



**SAMUEL CENTRE
FOR SOCIAL
CONNECTEDNESS**

**At the Crossroads of Sustainable Transportation and Social
Inclusion: The potential of Public Transit to Create Inclusive and
Equitable Cities**

A research case on transport-related social exclusion in Montreal

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EXECUTIVE SUMMARY:

Purpose: Stemming from a partnership with Data-Driven Yale, a research group developing the Urban Environmental Social Inclusion Index (UESI), this research aims at contextualizing some of the data put forward in the index on access to public transit in the city of Montreal. Public transit has become a considerable urban environmental stake but is also a fundamental city service in the way that it provides urban residents with the capacity to access their desired destinations, resources and opportunities, subsequently impacting their quality of life and individual capabilities. In order to be environmentally performant, transportation planning requires social coherence and inclusivity. However, the social aspect of mobility, identified as accessibility, is still hardly addressed and noted in current approaches to transportation policymaking, and planning and transportation is still hardly addressed in social development actions.

As a result, this research explores the links between social justice (equity), social development and transportation systems, using the example of the city of Montreal.

Methods: By means of interviews with various experts from the transportation sector, notably urban planners but also sustainable development, public health and social development sectors, this report explores the role and importance of Montreal's public transport in the lives of the most disadvantaged populations as well as presents some of the efforts, approaches and initiatives that various stakeholders currently undertake.

From fieldwork as well as background research, this research poses a clear question: how can cities build sustainable transit systems that align with sustainable performance goals without compromising, or rather facilitating, the socio-economic development of the most disadvantaged populations?

Subsequently, this report presents gaps and opportunities in Montreal's current transit system and engages in a discussion on equity in transit options. Thereafter, this analysis emphasizes the necessity to weave perspectives on mobility, putting forward an accessibility approach. This approach also underlines the impacts of transportation system on daily trips, spatial organization of activities, health conditions and consequent life choices, especially on the most vulnerable groups.

Lastly, this report casts light on the efforts made by public, private and civil society actors on the inclusion of the concept of equity in transportation policymaking and planning works at both local and municipal levels. Conclusions include recommendations directed to a variety of actors with the aim of working more collaboratively towards achieving both sustainable and social targets.

Results: Among observations made, readers can especially discuss the necessity of various stakeholders to create synergies and mobilize knowledge on transport-related social exclusion, and more specifically in light of environmental performance efforts, as well as include clear social equity goals in transportation planning. Only a comprehension of socio-economic stakes will enable efficient support that is socially and environmentally successful.



Source: Morgane Ollier

LIST OF ACRONYMS

ATM - Agence Transport Métropolitain (Metropolitan Transport Agency)

COP21- Conference of the Parties

DSP - Direction de Santé Publique (Public Health Office)

GHG - Greenhouse gases

ICLEI - Local Governments for Sustainability

IPCC- Intergovernmental Panel on Climate Change

REM - Réseau Express Métropolitain (Metropolitan Express Network project)

RUI - Zones of Integrated Urban Revitalization

SDG - Sustainable Development Goal

TOD- Transit-Oriented Development

UESI - Urban Environment and Social Inclusion Index

Organizations:

MES - Métropole en Santé (Metropolis in Health)

MTPA - Mouvement pour Transport Public Abordable (Movement for Affordable Public Transit)

OCPM - Office de consultation publique de Montréal (Montreal's Office of Public Consultation)

REISA - East Island Network for English Language Services

STM - Société des Transports de Montréal (Montreal Transportation Company)

WIM - Women in Cities

1. INTRODUCTION:

In 2015, the Paris Agreement (COP21) tasked signatory states to work on limiting global warming to 1.5 degrees Celsius above pre-industrial levels, as preconized by the IPCC report¹. Within the same year, the New Urban Agenda on Sustainable Urban Development was adopted. Since then, countries have, at all different scales, worked on these challenges, which not only include climate change but also poverty, equity or inclusivity. The link between environmental and social stakes has already been extensively proven, as both nurture each other. Tackling them together can thus address some of the most pressing urban challenges of our current society.

Many places around the world are still faced with accessibility issues that slow down their development, including in cities such as Montreal, where tensions and disparities are much less obvious. Low-income groups, identified in distinct neighborhoods of the city have showcased rather low access to current public transit system, making it the case for pressing considerations of transportation as a socio-economic issue. If universal accessibility has been emphasized by municipal

¹ Intergovernmental Panel on Climate Change. See <http://www.ipcc.ch/report/sr15/>.

and private actors², disadvantaged and vulnerable residents still bear the cost of these inadequacies on daily accessibility to essential services and resources. As a result, these challenges force cities to consider profound orientation changes, especially in light of pressing environmental commitments.

With the use of Data-Driven Yale's latest Urban Environment and Social Inclusion Index (UESI), this research aims at connecting the dots between current transportation projects in Montreal, vulnerable groups' cohesion and social development. This study explores the impacts of current public transportation systems on vulnerable communities' wellbeing and development in Montreal while questioning the implications of sustainable mobility efforts in offering more equitable access to resources and opportunities. By means of field research and interviews with experts, this research studies disadvantaged populations, and more specifically low-income groups' relationship to transportation while providing insights on some of the gaps and needs public authorities can address to offer efficient and coherent sustainable plans for all. Ultimately, this report will address several key concerns: to what extent can sustainable measures to decrease the use of cars influence positive development and equity between its urban residents and especially the most disadvantaged? How can these efforts be made without compromising the rights of the most marginalized? In turn, how can stakeholders, both from the private, public and non-state sector inject more of an equity lens in future transportation planning measures?

1.1 The Research:

> Scope of the research: This research thus comes to question the situation of Montreal for its current public transit system, with the use of the UESI, a tool developed by Data-Driven Yale³. Based on the analysis of 30 cities around the world, including Montreal, the UESI maps the correlation between different cities' environmental performance (sustainable transit, air quality, water quality, tree cover, Urban Heat Island and climate policy) and equity, measured by income across

² See City of Montreal. *Universal Accessibility Plan 2015-2018*. 2011.

³ See <http://datadriven.yale.edu>.

neighbourhoods. This new index aims to inform and empower urban residents, city managers and policymakers by building an evidence-based analysis of the equity component in critical environmental performances. The UESI assesses Sustainable Public Transportation patterns using two indicators: the *Public Transportation Coverage* (PTC), measuring the ratio of area within walking distance to a public transit stop, and the *Proximity to Public Transportation* (PTT), based on the proximity of a public transportation stop to residences (i.e. mean distance to a transit stop). Public transit here is comprised of buses, light rail, trains, the subway, trams and the metro, however, biking is not included in the measure. The UESI assumes an equitable and accessible public transit system is one that is less than 420m for buses, and 1.2km away from any point of residence for train stops. An evenly distributed transit system is thus claimed to be a system that ensures all citizens have equal access to opportunities throughout the city and equal access to environmentally sustainable transportation choices. If the UESI is looking at the spatial access to public transit, policymakers should consider that spatial accessibility is only one of the many factors for increased public transit use and increased sustainable behaviours. Many additional factors need to be analyzed to understand the tensions between equity, accessibility and sustainable mobility, whether these are exogenous (politics of transportation, economic pressures etc.) or endogenous (age, culture, gender, physical abilities or social appropriation), which will be taken into account throughout this report.

> About Data-Driven Yale: Data-Driven Yale, an interdisciplinary research group based in the Yale University Forestry and Environmental Studies Department, is developing non-conventional data census to unveil correlations likely to impact environmental policymaking. By creating indices, Data-Driven Yale facilitates the improvement of environmental policy at all scales. Data-Driven Yale had previously worked on the creation of the Environmental Performance Index (EPI), an effective measurement of environmental trends and progress that has been largely recognized as a worldwide tool in environmental policymaking.

> Preliminary remarks: A thorough preliminary research in the literature emphasizes an essential link between social inclusion, facilitated by accessibility, and the concept of mobility. This is justified by the fact that transportation systems have increasingly become a necessity for urban residents, offering access to desired destinations and fundamental resources or opportunities such as health services, food choices, education or the workplace, thereby contributing to socio-economic inclusion. The social perspective of mobility is however still extremely minimized in the current approach to transportation policymaking and planning and crucial changes are needed to be made. Indeed, talking about accessibility and subsequently about equity of movement is a subject at the crossroads of two major global topics: socio-economic development, molded by direct access to the workplace but also indirect effects of access to health and education or recreational activities, and transportation policies, increasingly interwoven in sustainable development strategies.

Why talk about environment? Improving servicing and transportation options encourages the potential abandonment of cars to the benefit of greener transit means (public transit, bikes, car sharing etc.). This subject also speaks to modifying environmental behaviours in the long term to achieve local, national and international targets. Today, public transit is used by people that favour sustainable transit over cars, but also for economic or practical reasons. Conversely, some others might be forced to use cars for reasons of unsuitable public transit option. It is thus absolutely essential to ensure increasing environmental efforts that seek to reduce car prevalence do not compromise the rights of the most disadvantaged urban residents. Promoting policies to change behaviours can compromise the enhancement of transportation in different groups or communities, offering incoherent solutions to local needs.

> Methodology: In partnership with Data-Driven Yale for this research, the core work consisted of contextualizing some of UESI's data on access to transit at the scale of Montreal. As a result, the UESI tool was used to map out Montreal's dynamics in relation to transit and income disparities. One

needs to acknowledge that some of the districts mapped out in the UESI are not strictly speaking part of the City of Montreal, but independent municipalities situated on the Island of Montreal and nested between city boroughs. The differentiation between the Island of Montreal (comprised of 19 boroughs and 15 cities), and the City of Montreal posed a core challenge to this research and the following analysis. For the purpose of the research, the analysis focuses on the Island of Montreal, including municipalities in the observations. However, it should be noted that the City of Montreal's plans and initiatives that will be explored thereafter are not, strictly speaking, tackling these independent cities' challenges.

For the purpose of this research, qualitative methods such as field trips, ground multimedia documentation and interviews with experts and stakeholders ranging from environmental activists, community organizers or local planners to public and private actors enabled a more precise analysis of opinions, challenges and efforts in diverse sectors. Moreover, participation in many events as well as the ICLEI World Congress (Local Governments for Sustainability) in June 2018 allowed for a better understanding of global sustainability planning processes. Lastly, an in-depth academic literature and municipal plans analysis provided examples of impacts as well as studies on measures of accessibility to increase the comprehension of the multifactorial implications of this topic. While this research first aimed at interviewing citizens and everyday users of public transport under the shape of story angles to understand needs and grievances, the difficulty to find participants to answer specific questions on this matter and time constraints resulted in a lack of individual testimonies. The following evidences thus mainly originates from representatives of community groups.

1.2 Definitions:

1.2.1 - Disadvantaged people: As the UESI primarily focuses on the economic aspect of equity, this research essentially concentrates on people who are economically disadvantaged, which is highly related to spatial repartition of households on the land and variation in access to public

transit. However, the term “disadvantage” can also refer to other individual identifiers such as age, gender, ethnicity or physical abilities. These attributes will also be, to a smaller extent, taken into account in the analysis.

1.2.2 - Social cohesion and social exclusion: Social cohesion can be defined as the degree of consensus among members of a social group or the perception of belonging of an individual to a common situation or project.⁴ This can be measured by the degree of intensity of interactions between individuals, as well as the degree of happiness and wellbeing resulting from the ability to access certain activities within which interactions take place. Conversely, social exclusion is often defined as poor access to material or human resources, causing personal, mental and physical harm.⁵ Transport-related social exclusion is therefore translated to the barriers in access to various resources and opportunities offered by the city. With this approach in mind, urban social cohesion is understood as a matter of social justice among urban residents, hence the necessity to drive policies to reinforce social cohesion within and between groups or communities.

1.2.2 - Spatial Justice: The idea of spatial justice posits that socially valued resources, such as jobs, income, political voice, social services and environmental goods, as well as the opportunities to make use of these resources, should be equitably allocated across space. In cities, the distribution of groups is “tightly linked to the availability of housing, public spaces, education, healthcare and transportation”.⁶ As a result, urban spatial justice is concerned with the equal repartition of these services across groups. The theory of spatial mismatch, exploring the relationships between transport and poverty from a geographical perspective, argues that vulnerable populations, for financial reasons, find themselves located away from decision centres with poor service provision

⁴ Berrone, Pascual. *IESE Cities in Motion Index 2018*. (2018).

⁵ Sen, 2000. in Mackett R L, and Thoreau R. *Transport, social exclusion and health*. (2015). Pg. 3.

⁶ Berrone, Pascual; Ricart, Joan Enric; Duch T-Figueras, Ana Isabel. *From Margin to Center: Fostering Social Cohesion in Cities*. (2017).

and hard access to jobs without a car.⁷ Spatial mismatch explains this process of "generation of barriers for access to income resulting from the three-way dynamic relationship between jobs, housing and the transport network".⁸

1.2.3 - Social development: Social development as defined by the City of Montreal is the creation and reinforcement of conditions each individual necessitates to fully develop their potential and their participation in social life.⁹ Social development also means enabling the collective as a whole to improve socio-economically and culturally in a respectful environment, while also being mindful of sustainability and social justice. *Equity* is one of the most crucial preconditions to social development.

1.2.4 - Equity or Social Justice: Justice as defined in John Rawl's classic definition entails not only the "fair distribution of goods, but also recognizing differences and removing procedural obstacles that prevent marginalized groups from meaningfully participating in decisions that affect their property, wellbeing and risk".¹⁰ Looking at transportation, social justice relates to equity in access and transport governance, suggesting that transportation policies that emphasize social justice should focus on offering the greatest benefit to the most disadvantaged groups of the population.¹¹ Social justice can also be defined by the outcomes that some services or situations create, influenced by the impacts of access to transit on health, employment or education.

1.2.5 - Sustainable transportation: Transportation systems are designed for people to move and interact, while offering access to services, goods, opportunities as well as places of interactions. Sustainable transportation enables all of these opportunities, while having a small net impact on the environment. Sustainable transportation today often includes active and collective modes of transit, such as light railways, buses, metro or public biking systems. Ultimately, sustainable mobility is a

⁷ See more on Spatial Mismatch in Kain, J. *A pioneer's perspective on the spatial mismatch literature*. (2004).

⁸ Titheridge, Helena et al. *Transport and Poverty: a review of evidence*. UCL. (2014). Pg. 3.

⁹ Definition offered by the FRDSIM, in Social Development Policy. City of Montreal Website.

¹⁰ Shi, Linda. *Roadmap towards justice in urban climate adaptation research*. (2016).

¹¹ Citing Fraser (1998) in Titheridge, Helena et al. *Transport and Poverty*. UCL. (2014). Pg. 5.

transportation solution that falls within environmental efforts to reduce emissions, but also, and this is much less taken into account, efforts to increase inclusive and egalitarian systems that are accessible and secure.

2. CONTEXT - Identifying environmental and social challenges of transportation in Montreal:

2.1 Demographics: The Island of Montreal registered 1,887,983 million inhabitants while the City of Montreal counted 1,651,235 inhabitants in 2016.¹² The City of Montreal is comprised of 19 neighbourhoods, while the Island of Montreal includes the City of Montreal as well as 15 independent cities (Montreal East, Montreal West etc.). Each of these boroughs are responsible for their infrastructure and is rather independent in decision-making. According to the IESE 2018 Cities in Motion Index, Montreal was ranked the 38th most innovative city out of 165 cities.¹³ Concerning the repartition of its population across neighbourhoods, the Island of Montreal shows a clear divide in population density across the land between the East and the West (with the exception of Montreal East and Saint Leonard to the East, see *Appendix: Figure 1*). The population in Lachine is of 41,616 inhabitants while Montreal-North has 83,868 residents and *Rivière-des-Prairies-Pointe-aux-Trembles* has 106,437 inhabitants.¹⁴

➤ Poverty & Inequity: The Montreal region has the greatest poverty concentration in all of Quebec.¹⁵ 29 percent of family households are classified as low-income¹⁶ and Montreal's unemployment rate scores 7.4 percent.¹⁷ There exists a rather pronounced "territorialisation of poverty"¹⁸ between the East and the West of the Island, the Eastern neighbourhoods being comparatively more affected. In

¹² Statistics Canada. 2016 Census. Web.

