



**SAMUEL CENTRE
FOR SOCIAL
CONNECTEDNESS**

Equity and Green Space in Montreal
Potential for Healthier and More Inclusive Communities

By Geneviève Westgate
Social Connectedness Fellow 2018
Samuel Centre for Social Connectedness
www.socialconnectedness.org
August 2018

Table of Contents

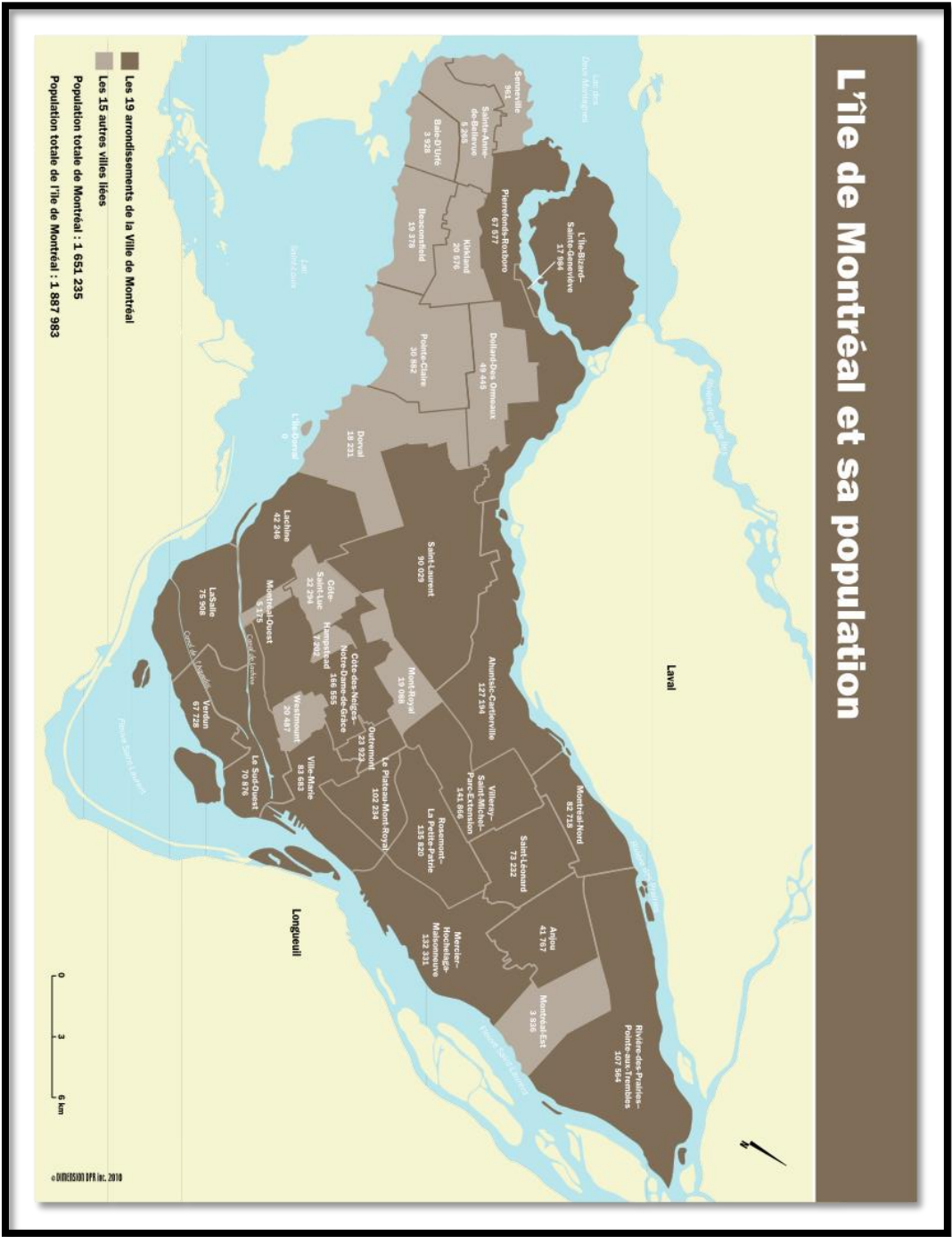
Organizations Consulted and their Acronyms	2
Map of Montreal and its Neighbourhoods	3
Abstract	4
Introduction	5
Research	6
The UESI and Data-Driven Yale	6
Methodology	7
Definitions	9
Green Space	9
Equity/justice	9
The Context: Social Development Challenges of Montreal	10
Socio-economic overview	10
Overall Health Status	11
Montreal's Policy Framework	12
The Challenge	13
How does green space relate to health and well-being?	14
How better health outcomes relate to social justice and integration	18
The potential for green space to mitigate health inequities	19
Key Findings	20
Green space deficit	20
Disparities in distribution and access to green space	21
Disparities in green space facilities and conditions	24
Efforts to Increase Green Spaces and Promote Health Equity and Social Inclusion In Montreal	26
Public Efforts for Inclusive Green Spaces	26
Policy Gaps	27
Tensions: Private Actors as The Missing Link?	28
Non-State Actors, Collaboration and Dialogues	29
Policy Recommendations	31
Impact	36
Conclusion	38
Appendices	39
Bibliography	45

ORGANIZATIONS CONSULTED AND THEIR ACRONYMS

AQLPA	= <i>Association Québécoise de la Lutte Contre la Pollution Atmosphérique</i> (Quebec Association Against Atmospheric Pollution)
CEME	= <i>Collective en Environnement Mercier-Est</i> (Mercier-Est Environment Collective)
CEU	= <i>Centre Écologie Urbaine</i> (Urban Ecology Centre)
CCS	= Centre for Community Services
DSP	= <i>Directeur de Santé Publique de Montréal</i> (Director of Public Health in Montreal)
ICLEI	= Local Governments for Sustainability
MGPV	= <i>Maison des Grand-Parents de Villeray</i> (Housing for Grandparents in Villeray)
MPA	= <i>Montréal Physiquement Active</i> (Montreal Physically Active)
NDGCC	= Notre-Dame-De-Grâce Community Council
RQVVS	= <i>Réseau Québécois de Villes et Villages en Santé</i> (Network of Healthy Neighbourhoods of Quebec)
REQ	= <i>Regroupement des Eco-Quartiers</i> (Eco-Districts)
TDS	= <i>Table de Développement Social de Lasalle</i>

MAP OF MONTREAL AND ITS NEIGHBOURHOODS

1



¹ It may be useful to refer to this map while reading the paper. The dark brown refers to boroughs of the city of Montreal, while the light brown are independent cities. Retrieved from the city of Montreal’s portal.

ABSTRACT

It is widely recognized in the literature that green spaces can have positive impacts on public health; notably on physical and mental health, as well as on social well-being. However, green spaces are not equitably accessible to everyone. This research seeks to identify practices that currently inhibit the equitable use of green spaces for residents of Montreal. This paper will analyze current public policy in regards to green spaces in Montreal, identify intervention points and provide recommendations to promote better accessibility – and therefore better use – of green spaces. The goal is for all residents of Montreal to have equal opportunity to enhance their health and well-being through the enjoyment of these public spaces.

To achieve this goal, this paper offers **six policy recommendations**:

1. Include health equity as a priority in the *Social Development Plan* of Montreal.
Highlight green space interventions as a means of achieving this goal.
2. Create opportunities for vulnerable or priority populations to participate in planning and decision-making processes during green space interventions.
3. Create partnerships and collaboration with various stakeholders, and agree on a unified vision.
4. Create green spaces in underused and underserved areas, specifically in those with more prominent health issues. Focus on small-scale interventions to avoid eco-gentrification.
5. Improve amenities and aesthetics of green spaces, and create programs and activities that engages citizens within this space.
6. Think long-term: evaluate effectiveness, and impact; ensure continuous funding and maintenance.

INTRODUCTION

More than 50% of the world's population lives in urban areas, and this number is projected to increase to 75% by 2050.² Urbanization at such a large scale fundamentally transforms how people live in societies how these are structured. While this rapid pace of urbanization reflects the opportunities that cities make possible, such as cultural enrichment, as well as access to education, services and employment, it also adds to urgency two interrelated challenges: public health and social isolation.³ Urban living limits access to nature and can increase exposure to certain environmental hazards, such as air and noise pollution – placing human health at risk.⁴ Meanwhile, big crowds and busy streets can actively contribute to feelings of alienation for city residents.⁵ Rapid urbanization exacerbated this challenge, since “walkable spaces shrink, parking lots replace playgrounds, and high-rise eclipse neighbourhoods – all of which make it increasingly difficult to maintain a healthy sense of community and belonging.”⁷

Green spaces and other nature-based solutions offer an innovative approach to enhance local resilience and promote sustainable lifestyles, increase the quality of urban settings, and improve both the health and the well-being of the residents.⁸ It is therefore necessary to ensure that green spaces are easily accessible and distributed equitably in order to promote better health for all members of the urban community.⁹ With this in mind, this report seeks to analyze the potential for green spaces to improve physical and mental health,

² Moore, M., Gould, P. and Keary, B. (2003). Global urbanization and impact on health.

³ Ibid.

⁴ Ibid.

⁵ Perry, Francesca. 2018. "Does City Life Make Us More Or Less Lonely? Share Your Stories".

⁶ Samuel, Kim. 2017. "The Urban Condition Is The Human Condition".

⁷ Ibid.

⁸ WHO. 2017. *Urban Green Space: A Brief For Action*.

⁹ WHO. 2017. *Urban Green Space: A Brief For Action*.

and promote feelings of belonging within the city. This in turn questions the potential of green spaces in reducing health inequities, which have been observed in Montreal. This research seeks to identify policies and practices that currently inhibit the equitable use of green spaces by residents in Montreal, and that therefore prevent residents to achieve their health potential. The goal of the research is to identify points of interventions and propose policy recommendations to promote more equitable use of green space, such as to ensure better overall health for Montrealers; and to create feelings of social inclusion and belonging within the community. What makes this research impactful is that while green space may not be a topic that policy-makers or citizens see as directly relating to social isolation in the everyday lives of individuals, a lack of green space may create social isolation in the long run. More specifically, lack of green space may contribute to poor health outcomes, such as obesity, cardiovascular diseases, and depression, which may eventually inhibit individuals' full participation in society. For these foregoing reasons, this report urges different stakeholders to include equitable access to green space in their efforts to promote health equity in Montreal.

