

A Truly Accessible Public Transportation System for Toronto:

A User-Centric Approach to Accessibility

by

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Abstract

This research investigates ways to create a truly accessible public transportation system to Torontonians facing mobility constraints.

A *Three Horizons* approach, in combination with systems thinking and human-centric design, is used for the analysis. Starting from an assessment of the current users' experience, I propose that a truly accessible system should offer *inclusive services*, enable *spontaneity*, be *perceived as accessible* by the population it is designed to serve, and be an *integral part of an accessible urban system*.

I then assess current trends that may impact the future of accessibility in Toronto and, building on some of these trends, recommend a shift away from mode-based solutions developed for the *average*, static, inexistent individual, towards multi-modal solutions for citizens whose needs are continuously evolving, in order to achieve true accessibility in a 10-year timeframe.

While my focus is on Boomers facing permanent mobility constraints, the findings may be generalized to other demographic groups and *disabilities*.

Acknowledgment

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To Don, Nara and Leila,
who deal with these experience on a regular basis

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Introduction

How might we create a public transportation system that is truly accessible to Torontonians?

This is the question being answered by this research. While the focus is on Boomers facing permanent mobility constraints, the findings can be extended to other demographics and disabilities.

Background

One in seven people in Ontario have a disability (Making Ontario Accessible, n.d.). Over the next 20 years, this number will rise significantly as the Baby Boomers begin to enter their senior years. In preparation for this major demographic change, the Provincial Government has approved legislation to make Ontario a fully accessible province by 2025¹.

The Accessibility for Ontarians with Disabilities Act (AODA), established to create “*a province where every person who lives or visits can participate fully*” (Making Ontario Accessible, n.d.), defines, among others, transportation accessibility standards² “*to make it easier for everyone to travel in Ontario*” (Making Ontario Accessible – Transportation, n.d.). These standards are an attempt to address the various physical, operational and

¹ Questions about the feasibility of this timeframe are being raised and are discussed later (The National Benefit Authority, 2014)

² Accessibility standards for the built environment are being addressed by changes to the Ontario’s Building Code to be enforced as of January 2015 (Making Ontario Accessible – Built Environment).

informational barriers individuals with disabilities may face to navigate the system. However, some of the constraints these individuals have to deal with may be less obvious and more limiting than visible obstacles.

Attitudinal, emotional and psychological issues such as the level of stress caused by route changes, deviations and delays, fear of accidents or rude behavior may prevent these individuals from considering the public transportation system as a viable travel choice (Fiedler, n.d.). Many of those who now face a mobility constraint were accustomed to driving before the onset of their disability, and switching to public transportation may not be a natural transition. As a matter of fact, many of the deficits in abilities that make driving problematic for these individuals also discourage them from using regular transit (Molnar *et.al.*, n.d.).

Other attitudinal and systemic barriers to public transportation accessibility may also be present but not necessarily visible. As such, it may be the case that a system that is fully accessible from a functional perspective is still not truly accessible to individuals facing mobility constraints.

In the light of the AODA legislation and of the efforts being undertaken to make Toronto – Ontario’s capital and the largest city in Canada – an accessible city by 2025, it is important to understand what accessibility really involves from the perspective of mobility-constrained individuals, and in which ways it can be enabled. This is the objective of this research.

Terminology

The following terms are used throughout this research and need to be explained for clarity:

- *Perceptual barriers*: These are barriers that are *felt* by individuals but not necessarily *visible* to the external observer. They are attitudinal, emotional or psychological barriers based on perceptions of the system the individual develops through experience or otherwise.
- *Truly accessible*: This refers to a system that is not only accessible by quantifiable standards, but also *perceived* to be accessible by the individuals it is designed to serve, i.e., a system that is *free of perceptual barriers*.

Research Approach

A *Three Horizons* approach, in combination with systems thinking and human-centric design, is used to (i) identify perceptual barriers to accessibility in the public transportation system; (ii) define the meaning of accessibility from the perspective of those facing mobility constraints; (iii) set the principles to be followed if a user-centric level of accessibility is to be reached; (iv) assess how likely it is that the system will become accessible in the future, according to these principles, given current trends and conflicting views; and (v) propose directions to ensure that the user-centric vision of accessibility will be achieved within the AODA legislation 10-year time horizon.

For scope management reasons, the focus of the analysis is on *Torontonians 50 to 70 years old (Boomers) facing a permanent mobility constraint due to aging or to the onset of a non-reversible health condition.*

While this focus does exclude other demographic groups and other legitimate disabilities, permanent or temporary, the methodological approach may be extended to address the needs of those groups.

The focus on Toronto limits the potential to generalize the recommendations to less populated areas in Ontario and elsewhere, but the methodological process may still be applied to address the needs of such areas.

Research Contributions

The research offers three main contributions:

- *True Accessibility Principles*: It proposes and illustrates a set of user-centric principles to define and assess the level of accessibility of a public transportation system;
- *Accessible Toronto*: It proposes strategic directions to ensure that Toronto can become a truly accessible city within the 10-year AODA timeframe, with the appropriate decision making and support; and
- *Transportation Planning Framework*: It illustrates a process to integrate strategic foresight and design thinking into transportation planning, to ensure that inclusive, resilient systems are being developed.

Research Structure

The research flows as follows:

In Chapter 1, I present the context for the study. In Chapter 2, I detail the *Three Horizons* methodology that was followed herein.

In Chapter 3, I provide a brief history of Toronto's transportation system to contextualize the *Three Horizons* inquiry. In Chapter 4, I narrate individual experiences with this legacy transportation system – the *First Horizon* – and identify perceptual barriers to accessibility.

In Chapter 5, I propose a set of user-centric principles to define accessibility that expands the scope of what is addressed by the AODA standards, and represents a user-centric vision for an accessible future – the *Third Horizon*.

In Chapter 6, I present current trends and conflicting views that could impact how accessible Toronto will become– the *Second Horizon* – and discuss what implications for the future might be depending on choices that are made at this stage – the *Triangle of Choice*.

In Chapter 7, I suggest strategic directions to address the current conflicts and ensure that Toronto stays on the path to true accessibility, given the right choices and support. While in reality true accessibility may not be reachable, it is proposed as an aspiration, so that high accessibility standards can be set.

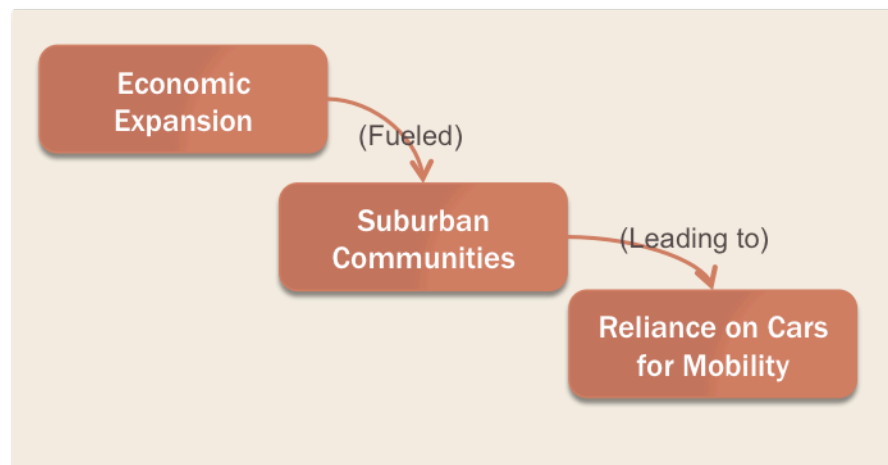
In Chapter 8, I present final remarks and future areas of investigation.

Chapter 1 – Setting the Context

Independence in an Car-Dependent Society

The Boomer generation came of age during a period of unprecedented economic expansion that fueled the development of suburban communities and a high level of reliance on the car (see Figure 1). As a consequence, most Boomers currently need to drive to access many essential daily activities (Turcotte, 2013).

Figure 1- Consequences of Economic Expansion



This car dependence is prevalent even in areas with high residential density levels such as Toronto, where, in 2009, most seniors indicated that their primary mode of transportation was the car – as a driver (50%) or as passengers (32%) (Statistics Canada – Table 3, 2013).

As they grow older, over 90% of Canadians tend to stay in their own homes, instead of moving to residences for senior citizens or health care and related facilities. These proportions have remained relatively unchanged for

the past 10 years (Statistics Canada, 2013) and Government strategies are being developed to enable people to continue leading *“healthy and independent lives in their own homes”* (LHIN, n.d.).

However, as Boomers’ cognitive and motor skills diminish, due to aging or to the early onset of a non-reversible health issue, so does their driving ability, and this high reliance on the car threatens their independence.

Health and Driving Safety

Limitations in vision, cognition and physical ability, which develop with aging or due to other health conditions, have been associated with poor driving performance or crashes, as have age-related medical conditions such as cardiac arrhythmias, dementia, Parkinson’s disease, sleep apnea, and stroke (Marottoli, 2009; Niewoehner & Thomas, 2013).

In fact, research indicates that senior drivers have some of the highest crash per mile driven in the driving population (AASHTO, n.d.; Government of Canada, 2013), and individuals with a chronic health condition such as multiple sclerosis are three times more likely to have a car accident than their peers without a chronic health condition (Vann, 2014). Nonetheless, the incidence of driving as the primary means of transportation among these individuals is non-trivial (Statistics Canada – Table 2, 2013), which creates a risk for all road users.

With safety being such a concern, these mobility-constrained individuals are sooner or later faced with the questions of whether or not they should be driving (see Figure 2).