¹³ See IESE Cities in Motion Index 2018 : <http://www.ieseinsight.com/fichaMaterial.aspx?pk=148539&idi=2&origen=3>.

¹⁴ Data from the City of Montreal official website.

¹⁵ Raynault, Marie-France ; Tessier, Simon. *Une politique de développement social axée sur l'équité : vers une réduction des Inégalités sociales de santé à Montréal*. Direction Régionale de Santé Publique du CIUSSS Centre-Sud. (2017). Pg. 9.

¹⁶ City of Montreal 2016 Census, MTPA official website.

¹⁷ Statistics Canada. *Fichier des familles T1, adapté par l'Institut de la statistique du Québec*. (2018).

¹⁸ Divay et Séguin, 2004 in Cissé, Amadou : *l'évaluation des politiques de revitalisation urbaine à travers quelques expériences internationales*. Rapport de recherche ENAP. (2012). Pg. 63.

fact, looking at income disparities across neighbourhoods, Montreal North (to the North East) scores the lowest with an average household income of \$50,817 CAD/year and Montreal East with \$57,511 CAD/year.¹⁹ In contrast, the average income in the city of Montreal West is \$156,423 CAD and Outremont is \$173,596 CAD/year [See *Appendix: Figure 2*].²⁰ These neighbourhood disparities have, among others, led to the creation of smaller selected areas for prioritized development actions called the RUI -Zones of Integrated Urban Revitalization.

> *Is Montreal's situation worse than other cities in Canada?* A 2012 Public Health Office (DSP) report showed that under the angle of social determinants and vulnerable groups, Montreal is at more of a disadvantage than other large Canadian cities.²¹ Moreover, Montreal shows a relatively older population and a significant part of Montreal's population is comprised of single households and single parent families.²² Regarding health, the profile of social inequalities of health in Montreal reveals the persistency of health disparities according to socio-economic status.²³ In educational terms however, Montreal scores averagely high, while the average cost of housing rental is one of the lowest of major Canadian cities. The primary challenges in Montreal in regards to spatial inequalities thus appear to be the reduction of inequalities between boroughs and the change in demographic dynamics between the East and the West. The research will thereafter account for some of these socio-economic challenges, including the diminution of the incidence of poverty, the enhancement of security, better quality of life and equal accessibility of public services.

2.2. Montreal's transit system and transit-oriented development: Montreal's current transportation planning is operated by the Montreal Transportation Company (STM), a public agency implementing, operating and maintaining the bus and metro network [see *Appendix: Figure 4*], while

¹⁹ Data from the UESI index, Data Driven Yale.

²⁰ Data from the UESI index, Data Driven Yale.

²¹ Leblanc, Marie-France, Raynault Marie-France. *Les inégalités sociales de santé à Montréal: le chemin parcouru*. 2ème édition. Rapport du directeur santé publique. (2012).

²² Ibid, pg. 35.

²³ Ibid, pg. 14.

the Metropolitan Transport Agency (ATM) is operating the suburban railway on the Island. According to STM's Sustainability Plan, each year the STM avoids GHG emissions totalling 2.3 million tonnes—the equivalent of 20.7% of Montreal's GHG emissions overall.²⁴ Montreal's central transit network is essentially reliant on its metro system, comprised of 4 metro lines.

As emphasized by Mikael Saint Pierre, *"There are still a lot of trips that are made by motorized vehicles in Montreal. There are also more and more issues of coexistence between the users of active transportation and the car users."*²⁵ In fact, Montreal is still pitted with a great dependency on automobiles, anchored in a North American culture of the car as the main mean of mobility. As a matter of fact, 47.2 percent of Montrealers use the car to commute to work every day, while 36.6 percent of the population use public transit.²⁶ Nevertheless, Montreal's reputable bike-share system and its 846 kilometres of bike paths have contributed to an important increase in cyclists in the city (now 13,4 percent of the population).²⁷

When municipalities outside of the City of Montreal (but on the Island) are considered in the calculation, the percentage of people using their car increases to 66 percent, while the population currently uses public transit reduces to 22.3 percent and a mere 10 percent for those using alternative means such as biking. It is well researched that the greater the distance from the city center, the higher the proportion of people who use cars. However, if the use of public transit seems to be much more evident through the lens of proximity to the city centre than the lens of income, statistics have also showcased an interesting correlation between average income per district and the rate of users of public transit. At the district level, the percentage of public transport used in lower-income boroughs such as Saint Leonard is 30 percent and of 23 percent in Lachine, in comparison to higher-income boroughs such as Plateau Mont Royal at 37 percent or Notre-Dame-

²⁴ Société de Transport de Montréal. Sustainable Development Plan 2025. (2017). Pg. 5.

²⁵ Mikael Saint Pierre, Centre d'écologie Urbaine. Statements collected in July 2018 by G. Westgate, Social Connectedness Fellow 2018.

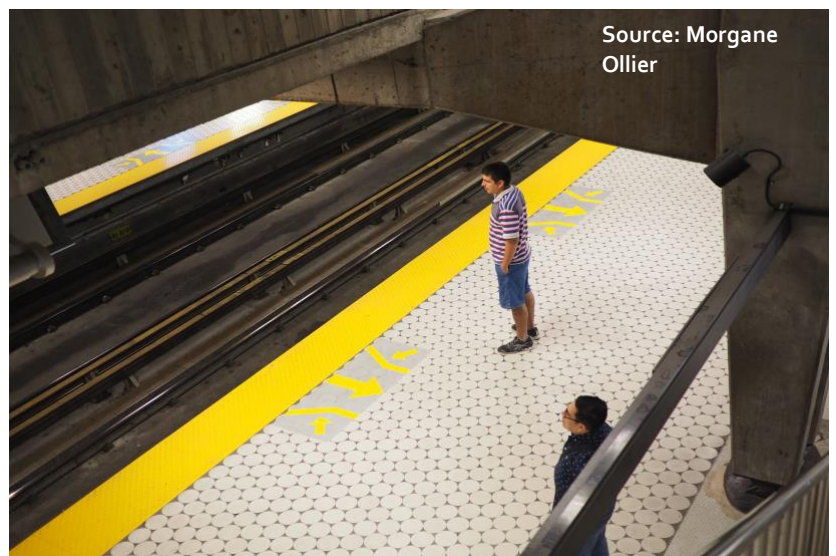
²⁶ Statistics Canada. 2016 Census.

²⁷ City of Montreal Official Website. Biking section.

de-Grâce with 46.5 percent of the population using public transit.²⁸ Moreover, the UESI has shown an important correlation between longer distance to public transit and lower average income in Montreal's neighbourhoods, making it the case for a lack of public transit in low-income areas. Only Outremont, a district spatially situated at the centre, contrasts with the rest of the city with only 29% of the neighbourhood population using public transit.²⁹ This can further be justified by the high level of income, which is often positively correlated with a higher car ownership. If there is in Montreal a verified negative correlation between population density and greater reliance on cars (the smaller the density, the greater the use of cars), specifically verified in the Western part of the Island of Montreal, it is extremely less justified across the East. As such, the population density in the Eastern part of Montreal is particularly high in *Pointe-Aux-Trembles*, but the rate of car usage also scores averagely high. This, in part, can be justified by a crucial lack of public transit provision in the Eastern part of the Island.

> Transit-Oriented Development in the Island of Montreal: One of the most pressing environmental

challenges the Island of Montreal currently faces is its consequential GHG rate, which is highly attributed to the important number of cars in circulation (transportation sector represents 39% of total emissions in Montreal, in which 44% of this derives from cars).³⁰ In 2008, Montreal



committed itself in its *Transportation Plan* (the latest to date) to making public and active

²⁸ Statistics Canada. 2016 Census.

²⁹ Statistics Canada - 2016 Census.

³⁰ Action Climat Montréal. *En action contre les changements climatiques, pour un Montréal Carbon Neutre*. OCPM. (2016).

transportation the preferred modes of everyday travel to meet sustainability goals. One of the major leap of this plan was that it required each of the City's boroughs to work on submitting local transportation plans, addressing the specifics of mobility within their districts.

In recent years, the City has also been following a *Sustainable Mobility Policy 2030*³¹, prioritizing a "reduce, transfer, improve" approach to transit which aims to diminish the necessity to carry out long trips, transferring and improving means as well as increasing the use of energy efficient transportation modes. According to Montreal's Metropolitan Development Plan, the large metropolitan orientation in regards to transportation is to increase by 30 percent³² the modal share of public transit in total trips before 2021. In comparison to other large American cities, Montreal has a fairly efficient transportation system, which is well used and relatively inexpensive.³³ However, some Northern and Eastern neighbourhoods of the Island are still underserved. Several interventions to accelerate changes like the Rapid Bus Project and the extension of the blue metro line to the East are currently in progress. Most of the Montreal transit system's challenges today reside in the necessity to develop a network in surrounding neighbourhoods or suburbs, targeting car users as well as spatially and economically excluded communities that rely heavily on public transportation or could highly benefit from it. Moreover, as the Movement for Affordable Transit (MTPA) explains: "Since 1970, the provincial government largely divested from public transit funding. The consequence of this is that today's funding of the system is largely reliant on users' financial contributions."³⁴

³¹ See Direction Générale de la politique de mobilité durable, Ministère des Transports: *Plan d'action de la Politique de mobilité durable 2030*. (2018).

³² Communauté Métropolitaine de Montréal. *Un Grand Montréal attractif, compétitif et durable*. (2012). Pg. 9.

³³ P. Cousineau, Trajectoire. Statements collected by M. Ollier. August 2018.

³⁴ See MTPA Website: Mission: <https://transportabordable.org/la-problematique/>.

2.3 Montreal's Policy Frameworks: Montreal is recognized in the international scene as a hub of inclusive and sustainable actions³⁵, thus making it interesting to take a closer look at their plans. *Montreal's Social Development Plan* addresses some of the city's socio-economic challenges stated earlier³⁶: it identifies priority actions within its social development policy, including poverty and its impacts, neighbourhood transformations, education and access to jobs. In speaking of neighbourhood transformations, the lack of transportation is formally recognized as creating geographical enclaves.³⁷ Moreover, transportation is recognized as one of the main domains of action to increase the city's quality of life. Sustainable mobility is an integral part of their axis on the "creation of a city that is at human scale", favouring social cohesion through social diversity and integration.³⁸ By sustainable mobility, the city targets mobility needs between and within neighborhoods by ensuring security, and prioritizing active and collective transport methods to improve access to commercial and services centres, cultural places as well as the workplace.³⁹ On its end, *Montreal's Universal Accessibility Policy 2015-2018* states that "making Montreal a universally accessible city is enabling each and every one to individually utilize city services in a fair and equitable way."⁴⁰ However, this plan does not touch on access to transportation neither in the urban orientations nor in the urban planning efforts, but rather prioritizes access to employment, as well as access to city offices. The plan focuses on a "creation" rationale, rather than questioning the source of inaccessibility. Citizens' participation is pivotal to the plan, offering points of reflection to increase living environments prone to fulfilment.

These two plans thus emphasize a real willingness to develop individuals' potential throughout an inclusive and sustainable social development approach. However, how does it

³⁵ Raynault, Marie-France ; Tessier, Simon. *Une politique de développement social axée sur l'équité : vers une réduction des Inégalités sociales de santé à Montréal*. Direction Régionale de Santé Publique du CIUSSS Centre-Sud. (2017). Pg. 14.

³⁶ City of Montreal. *Social Development Plan*. (2017).

³⁷ Ibid. Pg. 7.

³⁸ Ibid.

³⁹ Ibid. Pg. 17.

⁴⁰ City of Montreal. *Universal Accessibility Plan 2015-2018*. (2011).

translate on the ground? In the interviews completed with experts from various organizations, it was evident that their actions came to reinforce these plans' main axes. In order to maximize the benefits of such plans, the City of Montreal as well as non-state actors that work in the field have prioritized certain domains such as health, poverty, and access to housing. However, focusing on transit systems as a way to tackle some of the most pressing socio-economic challenges is extremely relevant yet still lacks in municipal strategies. Montreal's public transit is definitely at the core of the discussion on sustainable development today, but it has to become a long-term solution to inequality reduction as well. Public, private and non-state actors increasingly recognize the importance of collective transportation to reach socio-economic targets but the accessibility approach is still very little understood.

3. ISSUE: The socioeconomic tensions of transportation:

3.1 Understanding the link: Mobility, Accessibility and Poverty: Mobility is an elementary component of life as it connects people to their employment, activities, services and social circles. It is a driving force for social and economic inclusion, creating opportunities but also fostering wellbeing and a sense of belonging. However, as emphasized by Kaufman⁴¹, mobility needs to be analyzed as *motility* or the "capacity of entities to [...] access and appropriate the capacity for socio-spatial mobility."⁴² To better understand the implications of transportation on daily life interactions, motility can be broken down into 3 axes - accessibility, appropriation (the sense users give to access) and competencies (users' know-how such as ability to schedule).⁴³ Indeed, accessibility of transport, in its economic or geographic form, is a fundamental component of social development. As such, mobility is not only a question of movement but also a question of access to services and essential

⁴¹ Kaufman, Vincent and Bergman, Max. *Motility : Mobility as Capital*. International Journal of Urban and Regional Research. Vol, 28. (2004).

⁴² Kaufman, Vincent and Bergman, Max. *Motility: Mobility as Capital*. International Journal of Urban and Regional Research. Vol, 28. (2004). Pg. 750.

⁴³ Paulhiac Scherrer F. *Portrait des disparités en matière de mobilité dans l'agglomération de Montréal*. Ville de Montréal et Chaire In. SITU. (2018). Pg. 15.

opportunities necessary to development, wellbeing and equal representation of citizens. Public transport allows people to interact with their peers as well as access institutions crucial to healthy development, whether this be hospitals, schools, green spaces, public libraries or support centres. For this reason, looking at transportation requires shifting from a mobility to accessibility approach to understand local needs and grievances. [See *Appendix- Figure 12: Transport-related social exclusion*].

3.2 Transportation as a social determinant - the parameters of accessibility: The capability approach developed by Nussbaum and Sen offers interesting insights on human development and social justice approaches.⁴⁴ Capabilities, a core measurement of human well-being, are identified as "substantial freedoms, a set of opportunities to choose and act."⁴⁵ The rising use of cars has provided increasing capacities to move, reinforcing this idea of capability to travel across the land. However, the limited capabilities of some people, may they be cultural, physical or financial, have resulted in unequal approaches to mobility. These differences create situations of exclusion as the most disadvantaged people are at greater risk of being excluded, thus presenting a barrier to mobility.

Financially, car ownership is an important social distinction between income groups, and the use of public transit is still very much associated with the idea of it only being used by the underprivileged. Moreover, cheap housing is most commonly found in landlocked, distant boroughs, coinciding with low access to public transit (refer to the spatial mismatch theory of Kain, 2004). The most economically disadvantaged people thus tend to settle in districts further away from social centres, making them increasingly limited in their accessibility capabilities. Because these same population groups most generally count on public transport to move and access different activities,

⁴⁴ See Sen, Amartya. *Development as Freedom*. Anchor. (2010).

