulted in 112 meetings. Each meeting's set of minutes was examined from the earliest to the most recent. Each one was examined first with an initial skim of the document and then again using the 'search' feature to search for the terms of interest 'green space', 'parks', 'closure', 'recovery', 'public green space', and "COVID-19".

Any meeting that mentioned the provision, alteration, closure, reopening, or future of public green spaces or the impact of COVID-19 on existing plans or policies regarding public green space was documented. Throughout this research it was found that COVID-19 influenced several policies across disciplines in both official and strategic plans. This analysis revealed that over the course of the pandemic, the city responded to the coronavirus crisis by creating a phased approach. The first phase focused on relief and response efforts to mitigate the immediate negative consequences of the virus. This included creating an 'Economic and Social Impact and Recovery' task force. This task force initiated many objectives and incentives that looked to the assistance of many levels of government to relieve the pressures felt by the community and businesses. The second phase, which focused on the 'restart and reopening' of the City, influenced The London Community Recovery Network which responded to impacts from the virus by initiating short term and long-term actionable items.

On March 20, 2020, London officially declared a state of emergency following the province who declared it (Jeffrey, 2020). In the days following this declaration, public green spaces remained opened in the city, but the province warned that precautions should be taken to reduce the spread throughout the community. It only took three days for the city to close playgrounds, skate parks and multi-use courts on the 24th of March, this also included off leash dog parks (London City Council, 2020a). The influence of the coronavirus did not reflect in City Council meetings as extensively until

March onwards. March 24th was when the state of emergency had been declared and London took initiative to close all recreational fields, courts, and play structures (London City Council, 2020a). City council began meeting virtually to abide by public health regulations and initial concerns over the coronavirus surrounded an overview of predetermined budget considerations and the potential loss of revenues (London City Council, 2020a).

In April, parks, green space, trails, and pathways remained open for walk-through only whereas sports fields, golf courses, off-leash dog parks and community gardens stayed closed (City of London, 2020f). On April 9th, 2020, the first report was produced from the Mayors Economic and Social Impact and Recovery Task Forces (London City Council, 2020c). The meetings between businesses, organizations, and the city were conducted via zoom and involved over 200 people producing 37 short term action items that encompassed both phases of during the lockdown, and during the recovery (London City Council, 2020c). These items focused on supporting employment, housing, technology, homelessness and providing economic incentives and relief programs (London City Council, 2020c). The second report was May 8th, 2020 and included similar action items with more specific tasks and delivery methods but nothing about public green space was mentioned in either report. Later in the month however, Council prepared for community gardens to open with strict guidelines around physical distancing (City of London 2020d).

In early May, the city modified parks throughout the community to support an increase in pedestrians and cyclists by closing entrances to cars to give additional space to physical distance (City of London, 2020e). Shortly after this, community gardens finally opened. Mid-May, off leash dog parks were given the green light to open however recreational courts remained closed until May 21st along with benches, shelters, and tables (City of London 2020d). In the 10th meeting of City Council on May

19th, 2020, there was a query from a Councilman regarding the impending nice weather, but discussion focused solely on active transit and bike lane implementation and improvements (London City Council, 2020c). Much discussion surrounding public spaces spoke to the fear of transmission in indoor and enclosed public spaces (London City Council, 2020c). Anything regarding public green spaces was oriented to the delay of capital projects.

There were no incidents of overcrowding in public green spaces in the City of London. However, on June 6th, thousands filled Victoria Park to protest for Black Lives Matter although concerns over community transmission were not as prominent as they were in Toronto (Read, 2020). No spike in cases was reported because of this march (Trevithick, 2020).

On June 9th, 2020, London was officially in their "*Reopen and Restart Phase*" and the city launched the '*Back to Business'* action team to help business respond to the reopening in a safe way that supports public health measures (City of London, 2020c). The 12th *Special Meeting of the Strategic Priorities* on June 29, 2020, a meeting with City Council noted that action was needed to devise a model to open London back up with a focus on recovery citing that.

"The Civic Administration BE DIRECTED to develop and report back as soon as possible with a proposed model to bring together community partners in the development of a community recovery plan in response to the COVID-19 crisis, included therein the ability for such a model to capture short term community needs as well as a longer-term strategy for London's economic and social recovery." (London City Council, 2020d).

This motion was followed by the introduction of the *'London Community Recovery Network'*. On July 21, 2020, London City council officially endorsed the '*London Community Recovery Network'* as a framework to address the many issues COVID-19 has produced, influenced, and exacerbated (City of London, 2020a). The initiative was given the green light to proceed as soon as possible as the city

moved into the recovery and rejuvenation stage attempting to adjust to a new normal (City of London, 2020a). Chaired by the Mayor and comprised of membership from both council members, community leaders, and assistance from over 30 organizations, the cross-sectional leadership forum was made up of 45 individuals representing the cities industries from business, academia, marginalized communities and non for profits (City of London, 2020a).

The first meeting commenced on the 9th of September focusing on the pressing and most immediate concerns surrounding the community to develop a strong set of priorities to guide city recovery efforts (City of London, 2020a). The first phase, which encompassed September – December 2020 focused on establishing a clear set of short-term actionable goals to set the foundation for more specific idea generation in the future (London City Council, 2020g). These ideas prompted the network to draw expertise from over 150 community members from various organizations and various diverse backgrounds (London City Council, 2020g). This involvement, coined as "*Priority Action Tables*", was meant to refine these ideas, five areas were identified:

"A Destination Community
• Focus: Initiatives to support arts, culture, hospitability, tourism sectors Employment and Talent
• Focus: Initiatives to bolster recruitment, training, employer/employee supports
Supporting London's Most Vulnerable Communities
• Focus: Initiatives to address homelessness, addiction services, health care services and other needs of London's most vulnerable populations
Community Readiness and Resilience
• Focus: Initiatives to develop greater community resiliency, including considerations of the environment, education, and childcare
Strengthening London's Downtown and Core Areas
• Focus: Ideas to act in support of a strong, vibrant, and inclusive downtown and core area
Streamlining Collaborative Efforts among Businesses, Organizations and Governments

• Focus: Ideas to simplify, standardize, or revise public and private sector regulations and services and identify shared community advocacy needs" (London City Council, 2020g).

The idea refinement process was conducted through various outreach initiatives and feedback was evaluated and included on the bases that they addressed the immediacy of the situation, responded in a way that was feasible for the community, and understood the impact the pandemic had on all residents within the city (London City Council, 2020g). After this, the priority action table meetings were to happen between October 21st and October 23rd to set objectives and future directions (City of London, 2020a). Following these meetings, the network would extend outreach to identify more areas of concern to include in the recovery report.

On November 17, 2020, the Civic Works Committee meeting passed a motion to include active transportation projects within the city that are eligible to be included in the '*COVID-19 Resilience Infrastructure Stream*' through the province be received to the '*Strategic Priorities and Policy Committee*' for review (London City Council, 2020e). The COVID-19 Resilience stream was developed to help cities cope with the pressures and recover in the aftermath, and on October 29, 2020, it was determined by the province that London's total funding allocated under this stream of assistance was $5,520,798 (London City Council, 2020e). The only project that influenced public green spaces within the city was the 10th project bundle out of 11 which proposed which is to improve Existing Pedestrian Boardwalks/Trail Systems. This project would require 1 million dollars which would go towards:

"Replacing and upgrading existing walking trails with wooden boardwalks and stairs that have reached the end of their life span. Several projects include Highland Woods, Cavendish Parks, and others that will be investigated. The identified projects would create and improve approximately 8 km of sidewalk, 39 km of road cycling facilities, and 4 km of parks parkways" (London City Council, 2020e).

Although transportation focused, the possibility of improved pedestrian and cyclist pathways in parks influences the overall appeal and accessibility of these spaces. These projects were recommended by the City's environmental and engineering services department as well as the parks and recreation department (London City Council, 2020e). The second round of priority action tables began the week of November 18th until the 19th. After this, the network team would reconvene to discuss the outcomes of these meetings and begin drafting ideas for the city (City of London, 2020a).

The 19th Meeting of the '*Planning and Environment Committee'* which took place on November 30, 2020, the set of goals and objectives were listed to demonstrate movement towards priorities listed in the previous London Plan. One of these priorities was to "enhance and maintain our parkland and natural areas" by "increasing the number of hectares of maintained parks and natural areas in the municipality per 100,000 Londoners" (London City Council, 2020f). There was no indication of COVID-19 and a connection of green space and community wellbeing.

At the end of November 2020, The London Recovery Network reviewed any feedback from the priority action tables. Many of the responses included widely applicable insights to the equity, accessibility, inclusion, and sustainability impacts of COVID-19 (London City Council, 2020g). These responses were submitted electronically by community members, community leaders, and city staff and administration to ensure that the effects of COVID-19 and possible future directions represented many perspectives (London City Council, 2020g).

The results of this first phase were a success with over 70 ideas generated and were included in the first report '*Laying the Foundation: Ideas for Action to Power London's Community Recovery from COVID-19*', 'green space' was cited twice, 'park' 18 times, 'parks' twice, and 'health' 44 times. Out of these 70 ideas, one included the provision of 'curb appeal' and beautification efforts for public

spaces in the longer term, and another included addressing food insecurity through urban farming strategies virus (City of London 2020b). As this was only the first phase of the road to recovery in London, the second phase will determine the priority of the strategies put foreword to establish a long-term timeline for the City to address the impacts of the virus (City of London 2020b).

On December 16th, 2020, the final report of the *London Recovery Network* was submitted at City Council. A unanimous motion called for "Civic Administration BE DIRECTED to determine implementation plans for ideas" and return in early 2021 with ideas (London City Council, 2020g). Additionally, the report cited that "Council authorized $5 million to be contributed to the Economic Development Reserve Fund to support social and economic recovery measures" which was also passed with a unanimous motion (London City Council, 2020g).

4.1.2 City of Toronto: The Impact of Covid-19 and Municipal Approaches

To understand how the City of Toronto responded and adapted to the impacts of the coronavirus pandemic, an initial search was conducted on the Toronto Meeting Management Information System (TMMIS). The search was first limited to meetings that took place between Jan 1, 2020, and Feb 22, 2020, which produced 4336 meeting minutes. From here, the search was refined to meetings that had the term "COVID-19" anywhere in the corresponding staff reports. This resulted in a remaining 502 meetings. Beginning at the earliest report in January 2020, each of the 502 meetings were analyzed by conducting an initial skim over the titles of the staff reports and then analyzing the reports and outcomes associated with those meetings. Those that discussed impacts on parks or the provision of public green

spaces in the city because of the pandemic were included for further analysis. When investigating reports of interest, search terms like green space", "parks", "closure", "recovery", "public green space", and "COVID-19" were employed. Sections of meetings that spoke to any of these were included in this report. Despite a variety of plans, policies, and strategic objectives for public green spaces pre-pandemic, the City unfortunately ran into issues of overcrowding in these existing spaces during the pandemic.

On January 25, 2020, the first case of COVID-19 was confirmed in Toronto (City of Toronto, 2021e). Since that first confirmed case, the city has had over 93,000 confirmed cases and 1,400 outbreaks (City of Toronto, 2021a). Like the city of London, Toronto's majority of cases lie between the ages of 20-29 which comes in at 21.2% of all cases, almost 5,000 cases were hospitalized, and 2,620 confirmed cases resulted in death (City of Toronto, 2021a).

The City of Toronto had a stark racial disproportion in cases with more than 82% of people with a positive result, and 71% of those who were hospitalized, identifying with a racialized group (Wilson, 2021). After the first wave, there has been a 58% decrease in retail and recreation visits, a 56% decrease in workplace visits, and a 69% decrease in trips to transit stations (Brail, 2020). Overall, trips taken by transit has been reduced by over 70%, walking has decreased by 50%, and driving has decreased by 36% (Brail, 2020). In a year since the first case, Toronto has introduced '*TO Supports: Covid-19 Equity Action Plan'*, the '*Toronto Office of Recovery and Rebuild'* which has been possible from the help of the '*Mayors Economic and Social Recovery Taskforce*' and reports and research conducted by pre-existing community organizations.

The Toronto Office of Recovery and Rebuild (TORR) produced two reports. One of the reports entitled "*COVID-19 - Impact and Opportunities*" highlights directions the city can take moving forward in the aftermath of the virus as a result from extensive public engagement and research. The second report, entitled "*COVID-19: Engagement Summary*" highlights how the public perception of city services was altered over the course of the pandemic and the results of pre-existing surveys, the TORR initiated survey, roundtables, and various written public submissions to the office and City Council. The analysis below highlights the actions taken by the City of Toronto, the justifications for those actions, and how the city will have to change and adapt to recover long-term.