Figure 2 - Health and Implications for Driving



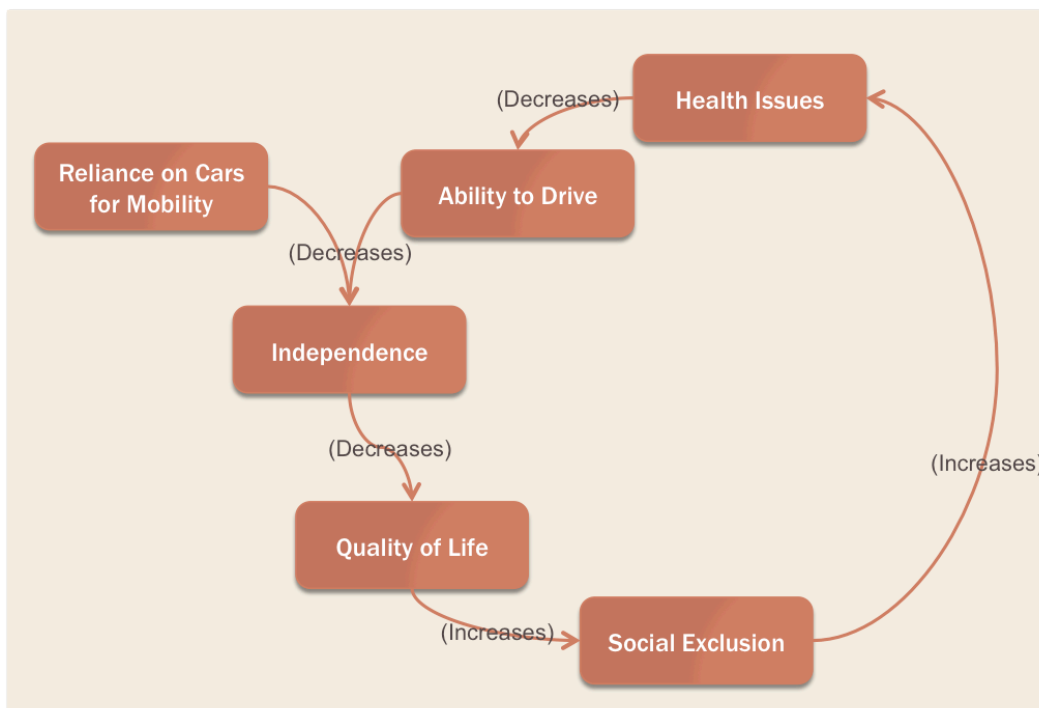
Mobility and Quality of Life

One of the main issues concerning the driving cessation decision is that a strong relationship exists between mobility and quality of life (Ahluwalia & Weatherley, 2013; Metz, 2000; Norweg *et.al.*, 2013; Schwanen & Zeigler, 2011). Mobility is strongly associated with the ability to engage in

social and productive activities, which in turn has been associated with lower risk of mortality and better functional status (Glass *et.al.*, 1999).

Driving cessation has been linked to various negative outcomes, including a decrease in participation in out-of-home activities, an increase in depressive symptoms (see Figure 3), and an increase in the likelihood of assisted living placement (Marottoli, 2009; Norweg *et.al.*, 2011). Seniors age 65 and older who no longer drive make 15% fewer trips to the doctor, 59% fewer trips to shop or eat out, and 65% fewer trips to visit friends and family than drivers of the same age (Bailey, 2004).

Figure 3 - Mobility and Quality of Life



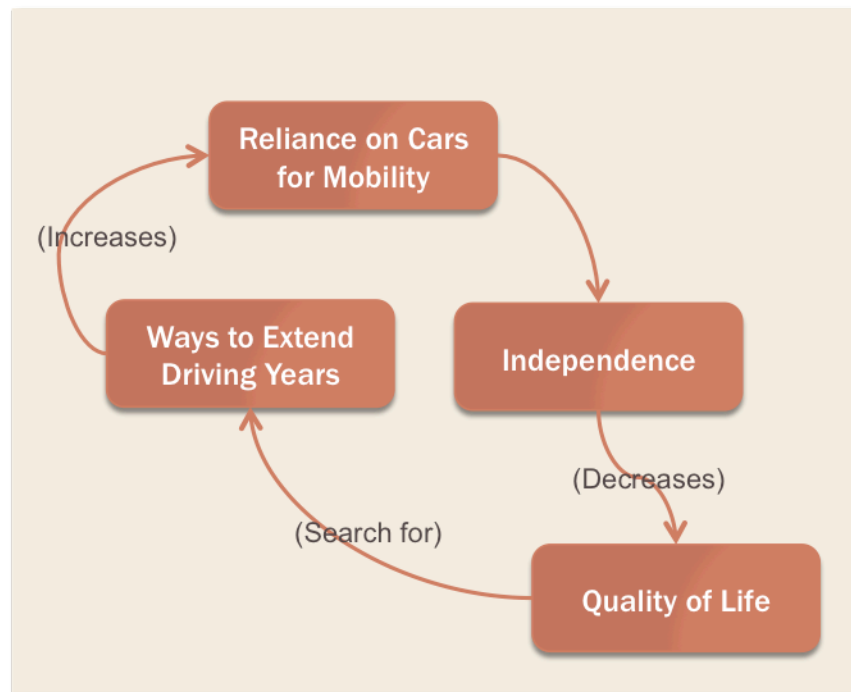
Awareness of the negative consequences of reduced mobility has led to reluctance on the part of many physicians to address their patients'

driving abilities, particularly given the lack of options in many locations to fill the mobility gap if people had to stop driving (Sinha, 2012).

Extending the Driving Years

The need to keep these individuals mobile has led to the search for solutions to enable them to keep their drivers' license for a longer period of time (see Figure 4).

Figure 4 - Extending the Driving Years



Consistent driver screening and assessment processes to avoid unfair license removal are being developed and tested (Akinwuntan, 2012; Candrive, n.d.). Education and training programs have been implemented to make them aware of changes they may be experiencing due to declining abilities, and to help them compensate for functional declines (AARP, n.d.;

SpinalHub, n.d.; Niewoehner & Thomas, 2013; CAA, n.d.; Vann, 2014). Studies have recommended the creation of support systems for these individuals to continue to drive safely, the improvement in vehicle design and the use of advanced technology to help increase road safety and mobility (OECD, 2001; Molnar *et.al.*).

As effective as these approaches may be, they only reinforce the car dependence and don't provide other acceptable alternatives. However, with the increase in life expectancy or the progression of their symptoms, most of these people will eventually be faced with a decision about driving cessation.

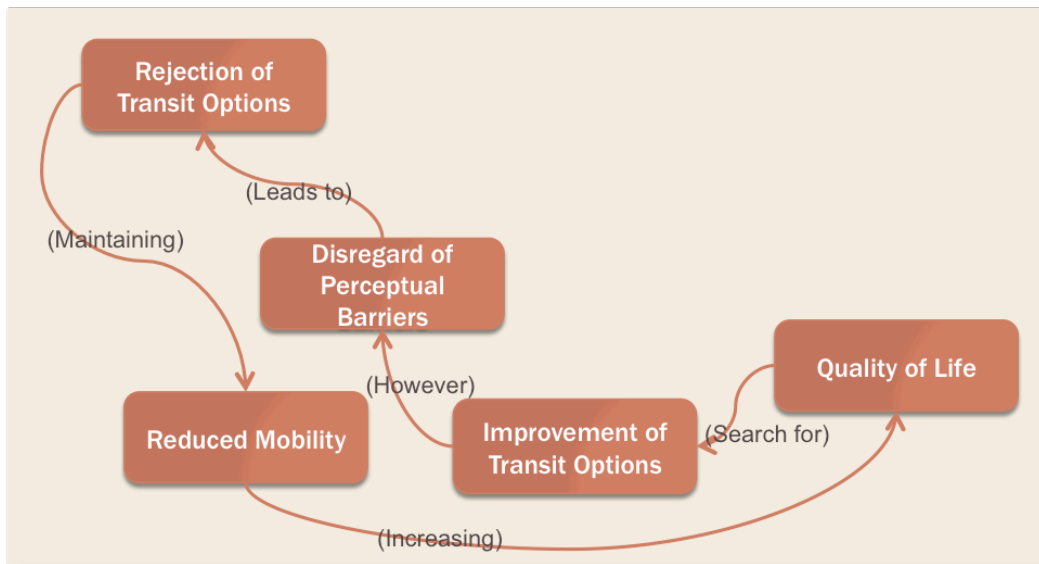
Are There Any Viable Alternatives?

In order to address the growing needs of the population, public transportation agencies worldwide are investing in enhancing the accessibility of their services. Efforts have been undertaken in many communities to improve regular transit services, including the provision of low-floor buses, the expansion of hours of operation, the provision of more user-friendly travel information, and training for transit users and transit service providers (Gasteiner, 2012; Molnar *et.al.*, n.d.; Transportation for America, n.d.).

However, a number of additional barriers prevent those facing mobility constraints from traveling by regular public transit as frequently as they would drive, or even from using it at all (see Figure 5).

Many of these individuals associate car ownership with quality of life, independence and mobility (Gilhooly, 2002; Siren & Hakamies-Blomqvist, 2006; Windle & Burholt, 2003) and prefer not to use public transportation. They perceive that while *serious* (non-discretionary) transport requirements may be provided for by alternative means, the discretionary trips that contribute significantly to the quality of life may be lost when private transport is unavailable (Davey, 2007).

Figure 5 – Transit Alternatives



Additionally, many of the deficits in abilities that make driving problematic also discourage these individuals from using regular transit services (Molnar *et.al.*, n.d.). As a matter of fact, those who suffer from such health-related limitations must often cease walking or using regular transit before they cease driving (OECD, 2001).

Getting to a bus stop and getting on the bus is difficult for those with mobility concerns, particularly in the winter, when sidewalks are not shoveled and bus stops and curb cuts are covered with snow. Many crosswalks don't allow enough time for mobility-constrained individuals to get across (Edmonton Seniors Coordinating Council, n.d.; Molnar *et.al.*, n.d.).

Some find the transit system intimidating to use without guidance. Language is an additional barrier for immigrants – a significant issue in Toronto. While onboard, those walking with difficulty are afraid of falling when trying to get to their seat with the bus moving.

Difficulties with reading or hearing passenger information or communicating with service personnel (Windle & Burholt, 2003), concerns about personal safety, anxiety about public transport running late, the behavior of some passengers, and the lack of concern from transport operators for the needs of these individuals (Fiedler, n.d.; Gilhooly, 2002) are also issues that negatively impact the perceived accessibility of regular transit. For such reasons, regular transit services may not be perceived as accessible.

Alternative transportation options have been developed in an attempt to overcome some of the barriers to using regular transit services, but these alternatives come with their own constraints.