⁴⁵ Nussbaum, Martha. *Creating Capabilities: The Human Development Approach*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press. (2013).

allocating public transit resources in an equitable manner can significantly reduce vulnerability⁴⁶ and has important repercussions on daily activities, equal opportunities and wellbeing.

Transportation provision, concerned with the availability of transit stops in specific places, further influences the accessibility capacity of all residents. As such, servicing raises the issue of inequality as lines and stops in many cities, such as Montreal, are concentrated in the city centre. Furthermore, it is essential to understand that accessibility to points of transit does not guarantee its use. As a matter of fact, a transit system that is incoherent and low-quality does not answer individuals' needs and attributes.

Other parameters of accessibility encompass criteria such as gender: social norms concerning the role of women in society still holds true and feeds the imbalance in the use of transportation between men and women. In fact, “women still bear much of the burden of reproductive work, that is, the caregiving and domestic work done to support the functioning of the household. This results in women taking more, but shorter, trips and practicing trip chaining”, adding extra financial costs.⁴⁷ The insecurity of transport is also a crucial

“Good transit is one of the main things making it difficult for [vulnerable communities] to work, and making it difficult for employers to get employees in lower entry level jobs. If you can’t afford a car, it’s hard to get to work. That is a very big challenge in the West Island”
West Island Community organizer. July 2018.

factor of transport-related exclusion, as it can limit people’s willingness to use public transit, therefore restricting their accessibility to various opportunities. Age is another important component of access to transportation, financially and physically. Indeed, older people have more difficulty in accessing transit stops as well as staying informed about the transit system itself and rely much more on others to remain active and socially included. Youth can have financial limits to using transit as

⁴⁶ El Geneidy. *The cost of equity: Assessing accessibility by transit and social disparity using total travel cost*. (2016).

⁴⁷ Blomstrom, Elena et al. *Access and Gender. Access for All Series: Policies for Inclusive TOD*. WEDO and IDTP. (2018). Pg. 7.

tariffs represent an important part of their budget and can re-inforce unsustainable behaviours. A research paper on public transit use among immigrants showed that “the propensity to use public transit to commute to work was far higher among recent immigrants than Canadian-born persons and that this difference remains when gender, age, income, distance to work, and distance from the city centre are taken into account.”⁴⁸ The research explains this high rate by the fact that immigrants tend to use public transit in their commute to work more when they are new to Canada (independent of other factors such as age and income), but their rate of transit use declines as they reside in Canada for longer periods of time. Additionally, physical disabilities [See *Appendix: Figure 7*] represent an important parameter of accessibility that is essential to tackle when looking at transport-related exclusions. As such, a lack of adapted infrastructure combined with mobility disadvantages restrain certain groups from using public transit. Lastly, the “appropriation” of the means is an important parameter of accessibility to consider when researching the determinants of socio-economic behaviors on modal choices and uses. Human daily interactions are shaped by the spatial organization of opportunities and temporal organization of activities⁴⁹, but also by social pressures inherent to its use: people need to feel able to use the means available to them for transit systems to be truly efficient. Where individual capabilities are compromised, transportation has a crucial role to play. Stakeholders can hardly modify intra-personal or endogenous factors, however they can definitely alter structural and economic barriers. Accessibility objectives have the potential to directly address the needs of the people, and so do public policy objectives.

⁴⁸ Heisz, Andrew; Schelleneberg, Grant. *Public transit use among immigrants*. Research Paper, Statistics Canada. (2004). Pg. 1.

⁴⁹ Paulhiac Scherrer F. Rapport final : *Portrait des disparités en matière de mobilité dans l'agglomération de Montréal*. (2018).

3.3 Where transportation impacts individual capabilities and development:

> Health: Transportation has been increasingly recognized as a crucial determinant of health. As

explained by the DSP, the predominance of private cars has been causing important negative consequences on health worldwide: trauma, cardio-respiratory problems associated with pollution emissions as well as obesity linked to sedentariness.⁵⁰ Moreover, researchers such as R. Thoreau have emphasized the barriers incoherent and inefficient transport creates⁵¹ and its repercussions on health and related social exclusion, which have broader

"By providing physical activity through walking and cycling, while providing access to healthy food, recreation facilities and healthcare, transport influences health in several ways" Mackett R L; Thoreau R. *Transport, social exclusion and health*. (2015).

consequences on the economy, poverty and wellbeing. In turn, favouring biking as a mean of moderate exercising can positively affect health or incidental socio-economic outcomes such as feelings of belonging to a certain place.

> Employment: Academic researchers have extensively emphasized how poor transport provision and the lack of social housing in close proximity to employment areas affects access to the workplace and levels of employment.⁵² As more affordable housing tends to be located in areas with poor transport connectivity and poor service provision, it becomes increasingly difficult for those on lower-income to access jobs without a car. This situation entails that spatial injustices contribute to increasing the inequality gap, in particular for low-skilled workers that do not own cars and are confronted with collective transit challenges.⁵³

⁵⁰ Therien, François et al. *Le transport en commun : un investissement pour la santé*. Direction de la Santé Publique. (2012).

⁵¹ Mackett R L ; Thoreau R. *Transport, social exclusion and health*. (2015).

⁵² El Geneidy, A. *The use of accessibility measures to evaluate the impact of transportation plans: An application in Montréal, Quebec*. Canadian Journal of Urban Research: Canadian Planning and Policy. 20(1). (2011).

⁵³ Raynault, Marie-France; Tessier, Simon. *Une politique de développement social axée sur l'équité : vers une réduction des Inégalités sociales de santé à Montréal*. Direction de Santé Publique. (2017). Pg. 27-8.

> Access to green spaces, entertainment and social interactions: Injustices linked to a restricted usage of green spaces cannot solely be attributed to a lack of provision but also a lack of access to these spaces. Indeed, accessibility of green spaces have also emphasized transportation inequalities across urbanities. As such, more frequent physical activity levels in parks have been pointed out in places where people had more ability to access them.⁵⁴ There is a real necessity to acknowledge the essential link between increased access to green spaces and wellbeing, good health or feeling of belonging. Likewise, transportation will greatly alter residents' participation in recreational activities which require accessible transit, such as community events or civic actions. A lack of access could result in a lack of public cohesion, participation and mobilization. From a conversation with the OCPM (Montreal's Public Consultation Office), the relationship between mobility and citizens' participation was made clear: if people cannot move easily and quickly, they tend to disengage themselves from public participation.

3.4 Transport poverty and related exclusion - inadequate public transport as a barrier to fulfillment:

> Lack of choice, lack of capability: The lack of servicing or choice in transportation modes have deeply affected mobility and increased difficulties to access resources and opportunities, resulting in socio-demographic marginalization. This lack has created a situation of what is often called *time poverty*⁵⁵, translating into a loss of time for education, health and employment opportunities, but also increasing exclusion from essential resources and opportunities available to residents in a city.

> Immobility, a factor of exclusion: A lack of access to public transit or lack of ability to use existing services often results in restraining opportunities to move and interact, further increasing immobility and confinement, and decreasing chances of encounters and social interactions. Reduced chances to

⁵⁴ Hillsdon M. Jones, A. & Coombes, E. Green space access, green space use, physical activity and overweight. Natural England Commissioned Reports, Number 067. (2011). Pg. 7.

⁵⁵ Blomstrom, Elena et al. *Access and Gender. Access for All Series: Policies for Inclusive TOD*. WEDO and IDTP. (2018). Pg. 8.

move for the people at most disadvantage increases lack of opportunities for development and fulfilment such as attending trainings, finding a job, or making new encounters and enjoying oneself.

> Transportation - a financial burden: Increasing or already high fares create additional barriers to integration, limiting riders' access to multiple modes of interaction and activities. For the people most at disadvantage, the cost of a trip can seem higher than the cost of immobility and isolation, thus having important repercussions on their health and wellbeing. The cost of tariffs as well as socio-spatial remoteness is definitely higher on the people that already are restrained by low capacities and capabilities (low-income households, women, youth, older people as well as people with disabilities). As a result, a disadvantage in transportation (limited access) as well as a social or economic disadvantage (lack of capacities) furthers isolation. Coherent, well-thought and inclusive transportation is thus essential to foster access to places, services, employment and social networks of individuals. The links between poverty and accessibility hardship have been however still very little documented at the local level until now, resulting in transport-related social exclusion.

4. KEY FINDINGS:

4.1 Evidence of transport-related social exclusion in Montreal:

The UESI helped identify Anjou, Lasalle, Pointe-Aux-Trembles, Montreal East and Montreal North as the districts with the most acute correlations between long distances to public transit and low average income [see *Appendix: Figure 2 and 3*]. While all of these neighborhoods score fairly low in terms of income levels, Montreal East, Anjou and Pointe-Aux-Trembles are fringe areas at the extremities of the Island, justifying to a certain extent minor public transit stops. However, Lasalle and Montreal North are much closer to the decision centres, emphasizing a clear gap in transit service provision in these areas that affect levels of development [see *Appendix: Figure 12*]. In Montreal, the percentage of households without a car doubles according to socio-economic status: 21.7 percent of the wealthiest quintile do not have a car, whereas 40.2 percent of the people in the

poorest quintile do not own a car.⁵⁶ For the ones who do own one, cars still represent 20 percent of total household expenses.⁵⁷ The necessity to tackle transportation as a serious socio-economic concern is thus well established in Montreal, however, it has still not been addressed adequately. A study led by the Léa-Roback Centre⁵⁸ cross analyzed data from origin-destination surveys, STM's census and substantive characteristics associated with underprivileged indices to reveal a much higher density of bus stops in Montreal's low-income neighbourhoods than higher-income neighbourhoods. However, from the people interviewed in lower income neighbourhoods who experienced accessibility difficulties, inadequate public transportation was indeed very often mentioned. As emphasized by the *Collectif de l'Environnement Mercier Est*, "*The Honoré Beaugrand station for example has been constructed without taking into account the high demand in mobility in the East Island. Today, the lack of bus options creates enormous problems of congestion and important delays. There is a huge demand that is not met by the infrastructures.*"⁵⁹ Analyzing some of OCPM's briefs on Saint Michel and Lasalle's neighbourhoods has further emphasized these pressing accessibility needs in secluded urban areas. In Lasalle's debrief, the improvement of trips seems to be a pivotal topic:

*In terms of mobility, many citizens emphasized the necessity to improve the efficiency of public transportation within districts, in particular around the Angrignon metro and in adjoining neighborhoods... it has also been suggested to better exploit the already existing rail network [...] to favour employment and implementation of technological companies.*⁶⁰

Indeed, field observations revealed Lasalle's local rail servicing was almost inexistent. Its bus network mainly crosses major commercial axes; the repercussions on the residents are multiple.

⁵⁶ Raynault, Marie-France; Tessier, Simon. *Une politique de développement social axée sur l'équité : vers une réduction des Inégalités sociales de santé à Montréal*. Direction Régionale de Santé Publique du CIUSSS Centre-Sud. (2017). Pg. 117.

⁵⁷ Action Climat Montréal. *En action contre les changements climatiques, pour un Montréal Carbon Neutre*. OCPM. (2016).

⁵⁸ (p 118). Quoting Charafeddine et al., 2008 in Raynault, Marie-France; Tessier, Simon. *Une politique de développement social axée sur l'équité : vers une réduction des Inégalités sociales de santé à Montréal*. Direction Régionale de Santé Publique du CIUSSS Centre-Sud. (2017).

⁵⁹ Collectif Environmental Mercier Est. Statements collected by G. Westgate, Fellow 2018 for the Samuel Centre. August 2018.

⁶⁰ Demain Montréal. *Compte Rendu: Arrondissement Lasalle et Saint Michel*. (2012).

People need to walk for long distances and limit their use to smaller activities, which is furthering their marginalization by a lack of access to services and resources and reinforcing social isolation. As to Saint Michel, *"The preservation of sectors of employment has to go through an opening-up of the district and improvement in mobility."* To the North-East of the Island, the last metro is Saint Michel, which is only halfway to the tip of the Island. For anyone living in Pointe-Aux-Trembles, it takes about two hours to travel to the city centre.



> Access to the workplace: From the interviews conducted with local social development organizations, access to the workplace has been identified as a major accessibility concern due to the lack of access to public transit in Montreal. The East Island Network for English Language Services' (REISA) President F. Guemiri explained: *"I use public transport and I walk 8 minutes to the bus stop. I just had surgery and this walk has become impossible. I need to use a taxi to go to work. I am temporarily in loss of mobility but I think of all the ones who are permanently in loss of mobility, that must be extremely isolating."*⁶¹ Additionally, an interview with *Voyagez Futé*⁶², a transportation management centre, emphasized extreme difficulties in accessing the workplace in the Eastern part

⁶¹ F. Guemiri, REISA. Statements collected by M. Ollier in July 2018.

⁶² N. Gaillard, Voyagez Futé. Statements collected by M. Ollier in August 2018.

of Montreal. In some of these Eastern districts' industrial zones, there is a crucial lack of safe infrastructures that could otherwise enable movements in all situations. *Voyagez Futé* further highlighted the lack of connectivity to employment clusters as one of the main issues these low-income districts are currently facing. Bike paths, if they exist, are often very dangerous too. Moreover, field observations in Montreal North and Saint Leonard emphasized a lack of proximity between work areas and residential areas [see *Appendix: Figure 12*] as well as a lack of transportation, impeding daily access to the workplace. *Voyagez Futé* explained the reluctance some people might have to seek employment outside of delimited geographical areas due to limited accessibility and mobility. These behaviours diminish work opportunities and possibilities for economic development in the city.

> Montreal's cost of public transport was also identified as a major concern and most often mentioned by experts that do acknowledge the equity aspect of transportation. In fact, it is the most common social consideration voiced in transportation planning. Montreal's current adult monthly transit pass is \$85 CAD, which "represents over 5% of the monthly salary of a worker earning the minimum wage, providing he or she is lucky enough to work 35 hours a week."⁶³ Considering that a single ride currently costs \$3.25 and a 1-day pass costs \$10, many low-income people have to think twice before using public transit. Current reduced fares only concern the 6-17, students and 65+ age range, in which the monthly fare is reduced to \$51 instead of \$85. Affordable access is key to implementing successful sustainable mobility policies that are equitable. The increase of STM's fare over the past 10 years has been equitable as it has faced a progression above the inflation rate. Fares do represent a very big cost for the poorest households in Montreal and clearly affect transit choices and unsustainable behaviours.

⁶³ Leblanc, Marie-France, Raynault Marie-France. *Les inégalités sociales de santé à Montréal: le chemin parcouru*. 2ème édition. Rapport du directeur de Santé Publique. (2012). Pg. 118.

> Access to recreational activities, entertainment, participatory procedures: Analyzing MTPA's releases highlights that many Montrealers had trouble accessing CLSC (Local Centres for Community Services), especially older people.⁶⁴ Other individuals have emphasized that their situations precluded them from volunteering or helping out their peers, despite living in the same city. Disparities in access to recreational activities and services have further reinforced social exclusion. As emphasized by F. Guemiri (REISA), *"If we had better public transportation or more neighborhood transports like mini buses, we could bring the seniors from their home to our activities."* She also explained that organizations had to fill this gap by paying taxis to pick up older people, permitting the most vulnerable to be included. An interview with OCPM's director also emphasized the difficulty for some groups to attend public consultations to raise local concerns or to simply have the ability to take part in participative democracy mechanisms.⁶⁵

> Health disparities in Montreal have also been found to be highly correlated with low access to transit and economic status. While Montreal's average physical activity rate is 45 percent⁶⁶, low-income neighborhoods such as Mercier-Est residents or Saint Michel-Saint Leonard are plagued with a 38.9 and 30,8 percent rate of activity, respectively. Another health investigation on obesity inequalities ordered Lachine-Lasalle in first position with an obesity rate of 23.6 percent, while Montreal North gravitated around 21 percent, in comparison to Montreal's average obesity rate of 17 percent.⁶⁷ Looking now at the prevalence of BIXI stations in Lasalle [see *Appendix: Figure 8*], we can note the absence of public bikes in the area, illustrating the poor choices Lasalle's residents have in using bikes as a possible means of physical activity. One of the community organizers met during an interview in Saint Leonard also shared that:

⁶⁴ See MTPA Website: Mission: <https://transportabordable.org/la-problematique/>.