In January, Toronto Public Health began to monitor, assess, and educate the public around the dangers associated with the virus (Toronto City Council, 2020a). On March 9th, the city assembled the 'Mayors Economic Support and Recovery Task Force' which began to work towards a rebuild and recovery strategy for the city (Toronto City Council, 2020n). This task force was to engage with stakeholders in round table discussions about the issues imposed by the pandemic and come up with possible recommendations and solutions.

Several City staff lead discussions on various key concerns that had been identified by the city throughout the beginning months of COVID-19 including:

1. Social Services and Housing – Lead by Councillor Ana Bailão, Ward 9 Davenport
2. Cultural and Arts Communities – Lead by Councillor Lai, Ward 23 Scarborough North and Councillor Gary Crawford, Ward 20 Scarborough Southwest
3. Small Business BIAs - Lead by Councillor Brad Bradford, Ward 19 Beaches-East York
4. Workers and Labour – Lead by Councillor Mike Layton, Ward 11 University-Rosedale
5. Upper Education and Industry – Lead by Councillor Jennifer McKelvie, Ward 25 Scarborough-Rouge Park
6. Recovery and Restart – Lead by Councillors Stephen Holyday, Ward 2 Etobicoke Centre and Paula Fletcher, Ward 14 Toronto-Danforth
7. Business and Community Contributions – Lead by Councillors Michael Thompson, Ward 21 Scarborough Centre and Michael Colle, Ward 8 Eglinton-Lawrence
8. Children and Youth – Lead by Councillor Shelley Carroll, Ward 17 Don Valley North

(Toronto City Council, 2020n)

Additionally, in March the city launched "*TO Supports: COVID-19 Equity Action Plan"*. This plan included 25 different actions to reduce the spread of the virus specifically in disadvantaged and marginalized neighbourhoods (Toronto City Council, 2020m). The themes under this plan looked at health communication and outreach, community health access, support for community partners, shelter and housing support, income support, food security, care for seniors, digital access, mental health and family safety, and children's services (Toronto City Council, 2020m).

The city announced that community centers, fitness centers, childcare centers, libraries, museums, and galleries were all to be closed on March 14th (Toronto City Council, 2020c). On March23rd, Toronto officially declared a State of Emergency and acted under municipal code chapter 59: *Emergency Management* (Tory, 2020). On the 26th of March, Toronto announced the closure of all City owned "playgrounds, sports fields, basketball and tennis courts, off-leash dog parks, skateboard and BMX parks, picnic areas, outdoor exercise equipment and other parks amenities, as well as parking lots attached to its parks system" as a response to these areas being over congregated (City of Toronto, 2020f). Public green spaces and parks however remained open. On April 2, and 3, 2020, the City issued Emergency Orders 1 and 2 which aimed to put regulations in place that required the enforcement of physical distancing within parks and public squares (Tory, 2020). These emergency orders in the city came with two enacted *By-laws 322-2020 and 323-2020* which support physical distancing guidelines city wide. These by-laws were to remain in effect for 30 days starting April 2, 2020 (Tory, 2020).

On April 24, the city announced the creation of the Toronto Office of Recovery and Rebuild (TORR) (Toronto City Council, 2020a). This goal of this office was to provide recommendations to the city that will help Toronto move forward post COVID-19. City staff planned to conduct public and stakeholder consultations, discussions, surveys, and research around the following themes:

1. Climate Change
2. Community & Strategic Alliances
3. Government & Financial Renewal
4. Business, Culture
5. Inspire Toronto
6. Divisional Agency and Preparedness (Toronto City Council, 2020a)

The engagement methods of TORR would build on existing reports from the 'Mayors Economic and Social Recovery Force' that was initially introduced in early 2020 and be complimented as well by letters to City Council, past reports from community organizations, and written submissions to TORR directly (Toronto City Council, 2020a). Consultations between vulnerable communities, City staff, community organizations, and other networks were planned to be held from mid-June to mid-July (Toronto City Council, 2020a). These consultations with the community aimed to discover what priorities Toronto needed to consider for the city to effectively recover. TORR also looked to discover what services and programs should be reviewed, upgraded, or implemented and with whom to ensure the long-term prosperity of the city and these resources. The Office of Recovery and Rebuild was to be led by Saad Rafi, the CEO of the Pan-Am Games as the Chief Recovery and Rebuild Officer, with the aid of Dr. David Mowat (Toronto City Council, 2020b)

On April 30th, the city announced that emergency bylaws put in place on April 2nd would remain in effect until the municipal emergency orders were terminated by the province (City of Toronto, 2020c). The city received several public letters from various organizations outlining that Toronto must execute a "bold, green, and just" recovery plan, emphasizing that the recovery of the city will depend on collective efforts of both the government and the community (Toronto City Council, 2020d).

One of the recommendations put forth was to "fast-track and improve Toronto's existing strategies, plans, and commitments in Toronto's recovery and rebuilding plans, in order to build a more equitable, healthy and climate-resilient city" (Toronto City Council, 2020d). Another one specified the

city should invest in sustainable building practices like low carbon buildings while also prioritizing social procurement and providing equitable employment opportunities in the recovery stage (Toronto City Council, 2020d).

On May 7th, 2020, community gardens were set to reopen including allotment gardens opening May 11, 2020 (Toronto City Council, 2020e). The Community and Social Services Committee presented a report to City Council surrounding "TO supports" which included a range of supports offered to vulnerable populations in the form of shelter enhancements, rapid housing, mental health support, food access, etc. during the pandemic. One of the initiatives put forth by the CSSC was the city-Community Response Table. This is where 75+ agencies would meet virtually three times per week to discuss options to improve the lives of vulnerable Torontonians (Toronto City Council, 2020e).

Also, in early May the City launched Active TO, a program that looked to implement over 50km of quiet streets to improve spaces for physical distancing for those who engage in active transportation (Toronto City Council, 2020f). A goal of this program was to get more people outside, especially those who lack private yard space. One of the key strategies behind this initiative was too open select "major streets' in the second phase of the plan that are adjacent to natural amenities "where crowding on weekends and holidays [had] been observed." (Toronto City Council, 2020f).

On May 23,2020, the overcrowding of Trinity Bellwood's Park went viral and concerns over community transmission was at large (Bensadoun, 2020). Experts in public health reported that "Outdoor transmission may not be a driver of a second wave but a huge contributor to more severe outbreaks" (Bensadoun, 2020). On the 28th of May, the city began painting circles throughout the 85 acres of space at Trinity Bellwood's in hopes that it would keep people apart while keeping the

spaces open and accessible (Fox, 2020). At a cost of $12 per circle, the city invested over $3,600 into the initiative (Fox, 2020). Several news reports asked the question that if streets can be adapted to accommodate space for those travelling by foot or bike, the city should be able to expand existing spaces or utilized under used space to ensure physical distancing laws are abided by (Fox, 2020). Important to note is that there was no evidence of an increase in case counts because of the Trinity Bellwood's incident (Bensadoun, 2020).

On May 29th, The Toronto Office of Recovery and Rebuild announced its first public survey to engage the public and gather initial feedback on the city's top challenges and residents' top priorities (Mowat, Rafi, 2020). This survey was to close on July 15th and would later inform the recommendations given to the city by the office (Mowat, Rafi, 2020).

On June 19th, 2020, City Council was updated by The Board of Health on Toronto Public Health's Response to COVID-19. The board recommended that efforts like Active TO be continued to support those who have limited space for physical activities (Toronto City Council, 2020f). Additionally, the medical officer of health should "support City Divisions and the Toronto Office of Recovery and Rebuild on the design and implementation of ways to address the social determinants of health for the City of Toronto's most vulnerable populations who have been adversely affected by the COVID-19 pandemic" (Toronto City Council, 2020f).

Group discussions on several topics related to the challenges faced by the city during the pandemic were facilitated by TORR over the course of a month starting on June 24th, 2020. These discussions were made possible by TORR's outreach and collaboration with Social Planning Toronto and over 30 other local organizations representing various equity-seeking groups and communities (Mowat, Rafi, 2020b).

Toronto entered stage two of Ontario's '*Framework for Reopening our Province*' on June 24, 2020 (Toronto City Council, 2020f). As the City opened under Stage two in early July, the weather caused people to flock to green spaces once again which resulted in these spaces becoming cluttered with litter. City Council was informed in a letter from a Council member that "when gatherings are limited, everyone needs access to clean green spaces for their mental and physical health." (Toronto City Council 2020h; Toronto City Council, 2020o).

On July 28, 2020, City Council received a recommendation that the *Infrastructure and Environment Committee* review current plans of revitalization and redevelopment of the Eglinton Park, Triangle Park as part of the Lawrence Heights Revitalization, and Baycrest Park (Toronto City Council, 2020g). This review would ensure that proper protocols for physical distancing would be implemented so that these spaces could stay open, accessible, but also safe for all who wish to attend (Toronto City Council, 2020g).

On July 30th, the '*Mayor's Economic and Social Recovery Task force*' released their final summary of recommendations after months of consultations with several community groups and stakeholders regarding the coronavirus pandemic and social agency (Toronto City Council, 2020a). In a 66 paged document to City Council, the recommendations covered the eight areas of concern mentioned previously. 'Parks' was cited twice, 'green space' was also cited twice, and 'health' was cited 74 times. Primary recommendations that included parks cited that "Consideration should be given to Neighbourhood Improvement Areas and Priority Centre areas when planning for the reopening of recreation centers, outdoor pools and amenities, parks, summer camps and community programming." in the 'Children and Youth' group (Toronto City Council, 2020a).

In the '*Green Industries*' roundtable discussion, it was mentioned that there is a need for a more walkable city that places high importance on green spaces which are good for mental health as well as a general demand for green space (Toronto City Council, 2020a). On July 31, 2020, Toronto officially entered stage three which resulted in over 800 playgrounds reopening (City of Toronto, 2020d).

On September 15th, The Toronto Office of Recovery and Rebuild released the *'COVID-19 Impacts and Opportunities'* report which outlined the engagement summary and key recommendations for the city's prosperity from then onwards. The task force built on existing city documents including the recent set of recommendations for '*The Mayors Economic and Social Recovery Taskforce*'. TORR itself received nearly 13,800 responses on the public survey on COVID-19 recovery and rebuild between May 29 and July 15 (Mowat, Rafi, 2020a). The office held 20 virtual meetings with more than 200 stakeholders, hosted by Mayor Tory, and led more than 240 theme-based roundtables and meetings with stakeholders, individuals, and organizations (Mowat, Rafi, 2020a). In the engagement report, the feedback was summarized into 19 categories, listed below:

1. Child Care
2. City Finances and Financial Sustainability
3. Climate Change and Resilience
4. Culture / Arts
5. Economic Development and Business
6. Equity, Vulnerable Communities
7. Food Security and Food Access
8. Growth, Planning and Development
9. Housing
10. Income Support
11. Indigenous Torontonians
12. Intergovernmental and Governance (Agencies and Corporations, Council Decision-Making etc.)
13. Long-Term Care
14. Mental Health
15. Mobility / Transit

16. Public Engagement
17. Public Health and Preparedness
18. Public Spaces
19. Strategic Partnerships

One of the questions in the survey asked "What are the priorities for you, your community, organization or business to effectively recover and rebuild? Please select up to three (3) choices", The results showed that community spaces, parks, and public spaces came in 3rd at 26% behind mobility (30%) and affordable housing (43%) (Mowat, Rafi, 2020b).

Another major finding from the survey was that the public had many concerns over "overdevelopment and the lack of green spaces" and " the need for more inclusive and consultative planning processes, particularly from equity seeking and vulnerable groups" (Mowat, Rafi, 2020b). Despite the connection of section 37 to development applications in the city, respondents suggested that "new developments need to contribute to the quality of public spaces, infrastructure and amenities such as green spaces" (Mowat, Rafi, 2020b).

Additionally, 70% of respondents reported visiting a park or public space before the COVID-19 and 62% of respondents cited that this was a service that was urgently needed in their communities in the next 0-6 months (Mowat, Rafi, 2020b). The report, in conjunction with the engagement summary, was finalized on September 15th and released. Several aspects of the report informed by the engagement report included findings related to accessible, equitable, and high-quality green space in almost every section.

Notable findings in the recommendations for section 3.6; 'Resilience' cited that the city should apply a wellness lens to planning to provide health benefits through equitable and accessible greenspace boosting the social determinants of health (Mowat, Rafi 2020a).

Infrastructure and Mobility cited that resident enjoy accessible greenspace when experiencing a lack of mobility or health concern to combat discrimination and stigma as a vision for a resilient Toronto (Mowat, Rafi 2020a).

The goal of these reports was to understand how the city could safely deal with the pandemic and save more lives in the future and it was emphasized that these results should serve as a first step to a strong recovery and rebuilding of Toronto (Mowat, Rafi 2020a).