Paratransit, for example, offers door-to-door options, but requires scheduling well in advance. Moreover, the high per-trip cost of these services,

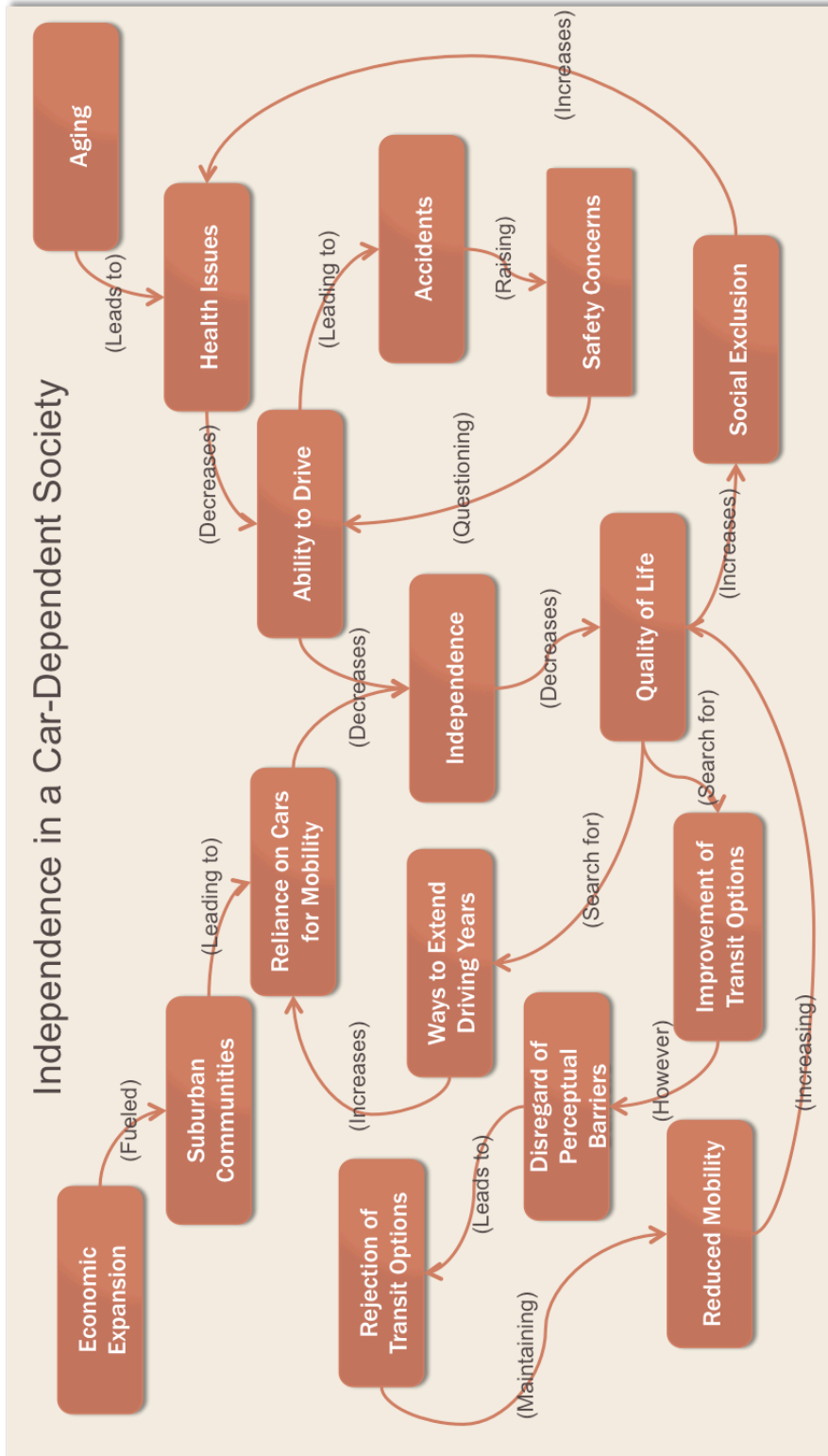
combined with significant growth in demand has led to a revision of eligibility criteria and an effort to move current users back to the regular transit system (Gasteiner, 2012; Henderson, 2007; Kalinowski, 2011)

Taxi services are as flexible as the car, but expensive to use on a regular basis. Volunteer ride programs may be more affordable than taxi services, but also tend to offer restricted hours and require advanced scheduling (Molnar *et.al.*, n.d.). As such, no effective alternative is available to provide the same level of flexibility and independence enabled by the car.

Summary

As Toronto prepares to become fully accessible by 2025, these barriers to accessibility – physical, operational, informational and perceptual – need to be clearly understood and addressed to ensure that the resulting public transportation system will be truly accessible to individuals facing mobility constraints. The problem needs to be approached from a systemic view (see Figure 6) to be effectively addressed.

Figure 6 – Independence in a Car-Dependent Society



Chapter 2 – Methodology

A Three Horizons Approach to Accessibility

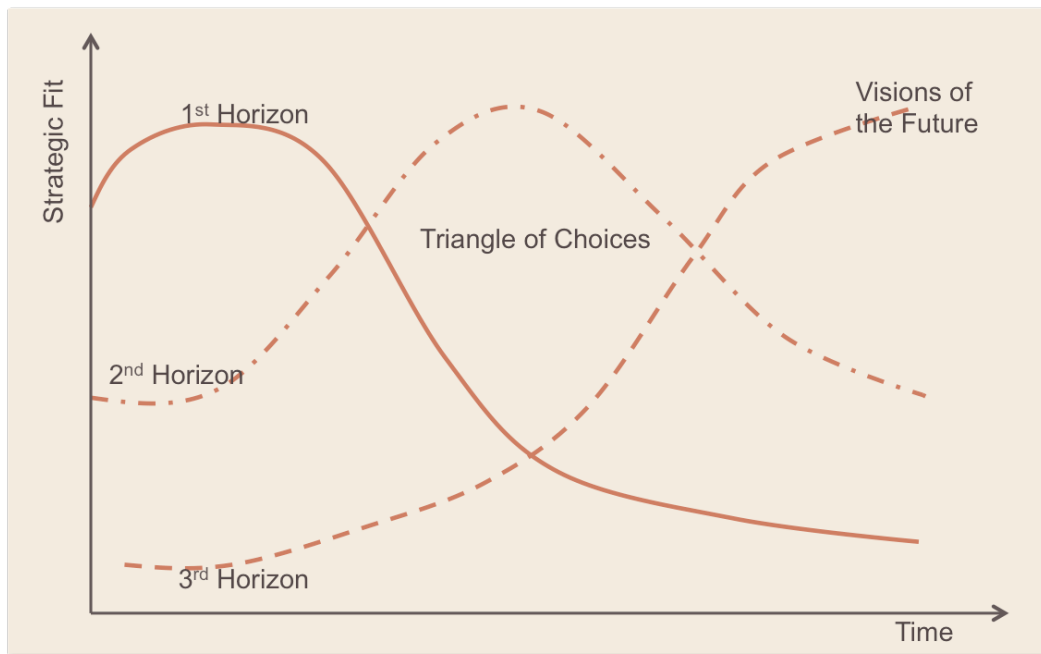
A *Three Horizons* approach is used in this study to identify ways in which we might create a truly accessible public transportation system for senior Torontonians facing a permanent mobility constraint.

In this approach, depicted in Figure 7, the *first horizon* represents a legacy system that is no longer well suited to address current needs. The *third horizon* represents visions of potentially more suitable future systems, which may eventually displace the current one, but are at best marginal in the present. The *second horizon* represents a transitional period in which the first and third horizons collide, values clash and competing alternative paths to the future are proposed. The time between when the first horizon starts to decline, the second horizon reaches its apex, and the third horizon begins to gain influence is called the *triangle of choices*, where the decisions made to resolve conflicting views help define what the future will become (Curry & Hodgson, 2008).

In the context of this study, the *first horizon* represents a legacy public transportation system that is not accessible to individuals with mobility constraints, which, as reflected by current legislation, is not desirable or acceptable. The *third horizon* represents visions of what an accessible public transportation system might look like, which may differ across stakeholder groups. The *second horizon* represents the present time, when conflicting

ideas and initiatives emerge, as Toronto seeks to become fully accessible. The analysis includes four major components, described below.

Figure 7 – The Three Horizons Approach (*)



(*) Image adapted from Curry & Hodgson, 2008

First Horizon – Experiencing the Legacy System

This stage consists of an analysis of how a legacy transportation system impacts and defines the travel experiences of individuals with mobility constraints and their perceptions of accessibility.

A series of in-depth interviews³ is used to map individuals' experiences with the system and illustrate some of the perceptual barriers to

³ See details in *Primary Research Design*, in Chapter 2, below.

accessibility also identified in the literature⁴ and in other similar testimonials (The Seniors Hub, 2014).

Third Horizon - Envisioning True Accessibility

Using the findings from the first horizon assessment as a starting point, and drawing upon the Inclusive Design, Social Inclusion and Transportation literatures, I propose a set of four guiding principles to characterize a user-centric vision for a truly accessible public transportation system. Such system should:

- Offer *inclusive services*;
- Be *perceived as accessible* by the population it is designed to serve;
- *Enable spontaneity*; and
- Be an *integral part of an accessible urban system*.

These four principles establish a framework to guide the process of identifying and selecting strategic initiatives to achieve true accessibility within the proposed AODA timeframe.

Second Horizon - Opportunities and Choices

I then conduct a simplified environmental scanning exercise to identify current trends and initiatives that may impact the future of accessibility in Toronto.

Environmental scanning is a method that enables decision makers to understand the external environment and the interconnections of its various

⁴ See *Are There Any Viable Alternatives?* in Chapter 1, above

sectors, and to translate this understanding into the institution's planning and decision-making processes (Morrison, n.d.). Its objectives are to (Coates, 1985):

- Detect scientific, technical, economic, social, and political trends and events important to the institution;
- Define the potential threats, opportunities, or changes for the institution implied by those trends and events;
- Promote a future orientation in the thinking of the institution; and,
- Alert the institution to trends that are converging, diverging, speeding up, slowing down, or interacting.

It fosters an understanding of the effects of change on institutions, aids in forecasting, and brings expectations of change to bear on decision-making (Friesen, 2014).

The simplified scanning exercise conducted herein is not intended to be an exhaustive coverage of trends and drivers that would have an impact on strategic planning for a 20- to 30-year timeframe. It is narrower in scope, and was conducted simply to provide a clearer picture of the current dynamics at play in the broader system of which the Toronto public transportation system is a fundamental component, so that these dynamics can be brought to bear in the final recommendations.

Strategic Choices – Achieving the Envisioned Future

Using the four principles of true accessibility as guidelines, and building on some of the trends and initiatives identified by the environmental scan, I propose a set of strategic directions to help bridge the gap between the current stage and the vision of a truly accessible Toronto within the 10-year timeframe set by the AODA.

Primary Research Design

Approach

The in-depth interviews to map individual experiences and support the definition of the user-centric vision of accessibility were conducted with individuals 50 to 70 years old who face mobility challenges due to a non-reversible health condition or due to aging. This group was selected to represent a variety of mobility issues faced by the next generation of seniors in Toronto, who will be served by the new, *accessible* system.

Recruitment and Final Sample

Participants were recruited via contact with various institutions that offer services to seniors and other individuals with mobility constraints in the Toronto area (e.g., Ontario Coalition of Senior Citizens' Organization, Multiple Sclerosis Society of Canada, Four Villages Community Health Centre). A total of 10 individuals were interviewed, distributed as indicated below.