RESEARCH

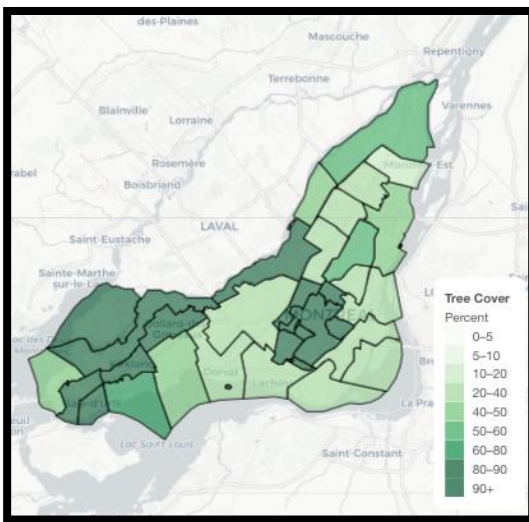
The UESI and Data-Driven Yale

This research was initiated in parallel to the launch of the Urban Environment and Social Inclusion Index (UESI), developed by Data-Driven Yale.¹⁰ This index spatially maps environmental performance within approximately 30 pilot cities – including Montreal – and reveals how these issues interact with equity and social inclusion. The UESI contains five

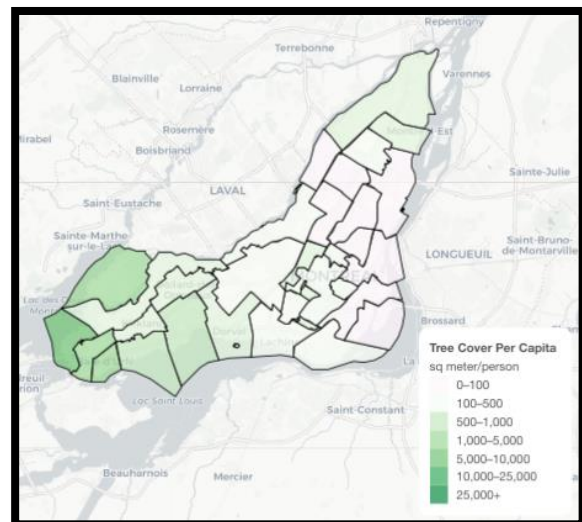
¹⁰ Visit: <http://datadriven.yale.edu/> for more information.

environmental performance indicators: air pollution, urban heat island (UHI), tree cover, climate change and water stress. It also contains two demographic indicators, income and population. Part of the objective of this research is to add a qualitative framework and analysis to the data set presented by the Yale research team, in order to shed light on how these environmental issues are affecting people in their daily lives. Below is the tree cover indicator for Montreal. The UESI makes evident an inequity in distribution of this green space between neighbourhoods, an issue that will be explored in this report.

Tree Cover



Tree Cover Per Capita



Methodology

Research for this report was holistic by nature, and was composed of an in-depth literature review, field research and interviews with experts in the field. A total of 12 interviews were conducted, with urban planners, public health professionals, environmental NGOs, youth and health organizations, community organizers and environmental activists. The interviewees were contacted by email or by phone between May 14 and August 1, 2018, and information about the research was shared prior to the interviews. All interviewees chose for themselves, and their organization, to be identified by name. Discussions with such a wide

range of experts allowed for a very inclusive understanding of the issues at stake, as well as a critical analysis of current public, private and citizen-led efforts to address the challenges identified in this report. Moreover, the UESI was used to identify vulnerable neighbourhoods, in relation to both income and green space. As a result, certain neighbourhoods became of interest – LaSalle and East of Montreal (which is more of a region than a neighbourhood). Findings from interviews and field research in these neighbourhoods will be used as examples throughout the report. In addition, many reflections on areas of interventions in public policy were cultivated during conferences and discussion with policy-makers and local governments at the ICLEI World Congress¹¹ on resilient cities, in June 2018.

It is worth noting that one of the major constraints in this research was in the ability to reach the *citizen*, and get their stories, experiences and feedback on how green spaces can impact their health as well as their ability to feel integrated, or, alternatively, isolated within society. This comes back to the point that green spaces may not be of primary concern to citizens and policy-makers as it is perceived to rarely affect them on a day-to-day basis. Rather, the effects of green spaces manifest itself over the long-term, a fact that may not be very evident to citizens, especially if they are facing more pressing concerns. A second caveat is that while this report discusses social and environmental challenges that residents of the *Island of Montreal* (the focus of the UESI) face, most policy plans analyzed will be that of the *City of Montreal*.¹² The independent cities have their own plans, although their visions do align closely. A special consideration will be made to differ the two, as to ensure clarity for the reader.

¹¹ For more information on the congress, visit : <https://worldcongress2018.iclei.org/>.

¹² Refer to page 4 for more specification on the boundaries between the City and the Island of Montreal.

DEFINITIONS

Green space

Defining urban green space can be tricky because it encompasses multiple conceptual frameworks and researchers have been debating the clear meaning of it. The most common definition that has been used in the literature – and that will be used in this report – is based on the definition from the European Urban Atlas, which defines it as “public green areas used predominantly for recreation.”¹³ This includes large urban parks, community gardens, local parks, street trees, green alleyways, community gardens, and so on. In policy terms, it is important to focus on green space that is open to the *public*, particularly when considering universal green space access regardless of socioeconomic circumstances.¹⁴

Equity / justice

Equity refers to the absence of “avoidable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically.”¹⁵ *Health inequities* are therefore more than just inequality with respect to health determinants and access to the resources needed to improve and maintain health or health outcomes. It also entails a failure to address inequalities that infringe on fairness and human rights norms.¹⁶ Meanwhile *social justice* is defined as “justice in terms of the distribution of wealth, opportunities, and privileges within a society.”¹⁷ Ensuring social justice is therefore one key component to achieving health equity.

¹³ WHO. 2016. *Urban Green Spaces And Health: A Review Of The Evidence*.

¹⁴ Ibid

¹⁵ WHO. 2018. "WHO | Equity." *Who.Int*.

¹⁶ Ibid

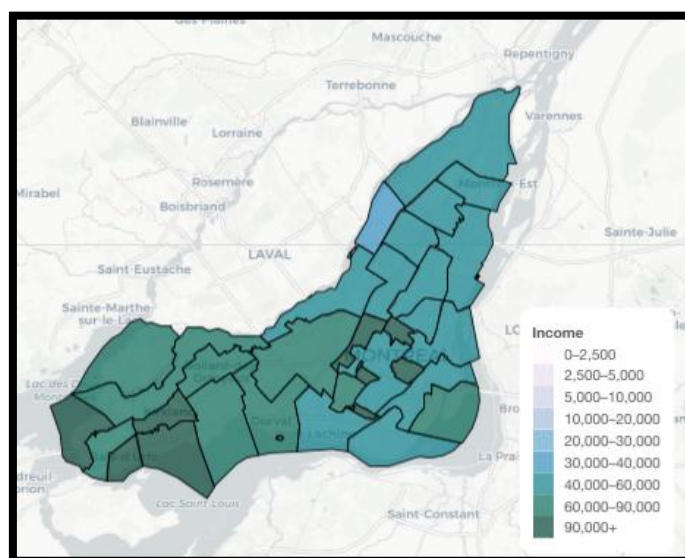
¹⁷ Benjamin, George. 2015. "Health Equity And Social Justice: A Health Improvement Tool."

THE CONTEXT: SOCIAL DEVELOPMENT CHALLENGES OF MONTREAL

Socio-economic overview of Montreal

In Montreal, as in many cities alike, wealth is distributed unequally. 11% of family households have an annual income of over 100 000\$ while 25% of family households have an annual income of less than 20,000\$.¹⁸ The UESI makes evident socio-economic disparities in Montreal (see below). The highest income earners live mostly in the West part of the Island, as well as some neighbourhoods in the city centre such as Outremont and Westmount.¹⁹ Meanwhile, neighbourhoods in the East and the South-West of Montreal tend to have lower median incomes. Despite progress made to date, many people still live below the income cut-off point, deal with precarious work conditions and are not sufficiently protected to face economic downturns.²⁰ People living alone and single-parent families, homeless people and immigrants are among the most socio-economically vulnerable in Montreal.²¹

22



¹⁸ Direction régionale de santé publique. 2017. *Une Politique De Développement Social Axée Sur L'Équité : Vers Une Réduction Des Inégalités Sociales De Santé À Montréal.*

¹⁹ Observation from the UESI.

²⁰ Direction de santé publique. 2012. *Social Inequalities In Health In Montréal.*

²¹ Ibid.

²² Retrieved from the UESI portal.

Overall Health Status

The negative effects of poverty and social inequality on health inequities are widely documented. A study released by the National Institute of Public Health (INSPQ) reveals striking disparities in life expectancy between high-income and low-income neighbourhoods in Montreal. As seen through Appendix A, certain areas in the East End, notably Hochelaga, has a life expectancy of 10 years less than other neighbourhoods in the city, such as the city centres or areas in the West.²³ These health inequities are not just limited to life expectancy, but other health outcomes as well. Overall rates of chronic illnesses such as obesity, overweight²⁴, psychological distress, and attempted suicides are higher in more disadvantaged neighbourhoods.²⁵ What is more is that the *perception* of overall health also differs significantly according to socioeconomic status.²⁶ As seen in Appendix B, perception of mental health and physical health are significantly worst in lower income neighbourhoods than their higher income counterparts. In support of this, Andre Belisle, founder of the Quebec Association Against Atmospheric Pollution (AQLPA) demonstrated that lower-income individuals are also the most likely to be hospitalized during threatening climate events: “You will see that it’s the poorer class in society that go first into the emergency during smog episodes and heat waves. They are the first to be impacted.”²⁷ In sum, Montreal displays remarkable disparities in health, the burden of which falls on the most socioeconomically vulnerable populations.

²³ Direction de santé publique. 2012. *Social Inequalities In Health In Montréal*.

²⁴ Direction régionale de santé publique. 2015. *État De Santé Physique*.

²⁵ Direction régionale de santé publique. 2015. *État De Santé Mentale*.

²⁶ Direction de santé publique. 2012. *Social Inequalities In Health In Montréal*.

²⁷ Interview with Andre Belisle (Founder of AQPLA). June 6th, 2018.

Montreal's Policy Framework

The City of Montreal sought to address these systemic issues and promote social inclusion with its implementation of the *Policy on Social Development*, which guides its decision-making and action plans. The ultimate vision is for Montreal to become²⁸:

[...] a supportive and inclusive metropolis made up of sustainable neighbourhoods that are excellent places in which to live and thrive and where citizens and stakeholders make important contributions.