On September 20th, the city provided preliminary staff comments around the recommendations produced in the report. Council acknowledged the need for the City to address Parks and Recreational facilities as one of the most essential aspects to the city's overall resilience, the economy, and social and public health (Toronto City Council 2020i). Several city departments agreed to consider these recommendations as well as the provision of spaces to make them easier for vulnerable populations to access (Toronto City Council 2020i).

One of the responses taken was for City Council to request multiple city departments and the officer of health to "explore opportunities to adjust park permit fees and noise exemption permit fees and create partnerships with Toronto businesses to support physically distant outdoor activities through the winter of 2020-2021" (Toronto City Council 2020k).

On the 27th, council also passed the clearing of snow on pathways and keeping additional public washrooms open to the public throughout the winter (Toronto City Council 2020k). Additionally, City Council was recommended to direct the Parks, Forestry and Recreation department to make sure that public washrooms are retrofitted to meet accessibility requirements in the winter months and year-

round (Toronto City Council 2020k). However, on November 23, 2020, The City was placed under a second lockdown.

City Council also adopted the motion to request that the Medical Officer review Public Health guidelines to keep public restrooms open during the winter in community centers and parks (Toronto City Council 2020l). This meeting also approved the General Manager Parks Forestry and Recreation to develop a strategy which would look to winterize more park washrooms through "the State of Good Repair and Capital Plan, and those new parks facilities being developed be considered for winterized washrooms" (Toronto City Council 2020l).

The city has continued to support a multi-dimensional approach to the recovery of social and economic systems throughout the duration of the pandemic. In early 2020, "*TO Supports: COVID-19 Equity Action Plan*" commenced to examine ten areas pertaining to the social determinants of health(Toronto City Council 2020m). Over the course of a year, the plan has been continuing to grow and transform through the collection of data and joint partnerships across the city (Toronto City Council 2020m). On December 16th, 2020, the team revealed several recommendations for City Council.

Firstly, that the Council and Board of health approve the addition of equity indicators as a monitoring tool focused on the social determinants of health to drive policy considerations (Toronto City Council 2020m). Secondly, the initiative further recommended that the City reach out to different social and financial departments to work collectively with the general manager and housing staff to support families who need to isolate due to a COVID-19 infection (Toronto City Council 2020m).

4.2 Phase 2: Policy Analysis of The Province of Ontario's Urban Development System

The City of London and its three ruling policy documents focused a lot on public green spaces from the perspective of natural heritage. Although green space and the network of natural areas was cited a fair bit throughout all plans, chapters like 'Community Improvement Areas' did not include a single citation regarding the benefits of these spaces for community wellbeing illustrated widely throughout literature. Marketed as 'The Forest City' this initial theme revealed that although prevalent throughout plans, policies reflect green spaces from a perspective that lacks holistic considerations for the social and public health of communities.

This is evident where neighbourhoods are envisioned within policy documents to be 'healthy' and beautiful. However, it became apparent after the initial skim of documents to determine the prevalence, followed by a latent content analysis of certain terms that came up, that awareness did not mean rationale. Often, healthy, and beautiful were not explicitly connected or left out of plans regarding the access to green space or the amount of public green space within a community. In both cases, the prevalence of public green spaces did not correlate to policies, visions, or directives for communities in terms of health in relation to green space access, availability, and equity. Documents in the City of Toronto emphasize the connections between the overall health and well-being of residents and the prosperity of the economic and social systems deep within the urban fabric. It was noted that there is a park deficit within the city and there was a need to fix this problem as Toronto continues to focus on vertically dominant growth.

This is drastically different from London who made almost no mention to the concept of balance and density.

During the COVID-19 pandemic, despite records that indicated these spaces were becoming more populated, both municipalities enacted distancing measures and reduced parking to enhance space however did not go further. When the initial phase one concluded, it was discovered that in Toronto, plans that spoke to density and balance referred to their parkland acquisition being a result of certain sections in the Planning Act which initiated this analysis.

To determine why cities had not been adequately planning for green spaces, the policies that pertained to urban development and building came into question. The purpose of this analysis was to determine how accessibility, equity, and availability in relation to proximity to public green space are considered in the urban development process in either location as well as the province of Ontario in its entirety. The following documents were analyzed during this portion of research:

	Documents Analyzed	**Intent**	**Prevalence**	**Policy Tools to Support Public Green Space**
Ontario	Section 37	Community Benefit Charges	Park/Parks – 2 Public Green Space/Green Space – 0 Health/ Well-being -0	Parkland Dedication -Cash In Lieu
	Section 42	Land Conveyance for New Parks	Park/Parks – 6 Public Green Space/Green Space – 0 Health/ Well-being -0	-Cash In Lieu -Parkland Conveyance
London	Development Charges	Directs how growth funds growth in the city	CITE	-Community Benefits -Cash in Lieu
Toronto	Section 37 Implementation Guidelines	Guides how The City of Toronto	CITE	-Community Benefits -Cash in Lieu
	Chapter 415 of the Toronto Municipal Code: Development Charges	"Dictates how development charges and community benefit contributions are facilitated through urban development in the city broadly" (City of Toronto, 2019)	Park/Parks – 123 Public Green Space/Green Space – 0 Health/ Well-being -7	-Identification of Priority Areas -Cash in Lieu

Table 7: List of Secondary Policy Analysis Documents

City of London – Development Charges

All development that takes place in Ontario throughout municipalities is subject to the Development Charges Act (1997) and Community Benefit Contributions under The Planning Act (1990) which are identified as 'financial contribution that is required to be paid when land is developed to contribute to the "capital costs of facilities, services, and matters" incurred from development and population growth' (Squires, 2020). Based on the planning framework in Ontario and the recent changes with the introduction of Bill 197 in September, parkland dedication and public green spaces and the way they are attributed to urban development has changed significantly.

In the City of London, the new London Plan outlines two types of bonusing provisions, Type 1, and Type 2 (London City Council, 2018). The City of London practices standard development charge rates that apply to services like stormwater management, roads, and other services in the municipality that are given in cash form at the time a building permit is issued (London City Council, 2018). These charges are required amongst all development applications and vary in rates across land uses (London City Council, 2018). Development charges are to be submitted in conjunction with applicable community benefit charges which focus more on services that impact the community like recreation, affordable housing, and public spaces among others (London City Council, 2018).

Bonusing provisions in the City of London can be defined as the ways in which developers offset an increase in heigh and density whereas otherwise it would not be permitted under existing zoning permissions and official plan designations (London City Council, 2018). Type 1 is when the proposed density and height are both within the standard maximum allowed through zoning, and Type 2 is when both proposed go beyond permitted maximums (London City Council, 2018). Type 2 bonusing may be permitted in exchange for community benefits however developers are able to pick

and choose which benefits they will support as outlined in a planning justification report explaining why this service is important, no calculation is required (London City Council, 2018).

Recently in response to policy changes in the province which will be explained deeper in phase 2, The City of London enacted a Parkland Conveyance By-law in January 2021. The provisions outline that in cases of residential development, the exchange of parkland dedication is 5% of the land area and 2% in all other cases (City of London, 2021). This would be applied on top of existing development charges and community benefits as parkland dedication has been excluded from Section 37 eligibility (Squires, 2020). In the City of London, it specified cash-in-lieu on a much greater scale than conveyance with specific rates for different types of density, the highest rate being higher residential developments.

City of Toronto: Section 3- Implementation Guidelines & Negotiating Protocol

As previously mentioned, Toronto is subject to provisions for urban development under both the development charges act (1997) and Community Benefit Contributions under The Planning Act (1990) within the Province of Ontario. The City of Toronto also contains standard development charges similar to The City of London and are coupled with Community Benefit Contributions where applicable. The City set out the S.37 implementation guidelines in 2016, which dictated how Community Benefits would be secured through development including what services could be eligible and to what degree (City of Toronto, 2016).. Section 2.5 cites that no formula exists that determines the exact level, or amount of community benefits but mentioned 30% as an example minimum for increased land value (City of Toronto, 2016). The document also mentions how these benefits are not expected to offset the impact of any development – these assumptions should simply be considered 'good planning practices' and nothing is mentioned about the balance between greenspace and density (City of Toronto, 2016).

Community benefits represent the public priorities that exist around where the development is located, and these benefits are provided through this section as an incentive of height and density at no cost to the City (City of Toronto, 2016). These benefits can include heritage conservation, public art, recreation centers, streetscape and park improvements, and affordable housing (City of Toronto, 2016). Mentioned in the Toronto Official Plan chapter 5 section 5.1.1, "there should be an appropriate geographic relationship between the secured community benefits and the increase in height and/or density in the contributing development" (City of Toronto, 2019).

S.37 benefits "should be specific capital facilities, or cash contributions to achieve specific capital facilities" (section 2.3) however "upon agreement between the owner and the City, cash contributions may be made to special accounts already established by City Council" (City of Toronto, 2016). The guidelines mention that there should be a connection between increased height and density however they also state that no exact formula exists, and no guidelines around what should be implemented over cash contributions exists and most are negotiated on a case by case basis (City of Toronto, 2016).

Section 2.10 suggests that S.37 is an essential mechanism that can help address affordability and heritage conservation but out of 12 guidelines, public green space or park provision is not mentioned (City of Toronto, 2016). Although green space, parkland, and open spaces for the public were all considered as S.37 eligible at the time the City released these guidelines, they are not mandatory or enforced, and there are currently no policies to police and manage the balance of density and green space within the city.

Toronto Municipal Code – Chapter 415: Development Charges

Within the Toronto Municipal Code, Chapter 415 dictates how development charges and community benefit contributions are facilitated through urban development in the city broadly. 'Health' is cited seven times, 'park' is cited 90 times, 'parks' is cited 33 times, green space is not cited. Within the Code, Toronto has adopted a strategy governed by a new by-law regarding parkland dedication. This is a direct result of policy changes within the province as previously mentioned, which leaves parkland dedication out of Section 37 eligibility. The By-law adopted by the city in response to these changes has separated the City into two different where parkland is needed in the city and has labeled these areas as parkland acquisition priority areas (PAPAS) and has specified that a large portion of the city falls within this category (City of Toronto, 2019). However, under this bylaw the calculation is 0.4ha of land for every 300 units with a cap at 10 or 20 percent of the site proposed depending on the size which equates to just under 2m2 per person assuming that all units are one bedroom (City of Toronto, 2019).

Although a step in the right direction, it is unclear how this will attempt to solve or mitigate any impending issues that will arise from a lack of green space within the city as development increases in the core. Additionally, Toronto acknowledges within the by-law that not all development will conform to this as some sites may be too small or result in a park 'not large enough to be useful' without justification for what size is useful, which results in cash in lieu (City of Toronto, 2019). Cash in lieu value and distribution is determined by the Toronto Real Estate board and there are currently no mechanisms that dictate how this money is spent in regard to parkland dedication or conveyance (City of Toronto, 2019).

City of Toronto: Section 3- Implementation Guidelines & Negotiating Protocol

As previously mentioned, Toronto is subject to provisions for urban development under both the development charges act (1997) and Community Benefit Contributions under The Planning Act

(1990) within the Province of Ontario. The City of Toronto also contains standard development charges like The City of London and are coupled with Community Benefit Contributions where applicable. The City set out the S.37 implementation guidelines in 2016, which dictated how Community Benefits would be secured through development including what services could be eligible and to what degree (City of Toronto, 2016). Section 2.5 cites that no formula exists that determines the exact level, or amount of community benefits but mentioned 30% as an example minimum for increased land value (City of Toronto, 2016). The document also mentions how these benefits are not expected to offset the impact of any development – these assumptions should simply be considered 'good planning practices' and nothing is mentioned about the balance between greenspace and density (City of Toronto, 2016).

Community benefits represent the public priorities that exist around where the development is located, and these benefits are provided through this section as an incentive of height and density at no cost to the city (City of Toronto, 2016). These benefits can include heritage conservation, public art, recreation centers, streetscape and park improvements, and affordable housing (City of Toronto, 2016). Mentioned in the Toronto Official Plan chapter 5 section 5.1.1, "there should be an appropriate geographic relationship between the secured community benefits and the increase in height and/or density in the contributing development" (City of Toronto, 2019).

S.37 benefits "should be specific capital facilities, or cash contributions to achieve specific capital facilities" (section 2.3) however "upon agreement between the owner and the City, cash contributions may be made to special accounts already established by City Council" (City of Toronto, 2016). The guidelines mention that there should be a connection between increased height and density however they also state that no exact formula exists, and no guidelines around what should be implemented over cash contributions exists and most are negotiated on a case-by-case basis (City of Toronto, 2016).

Section 2.10 suggests that S.37 is an essential mechanism that can help address affordability and heritage conservation but out of 12 guidelines, public green space or park provision is not mentioned (City of Toronto, 2016). Although green space, parkland, and open spaces for the public were all considered as S.37 eligible at the time the City released these guidelines, they are not mandatory or enforced, and there are currently no policies to police and manage the balance of density and green space within the city.