- *Women*: 7 participants (3 using a cane, 3 using a walker, 1 using a wheelchair)

- *Men*: 3 participants (2 using a scooter, 1 using a wheelchair)

While not a representative sample, this group of participants provides insightful views of the issues being faced by individuals with mobility constraints while trying to navigate the public transportation system in Toronto. The data gathered by these interviews illustrates similar experiences to those described in the literature⁵ and in other, similar testimonials, gathered by the South Vancouver Seniors Hub (The Seniors Hub, n.d.).

An interesting fact identified through the recruitment process is that participants of the contacted organizations are typically women. Men were a noticeable minority in all the groups contacted. It is unclear if this is due to behavioral differences (e.g., women are more likely to look for support in difficult situations) or other issues, but potentially a topic worth further research.

In-Depth Interviews

Individuals who agreed to participate were asked to answer the following questions ahead of time:

- Please write 10 words that reflect what accessibility means to you.
- Please write 10 words that come to mind when you think about:
 - Accessibility in your neighborhood.
 - Public transit trips.

⁵ See *Are There Any Viable Alternatives?* in Chapter 1, above.

- Car trips.

This exercise was used to support the development of the in-depth interview guide and to direct some of the discussion with the participants. The semi-structured interview guide was designed to understand (i) individuals' need to travel, (ii) travel options, as defined by their level of access to and perception of various travel modes; (iii) travel experiences with the public transportation system, and (iv) impact on activity engagement. Topics of discussion and probing included:

- *Participant characterization*: Age, gender, type of mobility constraint faced by the participant, mobility device and support needed.
- *Neighborhood and living space*: Level of accessibility of current living space and neighborhood, adjustments needed since the inception of the mobility constraint.
- *Travel vs. local activity engagement*: Probe for the need or preference to travel to engage in activities versus having the activity accessible in the neighborhood.
- *Available transportation options*: Ability to walk, ability to drive, valid driver's license, familiarity with public transit system, ability to use Wheel-Trans, awareness and usage of community-based transportation service, viability of using taxi services, access to other options.

- *Travel behavior changes due to mobility constraints:* Modes of transportation used before and after the inception of the mobility constraint, changes in decisions about whether or not to make a trip, how to plan for the trip, how much time to allocate. Probing for choices, processes, emotions, feelings and impact of experiences on future choices.
- *Journey experience mapping:* Experience at each stage of the journey, given the decision to travel, including the decision about how to travel, the trip planning process, ease and mode of access to the main mode of transportation, experiences entering and exiting the vehicle, the trip itself, issues getting to final destination or returning home, response to unpredicted events. Probe for feelings, emotions and impact on self, on sense of accessibility and on future decisions about engaging in activities that require travel.
- *Activity pattern changes due to mobility constraint:* Types of activities participants used to engage in before the mobility issues, current activities and limitations to these activities due to mobility constraints.
- *If you could make one change:* Question to generate ideas on improvements that would address the needs of these individuals.

The contents of these interviews were used to map the individual experiences with the current system and to support the definition of the user-centric guiding principles to define true accessibility.

Chapter 3 – Characterizing the Legacy Context

In order to better contextualize the analysis of the experiences of mobility-constrained individuals with the current transportation system, a brief history of how this system came to be is presented herein.

The Evolution of Regular Transit

As described in Transit Toronto (2012), public transit services in Toronto date back to 1849, when 10-minute long rides on six-passenger stagecoaches were offered along King and Yonge Streets for a six-pence. A 30-year franchise granted by City Council in 1861 to the Toronto Street Railway Company brought a horse-pulled street railway service to the city. Another 30-year franchise granted in 1891 to the Toronto Railway Company (TRC) replaced horse cars with electric cars.

After the turn of the century, due to the annexations of some of the city's surroundings, Toronto was being serviced by four separate transit systems, each collecting their own fares and offering no transfers between them, making it difficult and expensive for Torontonians to navigate across the city. Therefore, in 1921, after the TRC's franchise ran out, the City of Toronto decided to create the city owned Toronto Transportation Commission (TTC) to merge all of the networks into a single transit system.

During the 1920's, significant efforts were put into uniting the operations and upgrading the infrastructure of the TTC network. With the

stock market crash in 1929, the system weathered a 20% ridership loss but continued to make improvements. Investments in new cars in the late 1930s, in combination with the Second World War, were responsible for the resurgence in public transit ridership in the early 1940s. Buses were bought and plans were drawn for underground streetcar lines on Queen and Yonge Streets. Construction on the Yonge line began in 1949.

In 1954, in order to handle infrastructure funding and distribution issues caused by increasing urban sprawl, the Province of Ontario collected Toronto and its twelve suburbs under the auspices of the Municipality of Metropolitan Toronto. The TTC was brought under the jurisdiction of Metro, and at the same time was renamed the Toronto Transit Commission. The new agency was now responsible for an area several times larger than its predecessor.

In that same year, the TTC opened Canada's first subway line running down Yonge Street from Eglinton Avenue to Union Station, a huge success paid for almost completely from fares. However, because bus services had quadrupled, the TTC was requested to establish unprofitable service to the suburbs, and the automobile was becoming the first choice of many residents to address their transportation needs, the TTC's entire capital budget for additional expansions was paid for exclusively by taxpayers, though Government subsidies.

Additional subsidy was required after 1972 when, under political pressure from the suburban majority on council, the TTC eliminated its fare zone system, which previously obliged suburban residents to pay an additional fare. By the late 1980s, 32% of the TTC revenues were coming from taxpayers' money.

As the subway expansion continued, so did the shrinking of Toronto's streetcar network, which was then seen as a leftover from a previous era. It was only in the 1970s, in the era of protest against the Spadina Expressway and car-oriented development, that local citizens convinced the TTC that streetcars meant better service, and that the streetcar abandonment policy should stop.

In the 1970s and the 1980s, the Toronto Transit Commission was seen worldwide as a 'transportation showcase'. From 1979 until 1990, it won awards after awards for safety and design. In the 1990s, however, political foot-dragging slowed subway development to a crawl, and budget cuts, the recession, and the inability to service the rapidly growing areas outside of Metro Toronto cut ridership by almost 20 percent from an all-time high of 460 million rides a year.

In 2009, ridership had returned to its record levels of the late 1980s, but after years of little to no investment, services have deteriorated significantly. As the city continues to grow, even as new investments in

transit start, there are many concerns about the future of the system, particularly with Toronto's budget stress.

The Evolution of Transit Accessibility

Inclusivity was neither a concern nor a concept at the early stages of the TTC – it was not part of the prevailing values. Transportation needs of the *disabled* (Transit Toronto, 2013) didn't start to be addressed until 1926, when 3 coaches were used to transport approximately 30 wheelchair bound children from their homes all over the city to the Wellesley Street School, at the north-eastern corner of Bay and Wellesley Streets.

In 1948, larger buses were adapted to offer wheelchair service, creating a travel alternative for people who had previously been transported by ambulances to make at least some basic trips. In 1975 the initial Wheel-Trans service had 46 regular customers. Fleet expansion and equipment upgrade led to 17 Wheel-Trans vans providing service for 2,500 patrons by 1978.

In 1983, Wheel-Trans scheduling, reservations, dispatching and administration started being done by the Wheel-Trans Department of the TTC, and by 1989, the take over of 125 Wheel-Trans buses by the TTC was complete. In the end of 1991, Wheel-Trans celebrated its one-millionth customer.

Concerns about the accessibility of the regular transit system didn't begin to be addressed until 1979, when the TTC formed the Technical

Advisory Committee on Improved Accessibility to survey its entire system for obstacles for the handicapped. That triggered a series of system improvements, including the addition of textured strips to the subway platform edges, handholds to entrance doors of buses and trolley coaches, an electronic amplification system to subway collector booths, and additional subway platform benches.

Accessible Community bus services started in the early 1990s, when low-floor buses were promoted as a tool in making the entire rolling stock of the TTC accessible. In 1993 the TTC embarked on additional Easier Access improvements to the system with the installation of automatic doors at some subway stations, benches with side handrails, additional escalators and improved platform edge markers, and the addition of chime trains.

Additional improvements followed, and by 2003 the TTC had 35 accessible regular bus routes, 4 accessible community bus routes, 2 accessible night bus routes, 22 subway stations with elevators, and 2 RT stations with elevators.

In December 2011, the last of the non-accessible buses were retired, making the whole of the TTC's bus network fully accessible. In 2012, the TTC unveiled the next generation of Toronto streetcars, promising fully accessible streetcar service beginning in 2014 and fully implemented by the 2020. That same year, 30 of the TTC's subway and RT stations were accessible.

Implications Moving Forward

Built during different times, under other prevailing view and values, the Toronto public transportation system was not designed to be inclusive – the concern for inclusivity is just beginning to emerge in our society.

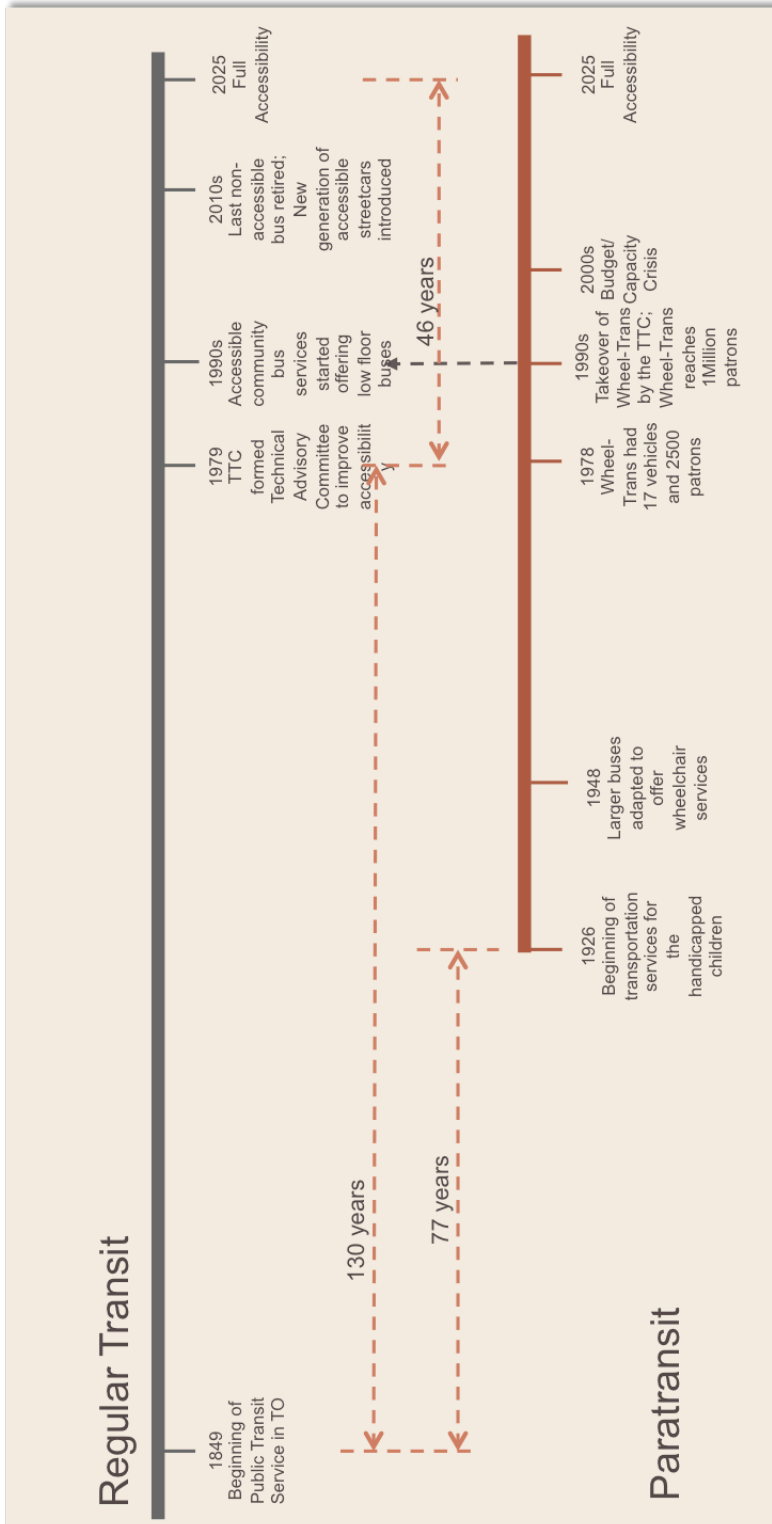
The transportation needs of *disabled* individuals have been addressed by a separate system from its inception, and didn't become a concern of the regular system until late 1970s – 130 years after its beginning (see Figure 8).