⁶⁵ D.Ollivier, OCPM. July 2018.

⁶⁶ Centre Intégré Universitaire de Santé et Centres Sociaux du Centre Sud. *Enquête québécoise sur la santé de la population*. (2014-2015).

⁶⁷ Raynault, Marie-France; Tessier, Simon. Une politique de développement social axée sur l'équité : vers une réduction des Inégalités sociales de santé à Montréal . Direction Régionale de Santé Publique du CIUSSS Centre-Sud. (2017). Pg. 10.

In the work done, all fellow community organizers have pointed out mobility and transportation as a crucial problem for access to health. Reduced mobility and the crucial lack of access to transportation from one side to the other of the island makes it impossible to use public transport. Going back and forth by taxi costs a lot of money, making it a barrier to accessing health services and making a point for inequity.⁶⁸

> Regarding urban planning and infrastructure improvement, some organizations such as Women In Cities (WIC) emphasized absurdities in Montreal's transportation planning. As such, a representative from WIC explained that many wheelchair accessible bus stops could only be accessed from the back of buildings, with no lights at night, resulting in very insecure spaces. WIC worked with these institutions to improve the quality of infrastructure, making it safer and more welcoming to the people.⁶⁹

4.2. Sustainable alternatives and social development: While the number of cyclists registered in Montreal has been in constant increase over the past 10 years, important neighbourhood disparities in terms of bike paths and infrastructure remain. Taking a quick look at PédalMontreal's index⁷⁰, street designed for bikes, bike lanes or BIXI (public bike-share system) stations are much more present in high-income neighborhoods such as Westmount (av. Household income of \$245,157 CAD) than in low-income neighborhoods such as Lachine (\$67,850 CAD) or Lasalle (\$62,685 CAD), taking into account the equal distance of such neighbourhoods from the city centre. Lower population density in boroughs such as Rivière des Prairies (av. income \$73,899 CAD) can question the lack of biking lanes and infrastructures in these areas of the city. Taking a closer look at Montreal's bike-share program (BIXI), which is considered one of North America's most reputed public bike-share system with 540 stations⁷¹, one can observe the great lack of bikes options in some of the poorest neighbourhoods of the city. The remoteness from the city centre is an invalid vindication for the lack of infrastructure, since these neighbourhoods have some of the highest population densities, in

⁶⁸ F. Guemiri. REISA. Statements collected by M. Ollier. July 2018.

⁶⁹ K. Travers. Women in Cities. Statements collected by M. Ollier. August 2018.

⁷⁰ See <http://www.pedalmontreal.ca>.

⁷¹ Vélo Québec. L'État du Velo en 2015. 2015.

comparison to other wealthier, less populated neighborhoods that do possess bike-lanes in the West. Moreover, biking can be gender- or age-sensitive, as interviews emphasized. Daily active mobility requires security and comfort, as well as adapted infrastructures for all “types” of individuals, and these gaps in biking policies are far from being achieved in Montreal. For example, WIC explained that many women felt unable to use bikes for matters of multiple stops, difficulties to carry children, as well as security.

> Shared-use mobility and appropriation of green alternatives to cars: Transportation alternatives such as shared-use mobility (car sharing or carpooling) were also brought up during the discussions as other potential sustainable options to improve accessibility of the most disadvantaged groups. The use of shared cars could dramatically change the situation, both environmentally and socially. In an interview with a macro-ecology think tank, the representative explained: *“A 75-year-old person could access health services more easily if an adapted transit system could pick her/him up at his place. However, the level of knowledge for now is still too low about this stake to be assessed for its true worth.”*⁷² In research led by Feigon and Randall⁷³, the success for car sharing in disadvantaged communities was explained as depending upon several factors: providing payment flexibility, working with community organizations on vehicle locations, hiring core staff with cultural competency and interest in social services, but also working on grassroots marketing. As such, they recommend that stakeholders need to put education and social engagement forward for programs to work (workshops, open houses, bike repair classes).

⁷² Anonymous. Statements collected by M. Ollier. July 2018.

⁷³ Feigon and Randall in Shared Use Mobility Center. Shared Use Mobility Reference Guide. (2015).

Biking: a solution for inclusion?

Indices such as the Copenhagenize Bicycle Friendly Cities Index¹, ranking cities on their biking performances, have pushed agglomerations to re-assess the potential of active mobility as a viable answer to the pressing environmental but also social and health challenges of the transportation sector. As a matter of fact, the implications of biking on health, wellbeing as well as on social justice are increasingly called into question: considered as a moderate physical activity, cycling can reduce health risks such as cardiovascular diseases, obesity or diabetes. In return, this can save important social and economic costs on the society. The social implications of active transportation on communities at most disadvantage has however been relatively little researched until now. Few anthropological works have emphasized interesting correlations between the social perception of bikes and related socio-economic status or cultural attributes of certain groups. As such, bikes are often associated with the idea of precariousness and cyclists can feel concerned about the way they are socially disregarded. Moreover, many groups and communities do not have the capacity to use bikes for endogenous reasons such as physical disabilities, cultural or gender dimensions: for example, more women than men say that they do not use bikes because they feel unsafe as well as face a difficulty to carry out several activities such as commuting between children's schools and the workplace². Incoherent policies that do not answer people's specific needs can thus reinforce social marginalization and further a sense of isolation. Lastly, many disadvantaged communities still substantially lack access to alternative mobility means in the neighborhoods they reside in. Without a car, which can be a costly financial investment for many, people find



themselves extremely reliant on others (especially the most vulnerable such as the elderly) or in a resulting state of isolation, away from activity centres and places of encounters. Bikes could here provide an opportunity for these people to get around and access various resources more simply. Interviews with Métropole en Santé and Réseau Québécois des Villes et Villages en Santé further highlighted the use of biking as having positive repercussions both on physical health, leading to better work productivity or school successes, and mental health, increasing feelings of belonging to a certain place. As a result, active transportation comes with its share of socio-spatial tensions and efforts to encourage local travel behaviors will ultimately depend on the attitudes and preferences of individuals and households. The positive repercussions of biking can thus only hold true for all residents if policymakers learn and acknowledge the potential of biking and its effects on communities' accessibility to opportunities, services or activities, ultimately guaranteeing equity in usage. Considering that a fair share of people at disadvantage, especially economically, do not get around the city by car, access to services and opportunities that match each of residents' needs by alternative means of mobility such as biking is all the more crucial, and needs to be addressed coherently.



¹ See Copenhagenize Bicycle Friendly Cities Index

² Inégalités sociales de santé, Santé Publique (117).

5. STAKEHOLDERS EFFORTS, GAPS AND TENSIONS: Interviews with actors from social development as well as transportation planning and sustainability sectors also helped gain a better understanding of municipal approaches and current efforts on the topic. The main issue that emerged from interviews with environmental community organizers was a clear lack of vision on transport-related equity matters. Most of the environmental organizations or transportation actors working on mobility have been typically focusing on traffic dynamics as well as economic and environmental returns of travel times. When asked about the extent of their knowledge on the social aspect of transports, they typically mentioned the potential of social pricing. However, social pricing most often falls outside of their responsibilities and power, thus making them less concerned with tackling the issue. Interviews ultimately showed that very few actors of the social development sector were tackling the issue of accessibility by means of tackling access to public transit. Only three of the many interviewed organizations identified transport-related social exclusion as a priority area. When asked why not more of this was tackled, some experts justified it by an accumulation of discriminating factors in the area, making it impossible to focus on all of the problems plaguing social development, but also and more simply, because of a lack of knowledge on the topic. Increased collaboration between the transportation sector and social policymakers could grow a better understanding of social dimensions in transport, largely unexplored in transportation planning processes, and transportation planning largely unexplored in social actions.

5.1 Public Authorities: In an interview with an official from the City of Montreal, the discussion emphasized a clear understanding and recognition of the issue of accessibility and related social exclusion in transportation planning. The new administration of Valérie Plante, Montreal's recently elected mayor, seems to confirm this trend as they appear to be focused on mobility and transportation planning, which presents a real chance for the City of Montreal to develop sustainable and inclusive plans. The administration seems to be particularly willing to work on

improving transportation options in most disadvantaged areas, especially where low-skilled workers are concentrated as well as badly served areas. However, transportation actors lack information and knowledge about local needs in mobility and accessibility in those specific areas. This would require a much more in-depth analysis of transport-related inequalities in various sectors, whether that be health, employment or education. Since the late 1980s, the City of Montreal has, in concert with local community groups, created several neighbourhood roundtables to tackle cross-cutting issues touching on social development, sustainability and wellbeing. The creation of 29 neighbourhood roundtables contributed to increasing efforts in understanding local needs, among which accessibility matters. For example, the Table de Quartier Mercier Est has been working with the RUI Mercier Est to tackle the problem of transportation and security, focusing on improving the local servicing as well as reducing trucks passages on Notre Dame street. Trucks have been impeding the community as they circulate in residential areas, bringing with it health, security, noise and atmospheric pollution problems. Other city-led initiatives such as *Collectif Quartier*, which gathers various partners for social development on an online platform, or RUIs, concentrates specific help on 12 particularly socially and economically affected zones (including Lasalle, Montreal North or Saint Leonard) to fight against poverty and exclusion, and encourage participation and concertation. Interviews with RUI Lasalle however emphasized the lack of focus on accessibility for matters of prioritization, which has led to less funds and time to focus on matters of accessibility and transportation.

Interviews also led this research to explore some of the current transportation projects, among which include the **REM** - The Express Metropolitan Network, currently at the heart of a debate between various environmental and transportation actors. The REM project is the most important public transportation project over the last 50 years in Quebec. It aims to deploy a one

hundred percent electrical rail network of 67 kilometres⁷⁴ to the North and West of the Island of Montreal [see *Appendix: Figure 6*] in order to improve access to public transit in the most distant areas. The ultimate goal is to decrease the use of cars and boost greener mobility. The anticipated cost of it is of \$6.04 billion CAD. Many environmental groups as well as the BAPE (Office of Public Hearings on Environment) have been particularly critical of the project. As such, the President of Climate Coalition Montreal and Coordinator of Climate Reality Canada⁷⁵ shared his fears of the REM undeniably provoking urban spreading and reducing green spaces for the benefit of suburban spreading projects. According to the BAPE, the modal transfer from cars to the REM would be minimal. However, the REM has not been explored well enough in social terms. In an interview with Trajectoire, a group focused on voicing transport users' concerns and mobilizing knowledge on socially-related transportation matters⁷⁶, the REM is defended as a positive project for people's accessibility. As a matter of fact, developing a network enabling better access to the University of Montreal could permit students to remain longer in their family homes, reducing costs.

> Public Health: The DSP has been extensively focusing on transport-related matters of health inequalities and resulting social exclusion. The office has, among other things, financially supported cross-sectoral consultation within local roundtables. In this regard, the DSP emphasizes three essential domains of intervention that should, in their opinion, be prioritized in social development policymaking in Montreal: affordable housing, urban planning and sustainable transportation.⁷⁷

> STM: The STM has been making commensurable efforts in terms of universal accessibility by allocating a substantial part of its budget to accessibility solutions in stations that currently have very little accessibility. It is also relevant to note their efforts to engage with external stakeholders and local communities to "increase environmental targets". However, there is still very little mention of

⁷⁴ REM Official Website.

⁷⁵ M. Chapman, Climate Reality Canada. Statements collected by M. Ollier. July 2018.

⁷⁶ P. Cousineau. Trajectoire. Statements collected by M. Ollier. August 2018.

⁷⁷ Raynault, Marie-France; Tessier, Simon. Une politique de développement social axée sur l'équité : vers une réduction des Inégalités sociales de santé à Montréal. Direction Régionale de Santé Publique du CIUSSS Centre-Sud. (2017). Pg. 21.

social considerations in sustainable mobility planning⁷⁸; most of it focuses on decarbonizing public transit and reducing resource consumption.

5.2 Private efforts: Can the solution come from the private sector? An interview with the representative of *Voyagez Futé* as well as discussion on its collaborators' works, has emphasized a growing body of actors in the private sector ready to act on sustainable mobility within their scope of action. In fact, as emphasized above, one of the major accessibility issues and transport-related exclusion reside in accessing the workplace and employment opportunities. A great number of people find themselves particularly excluded by the fact that a disadvantage in transportation translates into a lack of employment possibilities. Structures such as *Voyagez Futé* or MOBA, some of Quebec's six transportation management centres, have been working on supporting companies in developing sustainable mobility plans to improve access to the workplace, among others. The representative of *Voyagez Futé* explained that their work ultimately aimed at acting on modal choices and travel behaviors by rallying companies to favour more sustainable behaviors in their employees.⁷⁹ This work has also helped more disadvantaged groups, such as low-skilled workers living in secluded areas to access the workplace. One interesting point brought up was that some companies, whom *Voyagez Futé* consults, encountered difficulties in recruiting specific workers due to a lack of access to the area or lack of access from areas where these specific profiles tended to reside. As a result, the organizations have been working on developing sustainable mobility models to fill the gap in lack of public transit as well as reporting back to transportation authorities. Private companies are increasingly becoming actors of change in inclusive mobility planning.

⁷⁸ Société de Transports de Montréal. Sustainable Development Plan 2025. (2017). Pg. 5.

⁷⁹ N. Gaillard, Voyagez Futé. Statements collected by M. Ollier. August 2018.

5.3 Environmental and Social Community Organizations: *Trajectoire*, a community organization

focused on public transportation users' rights, showcased important efforts to foster inclusive sustainable transportation policymaking and planning. Structures as such have explicitly decided to work with the most underprivileged areas as they recognize the strong correlation between low employment and education rates, and high levels of health problems and access to public transit. *Trajectoire* has thus been working with the communities to amplify their voices by initiating "wishing" campaigns during the holiday season.

"People felt empowered to talk about public transit because they were users. There are almost 1 million of trips in public transit every day in Montreal, these people got to have a say".

P. Cousineau, *Trajectoire*. Statements collected by M. Ollier, August 2018.

Métropole en Santé (MES), a regional concertation roundtable on healthy and active lifestyles co-presided by the City of Montreal and the DSP, has, on its side, been working on favouring sustainable mobility behaviors in CEGEPs (General and Vocational Colleges) distant from city centres. They have also been gathering several actors around the table to foster inclusive action. The coordinator explained that the organization was focused on adopting what he called "*proportional universalism: working on very varied and broad environments gathering the entire population of Montreal, but having a great concern for most vulnerable populations, whatever is their vulnerability.*"⁸⁰ However, MES' coordinator admitted that "*if this project of CEGEP was specifically intended to answer the necessity of disadvantaged accessibility, [MES] is still not specific enough on the notion of equity and inequalities in active mobility.*"

In a discussion with WIC's representative K. Travers, she highlighted that gender inclusive transit systems are a largely unexplored urban issue. Ms. Travers explained that cities still had a long way to go before achieving gender neutral transit systems that offer equality in mobility. As a result,

⁸⁰ L. Coué, *Métropole en Santé*. Statements collected by M. Ollier. July 2018.