The values identified to achieve this vision are those of equity, equality, solidarity, dignity, respect and inclusion.²⁹ The plan seeks to address many systemic issues in society, notably poverty and disparities between neighbourhoods, food security, immigrant integration, academic success, quality of housing, among many others.³⁰ The policy plan accords a particular attention to the most vulnerable populations — low-income groups, immigrants, elderly, people with mental health problems and disabilities, as well as Aboriginal people — and works to help them reach their potential and integrate fully into society. That being said, the *major gap* in this policy plan is that it did not *directly* address social inequalities in health between individuals and between neighbourhoods, nor does it outline how the City might go about to reduce these disparities. Given that promoting health equity is related to social justice, it is imperative that this be addressed in the plan. There are cost-effective ways in which the city may tackle this challenge, notably by creating changes in the urban landscape to promote more physical activity and create places that foster social inclusion – and this may be done through *protecting and increasing green space; and encouraging its use* in the city. The City needs to recognize the potential of green space in tackling challenges related to

²⁸Ville de Montreal. 2017. "Politique De Developpement Social."

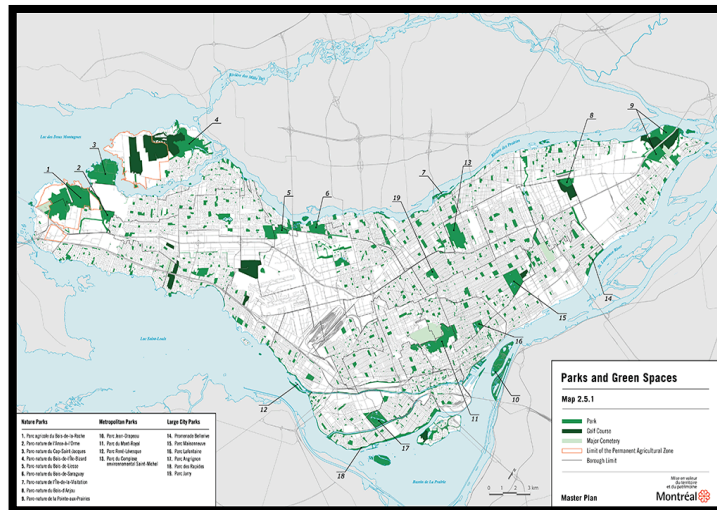
²⁹ Ibid.

³⁰ Ibid.

health inequities, and in helping to reach its ultimate goal of creating a “sustainable and inclusive city.”

What is the current situation with green spaces on the ground? Montreal has a large network of natural as well as urban-designed parks and green spaces, which may provide essential services for the health and well-being of individuals and their communities. The City of Montreal contains approximately 1,353 green spaces (equivalent of 41 615 050 m²), composed of large metropolitan parks, municipal parks, as well as “other” green spaces, which includes gardens, green alleyways, green roofs, etc.³¹ The City has set in motion policies and plans to increase and protect these spaces³², focusing primarily on providing these amenities to the most vulnerable neighbourhoods. This report seeks to highlight the potential of green space intervention in addressing health inequity; a component that would add a lot of value if included in the *Policy on Social Development*.

33



³¹ Ville de Montréal. 2018. *Plan Directeur Du Sport Et Du Plein Air Urbains*.

³² Point that will be revisited in subsequent sections

³³ Retrieved from the City of Montreal portal.

THE CHALLENGE

How does green space relate to health and well-being?

The sedentary lifestyle prevalent in contemporary societies is harmful to human health and well-being. Physical inactivity contributes to 3.2 million annual deaths worldwide, the fourth leading factor for global mortality.³⁴ Physical inactivity is becoming increasingly common in many countries — mostly in the Americas and the Eastern Mediterranean regions — with major implications for the prevalence of non-communicable diseases and the general health of the population worldwide.³⁵ This is a relevant issue in Montreal as recent data from population health surveys have demonstrated that:

- 1 in 3 Montrealers have at least one chronic disease
- 1 in 2 Montreal adults are overweight
- 6 in 10 Montrealers are not very active or are sedentary³⁶

According to the World Health Organization (WHO), whether or not someone engages in physical activity may be influenced *not only* by individual characteristics, but also by the accessibility, conditions and actual/perceived safety of their surrounding physical environment — including *green spaces*.³⁷ The literature has widely acknowledged that providing attractive urban green space may encourage people to spend more time outdoors and facilitate physical activity, even if it is only at a light level.³⁸ Increased physical activity has been shown to “improve cardiovascular health, mental health, neurocognitive development,

³⁴ WHO. 2016. *Urban Green Spaces And Health: A Review Of The Evidence*.

³⁵ WHO. 2018. "WHO | Physical Inactivity: A Global Public Health Problem."

³⁶ Santé Montréal. 2018. "Montréal, Une Métropole En Santé - A Mobilization Movement Designed To Foster Physical Activity And Healthy Eating."

³⁷ Kondo, Michelle, Jaime Fluehr, Thomas McKeon, and Charles Branas. 2018. "Urban Green Space And Its Impact On Human Health."

³⁸ WHO. 2016. *Urban Green Spaces And Health: A Review Of The Evidence*.

and general well-being; and to prevent obesity, cancer, and osteoporosis.”³⁹ While the literature has not confirmed a *direct* correlation between green spaces and these health outcomes, it does nonetheless suggest that engagement in green space may provide pathways to these outcomes. In some context, simple exposure to green spaces may also improve health. In 1984, a now renowned study published by *Science* demonstrated that post-operative recovery rates were significantly faster for patients with a *view* of vegetation from their hospital rooms, compared to those with a view of brick walls.⁴⁰ As such, whether actively engaging or simply being exposed to green spaces, evidence from the literature and reflections from public health professionals⁴¹ have indicated that green spaces can contribute to the promotion of better physical health.

Furthermore, access to green space may have an important impact on mental health. The WHO defines mental health as “a state of being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make contributions in his or her community.”⁴² One in four people in the world are affected by mental disorders at some point in their lives, and 450 million people are currently suffering from such conditions – making mental health disorders among the leading causes of disability and ill-health worldwide.⁴³ More precisely, recent data from *Statistics Canada* revealed that work/school is the number one stressor leading to mental health problems in Quebec, followed by financial problems and health of family members.⁴⁴ Meanwhile, depression, alcohol abuse and psychological distress are the most common mental health challenges

³⁹ Ibid.

⁴⁰ Ulrich, R. 1984. "View Through A Window May Influence Recovery From Surgery."

⁴¹ Interview with Karine Forgues (Public health professional at DSP). July 13th 2018.

⁴² WHO. 2018. "WHO | Mental Health: A State Of Well-Being." *Who.Int*.

⁴³ WHO. 2018. "WHO | Mental Disorders Affect One In Four People." *Who.Int*.

⁴⁴ Institut de la statistique du Québec. 2015. "Portrait Statistique De La Santé Mentale Des Québécois."

dealt by Quebecers⁴⁵ — making it an important public health challenge to be addressed. Vast arrays of literature have demonstrated that green spaces can mitigate certain mental health challenges. The main theory that has been revisited in numerous articles is that contact with nature can have a positive *restorative effect* on mental health, which may provide a buffer against stressful life events, reduce anxiety and improve cognitive function.⁴⁶ Forgues, a public health professional from the Director of Public Health Office (DSP) backs up this statement as she reveals that, “In Montreal, green space can have a positive impact on mental health, by decreasing depressive and anxiety symptoms.”⁴⁷ The benefits of green spaces on mental health may also arise from participation in activities occurring in these spaces, such as physical exercise and social interaction. These benefits include the “alleviation of stress and anxiety, and improved mood and attention.”⁴⁸ Sue, a resident from the West part of Montreal (Sainte-Anne de Bellevue), recounts the positive impacts of green spaces on the mental health of her students⁴⁹:

I like to get [the students] outside of the classroom. We have a small forest outside of the property of the school that contains a lot of wildlife. I convinced the teachers to let me take the students out there, because these special needs kids have ADD and anxiety. They were completely different people in the forest. They are more relaxed, and they can express themselves better. It is like everything they had trouble focusing on in the classroom became clearer in the forest. It felt like we were harming them by not bringing them out to these spaces.

Green spaces may also provide opportunities to increase levels of social cohesion within a community. Globalization has resulted in increasing levels of migration over the past decades.⁵⁰ This means that while Montreal may have been a rather homogenous city in the

⁴⁵ Ibid.

⁴⁶ WHO. 2016. *Urban Green Spaces And Health: A Review Of The Evidence*.

⁴⁷ Interview with Karine Forgues (public health professional at DSP). July 13th, 2018.

⁴⁸ Lee, Andrew, Hannah Jordan, and Jason Horsley. 2015. “Value Of Urban Green Spaces In Promoting Healthy Living And Wellbeing: Prospects For Planning.”

⁴⁹ Interview with Sue (resident from West Island). August 3rd, 2018.

⁵⁰ Konijnendijk, Cecil et al. 2013. *Benefits Of Urban Parks: A Systematic Review*.

past, it is becoming more and more multicultural, containing approximately 120 communities and 200 languages.⁵¹ Every neighbourhood is different and while this bring forth a certain richness and openness to others, it can also lead to discrimination and social exclusion. As Montgomery states in her speech at ICLEI, there are many ways in which neighbourhoods can tackle this problem of social exclusion, notably by creating public places in which people can meet, interact and create relationships — such as green spaces.⁵² Green space has been viewed as an important part of the urban and community development by providing opportunities for enhancing *social cohesion*, rather than just a setting for leisure and recreation.⁵³ Green spaces, particularly urban parks, have been suggested in the literature to facilitate social cohesion by creating space for social interaction, particularly between people of different social and ethnic background.⁵⁴ Increased social interaction within a community has been said to “help reduce social isolation, generate social capital, and lead to personal resilience and wellbeing.”⁵⁵ Robert Putnam in his work *Bowling Alone*, suggested that interacting with others help people to participate in society and create feelings of acceptance.⁵⁶ Moreover, social integration can have positive effects on virtually all aspects of health, physical as well as psychological: “The more integrated we are with our community, the less likely we are to experience cold, heart attacks, strokes, cancer, depression, and premature death of all sorts.”⁵⁷ During a discussion with a group of older people at an intergenerational home, many expressed their joy of using green spaces as a means for

⁵¹ Montgomery, Sue (Mayor of NDG). 2018. "Living Together In A City." Speech, ICLEI World Congress, , 2018.