While paratransit may have been adequate at one time, given the prevailing views, values and demand then, it faces tremendous pressures to keep up with huge increase in demand under significant budget constraints, and it no longer fits current inclusivity values.

Even though some improvements have been made since the 1970s to expand the transportation alternatives available to *disabled* individuals and to increase the accessibility of the regular system, the current services are far from being adequate, particularly given the expected growth in demand. Deterioration of service quality in the main system due to years of disregard compounds the impact of existing barriers.

As Toronto prepares to become fully accessible, understanding the experiences of mobility-constrained individuals with this legacy system is an important step towards building a future system that effectively addresses their needs.

Figure 8 – Accessible Transit Timeline



Chapter 4 – First Horizon: Experiencing the Legacy System

In order to better understand the experiences of mobility-constrained individuals with the legacy system, a series of in-depth interviews were conducted with Torontonians 50 to 70 years old facing a mobility constraint due to aging or a non-reversible health condition. These experiences are described herein.

The narration describes (i) how the environment characteristics impact their *travel needs* and their opportunities for activity engagement; (ii) how the available *travel options* impact the trips they choose to make and how they decide to travel; (iii) how their public transportation *travel experience* impacts their travel decisions; and (iv) *coping and problem solving* mechanisms to deal with these circumstances.

Travel Needs

The inception of a mobility constraint has a significant impact on travel needs, as the access to local activities is reduced due to limited *neighborhood accessibility and walkability*.

Neighborhood Accessibility

The current reality of Toronto is that many neighborhoods and living spaces are not accessible.

Most places – residential and commercial – have front steps to get in. The bungalows that once dominated the landscape, and had most major rooms in one floor, were replaced by more spacious, two- or three-floor

homes, better suited for able-bodied individuals. As a consequence, the inception of a permanent mobility constraint often triggers a change of living spaces, so that these individuals can function in their own homes.

“As soon as I started having a hard time walking I applied for this place.”

“I used to live in a town house, but I moved to a bungalow because it makes things easier for me.”

They don't always move to a location or living arrangement of their choice, because they have to take into consideration the needs of other family members.

“I'd rather move to a condo by High Park but my husband wanted a house, the kids wanted a house – everyone has a house.”

Those living in mixed-use locations are more likely to stay put, as their places are more likely to be accessible, the neighborhood offers more alternatives for activity engagement and there are more transportation options nearby.

“I live close to the St. Lawrence Market. It is very convenient. I have everything I need here and it easy to get to many places.”

While the move does address their primary need to be able to function within their homes, it doesn't always significantly increase their level of accessibility, as each neighborhood in Toronto presents its own obstacles.

Many of these neighborhoods resemble suburban areas and offer limited options for activity engagement.

“I can get to Wal-Mart and to the supermarket. For everything else I need to ride my wheelchair up to Jane, hop on the bus and get to Bloor West. When they finish the mall I will have more options but I don’t really see shopping as an ‘activity’.”

Most of the local buildings are not accessible – even the public ones – and people who haven’t had to deal with disability first hand are not sensitive to these barriers.

“The elementary school and the middle school in my neighborhood are not accessible. It is hard to participate in my kids’ school life.”

“You ask people if their places are accessible and they say ‘Sure. There is only one small step at the door but once you get over that it is all flat inside.’ I guess they have no idea what accessible means.”

Walkability

The streets and sidewalks are not easy to navigate with mobility support equipment.

“The streets where I lived before were very narrow and full of potholes. I wanted to ride my scooter or the tricycle but it was very dangerous.”

In the winter, the level of accessibility is even more limited, as streets are often icy and piles of snow block paths and curb cuts.

“In the winter they clean the roads but don’t clean the sidewalks. When that happens, it is very hard to go out. Last week I took my scooter out four times and I fell three times. Each time I had to wait on the ground until someone came to rescue me.”

“Sometimes I get stuck on a snow bank. When that happens, I put on my pitiful face, wait until a neighbor comes by and beg for them to help me. I don’t want to have to do that all the time. People start avoiding you.”

Those living in mixed-use areas may have more accessible options as far as activities are concerned, but face other limitations. The volume of pedestrians and motorized traffic that are typical of such regions present a threat to people who struggle with their balance and can’t keep the same pace.

“It is very busy where I live. People are always rushing, looking at their phones or with their headsets on. They don’t see you. It is almost as if you don’t exist. I’m afraid they will bump into me and I’ll lose my balance and fall.”

“The cars are very fast and there is too much traffic. I’m afraid I won’t have enough time to cross the street. I always wait until a new light cycle begins to try to cross. Otherwise I don’t know if I can get to the other side.”

The impatience and lack of empathy of others using the road makes them feel rushed.

“Sometimes when you are crossing and the cars want to turn left, they wait but you see they are anxious to go. They keep inching their cars closer and closer as if to say ‘hurry up’! Everyone is in a hurry...”

Such limitations have a strong impact on self-esteem and on individuals’ sense of independence and belonging, and lead people to choose to stay home more often than body-abled people.

“Right now, I avoid going anywhere unless it’s absolutely necessary.”

Summary – A Non-Accessible Urban System

Limited access to the built environment and barriers to walkability significantly reduce the overall level of accessibility of mobility-constrained individuals, limiting their access to local activities, as well as to transit options that may enable them to search for activity engagement opportunities elsewhere. The larger urban system context needs to be taken into consideration when addressing transportation needs, if a city where *everyone can participate fully* is to emerge.

Travel Options

When the need or desire does come to go beyond their immediate neighborhood to engage in some type of activity, the options available to individuals with mobility constraints are limited. Herein we describe some of the limitations involved in selecting the *private car, taxicabs, community-based transportation services*, short distance modes (*walking, scooters and wheelchairs*), *Wheel-Trans* and *regular transit*.

Private Car

Most individuals had a drivers' license before the inception of the disability. They tend to stop driving either because of their health conditions or because the cost of keeping a car, particularly an accessible one, is too high. However, they still hold on to their drivers' license in hope that something may change.

"I still keep my drivers' license. I don't drive because I can't afford a car but I won't give my license away."

"I sold my car since I got my health problem but I keep my drivers' license. Until I have to go take another driving test I'm keeping it."

Some of these individuals express incredulity about the responses they get from their doctors to their inquiries about driving, as doctors are reluctant about taking their drivers' license away.

"I noticed I was having a hard time driving. I had double vision. I asked my doctor if I should be driving and he told me that it was a decision I had to make."

"This woman was blind of one eye and didn't have a lot of peripheral vision on the other and she was still driving. Her doctor wouldn't tell her to stop. This is dangerous!"

While they may not believe they should still be driving, they may want someone else to make that call for them. Given that the car is associated with

comfort, control, freedom, it is no wonder individuals with mobility constraints try to maintain that option available for as long as possible. As a matter of fact, those who didn't have a car before the inception of the mobility constraint may start reconsidering it.

"I sold my car when I moved downtown because everything was so convenient... Now I'm thinking about getting a car again. I keep on thinking it would give me so much freedom..."

It is not unusual that those who no longer drive will have the option to travel as a passenger with a friend or family member, if their mobility support device can be folded. However, these are infrequent trips and they prefer to minimize them to maintain their sense of independence.

"If I go to an occasional movie or restaurant, a friend picks me up and drives me, but those are rare occasions."

"My husband offers to drive me places but I want my independence and my privacy."

Taxicabs

Taxicabs are perceived as very convenient because they offer door-to-door services, are available 24 hours a day with relatively short notice and will make multiple stops if needed. However, they are too expensive to be used on a regular basis and are often used as a last resource.

"I rarely travel by taxi. They are too expensive."

“If I am too tired to take the subway to go to my doctor, then I take a cab, but it adds up...”

Currently not all taxicabs in Toronto are fully accessible, and typically, these accessible services use a tiered pricing structure based on the length of the trip and they will wait for the passenger if needed, for a time-based fee.

Not all drivers are well trained and sensitive to the special needs of mobility-constrained individuals, but more specialization is a growing trend in this service.

“When I go out with my walker they grab it and want to put it somewhere. I’m like... I need this!”

Community-Based Transportation Services

Given the limited range of affordable alternatives available to individuals with mobility constraints, some community-based services have been developed by not-for-profit organizations.

Toronto Ride, for example, is a partnership of fourteen not-for-profit neighborhood-based community support service agencies that provide assisted transportation (as well as other services) to the frail elderly and adults with disabilities.

It offers door-to-door services to individuals who live in its catchment area and whose mobility support device can be folded. It is significantly more affordable than taxis, but has limited hours (typically business hours on

weekdays only). Trips need to be booked many days ahead of time and rides are not guaranteed, given the high level of demand for the service.

Even with this high level of demand, many seniors are not aware of the service availability, or do not know how to get access to it.