WIC is currently working on a project in Laval (Montreal's suburbs) at the crossroads of mobility and women's rights, but partners' slow responses are jeopardizing the initiative's advancement. Moreover, WIC also emphasized a crucial lack of gender disaggregated data on the topic, making it extremely hard for representatives to know, and care. As emphasized in the Conseil des Montréalaises' last report on Gender and Mobility⁸¹, urban transportation stood out as the most pressing file after housing during their consultations, yet *"there is a clear lack of information that does not make the actors from the transportation sector realize how big the problem can be."*⁸²

Among other groups researched, MTPA has long advocated for social pricing in Montreal. In May 2018, MTPA gathered hundreds of citizens in the street to claim more affordable transportation fares. It was one of the first times citizens were going out in the streets to voice their concerns on this topic. At the core of these claims rested a stop to mobility and partial or permanent exclusion of the most disadvantaged people from using public transit services. Jean-Yves Joannette, MTPA's spokesperson explained, "It is a matter of immobility. People stay in [because they cannot afford transit]." ⁸³ This action was heard and studied at the city level. Mayor Plante announced that the Metropolitan Community of Montreal (CMM) would study the feasibility of implementing social tariffs to reduce the cost of public transportation.

6. RECOMMENDATIONS:

Following all preceding observations, two large axes for solutions within which many smaller recommendations can be intended have been identified:

> All stakeholders, but more specifically transportation actors both from the public and non-state sectors should see transportation through the lens of equity, identifying accessibility as a core challenge and goal of sustainable mobility.

⁸¹ Colas, V. *Pour qu'elles embarquent*. Conseil des Montréalaises. (2009).

⁸² K. Travers, WIC. Statements collected by M. Ollier. August 2018.

⁸³ Gravel, J. Transport en commun: mobilisation pour un tarif social. Journal Métro. (2018).

> On a more practical approach, public, private and non-state actors can influence some of the accessibility parameters to foster equal access to public transit across urban residents.

> **RECOMMENDATION 1** - Integrate the notion of accessibility as one of the main challenges of sustainable transportation policymaking

* **Train actors on the notion of accessibility and equity, appoint "accessibility" managers:** A solution could be to create mandatory courses on social cohesion or equity in related university programs, or by default, experts' trainings in the transportation sector in order for them to identify and think their work and strategies according to equity principles. One could also follow the United Kingdom's Social Exclusion Unit's specific work on appointing supervisors to help on accessibility-related matters in local transportation plans.

* **Consistently incorporate these concepts and state transport-related social exclusion in municipal urban development plans:** The Polytechnique Chair of Mobility In. Situ, mandated by the City of Montreal's transportation office, recently published an in-depth *Profile of disparities of mobility in Montreal*.⁸⁴ This surely is a giant step forward in addressing the question of transport-related social exclusion and this report urges actors and authorities to make use of this report efficiently for future transportation planning.

> **RECOMMENDATION 2** - Address socio-economic determinants of accessibility and mobility, understand local needs

* **Favour participatory democracy and contribute to developing a responsibility to act:** This report advises independent offices such as the OCPM to continue their work of

"Every community should have its citizen communities or citizen group to defend their rights regarding the environment. We have to get people down in the streets. That is the only way we have a chance to get governments to move" - André Beslisle, AQLP. Statements collected by G. Westgate, July 2018.

⁸⁴ Paulhiac Scherrer F. *Rapport final : Portrait des disparités en matière de mobilité dans l'agglomération de Montréal. Étude portant sur la caractérisation des inégalités de mobilité quotidienne*. Ville de Montréal et Chaire In.SITU, Montréal (2018).

promoting inclusive processes by translating technocratic surveys and procedures into simpler, realistic questions that enable all of urban residents to vouch for issues of mobility and contribute together to achieving more sustainable and inclusive cities.

** Run more in-depth, disaggregated research and individual testimonies to increase knowledge of local needs*

> **RECOMMENDATION 3** - Reinforce partnerships between transportation, sustainability and social development organizations: Solutions include creating working groups on equity and accessibility in transportation offices, composed of people from different occupations. Their work would be to assess the accessibility implications of each project put forward as well as gather districts and local neighborhood houses to make their point. It could also be fostered via social exclusion/inclusion audits within transportation plans, whether at the municipal or district level. A part of the solution would also require districts to work more closely.

> **RECOMMENDATION 4** - Improve servicing and quality in offer in poorly served areas: Foster transportation planning that provides reliable, more frequent and coherent (well-routed) transit options, and that facilitate accessibility for the most spatially, economically, physically or individually disadvantaged people. As such, representatives need to re-allocate investments in districts that do need it the most. Funding should be prioritized towards lack of access to public transit in the poorest and landlocked areas of the city where social exclusion has been identified as highly correlated to lack of mobility.

** Respect accessibility rights of the most vulnerable to boost public transportation ridership.*

> **RECOMMENDATION 5**: Improve economic accessibility with social pricing grids, guarantee affordable transit for all: Montreal's current administration has expressed its willingness to consider

different pricing grids and this report urges these efforts to be made as soon as possible with respect to various individual considerations.

> **RECOMMENDATION 6:** Raise awareness to change citizens' perceptions of mobility and advocate for people's rights to use all transit options equally.

> **RECOMMENDATION 7:** Invest in coherent bicycle infrastructures and related trainings as a solution to inclusive urban transportation. San Francisco's Multicultural Communities for Mobility program is a successful example of how information campaigns and roundtables in low-income communities taught vulnerable people to take ownerships of green mobility means such as public bike-sharing.⁸⁵ By promoting the appropriation of green mobility means as modes of commuting, these groups became included in the shift towards more sustainable lifestyles, paving the way to more sustainable and inclusive cities with other residents.

> **RECOMMENDATION 8:** Increase private companies' responsibility to foster sustainable and equitable access to the workplace. *Voyagez Futé* and MOBA in Montreal, or organizations such as Wimoov⁸⁶ in France have clearly demonstrated the potential of companies to foster alternative sustainable mobility behaviors in their employees while enabling better access to the workplace.

Refer to the Appendix for more details on the above recommendations and for best practices.

DISCUSSION: Is local accessibility the core of the problem?

Transport is evidently linked to the notion of spatial distribution of households and services across the land. In this idea, it is worth questioning the extent to which localizing accessibility to combat social exclusion can be a solution. A significant number of people interviewed mentioned urban spreading and centralization of services or resources as critical in the discussion on transport-related social exclusion. Many citizens have also shared with local actors their reluctance to travel

⁸⁵ See <http://www.multicultimobility.org/tag/storytelling/>.

⁸⁶ See <https://www.wimoov.org>.

outside of their local districts, limiting their movement and civic participation. The necessity to question local mobility is thus crucial, and furthermore coincides with active transportation aspirations such as biking and walking, encouraging environmental choices. All actors involved and implicated in public transportation must also consider implementing quality basic services that answer local needs: this can range from developing local healthy food shops to health centres or creating suitable employment opportunities. Ultimately, this can also involve more green space planning as well as stimulating local community activities and groups. However, from a social standpoint, less mobility could result in more isolation: promoting localization thus needs to be questioned in relationship to low-mobility aspirations. Instead of arguing for localization of services in every neighborhood, a solution could be to develop smaller networks of services in different isolated locations and link these hubs with a coherent and adequate public transit system.

"According to me, the challenge is not only about developing transportation but more importantly, rethinking the city differently. If everything was closer, we would have already solved a lot of the problem." L.

Coué. Métropole en Santé. Statements collected by M. Ollier. July 2018.

7. CONCLUSION:

After identifying the situation and implications of Montreal's public transit system on accessibility to services and opportunities, this research has raised the potential of sustainable mobility efforts to increase environmental returns without compromising the rights of the most disadvantaged, or disfavoured social development and equity. Even if the socially excluded have not identified transportation as an issue, transportation remains an important driver of urban exclusion/inclusion, depending on the quality and coherence of the local transportation option and direction of policymaking. In fact, increased mobility can enhance accessibility and urban residents' equal chances of a decent life. However, it can also create situations of inequality, notably spatial, but also situations of economic and social deprivation. Transport-related social exclusion might not

be the most obvious urban exclusion, nor can it solve all socio-economic tensions. However, this report and additional research have pinpointed the necessity to focus more closely on the links between sustainable mobility, equity and social development as it can have important social and economic as well as environmental consequences in the long run.

Throughout discussions with experts, from community organizers tackling environment, health, social development, women's rights or citizen's representation issues to urban planners, the outcomes underscore the inadequacy of Montreal's transportation system to account for diverse accessibility and equity patterns in mobility. At the city level, the correlation between socio-economic inequalities and access to public transit is still relevant, despite important public, private and non-state efforts to reduce this gap. Efficient collective and active transportation that is adapted to local needs will allow for a real reduction in the city's ecological footprint while improving urban life. Coherent investments and political strategies will not only contribute to improving daily trips for millions of urban residents but will also increase productivity, physical and mental health and wellbeing (feeling of belonging). Last, but not least, developing local centres with proximity services and shops has to be questioned as well, as this could help most spatially excluded residents access fundamental services without compromising their health or other factors of wellbeing.

Ultimately, this report recommends that local authorities as well as community organizers and private entities all work towards a better understanding of social equity in transportation and the implications of transit policies and urban design on social development, cohesion and wellbeing. By offering equitable mobility that answer needs in accessibility to all urban residents, public transport will support social inclusion and social development.

9. IMPACT OF THE RESEARCH: By researching the impacts the lack of transit accessibility can create for different individuals and groups, this report casts light on daily struggles but also resulting risks of social exclusion on health, social interactions, mobility and access to employment. Identifying

a variety of research priorities and insights on transport-related social exclusion, this report could help stakeholders both from the public, private and civil society sectors to reflect on the inherent links between sustainability, transportation and social justice. This research is of particular relevance to planners and transportation authorities as well as environmental and social organizations that wish to create more inclusive sustainable transportation programs. This research can help them generate more systematic discussions on transport-related social exclusion within their sector and work in partnership with other actors to promote equal access to opportunities through coherent, inclusive and sustainable transit options. Ultimately, this piece of evidence-based research will hopefully enhance the equity or urban environmental performances in Montreal as well as other cities around the world and help urban centres reach global sustainability and poverty targets. On a more practical note, this research will provide Data-Driven Yale with qualitative observations of Montreal's situation in terms of equity and transportation performances. It will also hopefully help guide future transportation planners on making the most of the UESI, by using Montreal's challenges and already existing efforts as fruitful examples. Further research could include specific field observations with local communities and individuals to understand case-by-case situations in various cities across the world, and more particularly the repercussions in rates of employment, schooling, and health problems.

APPENDIX:

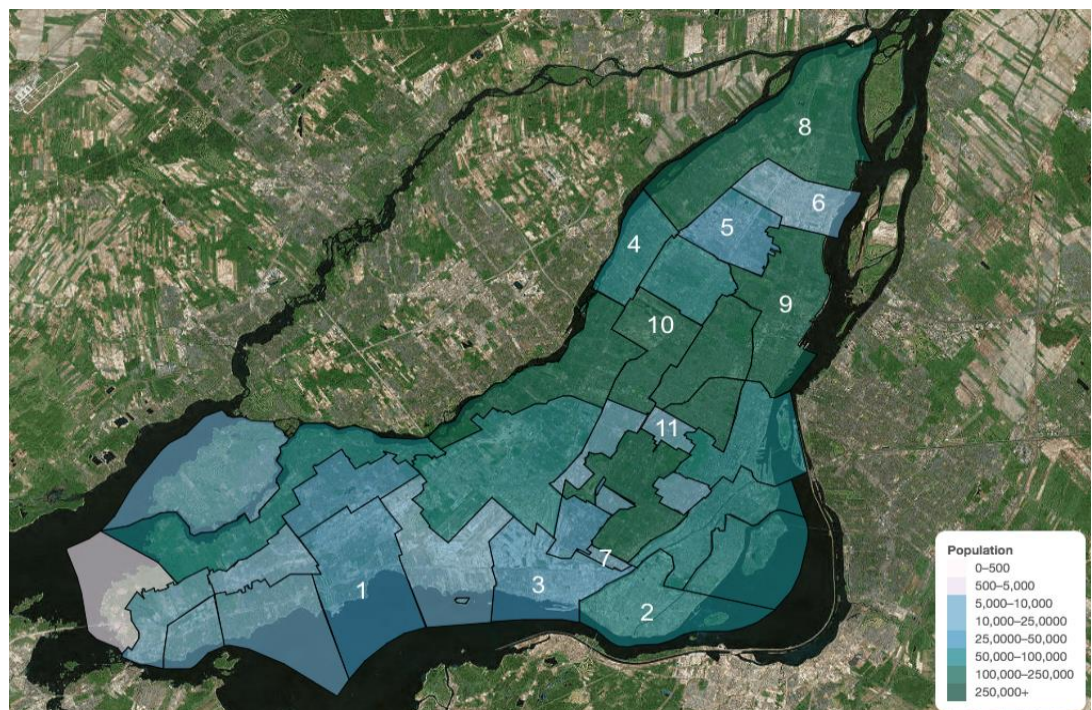
Additional Definitions:

> **Transit-Oriented Development (TOD)** provides cities with spaces that gather people, activities and services as well as buildings and public spaces. However, “it does not inherently lead to social inclusion and equality and can result in displacement. There is a challenge to ensure that the urban spaces concentrating job opportunities and public services such as education, recreation and health services”⁸⁷ can be accessible to all without discrimination.

> **Mobility and Accessibility:** Social mobility can be described as the “transformation in the distribution of resources or social position of individuals, families or groups within a given social structure or network”.⁸⁸ A good grasp of mobility also requires understanding that the improvement of conditions and capacities for mobility depends to a great extent on accessibility, taking into account what enables it. Accessibility has often been described as the capacity for an individual to benefit from services, opportunities and resources offered by the city. Accessibility is moulded by the very nature of the land and infrastructures as well as the transportation options (exogenous). However, endogenous factors such as age, physical ability, gender or income play an important role.

Figure 1: Population per neighborhood on the Island of Montreal (Source: UESI):

- 1- Pointe Claire
(independent city)
- 2- Lasalle (borough)
- 3- Lachine (borough)
- 4- Montreal North
(borough)
- 5- Anjou (borough)
- 6- Montreal East
(independent city)
- 7- Montreal West
(independent city)
- 8-Pointe-aux-
trembles -Riviere des
Prairies (borough)
- 9- Mercier-
Hochelaga
Maisonneuve
(borough)
- 10- Parc Extension-
Saint Michel
(borough)
- 11- Outremont
(borough)



⁸⁷ Blomstrom, Elena et al. *Access and Gender. Access for All Series: Policies for Inclusive TOD*. WEDO and IDTP. (2018). Pg.1.

⁸⁸ Kaufman, Vincent and Bergman, Max. *Motility: Mobility as Capital*. International Journal of Urban and Regional Research. Vol, 28. (2004). Pg. 747.