Toronto Municipal Code – Chapter 415: Development Charges

Within the Toronto Municipal Code, Chapter 415 dictates how development charges and community benefit contributions are facilitated through urban development in the city broadly. 'Health' is cited seven times, 'park' is cited 90 times, 'parks' is cited 33 times, green space is not cited. Within the Code, Toronto has adopted a strategy governed by a new by-law regarding parkland dedication. This is a direct result of policy changes within the province as previously mentioned, which leaves parkland dedication out of Section 37 eligibility. The By-law adopted by the city in response to these changes has separated the city into two different where parkland is needed in the city and has labeled these areas as parkland acquisition priority areas (PAPAS) and has specified that a large portion of the city falls within this category (City of Toronto, 2019). However, under this bylaw the calculation is 0.4ha of land for every 300 units with a cap at 10 or 20 percent of the site proposed depending on the size which equates to just under 2m2 per person assuming that all units are one bedroom (City of Toronto, 2019).

Although a step in the right direction, it is unclear how this will attempt to solve or mitigate any impending issues that will arise from a lack of green space within the city as development increases in the core. Additionally, Toronto acknowledges within the by-law that not all development will conform to this as some sites may be too small or result in a park 'not large enough to be useful' without

justification for what size is useful, which results in cash in lieu (City of Toronto, 2019). Cash in lieu value and distribution is determined by the Toronto Real Estate board and there are currently no mechanisms that dictate how this money is spent regarding parkland dedication or conveyance (City of Toronto, 2019).

Under the Development Charges Act in the Planning Act, both the City of London and the City of Toronto residential and non-residential development proposals are subject to *Section 37(S.37)* requirements and implemented through a Zoning By-law based on their height and density (City of Toronto, 2016). In a report to London City Council in 2018, several comments were made regarding the validity of Section 37 and its applicability to developments in the city.

The report explains that the way community benefits are determined has continued to change over time and has not had a standard approach to calculating the priority or amount of community benefits that should be supported from any given development (City of London, 2018). Additionally, there is no specific geographic component to the guidelines which is an issue when a city has many distinct areas and nodes that require a different approach (London City Council, 2018). Going a step further, the act also does not define how uplift value of sites can be quantified so there is no linkage between proposed land value after the development and public benefits (London City Council, 2018).

Development charges, as indicated above, play a critical role in the supporting infrastructure and growth management (Government of Ontario , 2021b). However, these fees are discretionary and leaves what these charges go to in the hands of municipalities based on eligible services outlined in the Development Charges Act (Government of Ontario , 2021b). Parkland provision has recently been excluded from the act as the province looked to increase its supply of housing based on market cost and demand which will be explained later as a window of opportunity for municipalities to begin

conceptualizing how they will balance rapid growth with intensification. Plan and policy documents from phase one did not give enough information that would give solidify the reason some communities have more public green space than others. In this regard, an additional analysis of the overarching mechanisms that govern development in cities was required to determine if a level or calculation of balance is considered or required. This would allow the study to determine whether plan and policy goals and directives were focused on during the development application process and how public green spaces are valued in this aspect of city planning. Within the Development Charges Act, health is cited once in eligible services that charges can be used for as 'services related to public health' (Government of Ontario , 2021b). 'Park' and 'Parks' are collectively cited twice in the same sentence also in eligible services cities that parks and recreation services are eligible but not the acquisition of land (Government of Ontario , 2021b). The remainder of search terms utilized in the previous phase did not yield any results.

As previously stated, Section 37 of the planning act discusses the concept of community benefit charges which can be combined with existing development charges outlined by the province of Ontario (Government of Ontario , 2021a). Within section 37, only applications that have approved Zoning Bylaw Amendments, Official Plan Amendments, Minor Variances, Draft Plan of Subdivisions, Consent to Sever, or the issuing of a building permit are eligible for community benefit contributions (Government of Ontario , 2021a). Additionally, community benefits are not required if a building is less than 5 storeys, 10 units (proposed or additional) (Government of Ontario , 2021a).

This section of the act specifically states that there is nothing that stops community benefits from being added to existing development charge as long as they stand in their own right beside the other charges (Government of Ontario , 2021a). Going a step further, the act dictates that a municipality

who has passed a bylaw ‘may allow’ the owner or developer to choose whether to provide in kind contributions or cash in lieu based on land value (Government of Ontario , 2021a).

The introduction of Bill 197 in September 2020 introduced several changes to Section 37 of the Planning Act, influencing municipalities across Ontario. This bill implemented community benefit charges capped at 4% of land value which would be imposed on developers, planners, and other development staff (Squires, 2020). Under Bill 197, municipalities will have the power and option to implement these changes in the form of a zoning by-law by September of 2022 (Squires, 2020). CBC’s will not apply to several residential developments including structures <5 storeys, <10 residential units, a redevelopment that proposes fewer than 10 new units to an existing building (Jeanrie, Blunt, Campagna, 2020). Additionally, parkland has been left out of CBC charges and these priorities have been left at the hands of municipalities to determine appropriate policies for parkland dedication prior to the CBC by-law implementation (Squires, 2020). Section 37, subsection 6 specifies that a municipality with a passed community benefits charge by-law can allow an owner to provide services and facilities that are needed because of a development, like a school or library for example, and then this contribution would be taken off the overall charge based on their value (Government of Ontario , 2021a).

Section 42 of The Planning Act explains land conveyance for the purposes of new parks. In this section, it speaks to the powers of a municipality to have the option to require 2% (industrial, commercial) of the overall land proposed or in some cases 5% be conveyed to the municipality for the purposes of turning it into parkland or other recreational areas (Government of Ontario , 2021a). The rate this section mentions is 1ha of land for every 300 dwelling units or lesser based on the municipalities discretion unless the municipality already has plans in place to secure parkland through

development (Government of Ontario , 2021a). In Section 42 subsection 4.1, it stresses that municipalities 'shall prepare and make available to the public parks plan that examines the need for parkland' (Government of Ontario , 2021a). The lack of direction has resulted in policies like the Toronto Parkland Bylaw which in theory has merit but as mentioned does not adequately direct balance or priorities around public green spaces to support public health into the future.

Within the act as mentioned, it does briefly outline percentages and amount of ha per dwelling unit to include – 1 ha of land per 300 dwelling units, assuming they are single residential units still only gives each person 3.3m2 per person of additional space. This is well below the previously mentioned guideline that the World Health Organization gave which is triple that at 9m2 per person. If these are multi-unit dwellings, that number gets even smaller. Although vague, this does provide a window of opportunity for municipalities to enhance the amount of parkland that exists within their communities. As previously mentioned, The City of London and Toronto have both since implemented similar parkland provision bylaws as a direct result of this change. London however lacks policy direction as how to identify priorities in the way that Toronto does by adopting a strategy to pinpoint 'priority areas', and Toronto has limited the amount of space allocated per 300 units to well below 1ha.

Although the province has expressed the importance of open green spaces during the pandemic, the changes to parkland in the new CBC's remains relatively like current policies (Jeanrie, Blunt, Campagna, 2020). Parkland dedication rates still cannot be higher than 1ha/300 units for in-kind contributions or 1ha/500 units for cash in lieu (Davies Howe, 2020). The overall goal of these changes is to make prices and affordability more predictable and to provide enhanced clarity or what a municipality could include to support. However, it is still unclear how this will be addressed.

However, this process is also critiqued to be arguably more difficult than existing systems in the province as CBC's are designed to work with development charges and parkland dedication in order to have a well-rounded source of funding (Gibson, 2020). The exact amount of parkland to come from developments will continue to be fostered from a 'standard rate' if municipalities choose not to adopt a parkland dedication by-law and in terms of priorities, is not on the top of the list for these new changes whatsoever (Berlis, McBurney, 2020). Important to note is that these changes are only applicable to lower (local municipalities) or single tier municipalities (formed from amalgamations) and not upper tier (regions). The City of London and the City of Toronto are both single tier municipalities and thus impacted by these changes. Although a notable step in a somewhat right direction for recovering valuable community services through urban development, the new Bill as well as the newly announced MZO changes focus on speed, certainty, and predictability through municipal advocacy (City of Mississauga, 2020).

The policies that directed London and Toronto urban development patterns has changed significantly that has left the fate of parkland dedication in the hands of municipalities. As both London and Toronto have adopted by-laws in response to this, this analysis reveals that it still does not go far enough to enhance the availability, accessibility, or equity of public green spaces in communities. A national and international policy analysis was required to determine strategies applicable to both subject sites in post COVID-19 recovery and in preparation for future public health crises.

4.3 Phase 3: National and International Policy Analysis

As discussed, the ruling policy documents illustrated what has currently been done to support the provision of public green spaces in both Cities, and throughout the pandemic, it became clear that

there were gaps in the ways both cities have been growing and incorporating available, accessible, and equitable public spaces. As the last analysis indicates, the urban development framework in Ontario is also fragmented and does not take into consideration the need for balance between density and space. To draw strong recommendation's applicable to both cities, a best practices review was needed. The cities chosen were selected based on their successes with green planning and similarities to the research sites in terms of population, growth rates, and geography.

These cities are Vancouver, BC, and Copenhagen DE. Vancouver has a growth rate of 4.6% from 2011 to 2016, under Toronto at 6.2% and just above London at 4.1% (Statistics Canada, 2016a; Statistics Canada, 2016b; Statistics Canada 2016c). The City of Copenhagen has a much higher growth rate, but a similar population to Vancouver, BC, and London Ontario sitting just over 600,000 with a similar geographical location to both Toronto and Vancouver being a harbor front city. This phase will satisfy objective four, to compare a national and international city that have succeeded in public green space planning and policy and review their strategies 'best practices'.

4.3.1 National: City of Vancouver

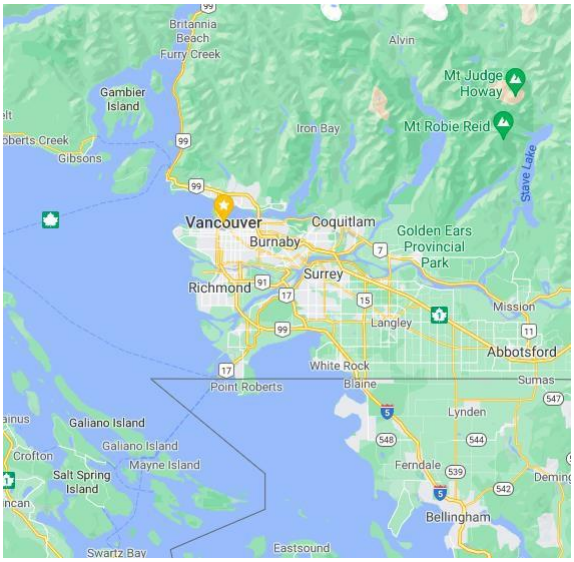

Figure 1: Map of City of Vancouver (Google Maps, 2021).

In 2011, the City announced its aspirations to be the greenest city by 2020. This involved a "Greenest City Action Plan" which outlined 10 specific targets for the city into 2020 (City of Vancouver, 2021a). A preliminary report revealed that 71% of people who live in Vancouver already live in a 300m radius of green space, this figure rises to 85% if schoolyards are included as 'greenspace' (City of Vancouver, 2011a).One of the goals was for everyone in the city to live within a 5-minute walk of a green space by 2020 and in 2014, this had improved from 92.6% to 92.7% of the city had achieved this (Goldberg, 2017).

The Greenest City Action Plan looks to ensure long-term sustainability and resilience to a changing climate. The plan supports a healthy economy, community, and a reputation of sustainable city that 'meets the needs of generations to come' (City of Vancouver, 2015a). 'Park cited 73 times, 'parks' is cited 18 times, 'green space' 15 times, 'health' cited 62 times. The plan is described as ambitious, necessary, and possible (City of Vancouver, 2015a). The fifth goal out of 10 outlines the cities priorities around access to nature. The Plan cites the goals for this section as increasing street tree's, forest naturalization in urban parks, tree canopy coverage, the conversion of 'right of ways' to mini parks, and the opportunity to explore community farming in parks. (City of Vancouver, 2015a) The plan emphasizes the connection of urban green space to population health, community cohesion, and overall well-being (City of Vancouver, 2015a). Progress thus far has been significant with 139,000 additional trees planted as reported in 2019 out of 150,000, 32 ha of natural areas restored or enhanced reported in 2019 out of 25 as the original goal, and tree canopy increased by 18% in 2019 out of 22% as a goal (City of Vancouver, 2019a).