“I see a van drop people here at the mall every now and then, but I don’t know how they get the service. There may be a way to get that.”

“I’ve never heard of this service. I’ll take a look into it.”

Walking, Scooters and Wheelchairs

For some of these mobility-constrained individuals, walking is still an option, with the support of a cane or a walker. However, they are often limited on how far or how fast they can walk, which becomes an issue for local trips, as well as for accessing regular transit and making transfers.

“I can walk but I have the pain and I also get tired very quickly, and sometimes there is no place to rest.”

“I avoid the escalators because I don’t feel safe, and most people I find live in their own little world, and don’t really see you, walking slowly with a cane, so I find that if I take the escalator and I don’t get off like everybody does, with the same ease, the people behind me get startled.”

As the walking ability diminishes, they resort to scooters and wheelchairs, which can be used for longer trips but do also present a number of limitations, such as short battery life and limited maneuverability.

“When I go to my mother’s I take a bus, because it’s a long ride for my scooter, and I figure going over there is going to kill my battery. My scooter has a four-hour charge, so two hours one way, two hours the other way. It doesn’t take me two hours to get to my mom’s. But, to be on the safe side...”

“I like my scooter. With a four-wheeler you can’t turn around, you can’t do anything. The three-wheeler has more turning radius than the four-wheeler.”

As limiting as these alternatives are, they would still enable a higher level of engagement if the neighborhoods and the public transit system offered more accessible options and were perceived to be less threatening to personal safety.

Wheel-Trans

Most people are grateful for Wheel-Trans, as it provides door-to-door flexibility at an affordable price.

“I love Wheel-Trans! It gives me a lot of independence!”

“They pick me up here and drop me off where I want to go for the price of a bus ride.”

However, the system requires booking the trips 24 hours in advance and doesn’t allow multiple stops, which is not convenient, but people find ways to adjust to that.

"I sit on my computer every Sunday night and book all my trips for the week."

"Sometimes I book a trip to a place where I can get to many things with a wheelchair and then I have lots of options until it is pick-up time".

The main issue about Wheel-Trans is how time consuming a trip can be.

"I use to say that only Wheel-Trans can turn a 15 minute trip to the doctor into a six hour journey!"

"I left my house an hour and a half before my appointment. One hour later I was sitting in the van 15 minutes away from my house."

In spite of that, people adjust to the system and often prefer the convenience of door-to-door services to the stress and discomfort of a trip on public transit.

"I bring my book and I'm OK. At least I can wait indoors and not at a cold bus station"

While Wheel-Trans offers a very wide window for pick-up and drop-off, it is not very flexible waiting for people.

"They are supposed to tell me when they are here. One day they didn't tell me they arrived, waited less than 5 minutes, left, put me on the black list."

In the end, all things considered, Wheel-Trans is still the service that best suits the needs of most of these individuals. However, not everyone qualifies for it and some choose not to apply to maintain some level of privacy about their condition.

“Wheel-Trans... I don’t want to apply for it. I don’t like the idea of a big van picking me up at my building. I don’t need my neighbors to know what I’m dealing with. At least not yet.”

Regular Transit

Experiences with and perceptions of regular public transit vary significantly across this group. Some individuals had rarely used public transit before the inception of their mobility constraint and still prefer to avoid it as much as possible, as they have a negative perception of the environment.

“I never used the subway before. There are too many people rushing, pushing, sweating...”

“I used to walk all over the place. I hate the bus! I have a problem with body odor.”

Others were familiar with public transit before the inception of the mobility constraint and continue to use it as much as possible, as it allows them some independence.

"I'm very familiar with the transit system. I have always used it and I still can get to many places with it."

"I am very familiar with the buses and the subway and I use them often. I only wish the streetcars were also accessible. That would be perfect!"

Some were familiar with public transit before and used it frequently but now cannot use it anymore because there are too many barriers. Not all subway stations are accessible and none of the LRT lines are accessible.

"If it breaks down in a station that is not accessible then what happens?"

"In some stations there are so many stairs... Sometimes I don't have the energy to do that amount of walking..."

Not all stations have washrooms, which is a significant limitation to some of these individuals.

"Because of my condition I have an active bladder. I need to go to the bathroom frequently and I know that not all stations have restrooms."

In addition to the physical barriers and perceptions about the environment, lack of awareness and empathy from the part of other users presents a threat to these individuals and limits the amount of trips they make.

"I can't use the subway anymore. It is too fast. People don't see you... I'm afraid of it. I don't go anywhere."

Overall, no matter the views these individuals have of public transit usability and affordability, they all perceive it as a time consuming and often stressful experience. Transit trips are typically associated with lack of control, long waits, anxiety, discomfort and unpredictability, as described below.

Summary – Limited Spontaneity

The current public transportation system significantly limits the ability of mobility-constrained individuals to be spontaneous. The lack of flexible, affordable options leads these individuals to limit their trips to the bare minimum, non-discretionary trips. A city where *everyone can participate fully* should provide all of its residents with similar traveling flexibility.

The Travel Experience

Traveling by public transit, once that choice has been made, is always a complex experience that presents challenges at every stage: during *trip planning* and when *choosing the travel time*, when *getting to the access station*, *waiting*, *boarding*, *riding*, *transferring*, and during *unpredictable events*.

Trip Planning

A lot of planning ahead goes into traveling by transit. People need to consider how long the trip would normally take and add a time buffer to it.

“I generally plan three times the amount of time it used to take me. If a trip took me 30 minutes, I plan an hour and a half. I find that generally works.”

They need to know bus schedules and plan their moves accordingly.

“I have to time when I leave the places so I get to the station on time for the bus. If I miss it, waiting for a long time is very hard.”

They need to call the TTC ahead of time to make sure elevators are working in accessible stations.

“You’re always supposed to call ahead of time to make sure elevators are working and sometimes they are not. I’m not gonna chance that...”

Just this initial planning effort may sometimes be a deterrent to traveling.

Choosing the Travel Time

Choosing the right travel time is a major component of making a successful trip, as peak time trips can be significantly more difficult than traveling during off-peak hours.

“I avoid peak hours because it is impossible to get on the bus.”

“I book my appointments in the middle of the day because then the subway is not full of people rushing around.”

When a peak time trip is required, it is not unusual to get a negative reaction from other passengers.

“People don’t always say something but they look at you like you shouldn’t be there at that time.”

Getting to the Access Station

Getting to the transit stop can be an adventure in itself, depending on the weather conditions, the type of neighborhood people live in and the level of mobility constraint they face.

“If the sidewalks are icy, or if it is raining it is very difficult to get to the bus stop.”

“The bus stop is not very close to my building. Sometimes I need to rest on my way there, but there are no places to sit... You need to make sure you have the energy to walk all the way before you leave the house.”

Waiting

Waiting is difficult, as most of the stops don't have seats or are not sheltered. If they are sheltered, they can be difficult to get into and out of.

“There is no place to sit at my stop. If I miss the bus or if the bus is late, I have to stand for a long time until the next bus comes. It worries me.”

“You have to walk a long way to get out of the shelter and into the bus, because the entrance to the shelter is at the back. Why do they build them like that?”

Boarding

Boarding is not always an option, for a number of different reasons. Sometimes access to the bus is blocked.

“The other day there was a pile of snow in front of the stop. I saw the driver was trying to find a place that would make it easy for me to get in but it wasn’t possible.”

Some of the mobility devices don’t fit the available space on the bus.

“If I have a 4-wheeler, it is more stable on the streets and on the sidewalks but it doesn’t fit on the bus. With a 3-wheeler I can maneuver once I’m on the bus. It is not as stable on the sidewalk, but it works.”

Subway doors close too fast to allow some of these individuals to get in safely.

“The subway door sometimes is not open long enough. I don’t have enough time to get in before the door closes.”

It is not unusual that the bus driver won’t be helpful, and will find excuses to not stop and let people board.

“One day I waited at the bus stop for a long time. Three buses came by and each time they would open the door and say ‘the ramp is not working’. You know, when the ramp is not working they don’t have to stop, so sometimes they use that as an excuse. I can see one ramp not working, even though they are supposed to check to make sure it is working before they start the day. But three?”

Some drivers can actually be quite rude.

“One of them opened the door and told me: ‘You people shouldn’t be here!’ I guess he thinks my people don’t belong on his bus...”

Riding

Riding the bus or other public transit options can also be a challenge. Many drivers start driving before people have found a place to sit, and concerns about falling are always present.

“Where I take the bus, I come in and the bus has to make a left-turn right away. Fifty percent of the drivers wait until I’m sitting down to make the turn, and the other half doesn’t, you know. I try to hold on because I don’t know.”

Younger, able-bodied people often occupy seats that are supposed to be preferential for seniors or individuals with mobility constraints and do not yield their seat if needed.

“There have been times when actually the bus driver had to say ‘please give the space’ to let me sit down.”

Individuals facing mobility constraints don’t feel that they should have to be asking people for the seat. Rather, yielding should be the rule.

“I’m not going to go up to a person and say, ‘can I have this seat’ if they don’t get up on their own. They should come up with a sign or something that says ‘You’re sitting because the seat is free, but if some disabled person comes get up! They need it more than you.’ I shouldn’t have to go and ask.”

While most passengers don't react in any special way to the presence of individuals with mobility constraints on the bus or in the subway, some make comments or engage in conversations that make these individuals feel uncomfortable.

"This woman looks at me and says 'I admire people like you!' Admires what? She doesn't know me. Admires my wheelchair? It is not a fashion accessory..."

Some of the remarks, while arguably in good intention, can make these individuals feel unwanted.

"One day this person told me: 'You know there is Wheel-Trans, right?' What am I supposed to answer to that?"

Transferring

Transfers add anxiety to an already difficult process. Uncertainty about when the next bus is coming is difficult to handle.

The bus is supposed to leave every 15 minutes, but in reality they hardly ever keep to that time; they come earlier or they come later. Sometimes I stay in my dentist's office, if I see the bus has just left, so I wait maybe ten minutes before I cross the street, because otherwise I will have to stand there, and that is hard for me to do."

Lack of accessible information about delays or accidents hinders decision-making. These individuals would like to have more access to such information to make informed choices about their trip.

“Sometimes the bus takes forever to come and you don’t know what happened. Some people have phones that they can use to know when the next bus is coming. I don’t have that. I wish they had signs that let us know what happened. Then I would be able to decide if I can wait or if I should find a way to go back home.”

Unpredictable Events

Service disruptions, which are not uncommon in Toronto, place additional stress on these individuals.

“You know when they close a subway station and you need to take a shuttle service? That is very difficult. People get crazy when that happens and it is very dangerous to walk. All the buses are very full. You have to stand in line and not everyone lets you go ahead. Sometimes I will just go into a store or a building where I can seat and wait until things are normal again...”