Figure 2: Average Income repartition per neighborhood on the Island of Montreal (Source: UESI):

- 1-Pointe-Claire
(independent city)
- 2- Lasalle
(borough)
- 3- Lachine
(borough)
- 4- Montreal North
(borough)
- 5- Anjou (borough)
- 6- Montreal East
(independent city)
- 7- Montreal West
(independent city)
- 8-Pointe-aux-
trembles -Riviere
des Prairies
(borough)
- 9- Mercier-
Hochelaga
Maisonneuve
(borough)
- 10- Parc
Extension- Saint
Michel (borough)
- 11- Outremont
(borough)

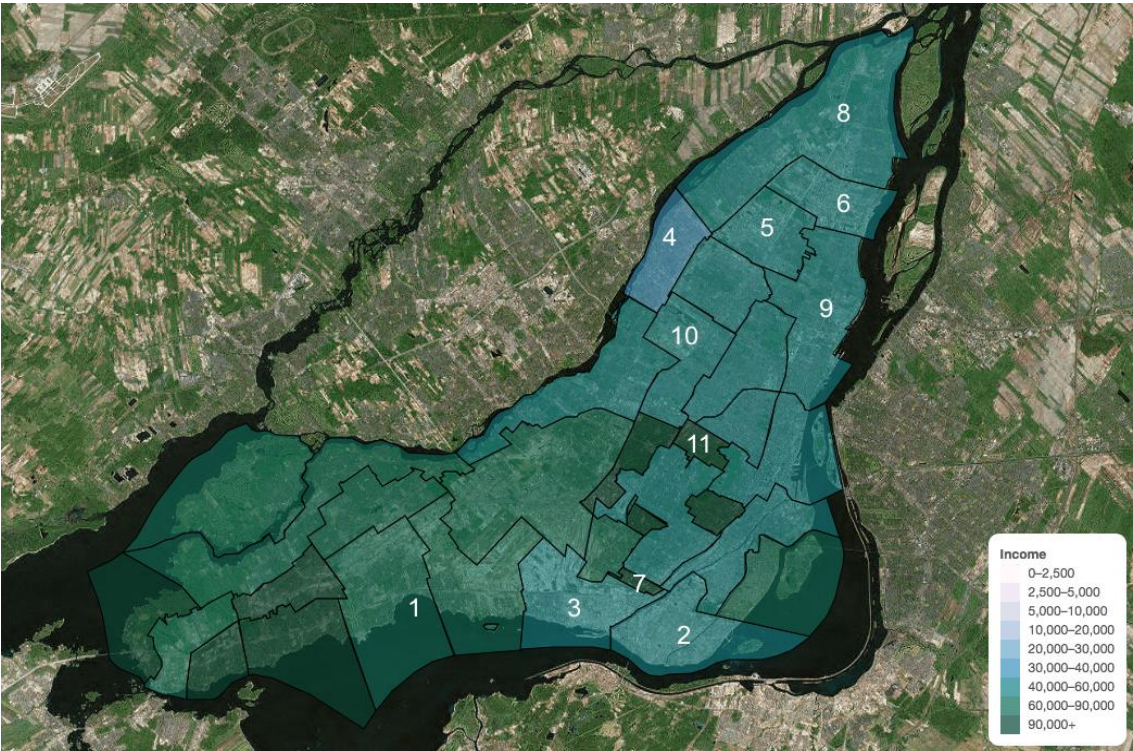


Figure 3: Access to public transit per neighborhoods in Montreal (Source: UESI):

- 1- Pointe Claire
(independent city)
- 2- Lasalle
(borough)
- 3- Lachine
(borough)
- 4- Montreal North
(borough)
- 5- Anjou (borough)
- 6- Montreal East
(independent city)
- 7- Montreal West
(independent city)
- 8-Pointe-aux-
trembles -Riviere
des Prairies
(borough)
- 9- Mercier-
Hochelaga
Maisonneuve
(borough)
- 10- Parc
Extension- Saint
Michel (borough)
- 11- Outremont
(borough)

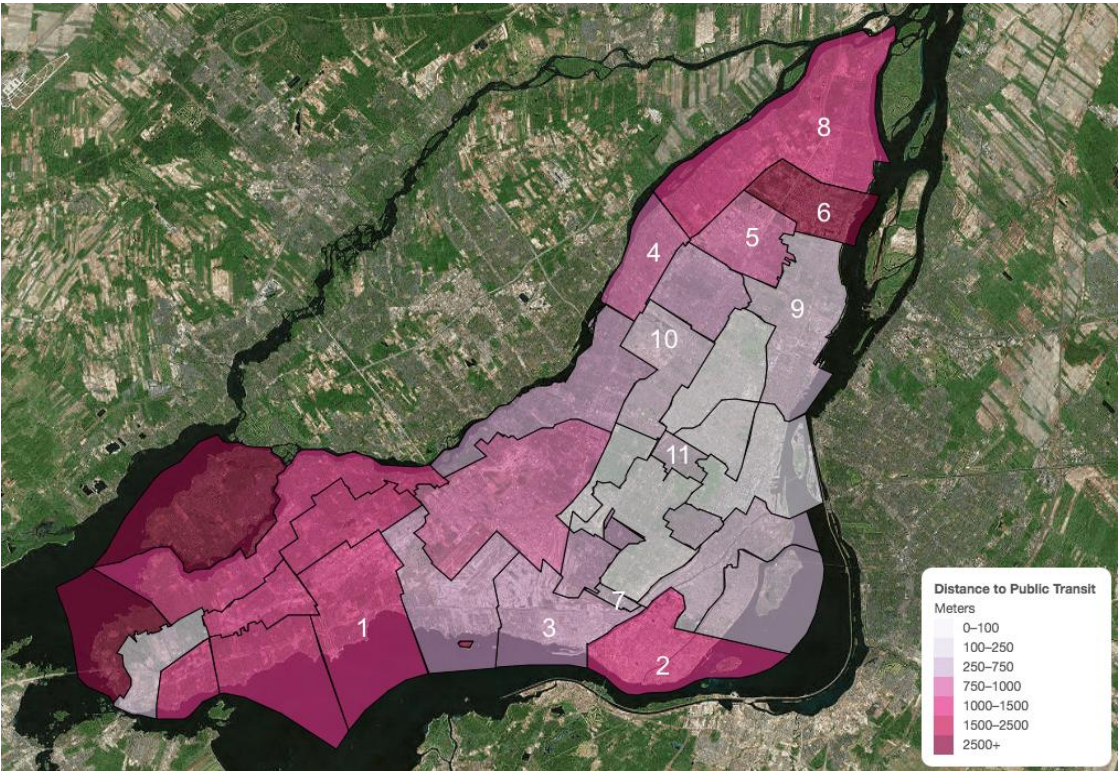


Figure 4: Montreal's public transit system, operated by STM and ATM (Source: STM website):



Figure 5: Modal share of active and collective transportation in Montreal according to the Origin-Destination Survey of 2008 (Source: Demain Montréal Fiche 3: déplacement des personnes a Montréal):

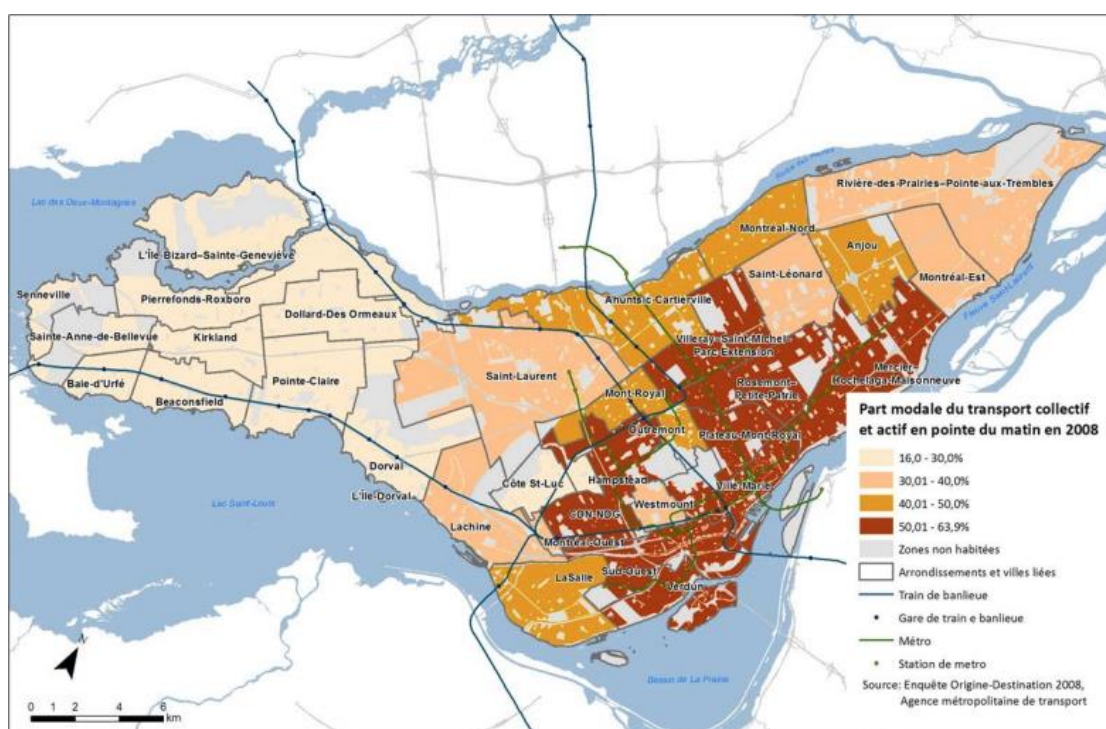


Figure 6: REM projected network (Source: REM official website):

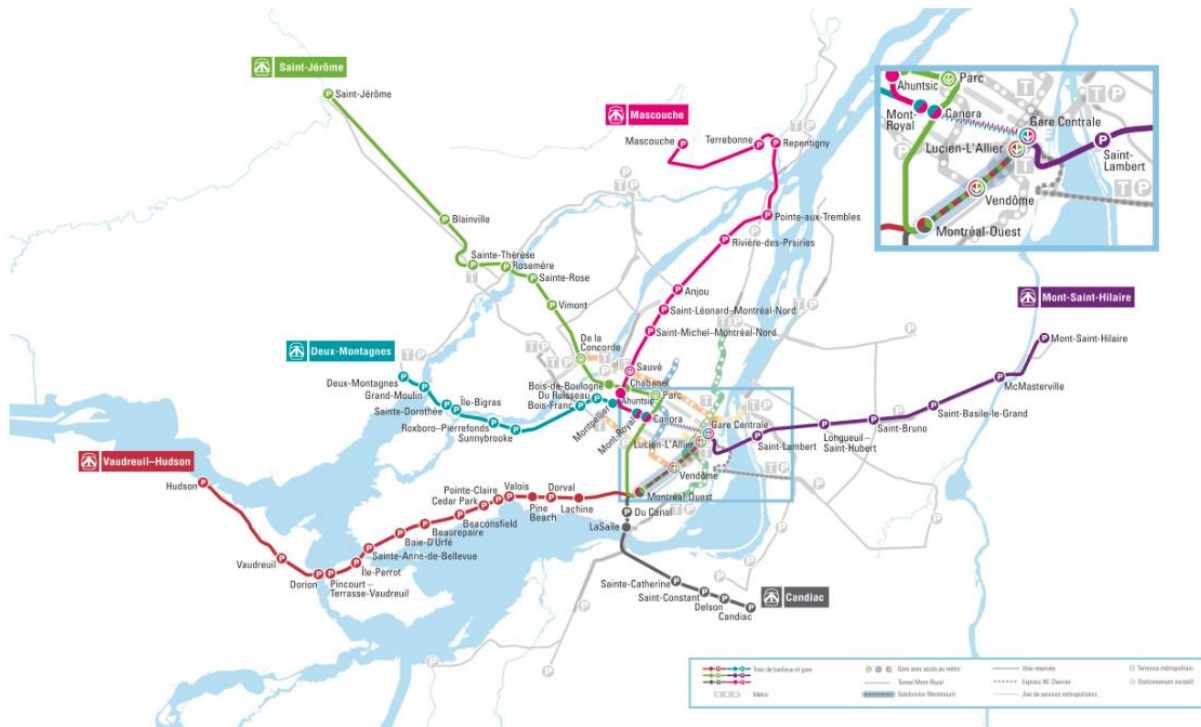


Figure 7: Wheelchair accessibility to the workplace in Montreal (Source: Grise et al. 2018):

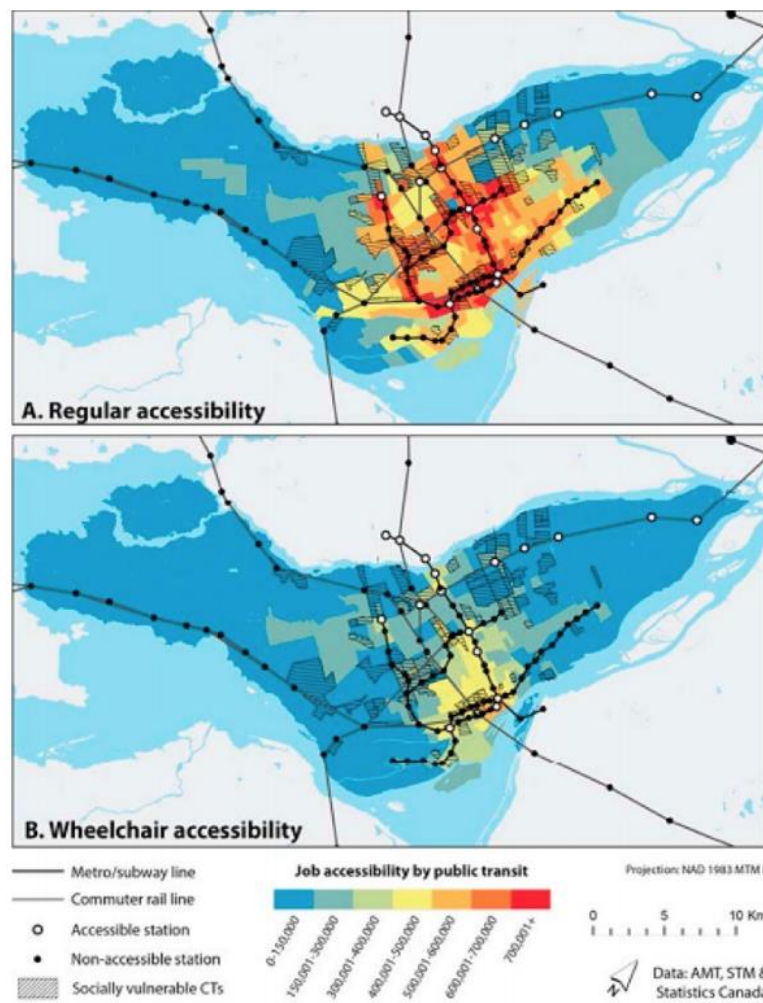


Figure 8: Prevalence of BIXI stations (public bike share system) in Lasalle (Montreal): A crucial lack of bikes in the neighborhood (Source: BIXI Website):

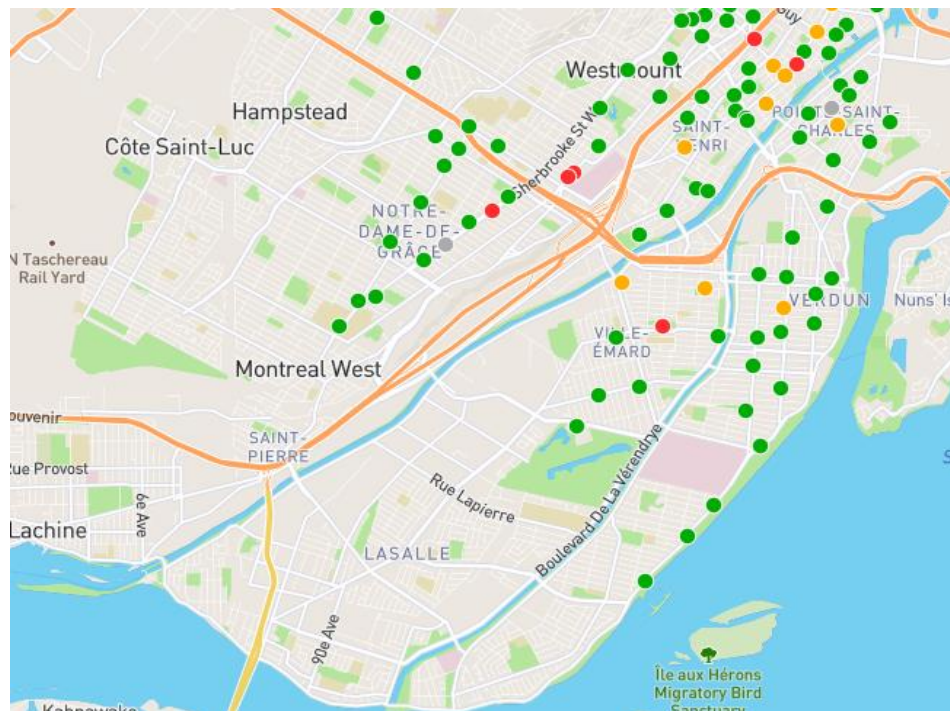


Figure 9: Diagram illustrating the transport-related issues reported from participatory process in Rosemont and Montreal North (Source: Boisjoly, 2017):