⁵² Ibid.

⁵³ Konijnendijk, Cecil et al. 2013. *Benefits Of Urban Parks: A Systematic Review*.

⁵⁴ Ibid.

⁵⁵ Lee, Andrew, Hannah Jordan, and Jason Horsley. 2015. "Value Of Urban Green Spaces In Promoting Healthy Living And Wellbeing: Prospects For Planning."

⁵⁶ Putnam, Robert D. 2007. *Bowling Alone*. New York, NY: Simon & Schuster.

⁵⁷ Ibid.

connecting with friends, families and neighbours. One woman revealed that her borough just installed a green alleyway behind her house, and the community now hosts numerous events in this space including potluck dinners and activities for children. She expressed that this gave her an opportunity to interact and to get to know her neighbours (some for the first time), and felt like engaging in these activities created a sense of belonging in her community.⁵⁸

How better health outcomes relate to social justice and integration

Good health has a significant value for individuals because it is essential to their well-being and ability to actively participate in the work force and in a democratic society.⁵⁹ If individuals cannot become active members of society, they are then faced with a myriad of social disadvantages that infringes on their human rights. The Nobel laureate economist Amartya Sen viewed health as a fundamental *capability* required to function in society, while ill health can be a barrier to realizing one's human rights.⁶⁰ Indeed, ill health threatens "[...] one's ability to earn a living and is an obstacle to fully expressing one's views and engaging in the political process."⁶¹ Moreover, social exclusion may also infringe on individuals' capabilities. Putnam found a strong correlation between social connectedness, and positive children development, school performance, maintenance of liveable and safe neighbourhoods, as well as economic prosperity.⁶² It is therefore *unjust* that those who are already socially disadvantaged in Montreal should also experience additional obstacles to opportunities based on having worse health outcomes and lower social capital. A special focus should be made on providing the most vulnerable populations with the resources that they

⁵⁸ Interview with participant (Maison des Grand-Parents de Villeray). August 7th, 2018.

⁵⁹ Braveman et al. 2011. "Health Disparities And Health Equity: The Issue Is Justice."

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Putnam, Robert D. 2007. *Bowling Alone*.

need to prosper in their health as well as their social-wellbeing. This resonates with the common sense of fairness and justice, “notably the concept that *needs* should be a key determinant of resource allocation for health.”⁶³ Providing enough green spaces with features that meet the *needs* of disadvantaged neighbourhoods is a *start* in offering fairer opportunities for health enhancement and social integration in Montreal. This, in turn, may address issues of health inequities, which has been observed in the city.

The potential for green space to mitigate health inequities

It has now been made evident that chronic illnesses are more prevalent in disadvantaged neighbourhoods in Montreal, revealing health inequities. These disparities in health inhibit citizens to reach their potential, which can have repercussions on their ability to integrate fully into society. The good news is that the literature as well as interviews with experts in the field has revealed that green spaces can *contribute* to alleviating health inequities in Montreal. To begin, a report by Allen and Balfour indicated that deprivation-related health inequities are smaller for those living in the greenest areas, which means that green spaces may mitigate some of the negative health impacts related to social inequality.⁶⁴ This was because they found that people living in areas with large amounts of green space were three times more likely to be physically active, thus experiencing better health outcomes than would those of a similar level of disadvantage for whom access to green space is much less.⁶⁵ Public health experts mirrored these statements during interviews. The director of RQVVS acknowledged that bringing more green space into the city is part of a *multifunctional* approach to reducing health inequities, specifically in regards to the

⁶³ Braveman et al. 2014. "Health Disparities And Health Equity: The Issue Is Justice."

⁶⁴ Balfour, Reuben, and Jessica Allen. 2018. *Natural Solutions For Tackling Health Inequalities*.

⁶⁵ Ibid.

disparities in life expectancy between neighbourhoods in Montreal: “It is really about having a macro vision when taking action to address large societal problems, such as health and poverty. Green space and urban planning is a large part of the solution – but not the only solution. There are other, complex factors that play into this, as well.”⁶⁶ An expert from the regional public health office agreed with the above statements, citing that: “I think greening is a big part of the solution. If we address issues in the local environment it can make significant changes in the disparities of health, and that is very important in Montreal.”⁶⁷ As such, providing more green spaces in disadvantaged neighbourhoods can enhance opportunities for physical activity and social engagement, and thus may be one of many factors that contributes to the alleviation of health inequities in Montreal.

KEY FINDINGS

Green space may not have the intended effects on health and wellbeing if there are obstacles to its *use*. Evidence from the literature, interviews with experts as well as field observations have determined that there is inequitable distribution and access to green space, as well as disparities in the facilities and conditions of these spaces. Undoubtedly, disadvantaged neighbourhoods bear the burden of this inequity, inhibiting their use of green space and thus compromising health-enhancement opportunities.

Green space deficit

Despite public efforts to increase green spaces in the city, Montreal is still facing a deficit. According to recommendations put forward by the *National Recreation and Park*

⁶⁶ Interview with Chloe Dodinot (Director of RQVVS). July 25th, 2018.

⁶⁷ Interview with Karine Forgues (public health professional at DSP). July 13th 2018.

Association, North American cities are suggested to have roughly 4 hectares of green spaces per 1000 residents, which includes 2 hectares of local parks and 2 hectares of large urban parks.⁶⁸ In Montreal, there is only 1.75 hectares of green space per 1000 residents, which incorporates 0.65 hectares of local parks per 1000 residents, and 1.1 hectares of large urban parks per 1000 residents.⁶⁹ Furthermore, wealthier sectors within the city, such as Pointe-Claire, Beaconsfield and Westmount have ratios varying between 2.2 and 3.8 ha/1000 residents, while more disadvantaged sectors, like Rosemont, benefit from only 0.7 ha/1000 residents.⁷⁰ Montreal also has less tree coverage than other big cities in Canada. It has approximately 6 million trees, a canopy cover of 20%. This represents a ratio of just 2 trees per residents.⁷¹ Refer to Appendix C for tree cover comparison with other cities of Canada.

Disparities in distribution and access to green space

Easy access to parks and green spaces and high green space coverage is associated with increased *use* of the space. Indeed, *National Parks and Recreation* have demonstrated that park visitation is more frequent and physical activity levels are higher for people living within walking distance to parks.⁷² They also noted that higher green space average within a neighbourhood is associated with increased participation in physical activity.⁷³ This suggests that equitable *distribution* and *access* to green space may promote healthier lifestyles and improve wellbeing across population groups, potentially addressing challenges of health inequity in Montreal. However, suggestions from the literature and reflections from experts

⁶⁸ Emond, Julie. 2017. *Les Espaces Verts Urbain Et Leur Contribution A L'amélioration De La Qualité De Vie Des Résidents De La Petite-Patrie*.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ TD Economics. 2014. "The Value Of Urban Forests In Cities Across Canada."

⁷² National Recreation and Parks Association. 2018. *Parks And Recreation In Underserved Areas: A Public Health Perspective*.

⁷³ Ibid.

in the field have questioned whether green spaces are truly equitably accessible to everyone in Montreal.

Many authors have shed light on the environmental inequity in the spatial distribution of green spaces in Montreal. To begin, Pham found that socio-demographics are significantly associated with the distribution of *street trees*, especially the presence of recent immigrants (negative effect) – implying that lower-income individuals have fewer trees in their neighbourhood.⁷⁴ Another report by Pham investigating environmental inequity in Montreal found disparities in the distribution of *vegetation* in Montreal disavouring low-income people, and to a lesser extent, visible minorities.⁷⁵ A report by Tooke reflected the findings of the previous author. His study found that income variables were significantly and positively correlated with distribution of *vegetation* in Montreal, suggesting that the higher an individual's income, the greater the chance that they live in an area with larger amounts of vegetation.⁷⁶ What is interesting about these findings is that green space inequity may be evident *between* neighbourhoods, as well as *within* neighbourhoods. The UESI makes it clear that the East parts of Montreal, as well as certain areas in the Southwest, are disadvantaged in regards to green space. Indeed, the directors of Eco-district (REQ)⁷⁷ and the Network of Healthy Neighbourhoods of Quebec (RQVVS)⁷⁸ have both suggested that the West part of Montreal (the wealthier region) contains significantly more greenery than the Eastern part. While the East is catching up, due to its greening initiatives, many residents are still expressing

⁷⁴ Pham, Thi-Thanh-Hien, et al. 2013. "Predictors Of The Distribution Of Street And Backyard Vegetation In Montreal, Canada."

⁷⁵ Pham, Thi-Thanh-Hien, et al. 2012. "Spatial Distribution Of Vegetation In Montreal: An Uneven Distribution Or Environmental Inequity?"

⁷⁶ Tooke, Thoreau, et al.. 2010. "A Geographical Approach To Identifying Vegetation-Related Environmental Equity In Canadian Cities."

⁷⁷ Interview with Simon Oceau (Director of Reseau Eco-Quartier). July 3rd, 2018.

⁷⁸ Interview with Chloe Dodinot (Director of RQVVS). July 25th, 2018.

discontent with this disparity of green spaces between these two regions. A member of CEME even declared, “*They put the parks in the West, and the garbage in the East.*”⁷⁹ However, what may not be so evident through the UESI are the disparities in green spaces *within* neighbourhoods. As Charters from NDG Community Council states, “There are certain ‘pockets’ of disadvantaged areas within neighbourhoods that are underserved with respect to green space.”⁸⁰ These findings suggest that distribution of green space tend to follow a socio-economic gradient, whereas lower-income population benefit from less green space coverage.

What complicates this issue further is that not all Montrealers have equitable *access* to green space. According to the WHO, urban residents should be able to access public green space of at least 0.5-1 hectare within 300 metre’s linear distance of their home, equivalent to a 5-minute walk.⁸¹ The WHO also states that green spaces should have obvious and safe entrance points, as well as secure and pleasant access routes (not having to walk across busy roads or through dangerous areas). Based on these definitions provided by the WHO, it is clear that not all residents have equitable *access* to green space. The East of Montreal, a region with already less greenery than the Montreal average, also experience difficulties of accessibility. Neighbourhoods in the region “are enclaved by highways and railway infrastructure”, making trips to green spaces more challenging.⁸² The two large urban parks that they *do* contain, is not made easily accessible. Anjou nature-park is on private land, and thus membership is required for its use. The Rivière-des-prairies nature-park is located on the

⁷⁹ Interview with Environment Collective Mercier-Est. August 6th 2018.