“I’m afraid the subway will break down in a station that is not accessible. It is underground. What if it breaks down in the tunnel?”

All these difficulties add emotional stress to the decision to of whether to make a trip, and frequently lead to a significant impact on activity pattern.

Summary – Low Perceived Accessibility

The unpredictability associated with regular transit leads mobility-constrained individuals to perceive the system as not being very accessible. This low accessibility perception is compounded by the system's fast pace and by the lack of empathy from other users.

To create a truly accessible system, these perceptual barriers need to be taken into consideration, in addition to the physical, operational and informational ones.

Resulting Behavior

The numerous barriers imposed by the system leads to *impacts on activity patterns* and to the development of *coping and problem solving mechanisms*.

Impacts on Activity Pattern

The perceived risks and difficulties of a regular transit trip and the lack of feasible and affordable alternatives often lead individuals with mobility constraints to significantly limit the numbers of trips they make and the types of activities they engage into.

"I don't go anywhere anymore. I just go to the doctor appointments."

"I never get out of the house. I'm too scared to do that."

They feel isolated and have a strong need for interaction, but on the other hand don't want to be constantly reminded of their limitations.

“The worst part of this disease is to have to stay home. I used to get involved in so many activities... Now when I get invited to go places and I can’t do many things it makes me feel bad about myself.”

Some still push themselves to stay engaged in some activities and to have an independent life.

“I do some volunteer work and I do yoga once I week. I need to get out of the house otherwise I get crazy.”

Others would like to be more engaged but are not aware of options that may be available, or don’t like the alternatives that they perceive to have.

“I like to play euchre. Do you know of a place where I can play that around here?”

“I know there is a community center that offers activities to handicapped people nearby, but those are mentally handicapped people. That’s not what I am looking for.”

Coping and Problem Solving Mechanisms

In spite of all the hardship, these individuals are not necessarily giving up on finding solutions for their situation. Some have joined support groups that have helped them better cope with these difficulties.

“One of the things I’ve learned from going to these group meetings is not being angry when people try to help me.”

Some are inquiring about ways to participate in the decision making process to find solutions to their transportation problems.

“The city should organize community meetings and make us aware of them. Say ‘we’re having this meeting and we want to hear from you.’”

Others are taking matters on their own hands and submitting proposals to their city representatives. Sometimes they feel heard, sometimes they don’t.

“After three buses didn’t stop for me, I canceled my appointment and I came home and I wrote a letter to the TTC, because that’s exactly what I do. They talked to the drivers on that shift, after they received my letter, and none of them remember the incident, but it never happened again.”

“We’ve put together all this information about a service that is available in Mississauga and sent it to our MP as a suggestion of what they could do to improve accessibility for seniors in Toronto. It’s been a while now, and we haven’t heard a word back.”

Summary – Limited Social Inclusion

The many barriers to accessibility faced by mobility-constrained individuals can lead to isolation and exclusion, which are detrimental to the individual and society. Listening to their concerns and addressing their needs is necessary to create an inclusive city.

Conclusion

The stated objective of the AODA legislation is to turn Ontario into “a province where every person who lives or visits can participate fully”. The city of Toronto (the province’s capital and the country’s largest city) and its public transportation services are far from enabling this objective, as indicated by the individual experiences described above, and summarized below.

- *A Non-Accessible Urban System:* The physical barriers imposed by the built environment in many of Toronto’s neighborhoods may force relocation, and significantly limit opportunities for activity engagement, leading to a feeling of social exclusion. The difficulty to navigate streets and sidewalks due to permanent or temporary obstacles, or to the lack of amenities that make these streets more walkable, further constrains access to activities and to regular transit services, preventing mobility-constrained individuals from engaging in society as much as they may have liked.
- *Limited Spontaneity:* The limited travel options and the complex decision process involved in making a trip in Toronto leave little room for spontaneity. Last minute, unplanned trips are not an option for mobility-constrained Torontonians. Alternatives to driving a private car are expensive, offer limited hours, require eligibility, or are too complex and stressful to consider for a discretionary trip. These

barriers further increase the resistance of mobility-constrained individuals to leaving the house and engaging in more than the very basic, non-discretionary activities.

- *Low Perceived Accessibility:* The inability to access most of the built environment can be discouraging. The lack of travel options limits spontaneity. The required amount of planning before a trip can be overwhelming. Paratransit is perceived by some to be invasive of their privacy, and disrespectful of their time and dignity. A transit trip can be an emotional rollercoaster. The oblivious, non-empathic, sometimes rude behavior of other people sharing the system can bring a feeling of being rushed, invisible, unwanted, antagonized. Crowded vehicles and fast flows bring a feeling of being unsafe. Service disruptions are stressful. All these emotions compound the visible barriers to using transit, reducing its perceived accessibility.
- *Exclusive by Design:* Result of a legacy system, built on different views and values, Toronto was not designed to be an inclusive city. The focus on the efficient movement of able-bodied people, and not on empathy and inclusivity, lead to structures and services that are not resilient to the changing needs of their users. The immense barriers to accessibility built into the public transportation and the urban systems impact individuals' decision to engage in a number of activities, leading to isolation and social exclusion, which are

detrimental to the individual and to society as a whole, particularly as the number of these individuals increase significantly over the next decade.

The question remains whether the AODA strategy will overcome all these barriers and lead to emergence of an inclusive city.

Chapter 5 – Third Horizon: Envisioning True Accessibility

As part of its strategy to create “*a province where every person who lives or visits can participate fully*”, the AODA sets minimum standards for both conventional and specialized transportation services to address physical, operational and informational barriers to accessibility (Making Ontario Accessible, n.d.).

While the proposed standards are necessary to ensure accessibility, their focus is on the functional, rather than on the human and emotional aspects of the issue. They address the more traditional, measurable barriers to mobility, but not necessarily the attitudes and perceptions of multiple stakeholders, which impact the perceived accessibility of the system as a whole. As such, they may have limited impact, if any, on some of the behavioral and attitudinal changes that need to take place for the system to become truly accessible.

The AODA also proposes a more flexible eligibility application process for the specialized transportation services. This proposition reinforces a discriminatory approach to accessibility, rather than an inclusive perspective, in that it perpetuates the existence of two separate systems to address the needs of individuals with different types of abilities, rather than advocating that the needs of all people be addressed by a single system.

While this discriminatory approach may be required to handle the short-term needs of an underserved group and avoid the catastrophic consequences of proceeding with a service integration before the regular system is suited to serve mobility-constrained individuals, a longer-term view of how these needs may evolve as this population grows significantly over the next decade, likely surpassing the available capacity of the specialized services, is also urgent. It is unlikely that with just the proposed standards the AODA will achieve its stated accessibility goals.

A User-Centric View of Accessibility

In order to achieve the stated objectives of the AODA and the needs of Torontonians facing mobility constraints, summarized in Chapter 3, I proposed that an accessible public transportation system should:

- Offer *inclusive services*;
- Be *perceived as accessible* by the population it is designed to serve;
- *Enable spontaneity*; and
- Be an *integral part of an accessible urban system*.

These concepts are further elaborate below.

Offering Inclusive Services

Inclusive design refers to the design of products, services and environments that are “*usable by all people, to the greatest extent possible, without the need for adaptation*”. It differs from barrier-free design in that it

focuses not on accommodating people with disabilities in the environment, but on building environments that are designed for all people. It actually assumes that everybody has a disability (Mace, 1998).

While we are all prone to become disabled as we age, and face other types of temporary or permanent disabilities throughout our lives, transportation planning hasn't typically taken that into consideration.

In fact, in its early stages, transportation planning was based on understanding mobility as *mass movement*, which could be studied using concepts from natural sciences, such as flow and gravity (Schiefelbusch, 2010). Legacy systems from that stage were based on a different set of values, planned under the assumption that mobility needs are homogeneous across the population, and were typically designed for the *average* individual, who is "*perfect, capable, competent, and independent*" (Mace, 1998).

However, most individuals do not fit this description, at least not all the time. The result is that these legacy systems do not serve the needs of a growing portion of the population, and the cost of providing specialized services to address specific needs is too high. As a consequence, a growing part of the population is being prevented from fully engaging in society, which goes against the AODA's objective.

In planning for the future, inclusiveness, as much as possible, should be the goal, so that individuals can easily adapt to the system with minimum modifications as their needs evolve.

Perceived as Accessible

To enable full participation in society, a public transportation system needs to be *perceived as accessible by the population it is designed to serve*.

Transportation Planning has traditionally taken a rationalistic approach to understanding travel behavior, using quantitative parameters to explain mobility and characterize the accessibility of a service or an area (Scott & Horner, 2004; Transportation for America, 2011).

Even though new frameworks for accessibility measurement have accounted for mobility and physical differences among people, taking into account personal limitations that affect travel time, effort, and even successful completion of a journey (Church & Marston, 2003), these approaches have typically left out the travellers' perception of accessibility.

However, studies from cultural and social sciences have argued that mobility not only serves psychological and social needs (Schiefelbusch, 2010) but is also sometimes hindered by psychological and emotional barriers (Fiedler, n.d.). A U.N. report on measuring social inclusion in a global context (Atkinson & Marlier, 2010) raises the point that exclusion is a personal experience, and that the views of those being socially excluded, although inherently subjective, should be taken into consideration in the analysis of certain aspects of social exclusion.

The experiences of mobility-constrained Torontonians has illustrated that while physical, operational and informational barriers do place major

constraints on accessibility, perceptual barriers, which are developed through personal experiences, can significantly magnify the impact of these constraints, potentially preventing people from using the services even after some of the observable barriers have been removed.

Effectively addressing these perceptual barriers is fundamental to developing a transportation system that is truly accessible to its intended users.

Enabling Spontaneity

To enable individuals to participate fully, as proposed by the AODA, the transportation system should *offer similar choices and level of flexibility to all individuals within a society.*

However, the transportation services currently available for people with mobility constraints require a significant amount of planning and scheduling way ahead of time, hours are limited and availability is not always guaranteed. While this may be workable for regular trips, last minute plans cannot be fulfilled in this system. These imposed limitations reinforce inequality and are a barrier to full participation and social inclusion that should be addressed.

Part of an Accessible Urban System

To enable full participation in society, the accessibility of the public transportation system needs to be *addressed in conjunction with that of the broader urban system.*

Mobility, the typical focus of traditional transportation projects, is often not an end in itself. Even though there are indications that some traveling does happen for the sake of the journey (Schiefelbusch, 2010), the ultimate goal of most trips is to reach desired goods, services, activities and destinations.