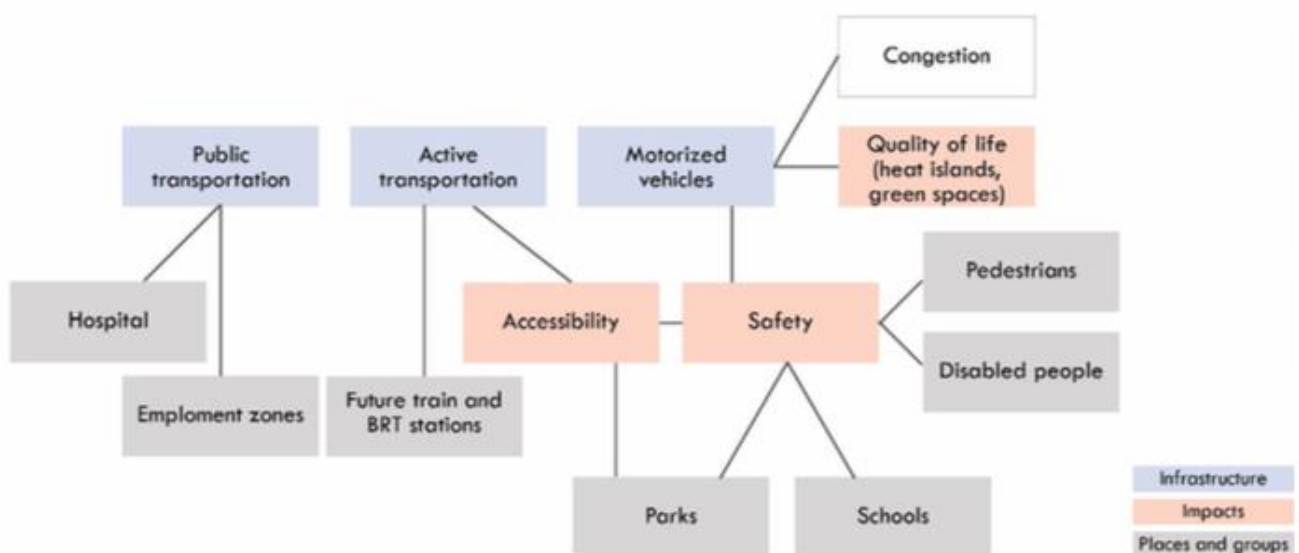


Figure 10: Populations and places of work near Montreal rail station (Source: CatBus, Anton Dubrau, 2011 census):

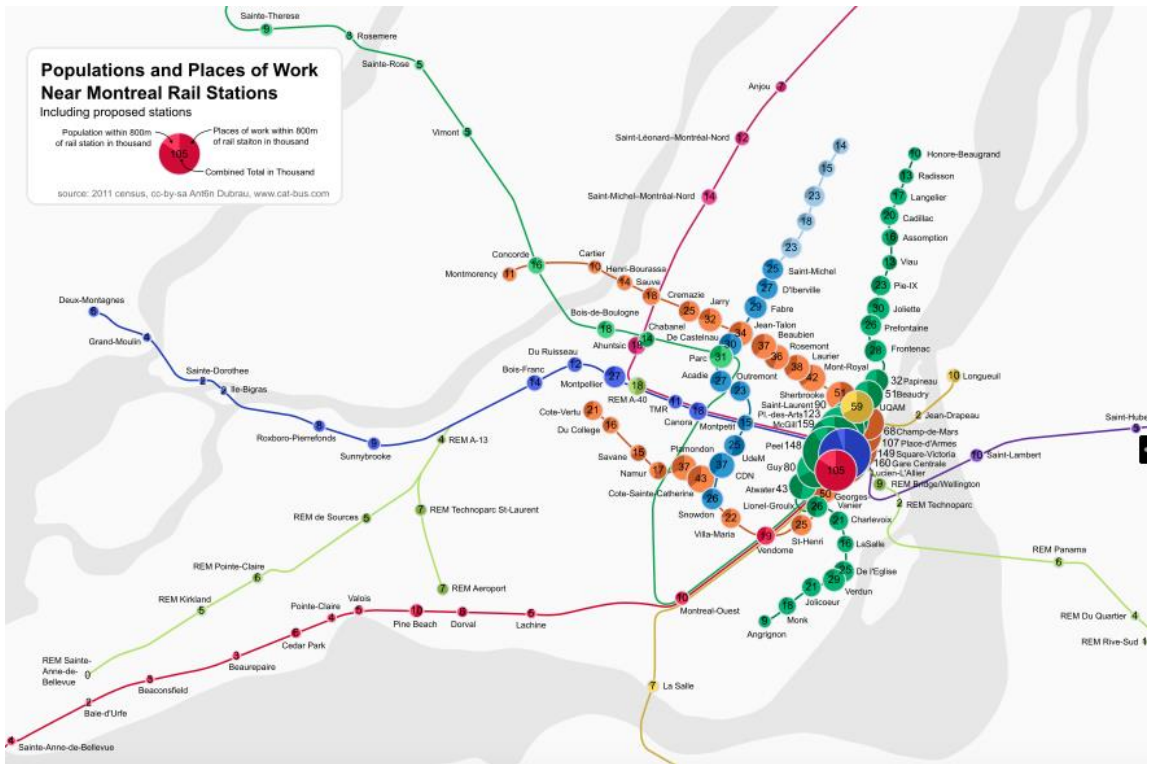


Figure 11: Transport-related social exclusion explained by Lucas (2012):

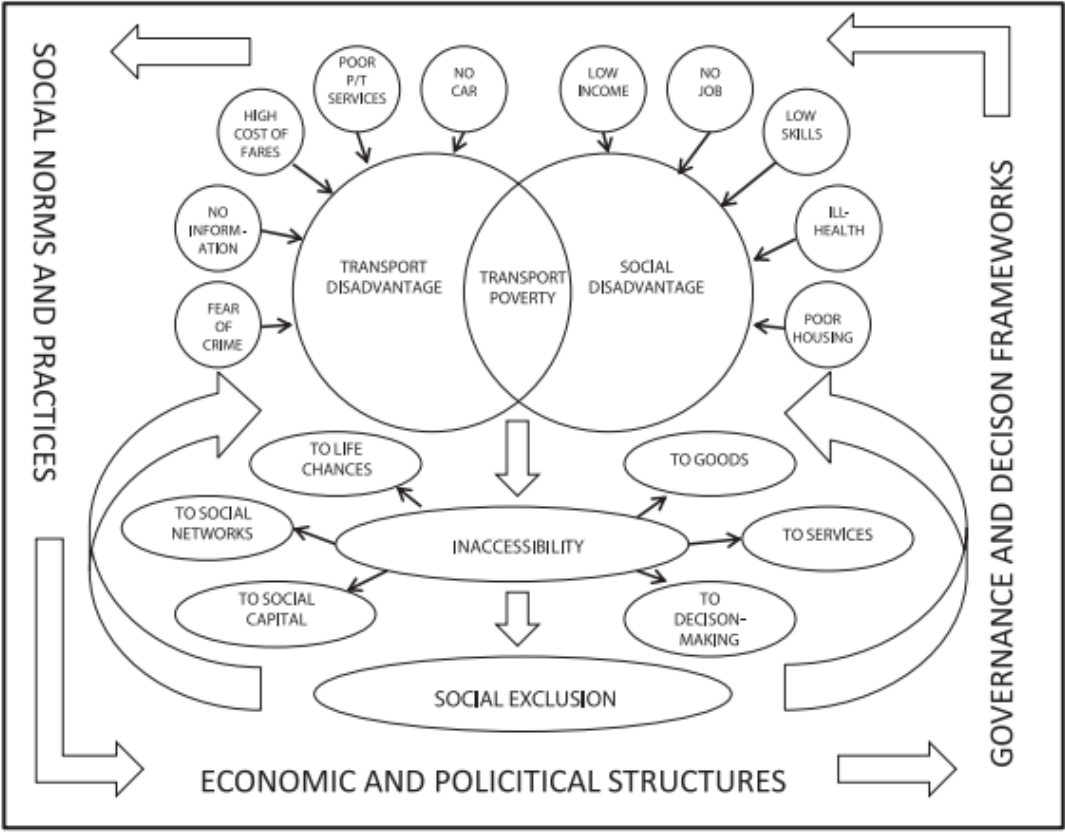
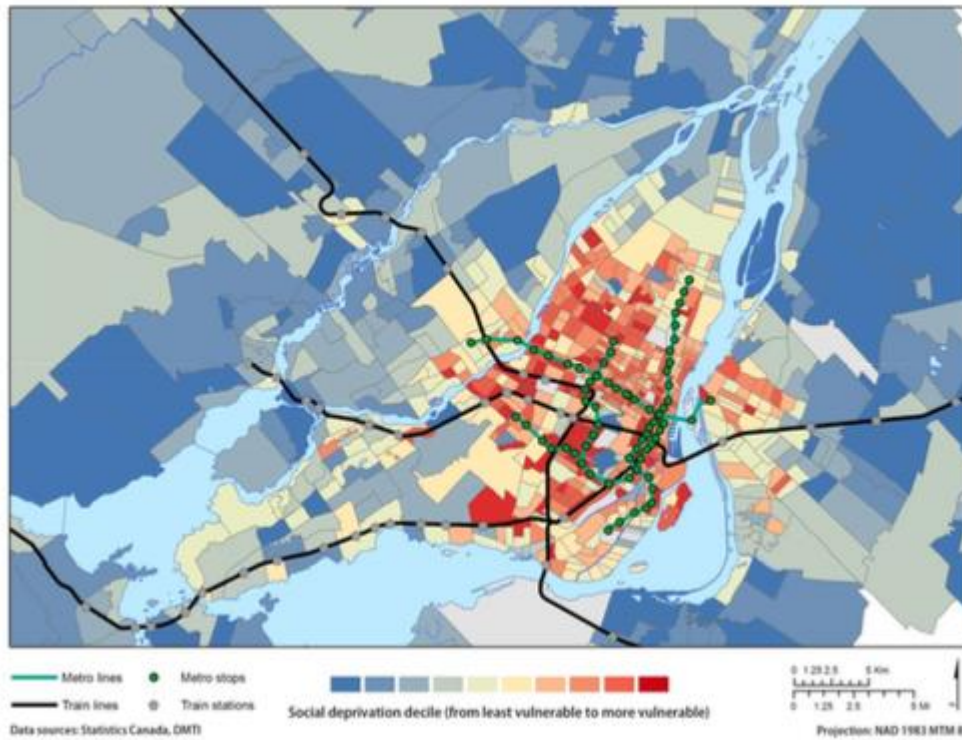


Fig. 1. Diagram to illustrate the relationship between transport disadvantage, social disadvantage and social exclusion.

Figure 12: Census tracts of Montreal region based on social vulnerability (Source: El Geneidy):



Picture 1: Urban landscape in Lasalle, a family walking past a 4-lane road (Source: Morgane Ollier):



Picture 2: Lasalle: a very car centred residential area (Source: Morgane Ollier):



Details of recommendations:

> RECOMMENDATION 1 - Integrate the notion of accessibility as one of the main challenges of sustainable transportation policymaking:

** Train actors on the notion of accessibility and equity:* If most professionals interviewed during the course of this research were aware of issues of mobility and accessibility, very few seemed to know about transport-related social exclusion and thus worked very little on the social aspect of mobility. A solution could be to **create mandatory courses on social cohesion or equity in related university programs**, or by default, experts' trainings in the transportation sector in order for them to identify and think their work and strategies according to equity principles. This can also follow the example of UK's government and its Social Exclusion Unit, created in 1997 to improve government's actions and reduce social exclusion in its policies. In 2003, this unit worked on transport-related matters, setting out 37 policy changes to be incorporated in local transportation plans. This means that each Local Transport Authority producing a transport plan had to appoint someone to help on accessibility matters. Moreover, public authorities need to shift their

understanding of transportation from mobility to accessibility, using accessibility as a much more comprehensive measure of sustainable transportation performances.⁸⁹

*** Sub-recommendation 1.2: Consistently incorporate these concepts and state transport-related social exclusion in municipal urban development plans:** Current transportation as well as mobility plans still too often discriminate the most vulnerable populations and plans are still mostly focused on mobility indicators and much less on social outcomes, resulting in incoherent and inefficient transportation options. However, the Polytechnique Chair of Mobility In. Situ, mandated by the City of Montreal's transportation office, recently published an in-depth *Profile of disparities of mobility in Montreal*.⁹⁰ This surely is a giant step forward in addressing the question of transport-related social exclusion and this report urges actors and authorities to make use of this report efficiently for future transportation planning. Municipal and local authorities as well as, to some extent, local organizations, need to evaluate the implications of transport policymaking on social development and social justice matters in order to address the pitfalls of their strategies. The enhancement of collective and active transportation such as bike paths or car sharing can support the ecological transition out of car dependence but only integrating the notion of accessibility and equity in transportation policymaking will effectively address the problem of social exclusion in mobility. Addressing inequalities through new legislations is fundamental but undeniably require a combination of political will, effective institutions and well-targeted social policies. Public transit has to be understood as a winning strategy to reduce the inequality gaps in health, employment and wellbeing. Securing cycling paths and walkways in certain districts require a local administration that is convinced it is necessary, and ready to pay the costs of it by defending it in face of negative public pressures.

> RECOMMENDATION 2 - Address socio-economic determinants of accessibility and mobility, understand local needs:

*** Sub-recommendation 2.1 - Favour participative democracy and contribute to developing a responsibility to act:** The views of low-income and other disadvantaged groups on the topic of transportation is still marginal in public decisions. Public consultations are powerful tools for expression but also civic engagement and must be multiplied. They must be transparent, coherent and respectful of different groups. This report advises independent offices such as the OCPM to

⁸⁹ Manaugh, K; El Geineigy, A. *Who Benefits from new transportation infrastructure? Using accessibility measures to evaluate social equity in transit provision*. (2012).

⁹⁰ Paulhiac Scherrer F. *Rapport final : Portrait des disparités en matière de mobilité dans l'agglomération de Montréal. Étude portant sur la caractérisation des inégalités de mobilité quotidienne*. Ville de Montréal et Chaire In.SITU, Montréal (2018).

continue their work of promoting inclusive processes by translating technocratic surveys and procedures in simpler, realistic questions that enable all of urban residents to vouch for issues of mobility and contribute together to achieving more sustainable and inclusive cities. Permit the right to the city means giving citizens more space to voice their concerns at the district and the city level, putting more funding in local roundtables and awareness workshops, as well as more funding in public education and public involvement. This report thus advocates for a change in traditional consultation paradigms, favouring participatory processes initiated by planners.⁹¹

*** Sub-recommendation 2.2 - Run more individuals research and testimonies to increase knowledge of local needs:** Much more research on locations, population groups and individuals in need of specific focus should be carried out upstream of transportation planning and policymaking. Local needs vary from places to others, from districts to others and from households to others. Cities are made for all of its urban residents, and not for the majority, everyone should thus equally benefit from city services in a fair and equitable manner. Questioning which activities, resources and services do guarantee a basic level of wellbeing and development is thus absolutely crucial. As emphasized in the conversation with WIC, specific data is still greatly lacking. Taking the example of the gender-differentiated impacts of transportation policies, many stakeholders are still not aware of the disproportionate number of male and female bike riders. An increase in gender disaggregated data thus seems essential to encouraging stakeholders to take actions on essential issues. This report thus urges researchers as well as city offices' engineers and planners to foster more bottom up research to provide real, significant data that will push representatives to increasingly care. The metro of Quito, Ecuador, is one example of successful public endeavours in creating an inclusive transit-oriented development policy. Indeed, Quito has been at the core of the International Transport Forum (FIA) this May 2018 for its effort to create gender-neutral public transport systems. By creating a tool to assess the extent of the problem, the city of Quito was able to identify specific needs at different scales.