⁸⁰ Interview with Steve Charters (Coordinator at NDG Community Council). June 26th, 2018.

⁸¹ WHO. 2017. *Urban Green Space Interventions And Health: A Review Of Impacts And Effectiveness*.

⁸² "Lutte Contre Les Iniquités Territoriales : Le Projet ILEAU Fait Partie Des Solutions - Gaiapresse" 2016. *Gaiapresse*.

far-east border of the city, necessitating a car to access, an amenity that lower-income populations do not always enjoy.⁸³ Beyond that, it may be difficult and simply unrealistic for individuals who spend the whole day at work, to drive back to their house, and then walk or drive a long distance to access a park. This is a concern that was expressed by Coué:⁸⁴

I live in the East of Montreal, and it takes me about one hour and a half to get to work. This means that in the evening, when I leave work at 5pm, I only get home at 6:30pm. If I had kids, it would be a challenge to help them with their homework and also bring them to a park to play. Green spaces are there, but there are challenges in more disadvantaged neighbourhoods because residents may not have the equipment to play. But, most importantly, people no longer have that tendency to play outside.

In sum, if green spaces are not made easily accessible to residents then it will surely impede their use of it — and, as a result, the health benefits will not likely be reaped.

Disparities in green space facilities and conditions

There are additional factors *within* parks themselves that either facilitate or hinder physical and social activity, notably the *conditions* and *facilities* of the space. Green spaces and parks that have facilities that promote social interaction (park benches, picnic tables, water fountains) and physical activity (bike lanes, sports equipment) may be more attractive for people to use, and can also promote better health and wellbeing — thereby addressing challenges of health inequities.⁸⁵ Facilities should not only be present, but also *support* the needs of different populations groups. For example, a community organizer from Lasalle explains that most parks in her neighbourhoods have water games not only to support community cohesion but also to counteract the impacts of the Urban Health Island (UHI),

⁸³ Ibid.

⁸⁴ Interview with Laurent Coué (Coordinator at Physically Active Montreal). August 1st, 2018.

⁸⁵ National Recreation and Parks Association. 2018. *Parks And Recreation In Underserved Areas: A Public Health Perspective*.

which is particularly severe in this neighbourhood.⁸⁶ Not only do people make the decision to use green space based on the types of facilities available but the condition of the green space also determines the decision as well, since “parks users are more likely to visit a park that is consistently well maintained in which the facilities are safe to use.”⁸⁷ As such, features within green spaces have been acknowledged as playing a large factor in individual’s decision to use the space.

Are the facilities distributed equitably across Montreal, in a way that supports better health and well-being for *all* its population? Coen and Ross (2004) explore this question in their study that examined health-enhancing neighbourhood resources in local parks and analyzed systematic differences in material conditions between areas.⁸⁸ 28 parks were selected from 6 urban Montreal neighbourhoods along a health status gradient. Results indicated that while neighbourhood parks showed a variety of features, *those located in poor health areas displayed several pronounced material disadvantages*, including “limited provision of facilities for physical exercise, concentration of physical incivilities, and adjacency to industrial sites and multi-lane roads.”⁸⁹ While this research makes evident the inequities in the quality of parks, more research needs to be done to see if this inequity is persistent at the city-level as well.

These findings demonstrate that quality green spaces are not equitably distributed and accessible across neighbourhoods in Montreal. This brings back the notion of social justice discussed previously. It is fundamentally *unjust* that these low-income population

⁸⁶ Interview with Alice Miquet (Coordinator of RUI Lasalle). July 5th, 2018.

⁸⁷ National Recreation and Parks Association. 2018. *Parks And Recreation In Underserved Areas: A Public Health Perspective*.

⁸⁸ Coen, Stephanie E., and Nancy A. Ross. 2006. "Exploring The Material Basis For Health: Characteristics Of Parks In Montreal Neighbourhoods With Contrasting Health Outcomes."

⁸⁹ Ibid.

groups that are already facing myriads of social disadvantages, also deal with constraining health-enhancement opportunities. As ill-health inhibits individuals' capabilities to become active members of society, it is critical to provide adequate green spaces to all population groups so that everyone can have the chance to reach their potential.

EFFORTS TO INCREASE GREEN SPACES AND PROMOTE HEALTH EQUITY AND SOCIAL INCLUSION IN MONTREAL

Public efforts for inclusive green spaces

Given the potential for green spaces to enhance health and wellbeing of residents, the City has proposed several policies to improve and increase its green infrastructure. They recently adopted the *Tree Canopy* plan, which sets to increase Montreal's tree canopy cover to 25% from 20% by 2025, compared with 2007.⁹⁰ They have also adopted the policy on the *Protection and Enhancement of Natural Space*⁹¹, which aims to achieve a 10% rate of protected land areas, to actively enhance the Network of Large Park (refer to map on p.14) for the benefit of the public, and to increase biodiversity in natural and urban settings.

What does this look like on the ground? In the short run, this would mean the protection of large urban parks, such as the parks of Pierrefond-Ouest and Anjou, which together contain more than 250 hectares of land.⁹² It would also entail ensuring territorial and social equity, and thus protecting and enhancing green spaces in the East of Montreal. But most importantly, it involves taking the lead in implementing large green space projects across Montreal. The most significant one, worth mentioning here, is the *Turcot Interchange*

⁹⁰ Ville de Montreal. 2012. "Plan D'action Canopee 2012-2021." Montreal: Direction des grands parcs et du verdissement.

⁹¹ Translated from French.

⁹² Rondia, Emmanuel. 2018. "Espaces Verts Et Milieux Naturels À Montréal - Pour Plus De Protection Et Un Meilleur Accès À L'Ensemble De La Population."

project. This public effort seeks to create a green walkway that will link two boroughs together (the Southwest with Notre-Dame-de-Grâce), and provide a pathway to a new sprawling park on land now *occupied by a highway*, and another pathway to an isolated forested area (see plan below).⁹³ It includes the planting of more than 500 trees, moving forward the city’s plan for increasing tree coverage. More than anything, it will provide a place for physical activity and community cohesion, which may be particularly important to the residents of the boroughs in the Southwest, who face a double burden of inequality — that is, they lack green space and are socio-economically deprived.

94



Policy gaps?

With that said, there are important gaps to mention in the City of Montreal’s green space plans and actions. To begin, there is a *failure to think long term*. They frequently mention the “10 year plans” that ultimately end in 2025, but fail to account for what needs to be done after, including the maintenance of these spaces. A citizen from CEME explains that as part of the tree canopy plan, the city planted 200 trees in his neighbourhood. Once

⁹³ Magder, Jason. 2018. "Dalle Parc Plan Is Back, Bigger Than Ever — But Without A Price Tag." *Montreal Gazette*.

⁹⁴ Ville de Montreal. 2018. "Transformation of the Turcot Parks." Office de Consultation Publique de Montreal.

planted, the city did not maintain them – or, at the very least, instruct the citizens how to maintain it themselves – and as a result, “only 25 trees are left. The rest died.”⁹⁵ Furthermore, policy guidelines fail to mention *how the city plans to evaluate the impacts* of their plans and actions, notably on the health and wellbeing of citizens. This is of utmost importance if they want to ensure the project is having the impact that they had intended, and to ensure that the city’s money is being invested properly. As Forgues explains, “There is a lot of action taken place to increase green spaces, but these actions are not evaluated in terms of its impact on public health” due to “limited budgets.”⁹⁶ These will be points that will be revisited in the policy recommendation section.

Tensions: private actors as the missing link?

In order to achieve the city’s objectives for green spaces, many improvements will need to be made to enhance and increase green space on public land. It is important to note that where there is the potential for the *most* improvement is actually on private land (due to the large proportion of land owned by private actors)⁹⁷. However, there exists tension between the City’s vision for green space and private actors’ (such as private landowners, companies and developers) varying interests, which may prioritize real estate development over green space protection. For example, a community organizer from the TDS Lasalle explained that there are many vacant lots in the neighbourhood, which have the potential of becoming convivial green space for the residents. She states, however, that because these spaces belong to private actors, they are not allowed to make any changes to the space,

⁹⁵ Interview with Environment Collective Mercier-Est. August 6th 2018.

⁹⁶ Interview with Karine Forgues (public health professional at DSP). July 13th 2018.

⁹⁷ Rondia, Emmanuel. 2018. "La Clé Pour Plus D'espaces Verts À Montréal - La Presse+.

unless they buy the property, which may not be possible due to their tight budgets.⁹⁸ As a result, many of these spaces have been vacant for over 10 years, gathering garbage and inciting criminal activity at night.⁹⁹ The potential would therefore be *huge* in refurbishing these places, and would have a positive impact not only for community cohesion and overall health but also would be a means of reducing criminality in the neighbourhood (should it be designed for that purpose). Given the amount of land owned by private entities, it is very important that these actors align their vision with that of the City of Montreal's green space plans, as to ensure better quality of life for all residents.

Non-state actors, collaboration and dialogues: examples of best practices in Montreal

Citizen, environmental and health organizations have stepped up to tackle the challenges of green space accessibility and health inequity in Montreal. They have focused on making green spaces more attractive and engaging, so that communities are more inclined to actually use them. While the City's approach is to protect and increase green spaces in Montreal, these local actors instead take a more human-centred approach and seek to tap into the *needs* of the population and directly promote physical and social activity. Below are a few examples of innovative local initiatives that use green spaces as a means of *both* fostering social inclusion and promoting physical activity.

1. "Science in the park" – Collective Community Services, Verdun

The main purpose of this initiative is to reduce youth isolation by providing engaging and educational experiences for youth through an outdoor setting.¹⁰⁰ Many of the activities

⁹⁸ Interview with Alice Miquet (Coordinator of RUI, TDS Lasalle). July 5th 2018.

⁹⁹ Ibid.

¹⁰⁰ Interview with Steffy Velosa (Coordinator of Art and Science in the Park at CCS). July 31st 2018.

revolve around nature, such as using sunlight for printing and making sun-catchers.¹⁰¹ This program is mainly targeted to low-income children, whose parents cannot afford a day camp for the summer. Whereas these children may have had to spend their summer indoors, this program offers a chance to engage with green space, creating an opportunity to make friends and learn valuable skills. This goes back to the point that parks and green spaces should have facilities that *meet the needs* of the neighbourhood, so as to ensure its continuous use.