Throughout the design of the action plan, several public consultations took place and comments were recorded. The public overwhelming expressed the need for an 'ecological corridor' to connect existing green spaces and enhance biodiversity (Vancouver City Council, 2020). Additionally, staff reported large amounts of feedback that spoke to the impact of natural urban space and the need for these spaces to be preserved or expanded (Vancouver City Council, 2020).

In 2021, there were >60 rezoning applications currently under review throughout the city of Vancouver and >100 applications had been approved (City of Vancouver, 2021b). In the City of Vancouver, development falls under three different categories; site specific zones, plan changes, and text changes (City of Vancouver, 2021c). Site specific zones create new districts and allow for different uses and forms of development (City of Vancouver, 2021c). Plan changes or amendments reflect a change 'from one district to another', and finally, text changes alter the permitted uses within an existing zoned area (City of Vancouver, 2021c). All of these developments require or will require development contributions to new or existing services within the community. These development contributions come in the form of parks, recreation, childcare, cultural spaces, social and affordable housing, transportation infrastructure, etc. (City of Vancouver, 2021c).

Development contributions in the city of Vancouver come in three forms; Development contributions come in the form of Community Amenity Contributions (CACs), Development Cost Levies (DCLs), and density bonus zoning (City of Vancouver, 2021d). In partnership with city contributions and partnership contributions, the City is able to achieve its goal of a balance between density granted and amenities and housing provided (City of Vancouver, 2020a). A breakdown of all three contributions is outlined below:

- "City contributions – Property tax, user fees (e.g., water and sewer utility fees) and parking revenue, and other operating revenue funds. City contributions primarily fund the maintenance and renewal of existing infrastructure and amenities.

- Development contributions – Community Amenity Contributions ('CACs'), Development Cost Levies ('DCLs'), Density Bonus Zoning contributions, connection fees, and other conditions of development. Development contributions primarily fund the provision of new, expanded, or upgraded infrastructure and amenities.

- Partnership contributions – External funding from senior governments (i.e., federal, provincial, and regional) or senior government agencies (e.g., TransLink), non-profit agencies, foundations, and philanthropists. Partnership contributions help to fund existing or new infrastructure and amenities." (City of Vancouver, 2020a).

Vancouver - Community Amenity Contributions (CAC)

Community amenity contributions are secured through rezoning applications that are granted by Vancouver City Council. CACs are characterised through different policy areas throughout the city and are categorized under two types:

1. Specific CAC policy areas apply to locations with their own CAC and/or public benefit policies. For all rezoning's in the area-specific CAC policies, the CAC is determined through a CAC target and/or negotiated approach.
2. For all rezoning's not determined through a CAC target, the CAC is determined through a negotiated approach (City of Vancouver, 2021f).

The City of Vancouver currently recognizes cash CACs as a best practice and are generally implemented where development has generic outcomes which are eventually grouped together to deliver public benefits identified through the Public Benefits Strategies (PBS) which is a section within community plans and policy statements (City of Vancouver, 2021e).

There are four main steps in preparing a PBS:

1. "Assessing local need within a city-wide context;
2. Developing a strategy (including outcomes and/or targets) for addressing the identified needs;
3. Providing a rough order-of-magnitude cost to fulfill the strategy;

4. Outlining a financial strategy to support the outcome-based strategy (this includes CAC determination and allocation).” (City of Vancouver, 2021e)

Where development has variable outcomes, rezoning requires a site-specific analysis which would yield what an appropriate CAC offering would be for that community (City of Vancouver, 2021e). This is applicable for developments that are not necessarily what was envisioned for the community initially (large increase in density, different use/ design strategy than existing developments, large additional land value), or an area that does not have a community plan, or specific policy statement tied to it (City of Vancouver, 2021e). The negotiated CAC would align with the impact from the development resulting in a cash contribution or an ‘in kind amenity’, a preferred method of city council meaning a tangible result or both in some circumstances(City of Vancouver, 2021e). CAC’S are monitored through ‘implementation trackers’ which are required in the appendices of every report from council regarding a rezoning application which track the CAC for the specific area (City of Vancouver, 2021e).

In an application for rezoning, the applicant must show how the development will increase land value identified as the ‘land lift’ which is a direct indication of how viable the project will be and how much public benefits will be secured through the development (City of Vancouver, 2021e). The City has produced a formula that calculates this as: REZONED LAND VALUE – EXISTING LAND VALUE = LAND LIFT (City of Vancouver, 2021e).

The City has established a target of 75% of land value as a CAC, however targets can be determined through various mechanisms like fixed rate targets and site-specific targets (City of Vancouver, 2021e). Targets can be specified through community plans as well and identified per square foot basis to net additional floor area . From this previous calculation the applicant is able to able to calculate the CAC

contribution which is formulated as follows: LAND LIFT X TARGET % = CAC (City of Vancouver, 2021e).

In addition to these calculations, the applicant is required to also submit two development proformas. These development proformas also have their own calculation which looks at the residual land value before and after rezoning the site (City of Vancouver, 2021e). The residual land value calculation uses revenues and the soft and hard costs of the development to validate the existing land value. This is illustrated in the following formula: REVENUES – COSTS OF DEVELOPMENT – PROFIT = RESIDUAL LAND VALUE (City of Vancouver, 2021e).

Because existing land value is not always equal to purchasing costs, this formula supports the CAC calculation to produce a more accurate land lift number. Since 2010, 13% of all CAC's have been allocated towards parks and green spaces (City of Vancouver, 2019b).

Vancouver – Development Cost Levies (DCL)

CACs are provided in addition to Development Cost Levies (DCL's). Where CACs apply to only applications requiring rezoning, DCL's apply to all developments including rezoning applications. DCL's fund public spaces like parks as well as childcare facilities, and other infrastructure (City of Vancouver, 2019b). DCL's were initially introduced in the early 1990's and then made permanent in 2003 and are now a large part in the development application process within the city (City of Vancouver, 2019b). DCL rates vary across the city and are supported through the city's capital plan and are considered the cities primary fiscal tools to fund infrastructure related to development (City of Vancouver, 2019b).

The rates of these levies are contingent on several factors including growth requirements and forecasts, cost estimates, and the most important factor, the district in which the development is taking place. Within the City of Vancouver, there are three different types of DCL districts:

"• City-wide DCL district applies to most of the City;

• Area-specific DCL district: developments in this district are exempt from city-wide DCL but subject to area-specific DCL; and

• Layered DCL district: development in these districts is subject to both city-wide DCL and layered DCL" (Vancouver City Council, 2017a).

DCL's are determined based on the GFA of the proposed project and are not consistent across uses (residential, commercial, industrial) or districts (Vancouver City Council, 2017a).

DCL's are reviewed on a 10-year basis. The principle of DCL's is to compensate for the anticipated growth and offset the costs of that growth (Vancouver City Council, 2017a). Since 2003, the city has reported 41% of the total rate of DCL's being allocated to parks. (Vancouver City Council, 2017a). Currently the city is in the middle of a DCL period and will update the rates and regulations again in 2026. Parkland DCL rates have shrunk to 18% for this period only because there is 110 million in unspent DCL funding in the parks reserve which has accumulated over several years, resulting in a lower figure for this period based on existing funds (Vancouver City Council, 2017a). During this period, it is forecasted that $1.059 billion will be recovered from development (Vancouver City Council, 2017a). In 2017, DCL rates were updated to the following as shown in the chart below.

Table 2: Recommended City-wide DCL Rates
($/square foot)

	Rate Category	Current DCL Rates	Phase-in of DCL Rates (50% of rate increase effective Sept 30, 2017)	Proposed Rates (Full Increase effective Sept 30, 2018)
	Lower Density Residential (under 1.2 FSR)	$3.23	$3.63	$4.03
New Category →	**Medium Density Residential** (at or above 1.2 FSR to 1.5 FSR)	N/A	$8.66	$8.66
	Higher Density Residential (over 1.5 FSR)	$13.91	$15.62	$17.34
	Industrial*	$5.55	$5.55	$5.55
New Category →	**Mixed Employment**** (Light Industrial)	N/A	$10.44	$10.44
	Commercial and Other Uses	$13.91	$13.91	$13.91

* Industrial rate applies to following zoning districts: I-2, M-1, M-1A, M-2, MC-1, MC-2
** Mixed Employment applied to following light industrial zoning districts: IC-1, IC-2, IC-3, I-1, I-1A, I-1B, I-4

Figure 8: Vancouver Recommended Development Cost Levy Rates (Vancouver City Council, 2017a)

Vancouver – Density Bonusing

The final mechanism used by the city to secure public benefits through development is 'Density Bonusing' or 'Bonusing'. In the zoning bylaw, there are several regulations for areas throughout the city regarding permitted uses and density (City of Vancouver, 2020b). When a development seeks to go above the permitted density allotted to the site in the zoning and development by-law, certain areas allow for the provision of public benefits in exchange for the increase in density (City of Vancouver, 2020b). These benefits include similar things included in both CAC's and DCL's including affordable housing and other community benefits outlined in the public benefit strategies of community plans. Density bonusing is calculated of additional square feet of 'bonus' density at a flat rate (City of Vancouver, 2020b).

Vancouver – Key Takeaways

Vancouver is consistently ranked as one of the most livable cities in the world, and the development application process is a large part of why that is. CAC's, DCL's, and density bonusing

emphasize the need to balance new developments with updated community services and facilities. In 2016, the City of Vancouver commissioned Hemson Consulting to analyze best practices for DCL's to inform updates to the system for the next period (2017-2026). This research analyzed Toronto, Surrey, Halifax, Calgary, and San Francisco as precedents and provided recommendations for the system based on these findings. The study found that Vancouver employs standards-based approaches (looking to other cities, municipal, national and professional standards and policy), past level approaches (pattern of past service provided), and plan-based approaches (based on approved plans). Out of all cities examined, Vancouver is the only municipality to undertake all three approaches (Hemson Consulting, 2016). Important to note is that Ontario legislation makes no reference to service levels and parks is included in 2/3 approaches taken by Vancouver as opposed to one approach in the City of Toronto (Hemson Consulting, 2016). Additionally, Vancouver imposes a rate structure that is variable. Toronto is the only city that provides a standardized approach to rates for community benefits that is city-wide (Hemson Consulting, 2016).

Geographic Basis of Charge		
Municipality	**Rate Structure**	**Comment**
Vancouver, British Columbia	City-wide, area-specific & layered DCLs imposed	Area-specific charges independent of City-wide charge, layered charges imposed in addition to City-wide charge
Toronto, Ontario	City-wide	All charges & services levied on a City-wide basis
Surrey, British Columbia	City-wide and area-specific charges	City-wide rate discounted for multi-res development in City Centre for Parks & Roads
Calgary, Alberta	City-wide and area-specific charges	Uniform rates in established area, rates within Greenfield Area specific to each watershed
Halifax, Nova Scotia	City-wide and area-specific charges	City-wide and area-specific charges layered
San Francisco, California	City-wide, area-specific and elective charges	Elective fees are alternative means of compliance with the Planning Code

Figure 9: Geographic Basis of Development Charges
(Hemson Consulting, 2016)

The City of Toronto was mentioned as a key precedent to determining rates based on residential uses utilizing a $/unit type approach, however the study recommended that Vancouver stick to their structure of $/sq. ft GFA (Hemson Consulting, 2016). Although no solid justification was made for this recommendation, there is an argument to be made that units with multiple bedrooms can vary in sizes and by charging per sq. ft maximizes the benefits that can be reaped. Additionally, non-residential projects are only charged if they are eligible in Toronto and are measured in sq.m as specified in the above table.

In Vancouver, all non-residential uses are subject to charges per sq. ft. which is 10-fold of Toronto's rate. The reason Vancouver has had success in balancing the need for community amenities and spaces like green space is because its approach to community benefits is layered, site specific, and comprehensive. Toronto and London are both subject to comprehensive development application requirements around community and public benefits, however they are city-wide standard approaches. Cities and the communities that occupy them have unique DNA and require unique approaches to how they are designed and planned.

4.3.2 International: Copenhagen

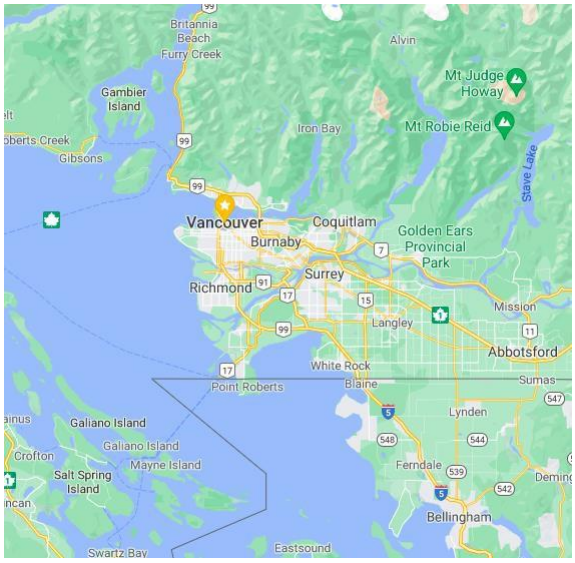

Figure 10: Map of City of Copenhagen (Google Maps, 2021).