> RECOMMENDATION 3 - Reinforce partnerships between transportation, sustainability and social development organizations: At present, technical experts often work and think in the context of their own fields, despite the fact that cities are interconnected nodes. Well-targeted and locally appropriate climate interventions could actually help many stakeholders meet their goals on health, gender-equality or older peoples' rights among other areas. Every single group that has been

⁹¹ Boisjoly, G. ; Yengoh, G. Opening the door to social equity : local and participatory approaches to transportation planning in Montreal. Eur, Transp. Res. (2017).

interviewed for the purpose of this research has mentioned collaboration and partnerships as crucial in their work or aspirations, either as intermediaries informing public authorities and influencing representatives' decisions, or joining forces at cross-sectoral roundtables around various themes. However, more coordination between transport providers, urban planners and social and environmental organizers is needed when planning transportation plans and projects as until now, very few groups have been working collectively on transport-related exclusion and silos do still prevail and prevent actors from creating synergies for coherent projects. Solutions include creating working groups on equity and accessibility in transportation offices, composed of different occupations whose work would be to assess the accessibility implications of each project put forward as well as gathering districts and local neighborhood houses to make their point. It could also be fostered via social exclusion/inclusion audits within transportation plans, whether at the municipal or district level. A part of the solution would also require districts to work more closely. Many of the interviewees have shared incoherent initiatives from districts to others that successively created an unbalanced burden on some other neighborhoods (for example, some implemented no enter signs in their areas and consequently moved car traffic around in other districts). Groups such as Voyagez Futé have offered public authorities in-depth knowledge of local tensions and needs in terms of public transit necessities as well as lack of employment options etc. In this way, they nurture the knowledge of challenges at the crossroads of economic and social returns.

> RECOMMENDATION 4 - Improve servicing and quality in offer in poorly served areas: The still relatively poor availability and inadequacy of services in specific low-income areas presses authorities as well as planners to foster transportation planning on providing reliable, more frequent and coherent (well-routed) transit options and facilitate accessibility for the most spatially (and thus economically), physically or individually disadvantaged people. Not only it is recommended to increase options in public transport but also carefully consider who will benefit from it to make sure it answers most disadvantaged areas' needs. Some people will make use of transportation if it is available, but most users will make use of it if it is practical and answers to the specificities of their daily mobility patterns and accessibility needs. Improving public transport provision is the most pressing task that authorities and actors will need to tackle. As such, representatives need to re-allocate investments in districts that do need it the more. Funding should be prioritized towards lack of access to public transit in the poorest and landlocked areas of the city where social exclusion has been identified as highly correlated to lack of mobility. The metro and train options should be densified and extended in the Eastern and Northern neighborhoods of Montreal, both of which are

densely populated. As these areas also coincide with lower levels of living standards, densifying the network in those districts will undeniably increase levels of accessibility and improve related socio-economic deprivations.

*** Sub recommendation 4.1 - Respect accessibility rights of the most vulnerable to boost public transportation ridership:** Once transport-related exclusion is internalized, infrastructure planning need to follow. The problem of personal safety for example is fundamental to tackle. Still too many people avoid using public transit for matters of safety, and in particular women, for reasons of unsuitable infrastructures. On the topic of universal accessibility, out of the 68 metro stations Montreal's network counts, only 11 have elevators. Most of these stations are thus completely inaccessible to people in wheelchairs and, to a certain extent, people with physical disabilities, but also men and women using strollers or other heavy matters, albeit one's knowledge of the higher burden, on women who still predominantly carry those tasks. Some of the environmental organizations interviewed explain that at risk of being less inclusive, investments in major environmental projects could favour much more sustainable behaviors. This siloed perception refrains transportation plans to address the accessibility aspect in case of environmental outcomes.

>RECOMMENDATION 5: Improve economic accessibility: Social pricing is one of the most conceivable and quickest solution to tackle transport-related socio-economic exclusion. In fact, reduced fares can benefit more people, in particular the poorest users, to use public transit and access services and opportunities. The need for affordable transit has been defended by many organizations in Montreal, among which MTPA or Trajectoire. Montreal's current administration has expressed its willingness to consider different pricing grids and this report urges these efforts to be made as soon as possible with respect to various individual considerations. Examples can be taken from Paris, where a 75% off discount on monthly passes is offered to the unemployed. Other solutions include offering travel assistance in forms of financial support for job seekers or low-skilled workers who cannot access their workplace easily for matters of accessibility and remoteness, as WorkWise Fonds (a collaboration between the West Midlands regional transportation authority and local employment agencies in the UK) has undertook.

>RECOMMENDATION 6: Raise awareness to change citizens' perceptions: A lack of understanding of mobility challenges within affected groups today has also halted citizens to take action, advocate for their rights to equal access to public transit, or use alternative mobility means. There is thus a crucial work to be done by community organizations such as local roundtables and authorities alike to raise awareness on more sustainable choices, or train people to know their mobility rights and

take ownership of active and collective modes of transport. The work done by MES in CEGEPs is a good example of projects that were done to reach individuals at key times of their lives when their behaviors can be changed more easily, putting infrastructures in place to favour this reflection. There is also a real need to deconstruct the vision of car ownership as an indicator of success for people to change their behaviors. However, this has to come upstream of coherent and well-routed plans and servicing that can welcome behavioral changes.

>RECOMMENDATION 7: Invest in biking, related infrastructures and trainings as a solution to inclusive urban transportation: The potential of bikes in revolutionizing transportation and mobility patterns is more and more recognized and included in sustainability plans to meet GHG targets. However, the benefits of biking in fostering positive development and increasing equity, whether on health criteria or in people's ability to access resources and services offered by the city is also fundamental. This report thus pushes actors to explore biking as a viable option for both more inclusive and sustainable options, integrating biking in the "transportation package" and focusing efforts and funding on the realization of quality cycle infrastructures in landlocked and poorer districts. However, as biking is still often seen as the transportation of the poor, authorities also need to provide workshops and community trainings to make sure this mean is welcomed and well accepted as a daily mobility mean, and not as an alternative to current lack of access to buses or rail trains and metro. San Francisco's Multicultural Communities for Mobility program⁹² is a successful example of how information campaigns and roundtables in low-income communities taught vulnerable people to take ownerships of green mobility means such as public bike-sharing. By promoting the appropriation of green mobility means as modes of commuting, these groups became included in the shift towards more sustainable lifestyles, paving the way to more sustainable and inclusive cities with other residents.

>RECOMMENDATION 8: Increase private companies' responsibility to foster sustainable and equitable access to the workplace: As many people still do use their cars to commute to work, companies do have a lot of potential in pushing for more sustainable behaviors in their employees, while offering alternatives to cars that represent important costs in low-income household's budgets. Most companies still do not realize how important their location is in facilitating or not access to the workplace for specific groups of the population and their efforts could clearly contribute to social development. Voyagez Futez and MOBA in Montreal, or organizations such as

⁹² See <http://www.multicultimobility.org/tag/storytelling/>

Wimoov⁹³ in France have clearly demonstrated the potential of companies to foster sustainable mobility behaviors in their employees while enabling better access to the workplace. By providing concrete solutions to alternative pathways in landlocked areas, these structures have produced concrete solutions to transit marginalization and difficult access to the workplace. This approach is however at a draft stage in Montreal and would deserve more attention as a viable solution for sustainable and inclusive mobility planning in response to unsuitable public transit options. At the district level, a legislation work can be done as well. MOBA, one of the other 6 transportation management centre, has notably worked with the borough of Saint Laurent, predominantly working class, to put in place requirements for companies located in the district to submit sustainable mobility plans.

⁹³ See <https://www.wimoov.org>.

BIBLIOGRAPHY:

Works cited:

- Action Climat Montréal. En action contre les changements climatiques, pour un Montréal Carbon Neutre. OCPM. (2016)
- Berrone, Pascual; Ricart, Joan Enric; Carrasco, Carlos; Duch, Ana. *IESE Cities in Motion Index 2018*, IESE, ST-471-E. (2018).
- Berrone, Pascual; Ricart, Joan Enric; Duch T-Figueras, Ana Isabel. *From Margin to Center: Fostering Social Cohesion in Cities*. (2018).
- Blomstrom, Elena et al. *Access and Gender. Access for All Series: Policies for Inclusive TOD*. WEDO and IDTP. (2018).
- Boisjoly, G.; Yengoh, G. *Opening the door to social equity: local and participatory approaches to transportation planning in Montreal*. Eur, Transp. Res. (2017)
- Centre Intégré Universitaire de Santé et Centres Sociaux du Centre Sud. *Enquête québécoise sur la santé de la population*. (2014-2015).
- Cissé, Amadou. *L'évaluation des politiques de revitalisation urbaine à travers quelques expériences internationales*. Rapport de recherche ENAP. (2012).
- City of Montreal. City of Montreal. Universal Accessibility Plan 2015-2018. (2011).
- City of Montreal. Social Development Plan. (2017).
- City of Montreal. Transportation Plan. (2008).
- Colas, V. *Pour qu'elles embarquent*. Conseil des Montréalaises. (2009).
- Direction Générale de la politique de mobilité durable, Ministère des Transports: *Plan d'action de la Politique de mobilité durable 2030*. (2018).
- El-Geneidy, A., Levinson, D., Diab, E, Boisjoly, G., Verbich, D. & Loong, C. (2016). The cost of equity: Assessing accessibility by transit and social disparity using total travel cost. *Transportation Research Part A: Policy and Practice*, 91. (2016).
- El Geneidy, A. *The use of accessibility measures to evaluate the impact of transportation plans: An application in Montréal, Quebec*. Canadian Journal of Urban Research: Canadian Planning and Policy. 20(1). (2011).
- Feigon and Randall in Shared Use Mobility Center. *Shared Use Mobility Reference Guide*. (2015).
- Gravel, J. *Transport en commun: mobilisation pour un tarif social*. Journal Métro. (2018).

- Heisz, Andrew; Schelleneberg, Grant. *Public transit use among immigrants*. Research Paper, Statistics Canada. (2004).
- Hillsdon, M., Jones, A. & Coombes, E. *Green space access, green space use, physical activity and overweight*. Natural England Commissioned Reports, Number 067. (2011).
- Kain, J. *A pioneer's perspective on the spatial mismatch literature*, Urban Studies, 41, pp. 7–32. (2004).
- Kaufman, Vincent and Bergman, Max. *Motility: Mobility as Capital*. International Journal of Urban and Regional Research. Vol, 28. (2004).
- Leblanc, Marie-France, Raynault Marie-France. *Les inégalités sociales de santé à Montréal: le chemin parcouru*. 2ème édition. Rapport du directeur de Santé Publique. (2012).
- Mackett R L, and Thoreau R. *Transport, social exclusion and health*. Journal of Transport and Health, 2. 610-617, doi:10.1016/j.jth.2015.07.006, available from <http://dx.doi.org/10.1016/j.jth.2015.07.006>. (2015).
- Manaugh K; El Geneidy, A. *What makes travel 'local': Defining and understanding local travel behavior*. The Journal of Transport and Land Use. Vol.5.(2012).
- Manaugh, K; El Geneidy, A. *Who benefits from new transportation infrastructure? Using accessibility measures to evaluate social equity in transit provision*. In K. Geurs et al. Accessibility and Transport Planning: Challenges for Europe and North America. Edward Elgar, London, UK. (2012).
- Nussbaum, Martha. *Creating Capabilities: The Human Development Approach*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press. (2013).
- Paulhiac Scherrer F. *Portrait des disparités en matière de mobilité dans l'agglomération de Montréal*. Ville de Montréal et Chaire In.SITU. (2018).
- Raynault, Marie-France; Tessier, Simon. *Une politique de développement social axée sur l'équité : vers une réduction des Inégalités sociales de santé à Montréal*. Direction Régionale de Santé Publique du CIUSSS Centre-Sud. (2017).
- Sen, Amartya. *Development as Freedom*. Anchor. (2010). Print.
- Shi, Linda et al. *Roadmap towards justice in urban climate adaptation research*. Nature Climate Change. V.6. (2016).
- Société de Transport de Montréal. *Sustainable Development Plan 2025*. (2017).
- Therien, François et al. *Le transport en commun: un investissement pour la santé*. Direction de la Santé Publique. (2012).
- Titheridge, Helena et al. *Transport and Poverty: a review of evidence*. UCL. (2014)

Vélo Quebec. *L'État du Velo en 2015*. (2015).

Relevant works:

Boisjoly, G; El Geneidy, A. *Daily Fluctuation in transit and jobs availability. A comparative assessment of time-sensitivity accessibility measures*. Journal of transport geography. (2016).

Chaire Mobilité. Rapport d'activités 2016-2017. Version préliminaire. Polytechnique Montréal. (2018).

El Geneidy, A et al. *Montréal's roots*. The Journal of transport and land use. (2011).

International Association of Public Transport (UITP). *S'attaquer à l'exclusion sociale: le rôle des transports publics*. (2007).

Lucas, Karen. et al. *Transportation, the environment and social exclusion*. Joseph Rowntreen Foundation. (2001).

Lucas, K and Musso, A. Policies for social inclusion in transportation: An introduction to the special issue. Case Studies on Transport Policy, 2. (2014).

Managh, K et al. *Integrating social equity into urban transportation planning: A review of Metropolitan transportation plans in North America*. Transport Policy, 37. (2015).

Mercier, Jean. *Equity, Social Justice, and Sustainable Urban Transportation in the Twenty-first Century*. Université Laval. (2009).

Metropole en Santé. *Ensemble pour les générations futures*. Table Intersectorielle régionale en saines habitudes de vie de Montréal. (2015).

Pitarch-Garrido, M-D. *Social Sustainability through accessibility and equity*. Local Development Research Institute. University of Valencia. (2015).

Schepper, B. Le transport en commun gratuit pour Montréal. N.5. IRIS. (2017).

Social Exclusion Unit. *Making the Connections: Final Report on Transport and Social Exclusion*. Office of the deputy prime minister (UK). (2003).

Van Lierop, D. *Enjoying the ride: Experience, Motivation, Satisfaction and Loyalty in Public transit*. School of Urban Planning, McGill University. (2017).

Vecchio, Giovanni. Democracy on the move? Bogota's urban transport strategies and the access to the city. (2017).

Vélo Quebec. *Le vélo dans l'avenir des villes*. Propositions 2014-2021. (2013).

Vivre en Ville, Équiterre. *Pour un Québec leader de la mobilité durable: l'urgence d'agir pour dépasser la dépendance à l'automobile.* (2017).

Willis, D; Manaugh, K; El Geneidy, A. *Cycling under influence: Summarizing the influences of attitudes, habits, social environments and perceptions on cycling for transportation.* International Journal of Sustainable Transportation, 9 (8). (2015).

Data from:

City of Montreal. (Profiles Sociodémographiques et Économiques). 2016. Web.

Origin-Destination Survey: Mobility of the people in the Montreal Region. 2013.

Statistics Canada. 2016 Census. Web.

UESI index, Data Driven Yale. Web.