2. “Green and Active Paths” - Eco-District Program and Montreal Physically Active

The objective of this initiative is to create *paths* in alleys to help citizens discover their green alleyways and to develop active transportation at the neighbourhood scale, particularly for the youth.¹⁰² The creation of the 5-kilometer path was done through a mobile app that citizens could use to navigate themselves throughout the event. The idea is to encourage physical activity (jogging, walking, biking) through the use of local alleyways.¹⁰³ There is one unintended impact that was not mentioned in their plan, and that is the increase of feelings of belonging within a community. When you navigate a neighbourhood on foot or by bike, you become more familiar with the neighbourhood, which favours better community life and also provides opportunities for people to meet and interact.¹⁰⁴ This initiative is a great example of how non-conventional green spaces, i.e green alleyways, can promote physical activity, and provide opportunities for greater levels of social cohesion within a community.

¹⁰¹ Field observations.

¹⁰² Ville de Montreal. 2018. "Les Parcours Ruelles Vertes Et Actives." *Faire Montréal*.

¹⁰³ Ibid.

¹⁰⁴ Interview with Chloe Dodinot (Director of RQVVS). July 25th, 2018.

POLICY RECOMMENDATIONS

Following all preceding observations, 6 policy recommendations are presented with the goal of enhancing opportunities for addressing public health challenges in an inclusive manner. These recommendations may help the City of Montreal, as well as the independent cities that comprise the Island, to guide their policy plans. Meanwhile, these recommendations are also targeted to health organizations, as well as private and civil society actors in their resource allocation and to form stronger relationships with the citizen when designing and implementing green space interventions.

- I. Include health equity as a priority in the *Policy for Social Development* of the City of Montreal. Highlight green space interventions as a means of achieving this goal.

Achieving health equity should be included in the city's development plan, as ill- health can affect individual's functioning and ability to integrate into society. Health equity indirectly affects all social and economic problems that the *Policy for Social Development* seeks to address, such as eradicating poverty, reducing neighbourhood inequities and promoting academic success. It should be made evident to decision-makers that achieving this goal does not necessarily imply improving access to medical services. Rather, it would be pertinent for the *Policy for Social Development* to accentuate the value of *preventative* interventions that address health conditions of individuals, particularly at the local level. This, of course, includes enhancing and protecting green spaces.

- II. Create opportunities for vulnerable populations to participate in planning and decision-making processes. In other words, designing those opportunities so that priority populations are able to participate and fully engage in the process.

It is important to encourage democratic participation in local greening projects. Engaging vulnerable populations may help identify inequities and barriers to enjoying healthy natural environments. Local interventions that do not respond to the unique needs of a group may

actually exacerbate health inequities. The citizen must be put “at the heart of planning processes”, as they have expertise of their local environment that is indispensable.¹⁰⁵ Engaging the citizen “allows a link between professional expertise and the experiences of citizens that live their territory on a day-to-day basis”¹⁰⁶ — a collaboration that would be more adept to respond to local challenges. Many of the greening projects that did not include citizen participation in Montreal were faced with opposition from citizens, and some eventually had to be dismissed.¹⁰⁷ As St-Pierre states, “the projects that include participation, these are the projects that we speak less of but *they work best*.”¹⁰⁸ Furthermore, giving residents the ability to shape their community and the green spaces within them has also proven to have several health benefits. It gives citizens an opportunity to build social relationships with their neighbours, it increases the likelihood that these spaces will be used and maintained, and it engages people in a positive community building process.¹⁰⁹ Community participation in designing and planning for these spaces, “assures use and acceptance of urban green spaces.”¹¹⁰ As such, the City should work with community organizations to help support citizen participation in green space interventions, giving a particular attention to “priority neighbourhoods” to have *their needs met first*.

III. Creating partnerships and collaborations with various stakeholders can help urban green space interventions be more effective

The value of “collaboration” is not included in the set of values highlighted in the Social Development plan, and it should be as it promotes better, and more holistic understanding of the challenges, and it creates a shared vision for plans and actions to be taken on the

¹⁰⁵ Interview with Mikael St-Pierre (Coordinator at Centre Ecologie Urbaine). June 12th, 2018.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

¹⁰⁹ WHO. 2017. *Urban Green Space: A Brief For Action*.

¹¹⁰ Ibid.

ground. The problem is that many organizations, whether environmental, health, or civil society organizations, think that *their* vision is the right one. Therefore, many organizations compete against one another instead of sharing ideas and building trust, thus working in “silos” and not collaboratively.¹¹¹ As stated by Coué, “It is only by collaborating that we will achieve our objectives, not alone. We are faced with complex challenges, and there cannot be *simple* solutions to *complex* challenges. We need to simplify our method of finding solutions to complex problems.”¹¹² In creating green space interventions, it is valuable to work with a variety of stakeholders, including public health organizations, community organizations, school boards, private actors, city officials, and so on — with one vision in mind, that is to promote healthier and more inclusive societies.¹¹³

- IV. Create green spaces in underused and underserved areas, specifically those with more prominent health issues. Focus on small-scale interventions to avoid eco-gentrification.

The imperative to address environmental injustices and related public health disparities has led planners and community-based organizations to focus on innovative strategies for expanding green space resources.¹¹⁴ While it may be challenging to expand parks in highly dense cities, there is a range of possibilities to increase non-conventional forms of green spaces through the adaptive use of urban infrastructure like alleyways, remediated brownfields, rooftops, and urban streets. Perhaps one of the most famous examples of using obsolete infrastructure is New York’s high line, which was built on the remains of an abandoned train line.¹¹⁵ Rendered obsolete in 1980, it was slated for demolition, when local

¹¹¹ Interview with Laurent Coué (Coordinator at Montreal Physically Active). August 1st, 2018.

¹¹² Ibid.

¹¹³ Interview with Chloe Dodinot (Director of RQVVS). July 25th, 2018.

¹¹⁴ Wolch, Jennifer R., Jason Byrne, and Joshua P. Newell. 2014. "Urban Green Space, Public Health, And Environmental Justice: The Challenge Of Making Cities 'Just Green Enough'."

¹¹⁵ Ibid.

activists campaigned to redesign it as an aerial greenway.¹¹⁶ The high line has become one of the most popular destinations of the city, attracting millions of tourists each year. Montreal has also achieved many successes in refurbishing unconventional and underused infrastructure, in such a way that increase green spaces and promote healthier and more inclusive communities. For example, Montreal currently has more than 350 green alleyways in the city, which ecologists say help reduce heat islands, absorb rainwater and bring green space to Montreal's *underused corners*.¹¹⁷ These alleyways have become part of the city's identity, attracting residents' and tourists' interests. With that said, a special focus should be made on revitalizing green spaces in disadvantaged neighbourhoods in Montreal, as they still seem to be left behind.

- V. Offer opportunities to make green spaces more engaging, and promote the use of these communal places.

It is important to consider what motivates local residents to engage with green spaces and venture outdoors. If these spaces are not well maintained and have little recreational activities to offer, few people will feel motivated to use the space — as such, physical activity and social cohesion will not be promoted. It is valuable that stakeholders (such as health organizations and local community organizations) sponsor and subsidize programs and activities in these public spaces, such as fitness classes, sport activities (such as dance class), or activities that gives opportunities for social engagement. Like previously discussed, it is not necessary to be *actively* using the space to enjoy its benefits. Therefore, a focus should also be made on simply providing amenities for social interaction and engagement such as park benches, picnic tables, and water fountains. More importantly, these amenities *must respond*

¹¹⁶ Ibid.

¹¹⁷ Lowrie, Morgan. 2018. "Montreal'S Green Alleys Have Environmental, Community Benefits, Experts Say." *National Post*.

to the needs of the surrounding population — for example, if in a family-oriented neighbourhood, it may be useful to have games and activities for young children. In sum, creating engaging green spaces may help to overcome common barriers that prevent people from accessing or engaging within these spaces, and provide opportunities for physical activity and community cohesion.

- VI. Have a long-term vision: evaluate effectiveness and impact, ensure continuous funding and maintenance. Turn to the UESI to evaluate the progress in these interventions.

A recurring issue with projects that seek to protect and increase green spaces is that it prioritizes the “intervention, not the evaluation.”¹¹⁸ Many policies tend to focus on a dedicated timeline, with little attention to what happens after the project is fully implemented. It is *vital* to monitor and evaluate urban green space interventions to assess whether it provided the intended benefits and to find out whether certain population groups benefited less, or could even be negatively affected by unintended side effects. It is often cited that the main reason for not evaluating the impact of a project is that there is not enough funding allocated to this component of the intervention. It is for this exact reason that, *from the start*, sufficient resources should be allocated and reserved for the evaluation of interventions. On top of evaluating the impact on health, it is also important to analyze the impact on equity, since actions that aimed at increasing green spaces may also perpetuate disparities if no consideration is made to those that are more susceptible to benefit from green spaces. It is also important to ensure continuous maintenance of green space, following its implementation. If the City cannot work to maintain it, they can also train the community to do it themselves. Most importantly, stakeholders need to think *long-term*, and ensure that

¹¹⁸ Interview with Chloe Dodinot (Director of RQVVS). July 25th, 2018.

green space interventions are having the intended benefits to citizens. City-planners may turn to the UESI to evaluate the impact of the intervention on specific environmental indicators, such as air quality, tree cover, and climate, or demographic indicators, such as income. The UESI may also be useful to determine whether the green space interventions may reduce environmental disparities between neighbourhoods in the long-run.

IMPACT

What makes this research particularly impactful is that while green spaces may not be a topic that policy-makers or citizens see as directly related to social isolation, a lack of green space may have this effect in the long run. More specifically, lack of access to parks and green spaces that meet the needs of citizens inhibits communities to reach their health potential. Ill-health constrains individual's capabilities, whether that be in regards to employment or engagement in social activities. It is for this reason that this research seeks to call out to a wide range of stakeholders to do their part to ensure that Montreal's communities stay engaged, connected and healthy.

First of all, as mentioned previously, the *local government* must include access to green space as a pathway to achieving health equity in the *Policy for Social Development*. It must then relay to *community organizations* the task of discussing the issue, and coming up with adequate green space interventions with their citizens. Solutions that address health inequity through alterations in the local environment *must* first and foremost meet the needs of the local populations. Then, once the citizens have decided how they would like to enhance green spaces in their community, they must acquire support and form collaboration with multiple actors that can bring their own skillset and niche to the project, including *urban planners, environmental and health organization; as well as private and public actors*. In other

words, solutions must come from citizens, but realized by higher-level actors that have the financial and institutional resources to accomplish the projects. Most importantly, increasing green spaces in a way that supports health equity involves a multi-stakeholder approach, and requires collaboration, a united vision and continuity in efforts.