Co-Create Copenhagen 2015-2025

The City practices high standards regarding the extent and quality of greenspaces around housing, particularly prioritizing the development of underutilized sites for public green spaces. On the application that won Copenhagen the title of 'Green Capital' in 2014, the City stated that its planning framework ensures 'environmentally appropriate density' and quality access (European Commission, 2012a). In 2017, the city of Copenhagen was reported to have 42.4m2 of greenspace per person, which covers 25% of the total land area (Comertler, 2017).

Co-Create Copenhagen is one of the ambitious initiatives brought forth by the City and the Region to ensure resilience to a changing climate (City of Copenhagen, 2015a). The plan is tailored to

the public perception of the city, concerning itself with how the public will view the city based on a number of actionable targets into 2025:

"• Copenhageners spend 20% more time in urban spaces
• 90% of Copenhageners consider their neighbourhood lively and varied
• Two thirds of Copenhageners consider the city clean
• 50% of trips to work and study in Copenhagen are by bike
• 70% of Copenhageners are satisfied with bicycle parking
• 75% of Copenhageners consider Copenhagen a green city" (City of Copenhagen, 2015a).

Within this plan, several public comments have been included including the following: "You can see that the open spaces and green places are popular, they are used a lot. It's cool, people get out more and they are together more", and "Copenhageners are really good at using local amenities. The more opportunities there are, the more people will use their communities. It enhances the quality of life" (City of Copenhagen, 2015a).

Co-Create Copenhagen cites the need for a radical restructuring of traditional planning and urban development (City of Copenhagen, 2015a). Additionally, this Plan emphasizes the need for public involvement and the use of international examples to develop unique strategies that help tackle the United Nations Sustainable Development Goals (City of Copenhagen, 2015a). The Plan sets an ambitious target of being one of the top Global Cities by 2025, and in 2018 ranked 9th place as one of the most livable cities in the world by CNN, behind Vancouver (6th) and Toronto (7th) (Buckley, 2019).

Also in 2015, Copenhagen released the Urban Nature in Copenhagen 2015-2025 Plan which states the important of close and accessible green space for mental and physical wellbeing (City of Copenhagen, 2015b). The plan speaks to the creative incorporation of biophilic design throughout the

cities and claims that being green is more than just wide open park spaces (City of Copenhagen, 2015b). The incorporation of green facades, school yards, green streets, ,street trees, and green roofs were all included as strategies (City of Copenhagen, 2015b). Throughout the report, it was cited that 90% of residents are within a 15 minute walk to a public green space, and 95% of all residents are satisfied with the quality of existing green spaces (City of Copenhagen, 2015b).

Eco-Metropolis (2015)

Additionally, The City also released an 'Eco-Metropolis' report which outlined a vision for the city in 2015 citing that its goal is to become an 'eco metropolis of the world' emphasizing that environmental consciousness adds an interesting dynamic to urban development (City of Copenhagen, 2015c). A key factor in the success of this goal was the idea that green space did not need to be large and could be incorporated in smaller parts of the city, like alleyways and corners (City of Copenhagen, 2015c).

Urban Nature in Copenhagen (2017)

Imbedded within the Green Copenhagen initiative that supported the plans above and several other strategies over the past 10 years included the release of the Urban Nature in Copenhagen Plan in 2017. This strategy would be implemented through construction and development projects to further protect and ensure the quality and accessibility of urban nature within the city (City of Copenhagen, 2017). The Urban Nature in Copenhagen report cites a tool referred to as 'the green planning tool' to calculate a 'green factor' of a development (City of Copenhagen, 2017). This tool was proposed to quantify how much urban nature was on the site and the quality of it using a numeric scale (City of Copenhagen, 2017).

The scale ranges from 0 being the lowest, to 2 being the highest value and analyzes the total are of urban nature on the surface. These areas can include grass, water, vegetation and man-made interventions like green roofs and facades (City of Copenhagen, 2017). The goal of this tool is to improve the development process to incorporate more urban nature into projects and plans. It is apparent that Copenhagen has categorized nature as a part of our existence rather than a compliment of it. The 2015-2025 plan looked to prioritize urban nature interventions within the city the way it prioritized cycling to become the norm (City of Copenhagen, 2017).

The main message was that any space can 'go green' that would otherwise be covered in pavement. These interventions can be edible, a corner greenhouse, tree cover, a patch of grass with a bench, green facades and green back yards (City of Copenhagen, 2017). In large the ambitious mission is health of residents and ecosystems as well as sustainability and consistently speaks to the power of urban nature to enhance community and public health and that the idea of what a conventional city should look like, is no longer relevant (City of Copenhagen, 2017).

The Finger Plan (1940's-present)

A lot of Copenhagen's green success is product of an initial Danish plan that utilized a hand-shaped strategy which was coined "The Finger Plan" back in the 1940s. The Finger Plan divided the region of Copenhagen into four areas:

"1) the core urban region,
2) the peripheral urban region (the city fingers),
3) the green wedges, and
4) the rest of the Greater Copenhagen area" (Sørensen, Torfing, 2019).

This Plan directed the built environment to the center of the 'palm' while transportation took on five major routes along the city fingers, in the gaps between these routes were 'green wedges' which contained areas of vast vegetation to divide up the routes which has since been preserved (Sørensen, Torfing, 2019). The main goal of The Finger Plan was to balance the need for housing and development with green spaces with accessibility at the forefront (Sørensen, Torfing, 2019).

The 'fingers' of the Plan contributed to high quality of life, balance, and appropriate access to recreational spaces. The Finger Plan has since remained a national planning strategy and currently drives planning for many of Copenhagen's strategic plans (Sørensen, Torfing, 2019). In 2005, an additional component of the finger plan was implemented which connected all green wedges to facilitate a green network (Danish Ministry of the Environment, 2015).

This Plan has also influenced the Park Policy (2004) which led the development of the action plan "Pocket parks, trees and other green areas" (European Commission, 2012b). This looked to change existing urban landscapes to accommodate more space for public urban nature – even in the tightest spaces (European Commission, 2012b). Pocket parks, which was a highlight of this plan, encompassed less than 5000m2 of space so their implementation was easy and affordable (European Commission, 2012b).

Within the Finger Plan whose principles will continue to influence danish policy for the foreseeable future, the Copenhagen system has implemented priority indicators (Danish Ministry of the Environment, 2015). Priority indicators work to identify areas for expansion around transit notes like Ørestad or Nordhavn (Danish Ministry of the Environment, 2015). Balance is embodied these indicators in order to maintain a designated urban area while also developing the greater urban area of Copenhagen as well. This helps municipalities identify areas for new 'urban zones' where appropriate

to accommodate an evolving planning situation for the sake of balance (Danish Ministry of the Environment, 2015).

Priority must be categorized so that development in the Copenhagen region is "only of a local nature" emphasizing the need for cohesion amongst existing municipal development patterns and landscapes (Danish Ministry of the Environment, 2015). In the European commission submission, development would occur over the next 30 years only in urban designated zones, and appropriate rezoning would ensure that additional residential housing would be accommodated in commercial and industrial zones (European Commission, 2014b). To make all of this possible, several levels of governments are required to actively engage with one another during the development process to maintain the country/urban boundaries (Centre for Public Impact, 2019). This is all part of a strict municipal planning process.

Copenhagen has a complex approach to development that involves multiple stakeholders and success of projects is contingent on private/public partnerships more so than Canadian cities. However, a standard approach to Denmark's version of 'community benefits' does not exist rather, project specific requirements are laid out during a rather lengthy approval process that involves several levels of government. In the last 15 years, over half of redevelopment has been able to generate mass amounts of wealth due to the point of ownership (Apolitical, 2017).

Some sites are initially purchased by one entity, By & Havn, which is a publicly owned private corporation spearheaded by a past Mayor of Copenhagen (Apolitical, 2017). The way this system is facilitated is that the corporation takes ownership of the land, then it is rezoned to prioritize commercial and residential uses which significantly raises the value of the land (Apolitical, 2017). From here, the

corporation takes out a loan based on the new existing value of the land, this money funds infrastructure projects throughout the city and the corporation then leases the land to developers (Apolitical, 2017). The revenue from this is used to settle the debt on the loan (Apolitical, 2017).

Aside from this tool to fund 'community benefits' throughout the city through the strategic financing of sites, the city has trialed a sustainability assessment tool first introduced while rapidly developing the North Harbor. The tool emphasizes conversation between private and public entities throughout the development process to promote 'The Eco-Friendly Neighbourhood Concept' in conjunction with other plans (Alkhani, 2020). Developers are then able to determine what payments to what services are appropriate for the current municipal context based on growth trends and sustainability targets (Alkhani, 2020). Usually, these payments are directed to environmental or sustainability strategies or initiatives (Alkhani, 2020). Specifically, the Orestad area of the region, these levies also support infrastructure in the community that would accommodate growth. In this area specifically, the metro was financed through development fees (Merk, Saussier, Staropoli, Slack, Kim, 2012).

The systematic approach to developments is profound and unlike anything on Canadian soil. Developers are required to follow strict guidelines regarding the use of local materials, additionally, local law dictates that 25% of all new housing must be affordable (social housing or low income) (Apolitical, 2017). Policies surrounding urban land development outline the general rule for new housing and open spaces as; 'open [green] spaces for housing; typically, 60 m2 per 100 m2 of housing for new multi-family dwellings] (European Commission, 2012b).

Because the city prioritizes green space so predominantly, the inclusion, upgrade, or funding of green space of any kind is apparent in virtually every single development in the city. With the introduction of ambitious climate targets, it's expected that development must reflect all climate policy within the city and the nation. Although exact development charges cannot be understood through a brief policy analysis such as this one, future research should incorporate key danish stakeholders to develop a further understanding of how area specific levies are carried throughout the city.

However, the evidence is clear that differences lie in the radical thinking of policy and plans for the nature of urban development. Years of utilizing the principles put forth by the Finger Plan almost half a century ago has instilled strict growth boundaries and targets for dense urban communities that has avoided sprawl despite a growing population. Ambitious city targets, similar to the planning framework in Vancouver, and the multi-level collaboration of stakeholders in both private and public life has been a key component of the protection and enhancement of public green space throughout the region.

Summary

Years of standardized approaches to green space policy has resulted in unequal planning for cities in the Ontario context. The state of cities in the face of climate change, population growth, and changes in housing preferences demands a movement away from traditional approaches.

The study utilized two cities that have been widely acknowledged for their sustainable planning efforts and livable communities, The City of Vancouver, and The City of Copenhagen as best practice examples. In each city, the development process and systems were reviewed in order to identify key themes applicable to the research sites. Overtime, literature has stressed that it is critical that dense urban areas with growing populations respond to pressures and plan strategically to support balanced

and healthy communities with public green spaces as a key component of this (Reeve, Desha, Hargreaves, Hargroves, 2015; Hunter et al 2019; Totaforti, 2020). Copenhagen has successfully been able to realize the connection and benefit to bridging health and the natural environment through plan and policy direction which has become a standard practice. Vancouver similarly focuses on policy that understands the complexities of complete communities, so the approach taken is complex and multi-faceted.

This is evidenced by their multi staged strategy to determining the level of service needed for a given area focused on standards, past, and plan based approaches that each focus on different services. In London and Toronto, the findings show that the strategy taken is past-level, grouping all services into one category. Planning scholarship has continued to stress how the uniqueness of communities must be reflected in practice in order to equitably work in the public interest (Nooren, Tang, Dean, Glover, 2020). Vancouver has been able to foster a system that focuses on site level considerations in conjunction with ambitious plans to become a greener city to a broader extent than its Ontario counterparts, thus making it a greener and more livable city overall.

Phase 3 found that Vancouver focuses on measures that support balanced communities which includes a layered, comprehensive, and site specific approach to urban development policies. In Copenhagen, urban development includes an entirely different approach focusing on density that is environmentally appropriate. These frameworks together place public greenspace to a high standard and priority, making sure that any development and density increase fits within the natural urban landscape that it is being proposed in. Both strategies are supported through literary evidence throughout planning scholarship on need to balance the environmental quality of neighbourhoods (Du, Zhang, 2020; Wolch et al, 2014). The findings suggest the potential for a restructuring of the system where the human wellbeing becomes a top priority before public green space inequity becomes a larger

problem not only in future public health crises, but as both cities become more populated. Based on the analysis between the subject sites and international and national comparisons, there are several lessons that can be learned and applied through policy and practice.