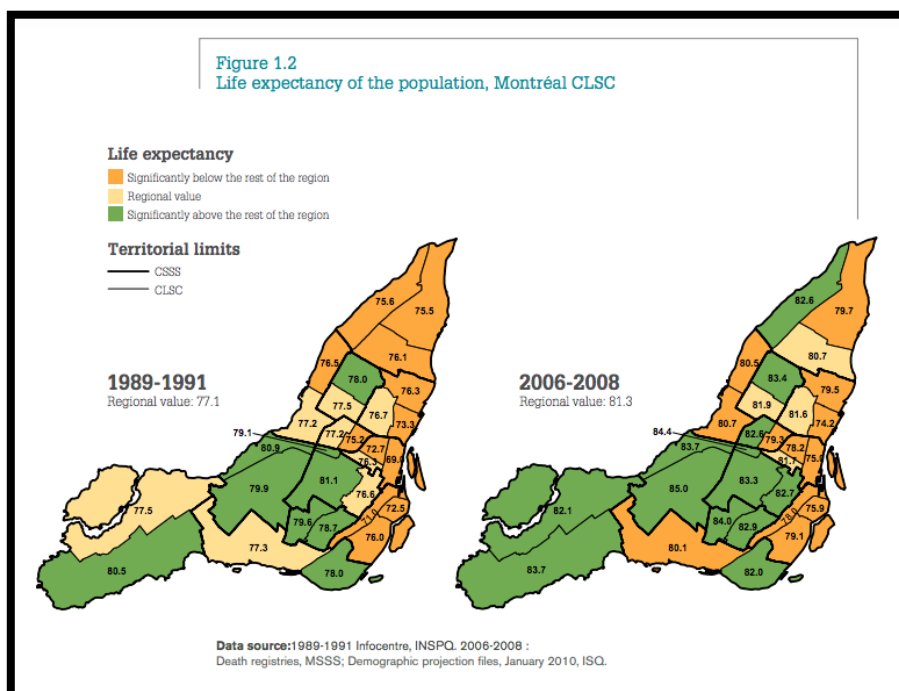
One of the major challenges during this research was convincing different stakeholders the importance of green space to community health and social cohesion. In fact, in most cases, green spaces were not even in the list of priorities and interventions for community organization. To take this forward, researchers would have to demonstrate to policy-makers in a very effective, and convincing matter 1) the cost-effectiveness of green space as a means of addressing health inequities 2) the potential for green space to foster community cohesion and 3) the ability of green space to create more active community. Once it becomes clear to these decision-makers that improving green spaces in the city can address multilevel, systemic challenges that affects vulnerable communities in Montreal, it would then seem to be the next step to include green space interventions as part of the city's policy for achieving health equity. As a result of this being formalized in the city's plans, it may become evident to different stakeholders, including community organizations, the importance of green space in community development. Another caveat in this research was in the difficulty to reach the *citizen*, and that is likely due to the lack of trust between the researcher and the citizen (probably due to the short time frame of the research), along with the lack of priority that citizen accord to green spaces. Moving forward, researchers would need to establish a strong rapport with citizens from the start, and this can be done through partnerships with community organizations and city councils.

CONCLUSION

This research sought to analyze the current state of health and other social problems in Montreal, and highlighted the ways in which these may be interrelated. Furthermore, the research suggested ways in which green space may promote health equity, and foster social inclusion within communities. The paper sought to identify policies and practices that may inhibit equitable use of green space by residents in Montreal, and that therefore prevent residents to achieve their health potential, and, in the long run, actively participate in society. This relates to social justice, as good health is essential to individuals' wellbeing and ability to actively participate in the workforce and in a democratic society. Health is a fundamental capacity required to function in society, while ill health can be a barrier to realizing one's human rights. Policy recommendations were presented, and revolved around putting green space interventions at the heart of the city's goal of achieving health equity. This paper makes evident that by achieving health equity, many social problems at the heart of the *Policy on Social Development* would also be addressed, thus pointing out to policy-makers the value in local interventions in enhancing and promoting the use of green spaces. More consultations with citizens would need to be done in order to understand the value that they put to these green space interventions, and how they foresee this as a way of addressing their pressing needs. Finally, this report calls out to various stakeholders to do their part in designing, creating, funding and maintaining green spaces in ways that support the health and well being of all residents.

Appendix A

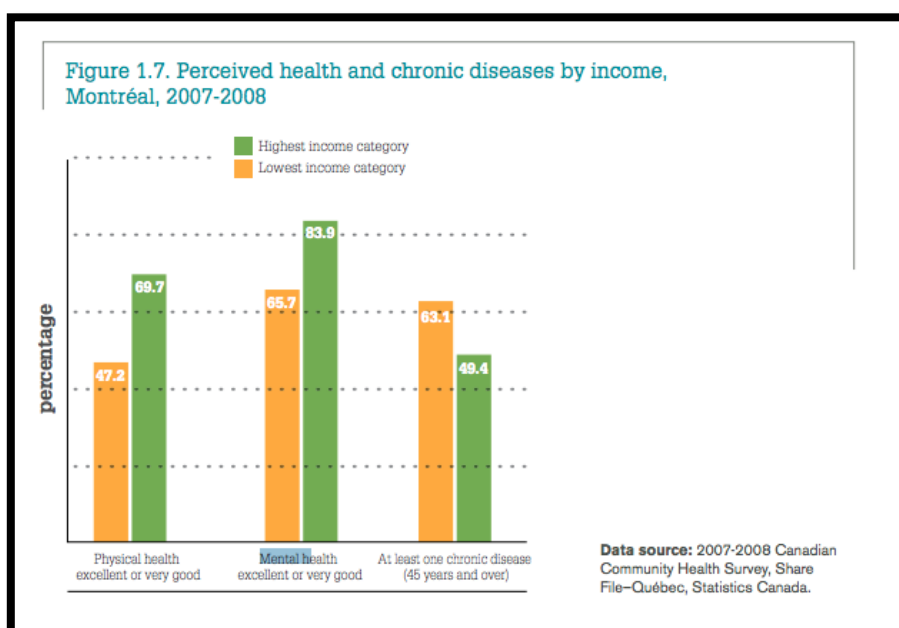
Disparities in life expectancy between neighbourhoods, Montreal



Source: https://publications.santemontreal.qc.ca/uploads/tx_asssmpublications/978-2-89673-131-2.pdf

Appendix B

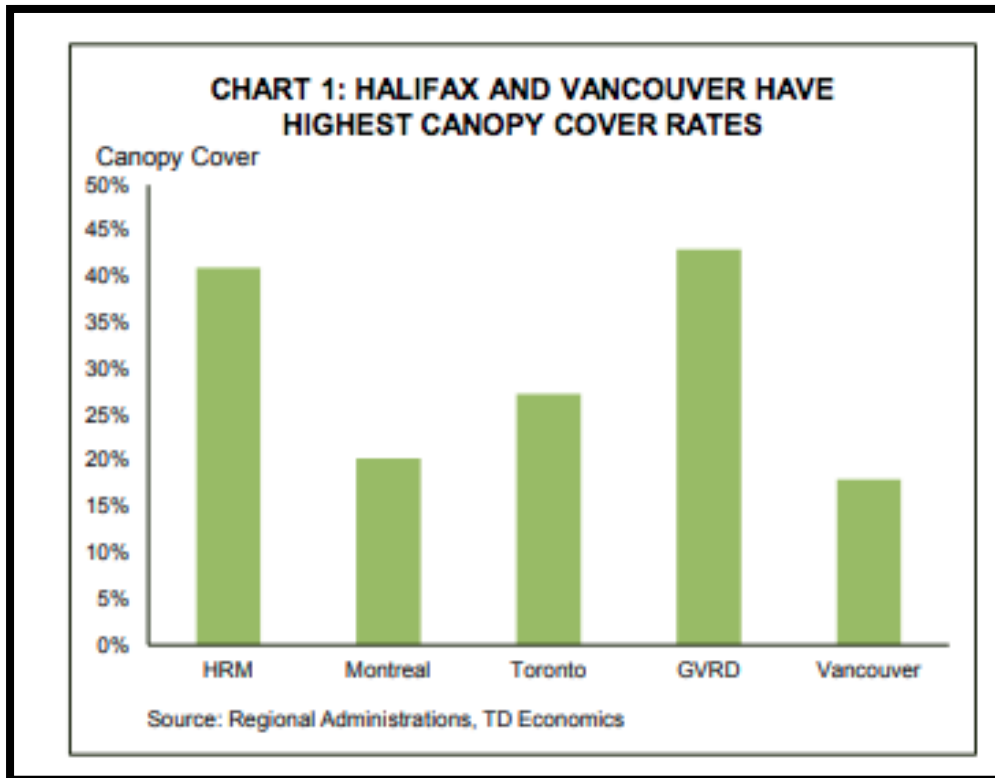
Perceived health and chronic diseases by income, Montreal



Source: https://publications.santemontreal.qc.ca/uploads/tx_asssmpublications/978-2-89673-131-2.pdf

Appendix C

Tree coverage comparison of big cities in Canada



Source: <https://www.td.com/document/PDF/economics/special/UrbanForestsInCanadianCities.pdf>

Appendix D

Pictures during Field Research

Picture 1: Outside of Parc Metro Station. Example of underused green space.
(Source: Morgane Ollier)



Picture 2: Man relaxing in the Parc Frédéric-Back – Environmental Complex of St-Michel
(Source: Morgane Ollier)



Picture 3: Construction Workers Greening an Underused Area in St-Michel
(Source: Morgane Ollier)



Picture 4: Un-kept Green Space in Lasalle (Source: Morgane Ollier)



Picture 5: Tree coverage in Downtown Montreal. Residents Enjoying this Space for Socializing and/or Relaxing (Source: Morgane Ollier)



Picture 6: Underused Parking Lot in Lasalle, Source of UHI
(Source: Morgane Ollier)