Chapter 5
Discussion

Overall, the findings from this study strongly support the rapidly growing body of academic literature which speaks of the connections between public green spaces and human well-being. When the coronavirus shuttered access of necessary community services and facilities, public green spaces served as a necessary venue for social interaction and cohesion fostering positive public health outcomes (Melcher, 2020). Aside from social interaction, individuals also were unable to reap other benefits like reduces feelings of anger, stress, and depression as these spaces have been shown throughout literature to improve feelings of peace, happiness, and relaxation – all feelings that were intensely challenged during the pandemic (Wolch et al, 2014; Douglas et al, 2017).

Ebeneezer Howard pioneered the Biophilia Hypothesis which spoke to the ability of the natural environment to mitigate the ills of polluted cities for the sake of community well-being (Clevenger, Andrews, 2017). Since Howard, urban thinkers have continued to stress the invaluable synergy between humans and the natural environment. These spaces have the potential to influence the social and cultural aspects of communities, well-being of residents, as well as being a key policy and planning tool for climate change adaptation. From the Garden City to the City Beautiful movement, research has illustrated how changes to the built environment to incorporate environmental interventions have the ability to positively influence urban life exponentially (Akpinar et al, 2016). Despite literary support, it could be argued that planning practice has not fully understood the extent to which public green space functions as a pivotal tool in promotion of healthy and livable cities and communities alike.

Findings revealed that official plans in London and Toronto speak to public green space quite often, and largely regarding climate change. Although the concept of health and the environment is

spoken too in both contexts, there is still a clear disconnect when it comes to prioritizing public green space and the health of communities in practice. The benefits of public green spaces in terms of social, mental, and physical well-being can still be achieved applicable when the rationale behind OP goals and visions are not explicitly public health. However, there is a lack of evidence suggesting that existing policies ensure an equitable dispersion of public green spaces which in practice, becomes problematic. As literature has suggests, public green spaces have the capacity to support a myriad of issues facing communities, especially underserved communities (Jennings, Bankole, 2019). A holistic rationale for public green spaces that includes not only environmental but also community well-being as pillars to the rationale of planning and design is absent from current planning frameworks in both cities as this study has illustrated.

This study highlighted that there is much work that needs to be done at both the policy and practice level in rapidly growing metropolitan areas like those included in this study to facilitate a healthy balance between available, equitable, and accessible public green spaces and density. The themes identified within the study was the level of priority given to these spaces, the rationale for their inclusion in communities as outlined in official plans and overarching policies, and how the availability, equity, and accessibility of these spaces are regulated through urban development processes. Below, the themes that were addressed in the results chapter are discussed below and the results from this study are disseminated. This section is followed by a discussion of the limitations as well as key recommendations based on the results.

5.1.1 *Recommendation 1: Establishing clear definitions of what constitutes public green spaces and what equitable, safe, and accessible places might look like.*

Defining Public Green Space and the Level of Prevalence

In Toronto and London there was no discussion on the benefits of balancing density and green space regardless of how many times the concept of public green space was mentioned throughout plans and policies. In park plans specifically in the City of Toronto, the lack of equitable green space was acknowledged but not offered with tangible policy change solutions. One inconsistency that has existed throughout literature and was identified in this study was the definitions around what constitutes 'public green space'. Throughout the study, there was no clear definition identified of what 'public green space' means, especially when it comes to per capita measures. Throughout planning scholarship, public green spaces have been identified as complex and variable aspects of communities, and there are several different kinds of infrastructure that have been included under the blanket term 'public green space' that should be measured (Jennings, Bamkole, 2019). The findings showed that The London Plan (2016) identified public green space in relation to recreation and natural heritage cities that access to these spaces should be supported provided that the public respect their ecological features. However, the definition of green spaces did not include anything in relation to well-being or public health. Additionally, The Plan spoke to the need for these spaces to be desirable for use and preservation with no differentiation between spaces and their benefits (City of London, 2016).

Throughout the study it became apparent that all these areas were grouped together in per capita measures, skewing the actual amount that was in certain communities over others. It is clear in academia that different types of green spaces whether that be permeable pavement, parkettes, pathways, natural heritage, or open spaces yield different benefits, although there is no agreement on the difference in benefits across spatial scales (Wood, Hooper, Bull, 2017). In Toronto, the definition of these spaces was like Toronto citing the natural heritage and need for accessibility for recreation but also mentioned quality of life and social well-being purposes (City of Toronto, 2019b). In both contexts, definitions were brief, general, and lacked clarity. Additionally, the definitions varied for both, London focusing

more on the natural heritage aspects whereas Toronto focused more on what these spaces bring to a city like aesthetics, cohesion, economic value, etc.

Additionally, definitions of 'adequate', 'attractive', and 'appealing' public green spaces was another inconsistency throughout the study and academia. It was found throughout the duration of this research that S.37 mentions community services including public green spaces as 'good planning practice' but does not go further to explain what good planning practice is (City of Toronto, 2016). This recommendation speaks to the need for municipalities to clearly identify what defines 'public green space' as well as the various forms it can take. Literature has illustrated how the lack of clear definitions makes it even more difficult for policy makers to form decisions for communities regarding these spaces (Taylor, Hochuli, 2017). By focusing on what encompasses these spaces and the clear definitions that accompany them, policies can be clear, direct, and can support context focused interventions, calculations, and representations of public green spaces in communities.

5.1.2 Recommendation 2: Prioritize public green spaces as more than strategy for climate change mitigation but also a public health strategy for vibrant and healthy neighbourhoods.

The Justification for the Implementation of Public Green Spaces

It was no surprise that as weather warmed, public green spaces became overrun with people looking to escape the ills of a crowded city, the isolation of minimal square footage in a high-rise unit, and societal pressure of an unknown future for public health. The findings revealed that public green spaces served as meeting places and areas for social cohesion, functioning as safe havens against the influence of COVID-19. 21st century cities are facing impending challenges due to a changing climate placing communities in vulnerable positions against sea levels, temperature changes, and extreme weather

events (Hunter et al 2019). Because of the climate urgency, the ability of green urban interventions to release pressure on cities has been long incorporated into planning strategies in dense municipalities who suffer more from urban heat islands and poor air quality (Anguelovski et al, 2018). Although in both locations, several excerpts from municipal documents did speak to a synergy between health and the environment, there was a lack of policy support that equipped either space with tools to ensure this synergies longevity. The finding showed that several instances in The City of London spoke to this in The London Plan from 1989 and the new Plan, citing that these spaces should be attractive and "ensure that all future park sites are suitable, appropriately located" (City of London, 1989). Additionally, the Cities new Plan spoke to the connection between healthy lifestyles and avenues for recreation, however, did not explicitly mention mental or social health, and was usually cited in conjunction with increasing physical activity to reduce greenhouse gasses (City of London, 2016).

Literature has shown that the biophilia hypothesis stresses how the incorporation of the natural environment does more than just mitigate climate risks and impacts, but also offsets public health pressures, reducing barriers to health access and health promotion (Clevenger, Andrews, 2017). During the pandemic, many avenues supporting physical and mental health were shuttered, challenging the well-being of residents, specifically in dense communities with a lack of space (Nooren, Tang, Dean, Glover, 2020). In Toronto, the policy analysis also showed several instances where health was mentioned in partnership with public green spaces. Toronto expressed those green spaces should be beautiful and vary in size, and opportunities to promote health and wellness City of (Toronto, 2019b).

Survey results indicated that the mental toll the pandemic took on individuals was heightened, and societal pressures continued as lockdowns were extended time after time (Brockbank, 2020). In Toronto, documents acknowledged the influence of the environment on social well-being briefly citing

that these spaces provide opportunities for peace, quiet, and recreation making Toronto a good place to 'invest' (City of Toronto, 2019b). However, this only furthers the narrative that parks and their benefits equate to an economic value in the eyes of policy makers. This study found that communities suffered a lack of connection to the city around them and immense feelings of isolation were felt by many (Borkowska, Laurence, 2020; Brockbank, 2020, Uchiyama, Kohsaka, 2020). Literature has determined that even a level of proximity to local public green spaces has the ability to combat feelings of psychological distress which when left untreated can lead to more severe physical health consequences (Melcher, 2020; Shadmi et al, 2020; Jennings, Bambkole, 2019). A survey in Toronto distributed by the TORR office revealed that just under 100% of the public agree that parks contribute to high quality of life, citing that these areas serve as spaces of comfort (City of Toronto, 2019e).

Over the course of COVID-19, it was revealed that vulnerable communities suffered at a greater extent to the virus and similarly also live-in communities that are victim to green space inequity reproducing green space deficits (Shadmi et al, 2020). Public green space has numerous impacts on the culture within a neighbourhood and can foster feelings of togetherness, sense of belonging, as well as promoting healthy lifestyles and worker productivity (Holt, Lombard, Best, Smiley-Smith, Quinn, 2019; Braubach et al, 2017; Wolch et al, 2014). However, the study showed that the majority of commentary around the inclusion of public green spaces focused heavily on their ability to reduce carbon emissions, foster healthy lifestyles, and provide aesthetic appeal to communities boosting real estate values. Throughout the plan and policy analysis between The City of London and Toronto, very few plans provided solid recommendations and directions for public green space implementation in communities for the purpose of public health benefits. Municipalities should understand the role that public green spaces played during the height of the pandemic and draw on lessons from the phenomena of overcrowded spaces. Important to note is that the presence of existing green spaces is not enough in

the long run as we have been able to witness over the past year. As a public health strategy, equitable public green space planning should become a priority, so all neighbourhoods are able to reap the benefits.

Planning scholarship has continually stressed, those most at risk have the potential to get more out of attractive, accessible, equitable, and available green spaces (Braubach et al 2017; Shule, Gabriel, Bolte, 2017; Beyer et al 2014). Therefore, the possibility for public green spaces to serve as more than just critical social infrastructure during times of public health crises is insurmountable. The benefit of public green space has the ability to cut across socioeconomic, demographic, and health conditions to improve the quality of life within communities and when these spaces are available, people will utilize them (Azure, 2020). In this regard, this recommendation looks to support the need for public green spaces to stand alone in their own right as places of health promotion and as key strategies for healthy communities that should be supported through integrated policy tools that balance density and space.

5.1.3 Recommendation 3: Calculate public green space per-capita per neighbourhood and require applications to include a component dedicated to the implementation of new spaces or upkeep of existing based on that number.

The Influence of Urban Development on Accessibility, Equity, and Availability

During the initial phase of data collection and analysis, the equitable dispersion of green space was called into question in both locations when municipal planning documents spoke to the inclusion of balanced green space, but it was found that a lack of policy tools exist to support these claims. For example, in Toronto, the parks plan specifically spoke to a lack of green space in certain communities yet provided no policy or direction for how to deal with this. Additionally, in London, municipal plans praised the amount of green space throughout the city as well as the rapid rate of urban growth but no

direction of how to continually support both. During COVID-19 the majority of policy decisions centered around pedestrian accessibility on streets and trails, reducing car space and making sure distancing measures were in place. The idea that park space could be easily implemented in the same way bike lanes could be a larger issue. It became clear that the issue of green space accessibility, availability, and equity was not only a municipal planning error, but a provincial miscalculation. As a result, not much could be done to reduce the overcrowding of spaces in cities other than start conversations regarding overarching policy that governs how our cities are designed and developed.

A lack of private yard space can contribute feelings of depression, fatigue, stress, and loneliness were only heightened and the societal pressures to work from home or in a front line position hit harder (Hong, Lee, Jo, Yoo, 2019, Beyer et al 2014; Roe et al 2017). As literature has described, dense urban environments must facilitate a well-established balance of space and place for community and individual wellbeing to be maximized and the pandemic only highlighted how this has not been incorporated into practice appropriately (Groenwegen, Vandenberg, et. al, 2006).

Past research has demonstrated how neighbourhoods facing green space deficits are often occupied by vulnerable communities who experience more intense feelings of loneliness at a higher degree (Shadmi et al, 2020; Jennings, Bankole, 2019). This analysis has shown that the way planning frameworks have latently prioritized attractive public green space has been mostly ‘out of sight out of mind’ as illustrated through a lack of initiative taken by either City throughout the pandemic to improve policies in the recovery phases. This has created a narrative that places public green space as a luxury, bolstering real estate values (WGBH Forum, 2018).

The findings from this study show that although a per capita/ city measure of greenspace looks promising on paper, this glosses over the fact that some neighbourhoods have much less than others, or the 'green space' counted is often unsafe and poorly maintained (WGBH Forum, 2018). These findings in additional to the plan and policy research required an additional analysis into the way the urban development system in both city looks to balance public green space and density. The study found residential and non-residential development in both cities are subject to site specific development charges through the Development Charges Act and additional community benefit charges through Section 37 of the Planning Act depending on height and density of the proposed project.