Bibliography

- Balfour, Reuben, and Jessica Allen. 2018. *Natural Solutions For Tackling Health Inequalities*. Ebook. UCL Institute of Health Equity. Accessed August 22.
<http://www.instituteofhealthequity.org/resources-reports/natural-solutions-to-tackling-health-inequalities/natural-solutions-to-tackling-health-inequalities.pdf>.
- Braveman, Paula A., Shiriki Kumanyika, Jonathan Fielding, Thomas LaVeist, Luisa N. Borrell, Ron Manderscheid, and Adewale Troutman. 2011. "Health Disparities And Health Equity: The Issue Is Justice". *American Journal Of Public Health* 101 (S1): S149-S155. doi:10.2105/ajph.2010.300062\.
- Benjamin, George. 2015. "Health Equity And Social Justice: A Health Improvement Tool."
- Conseil Regional de l'Environnement de Montreal. 2007. *Le Verdissement Montrealais Pour Lutter Contre Les Ilots De Chaleur Urbains, Le Rechauffement Climatique Et La Pollution Atmospherique*. PDF. Montreal.
<http://www.cremtl.qc.ca/sites/default/files/upload/documents/publications/leverdissementmontrealais.pdf>.
- Direction régionale de santé publique. 2015. *État De Santé Physique*. Ebook. Montreal: Direction régionale de santé publique.
https://publications.santemontreal.qc.ca/uploads/tx_asssmpublications/Etat_de_sante_physique.pdf.
- Direction régionale de santé publique. 2015. *État De Santé Mentale*. Ebook. Montreal: Direction régionale de santé publique.
https://publications.santemontreal.qc.ca/uploads/tx_asssmpublications/Etat_sante_mentale.pdf.
- Direction régionale de santé publique. 2017. *Une Politique De Développement Social Axée Sur L'Équité : Vers Une Réduction Des Inégalités Sociales De Santé À Montréal*. Ebook. Montreal: Direction régionale de santé publique.
http://ville.montreal.qc.ca/pls/portal/docs/PAGE/COMMISSIONS_PERM_V2_FR/MEDIA/DOCUMENTS/MEM_CIUSSS_20170113.PDF.
- Direction de santé publique. 2012. *Social Inequalities In Health In Montréal*. Ebook. Montreal: Direction de santé publique.
https://publications.santemontreal.qc.ca/uploads/tx_asssmpublications/978-2-89673-131-2.pdf.
- Emond, Julie. 2017. *Les Espaces Verts Urbain Et Leur Contribution A L'amélioration De La Qualité De Vie Des Residents De La Petite-Patrie*. PDF. Montreal.
<https://archipel.uqam.ca/10897/1/M15266.pdf>.
- Institut de la statistique du Québec. 2015. "Portrait Statistique De La Santé Mentale Des Québécois". Québec: Institut de la statistique du Québec.

<http://www.stat.gouv.qc.ca/statistiques/sante/etat-sante/mentale/portrait-sante-mentale.pdf>.

Kondo, Michelle, Jaime Fluehr, Thomas McKeon, and Charles Branas. 2018. "Urban Green Space And Its Impact On Human Health". *International Journal Of Environmental Research And Public Health* 15 (3): 445. doi:10.3390/ijerph15030445.

Konijnendijk, Cecil, Matilda Annerstedt, Anders Busse Nielsen, and Sreetheran Maruthaveeran. 2013. *Benefits Of Urban Parks: A Systematic Review*. PDF. <https://worldurbanparks.org/images/Newsletters/IfpraBenefitsOfUrbanParks.pdf>.

Lee, Andrew, Hannah Jordan, and Jason Horsley. 2015. "Value Of Urban Green Spaces In Promoting Healthy Living And Wellbeing: Prospects For Planning". *Risk Management And Healthcare Policy*, 131. doi:10.2147/rmhp.s61654.

Lowrie, Morgan. 2018. "Montreal'S Green Alleys Have Environmental, Community Benefits, Experts Say". *National Post*. <https://nationalpost.com/pm/news-pmn/canada-news-pmn/montreals-green-alleys-have-environmental-community-benefits-experts-say>.

"Lutte Contre Les Iniquités Territoriales : Le Projet ILEAU Fait Partie Des Solutions - Gaiapresse". 2016. *Gaiapresse*. <http://www.gaiapresse.ca/2016/02/lutte-contre-les-iniquites-territoriales-le-projet-ileau-fait-partie-des-solutions/>.

Moore, M., Gould, P. and Keary, B. (2003). Global urbanization and impact on health. *International Journal of Hygiene and Environmental Health*, 206(4-5), pp.269-278.

National Recreation and Parks Association. 2018. *Parks And Recreation In Underserved Areas: A Public Health Perspective*. PDF. https://www.nrpa.org/uploadedFiles/nrpa.org/Publications_and_Research/Research/Papers/Parks-Rec-Underserved-Areas.pdf.

Perry, Francesca. 2018. "Does City Life Make Us More Or Less Lonely? Share Your Stories". *The Guardian*. <https://www.theguardian.com/cities/2016/feb/29/city-life-more-less-lonely-loneliness-cities-share-stories>.

Pham, Thi-Thanh-Hien, Philippe Apparicio, Shawn Landry, Anne-Marie Séguin, and Martin Gagnon. 2013. "Predictors Of The Distribution Of Street And Backyard Vegetation In Montreal, Canada". *Urban Forestry & Urban Greening* 12 (1): 18-27. doi:10.1016/j.ufug.2012.09.002.

Pham, Thi-Thanh-Hien, Philippe Apparicio, Anne-Marie Séguin, Shawn Landry, and Martin Gagnon. 2012. "Spatial Distribution Of Vegetation In Montreal: An Uneven Distribution Or Environmental Inequity?". *Landscape And Urban Planning* 107 (3): 214-224. doi:10.1016/j.landurbplan.2012.06.002.

Putnam, Robert D. 2007. *Bowling Alone*. New York, NY: Simon & Schuster.

- Rondia, Emmanuel. 2018. "Espaces Verts Et Milieux Naturels À Montréal - Pour Plus De Protection Et Un Meilleur Accès À L'Ensemble De La Population". *Cremtl.Qc.Ca*. <http://cremtl.qc.ca/publication/entrevues/2017/espaces-verts-milieux-naturels-montreal-pour-plus-protection-un-meilleur>.
- Rondia, Emmanuel. 2018. "La Clé Pour Plus D'espaces Verts À Montréal - La Presse+". La Presse+. http://plus.lapresse.ca/screens/aa9bcca8-1311-4ddf-82fa-a109ce96792b_7C_0.html.
- Samuel, K. (2018). *The Urban Condition Is the Human Condition*. [online] HuffPost. Available at: https://www.huffingtonpost.com/kim-samuel/the-urban-condition-is-th_b_9170742.html [Accessed 6 Aug. 2018].
- Santé Montréal. 2018. "Montréal, Une Métropole En Santé - A Mobilization Movement Designed To Foster Physical Activity And Healthy Eating". ASSSM. <https://santemontreal.qc.ca/en/public/news/news/montreal-une-metropole-en-sante-a-mobilization-movement-designed-to-foster-physical-activity-and/>.
- TD Economics. 2014. "The Value Of Urban Forests In Cities Across Canada". Td.Com. <https://www.td.com/document/PDF/economics/special/UrbanForestsInCanadianCities.pdf>.
- Tooke, Thoreau R, Bria Klinkenber, and Nicholas C Coops. 2010. "A Geographical Approach To Identifying Vegetation-Related Environmental Equity In Canadian Cities". *Environment And Planning B: Planning And Design* 37 (6): 1040-1056. doi:10.1068/b36044.
- Ulrich, R. 1984. "View Through A Window May Influence Recovery From Surgery". *Science* 224 (4647): 420-421. doi:10.1126/science.6143402.
- Ville de Montreal. 2018. *Plan Directeur Du Sport Et Du Plein Air Urbains*. Ebook. Montreal: Ville de Montreal.
- Ville de Montreal. 2017. "Politique De Developpement Social". http://ville.montreal.qc.ca/pls/portal/docs/page/d_social_fr/media/documents/politique_de_developpement_social_fr.pdf.
- Ville de Montreal. 2014. "Politique De Protection Et De Mise An Valeur Des Milieux Naturels". Montreal: Ville de Montreal. https://ville.montreal.qc.ca/pls/portal/docs/page/grands_parcs_fr/media/documents/politique_protection_mise_en_valeur_milieux_naturels.pdf.
- Ville de Montreal. 2012. "Plan D'action Canopee 2012-2021". Montreal: Direction des grands parcs et du verdissement. https://ville.montreal.qc.ca/pls/portal/docs/PAGE/GRANDS_PARCS_FR/MEDIA/DOCUMENTS/PAC_JUIN_2012_FINAL.PDF.

- Ville de Montreal. 2018. "Transformation of the Turcot Parks." Office de Consultation Publique de Montreal.
http://ocpm.qc.ca/sites/ocpm.qc.ca/files/pdf/P98/3.1_english_transformation_turcot_yard.pdf
- WHO. 2017. *Urban Green Space: A Brief For Action*. PDF.
http://www.euro.who.int/_data/assets/pdf_file/0010/342289/Urban-Green-Spaces_EN_WHO_web.pdf.
- WHO. 2016. *Urban Green Spaces And Health: A Review Of The Evidence*. PDF.
http://www.euro.who.int/_data/assets/pdf_file/0005/321971/Urban-green-spaces-and-health-review-evidence.pdf?ua=1.
- WHO. 2017. *Urban Green Space Interventions And Health: A Review Of Impacts And Effectiveness*. PDF. Copenhagen.
http://www.euro.who.int/_data/assets/pdf_file/0010/337690/FULL-REPORT-for-LLP.pdf?ua=1.
- WHO. 2018. "WHO | Physical Inactivity: A Global Public Health Problem". *Who.Int*.
http://www.who.int/dietphysicalactivity/factsheet_inactivity/en/.
- WHO. 2018. "WHO | Mental Disorders Affect One In Four People". *Who.Int*.
http://www.who.int/whr/2001/media_centre/press_release/en/.
- WHO. 2018. "WHO | Mental Health: A State Of Well-Being". *Who.Int*.
http://www.who.int/features/factfiles/mental_health/en/.
- WHO. 2018. "WHO | Equity". *Who.Int*.
<http://www.who.int/healthsystems/topics/equity/en/>.
- Wolch, Jennifer R., Jason Byrne, and Joshua P. Newell. 2014. "Urban Green Space, Public Health, And Environmental Justice: The Challenge Of Making Cities 'Just Green Enough'". *Landscape And Urban Planning* 125: 234-244.
doi:10.1016/j.landurbplan.2014.01.017.