The research revealed however that very few communities actually have policies that support a balance between growth and public green space (Sivaragah, Plummer & McGrath, 2020). The study revealed that development charges are a one-time fee usually at the beginning of the application process, lumping public green space in with an abundance of other services making it a minor percentage of the overall charge. For residential developments seeking additional height and density where otherwise not permitted, are required to exchange cash in lieu, or cash in kind for necessary community services and facilities, like public green space as outlined in Section 37 of the Planning Act. Despite mounting evidence that supports the importance for biophilic urbanism's ability transcend the social gradient and foster upstream determinants of health, especially in high density communities, the community benefits exchanged are not strictly regulated and no clear formula or calculation to balance density and public green space exists (Beyer, Kaltenbach, Szabo, Bogar, Nieto, Malecki, 2014).

The urban development system has neglected to realize the importance of public green spaces, it has facilitated an inequitable distribution resulting in public green space becoming a close luxury for some, and a distant amenity to others. Planning scholarship has stressed the need for public green spaces, especially in vulnerable communities as they have the potential to reap more benefits, cutting

through exacerbated SES and health inequities (Beyer, Kaltenbach, Szabo, Bogar, Nieto, Malecki, 2014). However, the study found a stark lack of policy tools in The Province of Ontario that would continue to support dense urban development with an equitable variation of public green space throughout neighbourhoods.

The findings from this study demonstrate that COVID-19 had an impact on the usage of public green spaces in communities. As planning scholarship has argued, access to available and equitable public green space is necessary to combat feelings of social isolation and loneliness, as well as declining mental health (Thompson et al, 2021). This is evidenced by the increase in visitors to neighbourhood green spaces, especially in high density communities who lack private yard space. The prolonged isolation caused by stay-at-home orders negatively influenced the mental health of many as 52% of individuals who reported mental strain since the start of the pandemic (Kleinsteuber, 2020). By comparing both a mid and large sized city, this study found trends across spatial scales in the attempt to draw conclusions around how different sized cities both handled the pandemic and planned for recovery. It became obvious that access to public green space was not made a clear priority at the beginning of pandemic, as most reactions concerned public spaces in general and the reconfiguration of streets (Nooren, Tang, Dean, Glover, 2020).

The physical health of residents was encouraged through initiatives geared towards quiet and slow streets, improved infrastructure for active transportation, as well as replacing curbside parking with seating for restaurants and pathways for pedestrians (Nooren, Tang, Dean, Glover, 2020). Research has shown how public green space has the ability to promote increased physical activity along with stress reduction, improved satisfaction, and feelings of support yet was not prioritized in the same way as bike lanes and walkable streets as this study showed (Groenwegen,, Vandenberg, et. al, 2006). The

findings from London and Toronto both illustrated that the public utilized public green spaces more than before the pandemic occurred and this was evident in survey results put forth by recovery teams and throughout the media. This aligns with literature that has argued that public green spaces are more affective in fostering positive public health outcomes than recreation in grey areas like streets and sidewalks (Venter, Baron, Gunderson, Figari, Nowell, 2020). However, the findings also demonstrated that cities did not utilize this phenomenon to enact real change in practice as substantiated by a lack of initiatives in respect to public green space. Toronto specifically began painting 6ft circles in parks in order to curb the crowded landscape which seemed to temporarily work and has since been reemployed summer of 2021 (Delaney, 2021). This study suggests however this may be a band-aid solution to a broader systemic problem.

Because the City of London has a higher concentration of private yard space, overcrowding was not as much as issue as it was in the City of Toronto. The study revealed that vulnerable communities suffer from a 'green space deficit' leaving them at higher risk for all of these issues regardless of the pandemic (Roe, Aspinall, Thompson, 2017). City Council reports for both London and Toronto discussed the push from community organizations to prioritize the experiences of vulnerable communities during the pandemic to help build a recovery strategy, however discussion did not include specific recommendations for public green spaces (City of London, 2020a, Toronto City Council, 2020m). A strategy found in both international examples was the difference in the prioritization of green space. In both Vancouver and Copenhagen, public green space was considered a pillar of a healthy community, which is not the case in Ontario. Considering this study showed that both locations had a rationale for green spaces that focused less on the public health aspect of it, it could be argued that a combination of prioritization and a holistic approach to the rationale behind policies, could be used as a tool to combat the inequities faced by marginalized communities in respect to these spaces.

Literature has shown that neighbourhoods are unique, and those that have a higher proportion of those who identify with marginalized communities need more to reap the same benefits as their affluent white counterparts (Braubach et al. 2017). Specifically in Toronto, the study found that some spaces have less than 4sq.m per person specifically in the dense neighbourhoods of Danforth, Yonge-Lawrence, and St. Clair West (City of Toronto, 2017). By establishing a healthy per capita baseline based on the pre-existing conditions of neighbourhoods within a city, can help policy makers support and approve development that will enhance, add value, and support well-being for all economically, socially, culturally. These statistics show that a per capita per neighbourhood is possible and ready yet cities do not prioritize them the same way they do a City-wide measure arguably because it makes the numbers look better. Because of the complexity of what constitutes public green spaces as identified throughout literature, the options are plentiful for exploring what interventions would be appropriate where serving both environmental and social justice purposes (Wolch et al, 2014; Shule, Gabriel, Bolte, 2017; Beyer et al 2014).

Literature has argued how systemically, urban planning practice has reproduced inequality though years of spatial segregation (Du, Zhang, 2020). Although the pandemic may have caused an influx of visitors to public green space, it did not cause the overcrowding. The overcrowding is a by-product of years of redlining communities, neglecting the power of public green spaces for community building, and the commoditization of these spaces for real estate (Du, Zhang, 2020). The popularity of public green spaces is not new, and neither are the inequities that became apparent throughout the pandemic, like lower income communities suffering from a lack of them (Barbosa, Tratalos, Armsworth, Davies, et al, 2007; Shule, Gabriel, Bolte, 2017). The findings from Toronto specifically showed that closing off parking in parks for more space for pedestrians to occupy, and this is a strong strategy that could and should remain post pandemic (City of Toronto, 2020f). Those who occupy high density living

environments, specifically in downtown cores were more isolated than those who occupied single family dwellings with private yard space during the course of the pandemic (Melcher, 2020). It is unclear if these municipalities will be using public feedback and commentary to redesign their approach to green space planning in the future, or if once the pandemic has ceased, these measures and considerations will as well.

5.2 Limitations and Directions for Future Research

The duration of this study was completed over one year during the COVID-19 pandemic and will unfortunately not be able to analyze how new strategies and initiatives will continue and influence communities. Longitudinal studies would greatly benefit this area of research and should be explored as future research priorities. Longitudinal studies would allow researchers to watch the relationships individuals have with the presence or absence of green space over time which would better round out the findings with a public perspective (Farthing, 2016). The coronavirus in combination with the objectives and timeline of a master's program made this research. The outcome of longitudinal studies is to understand how the characteristics of certain communities influence their realities is the goal of this research, which makes it an appropriate choice for future studies that have time and resources available (Farthing, 2016).

Additionally, the data collected, and recommendations made may not be generalizable among all mid to large sized cities provincially and nationally. In qualitative research, validity and reliability can be achieved through several means (Creswell & Creswell, 2018). An indication of strong validity and reliability is the incorporation of multiple measures like prolonged time in the field, member checking, and thick descriptions to capture the data (Creswell & Creswell, 2018). Although this study

was exploratory, several factors influenced its ability to be fully robust. The scope of work and limitations brought forth by the pandemic limited how extensive the exploratory methods could be. A thorough, cross-Canada study is needed to fully understand the variations between large, mid-sized, small sized cities. Exploratory studies, especially sequential mixed methods, would allow for a range of data to analyze including the public perception which was not incorporated into this research (Farthing, 2016).

The comparative study design and the incorporation of the European city of Copenhagen proved to be challenging due to a language barrier with some policy documents not easily understandable or accessible (Sadovnik, 2007). Future research should incorporate stakeholder interviews which would increase the validity of the research and gave better insight into the urban development process and strategies of different national and international locations (Sadovnik, 2007). A strong component of equity research is the incorporation of the public opinion, and for examples like Copenhagen, interviews are useful because participants can't be easily observed (Creswell & Creswell, 2018). Additionally, documents from other jurisdictions proved to be more difficult to obtain, understand, and discern. This is a direct limitation from utilizing document analysis, and future research should employ additional measures like interviews to ensure accurate and complete information (Creswell & Cresewell, 2018).

Although, there may be a lack of consensus over these specifics, there is a collective agreement that population levels, neighborhood demographics, societal conditions, public health concerns, and density must all be considered when it comes to urban green space planning and design (Haaland, van den Bosch, 2015). Aside from the coronavirus pandemic, green space is facing pressure from many other issues within our cities, and they remain consistent among all studies. The differences between

private and public green space are increasingly becoming an environmental and social justice issue, the exploitation of these spaces for economic gain is only cementing bigger equity issues among vulnerable neighbourhoods, density threatens the availability and accessibility of urban green spaces, and the acknowledgement of green space as a luxury amenity over a necessary priority is costing cities.

When these green space injustices go untreated, the climate, biodiversity, community cohesion, public health, and many other aspects of cities go underserved and overlooked. Public urban green spaces must be analyzed by their importance within their communities from a public perspective and must be implemented on the basis of that importance for public health crises of today, and possible ones in the future (Haaland, Van den Bosch, 2015). The future of metropolitan frameworks relies on the accessibility, availability, equitable, and attractive design of neighbourhood green spaces and natural environment features not only for the physical health of its citizens but for the prosperity, success, and longevity.

5.3 Conclusion

The findings from this study show that the importance of public green spaces for community well-being cannot be ignored, especially during times of public health crises. This study has reinforced what planning scholarship has demonstrated for decades, that the integration of biophilic design in the built environment breaks through social, cultural, and economic barriers for health promotion (Douglas, Katikireddi, et al, 2020; Anthun, Maass, Hope, Espnes, Bell, et al, 2019; Braubach et al. 2017). The findings give valuable insight into the ways municipalities can incorporate public green spaces as a priority not only for future health crises but as a policy tool for public health in general. Nevertheless, municipalities must focus on equitable dispersion and the incorporation of unique and creative green

space interventions like green roofs, permeable pavement, and green facades where space for open parks may be sparse (Maller, 2019).

In conclusion, results illustrated that there is a lack of synergy between space and density in both cities plans, policy, and practice. This study revealed that in London and Toronto, the rationale behind the existence of green space priorities within municipal plans does not focus on community well-being. However, despite the disconnect in rationale, individuals are still able to reap some benefits from these spaces based on their presence alone. The initial goal of the study was to understand how the approaches to open public green spaces was influenced by the COVID-19 pandemic, and during this research it became clear that these spaces and their importance could not be ignored. Public green spaces became idyllic escapes from the loneliness of stay at home orders and prolonged isolation. Public green spaces served as a savior for those who lacked private yard space and an adventure for those who had it but craved more than a fenced in section of green with no one to wave at, no one to say hi to, and nothing more to look at. Throughout the study it was apparent that the dispersion of green spaces was inequitable, and the overcrowding of these spaces forced restrictions and closures that threatened the accessibility of them. Vulnerable populations and those without yard space relied heavily on the biophilic benefits of these spaces and were thus put at a higher risk than they already were during the pandemic. With this being said, municipalities need a triage of holistic rationales for public green spaces in municipal documents coupled with strong policy direction and enforcement regarding the implementation and balance of space in communities who need them the most.

The implications of the COVID-19 pandemic on public green space equity and accessibility are numerous. The pandemic did not cause these concerns and it is not the sole culprit for the increased risk faced by underserved communities and vulnerable populations. The pandemic simply exposed all

of the cracks in the planning system as a whole that has continually reproduced these issues and allowed them to separate neighbourhood from neighborhood, and public green space from a human right to an unaffordable and unavailable luxury. Restructuring the way urban development supports community benefits is a key component of how COVID-19 recovery should unfold.

As business begins to boom, infrastructure begins to rapidly increase, the need to allocate funds appropriately, carefully, and strategically is more critical than ever. The work must start at a policy level where the health benefits of public green space is realized as much as the climate benefits and prioritized as such, clear definitions of different kinds of public green space are outlined and included, as well as determining a 'best practice' amount of public green space per capita. Practice must work by calculating public green space per captia per neighbourhood so developments in those areas can determine how to improve and upkeep spaces through the application process, and finally municipalities and the province must work to develop a calculation and baseline percentage for community benefits across the board while taking strategies from successful cities that have become known for livability.

The truth is that we should not and never go back to what normal was before the pandemic. The power of livable, healthy, green, and walkable communities was the biggest lesson that came out of COVID-19. It is the hope that this research informs policy makers and urbanists who have profound influence on the ways our communities are shaped and function.

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