Accessibility, as such, is impacted not only by mobility, but also by the geographic distribution of activities and by how accessible these activities are in each location. Measures such as intentional service location and proactive land-use planning are often combined with transportation solutions to address accessibility constraints (Litman, 2002; Social Exclusion Unit, 2003; Metrolinx Mobility Hubs, n.d.).

This highlights the need to evaluate and plan accessibility of the public transportation system in the context of the larger urban system. Assessing the overall accessibility of new and existing urban spaces and built environments, and understanding how an integrated approach involving transportation, urban redevelopment and building adaptation can help support or improve overall accessibility is fundamental to developing an inclusive city.

Conclusion

The vision of accessibility proposed herein aims at integrating all Torontonians in the community and enabling all of them to participate fully, irrespective of their types of abilities. It expands and modifies the AODA

vision, looking at offering equal access and opportunities for engagement to all individuals.

It proposes (i) aiming for *inclusive services*, as opposed to specialized offers; (ii) *enabling spontaneity* by providing equal levels of mode choice and flexibility to individuals of all abilities; (iii) addressing *perceptual barriers*, as opposed to just the visible ones; and (iv) using an *integrated approach to accessibility* that combines transportation planning, urban redevelopment and built environment adaptation.

As the city evolves towards becoming more accessible, are there opportunities to fulfill this inclusive vision? Is this the direction Toronto is moving in?

Chapter 6 – Second Horizon: Opportunities and Choices

As the legacy transportation system continues to fail the needs of mobility-constrained individuals, and visions of accessible futures are put forward, a number of new trends and initiatives that could impact how accessible Toronto will become are evolving.

This is the *triangle of choices*, within which decisions on which trends to work with and which trends to work against need to be made to ensure that the desired vision of the future can become reality. Understanding the risks and opportunities that these trends and initiatives represent is fundamental to making the right strategic choices and ensuring that a truly accessible Toronto will emerge. This is the discussion presented herein.

Trends Impacting Travel Needs

Decentralizing the Urban Experience

Mixed-use developments enhance local opportunities for activity engagement

A new trend in urban planning, mixed-use developments bring a variety of activities, goods and services together within the same building or neighborhood.

These projects can be simple mid-rise residential spaces with retail at the ground level (Norman, 2014) or complex developments combining office, retail, entertainment and residential spaces all within the same area (Perkins,

2014), creating the opportunity for residents to address many needs without having to travel.

The number of mixed-use projects in Toronto has more than doubled over the past five years (5.4% in 2009 to 11.7% in 2013), and new developments continue to be proposed (Kane, 2014, Feb 3). The approach is actually an integral part of the Metrolinx strategy to transform the transportation services in the GTHA, as one of the goals of its *mobility hubs* strategy is to reduce the need to travel through the development of mixed-use, transit centered regions (Metrolinx Strategy #7, n.d.).

While many residents are embracing these projects (Kane, 2014, Feb 3), some are opposing them (Nursall, 2014, Jan 28), concerned about their negative impact on local businesses and on neighborhood characteristics.

Toronto government representatives are supportive of the concept, given its potential to reduce the need to travel, but also have serious concerns about the impact on infrastructure the more complex developments with large towers may have (Atchison, 2013). From a transportation perspective, poor planning of such spaces can lead to massive road congestions and saturation of public transit and walking spaces.

Implications for Accessibility

If an inclusive design approach is adopted, these mixed-use spaces could significantly improve accessibility for mobility-constrained individuals, as they would diversify the set of available activities, goods and services

available across the various neighborhoods, potentially reducing the need to travel. However, inclusivity needs to be ensured, otherwise it won't work.

The potential saturation of transit and walking spaces associated with some of these developments is of concern, though, as it would compound not only the physical but also the emotional barriers faced by mobility-constrained individuals as they try to get around. To ensure accessibility, appropriate planning of the support transportation system (including streets and sidewalks) for these developments needs to take place.

Democratizing the Streets

*Developing complete streets,
for all modes and all people*

Complete street developments are becoming the focus of various government- and community-based initiatives to address a number of social, economical and environmental problems designed into a city built for the car. The efforts involve building, retrofitting, or repairing streets to allow more equitable access to pedestrians, cyclists, transit users and drivers of all ages and abilities.

Toronto planners have started to prioritize pedestrians – including children, the elderly and disabled people – as opposed to the car, when designing its streets (Herb, 2013; Moore, 2013, Jun 8). Since January 2010, Toronto's transportation workers have been modifying hundreds of traffic

signals per year to give people more time to cross the street, making them friendlier to those with mobility constraints (Dale, 2013).

The Toronto Coalition for Active Transportation (TCAT) has been operating since 2006 to foster the adoption of complete streets policies to ensure that whenever a street is built, retrofitted, or repaired it is designed for all road users (Blackett, 2012).

Metrolinx, through the transportation system supporting its mobility hubs initiative, has also proposed a strategy to build communities that are pedestrian, cycling and transit-supportive across the GTHA (Metrolinx Strategy #7, n.d.).

As the complete streets movement evolves, controversies have emerged with individuals and groups taking extreme positions, each claiming that the streets belong to a different mode and declaring war on the *competing* modes (Ahmed, 2013; Alter, 2013; DiManno, 2013; Goldberg, 2013).

Implications for Accessibility

The complete streets initiative has the potential to make streets a lot safer and more accessible for all people – not just for mobility-constrained individuals. However, for it to be successful, this initiative needs to be viewed as a human-centric solution for a multi-modal city (The National Benefit Authority, 2014) in which all individuals can be users of all modes,

depending on their needs at each moment. It cannot be viewed as a war in which some modes win and some lose.

Lead Users Take Charge

Those dealing with mobility limitations take the initiative to make the city more livable

While the AODA standards for transportation services, combined with new updates to the Ontario Building Code and the Metrolinx Plan for Universal Access, could significantly improve the accessibility of Toronto's built environment in the future, these regulations have limited impact on the already built space in the present time (Making Ontario Accessible – Transportation, n.d.; Ministry of Municipal Affairs and Housing; n.d., Metrolinx Strategy #8, n.d.).

Unwilling to wait for government guidelines to take shape, entrepreneurs, often driven by their own needs, are building partnerships and providing innovative, simple and cost-effective solutions to address some of Toronto's major barriers to accessibility – the ability to enter the building where activities, goods and services are available.

Luke Anderson, a structural engineer who sustained a spinal cord injury in an accident, partnered with Home Depot to create StopGap, an initiative that uses volunteer-built colorful custom ramps to provide access to buildings in Toronto and raise awareness about the barriers faced by people with mobility constraints (Boatman, 2014, StopGap, n.d.). These

ramps can currently be found in various Toronto neighborhoods, including Roncesvalle, Kensington Market, the Junction and Stouffville (Turnbull, 2012).

Concerned by the fact that the design of public spaces will be the last area to be addressed by the AODA, Silvia Guido, a physiotherapist, developed AccessTo, a blog that provides information on accessible spaces – restaurants, cafes, bars and pubs, concert and live music venues – in Toronto. The organization has created its accessibility seal of approval and, through a recent partnership with the occupational therapy program at the University of Toronto, is engaging occupational therapy students to grow the number of reviewed spaces (AccessTO.ca, n.d.).

March of Dimes Canada and Quadrangle Architects have partnered to create AccessAbility Advantage, a joint venture specialized in accessibility and universal design that is expanding the realm of available offices, residences and retail spaces in Toronto (AccessAbility Advantage, n.d.; Quadrangle Architects, n.d.).

While some of these efforts do help mitigate accessibility barriers, even if temporarily, conflicts with city by-laws make it difficult to find more permanent solutions that are inclusive by nature (City of Toronto, 2013; Turnbull, 2013; Clear Path Employer, 2012).

Implications for Accessibility

These entrepreneurial initiatives have the potential to increase awareness about the accessibility issue in the community, while helping businesses and other community members to find cost-effective, creative solutions to address these issues. Collaboration between the City and these entrepreneurs may be an important way to quickly bridge the inclusivity gap, but would require a high level of commitment on both parts to find ways to address problems, such as conflicts with the city by-laws, as they appear.

Trends Impacting Travel Options

Change By Choice or By Force

Torontonians avoid driving due to changing values or to escape massive jams

Over the last few years driving habits have started to change in Toronto. Auto sharing has grown significantly in the city, as more Torontonians, particularly younger ones, choose to not own a car (Bowerman, 2014; O’Kane, 2013; Stancu, 2012).

Toronto Bike Share (previously Bixi) offers additional shared mobility options to those unwilling to drive (CBC News, 2014, Mar 31, Robertson, 2013). While it currently only covers the downtown area, there are plans to significantly expand coverage by the Pan Am games in 2015.

Additionally, the partial closure of the Gardiner for repair until 2016 and many other construction and repair projects throughout the city create massive congestions and may bring changes to commuting habits (Global

News, 2014; Nursall, 2014, Apr 28), including higher use of public transit (Aylward, 2014) and potentially a search for living spaces in mixed-use, walkable communities.

The city is preparing to adjust to these shifts in travel behavior, trying to offer better access to various travel modes, shorter commute times, and greater walkability. Metrolinx is preparing to integrate car sharing into the GTHA transportation network, providing dedicated car share spaces at GO Rail stations (Bowerman, 2013; O’Kane, 2013; Stancu, 2012).

Meanwhile, the University of Toronto is working on the development of MARLIN-ATSC, a system of smart traffic lights that can revolutionize the way vehicles flow in the city, and significantly reduce congestion (Greenberg, 2013; Hall, 2013; Moore, 2013, Mar 23). The use of technology to solve gridlock problems is an integral part of the city plans, and of the campaign of some mayoral candidates (Delcan & Lura Consulting, n.d.; Karen2014.ca, 2014).

Implications for Accessibility

The shift in preference towards multi-modal options, where the travel mode is selected based on need rather than on technology affiliation, is conducive of a more collaborative approach to transportation planning, and favorable to the complete streets model. As such, it has a strong potential to positively impact accessibility in the future. The shift may impact how transit

offers are configured, potentially enhancing travel alternatives for all people and leading to less congested systems.

While improved traffic management systems could lead to more cars on the road, a more balanced transportation system may be achieved in the future, due to changes in value, which would significantly reduce the perceptual barriers to accessibility.

Disrupting Taxi Services

New rules and innovative solutions disrupt the well-established taxicab industry

A combination of new rules approved by the City Council and innovative services being offered by technology-based companies has the potential to disrupt the taxicab industry in Toronto, possibly leading to better, more accessible and more affordable services.

Toronto City Council has recently voted and approved a new kind of taxi license - Toronto Taxicab Licence (TTL), which all plate owners must obtain by 2024. The key approved changes include moving to a 100% wheelchair accessible taxicab fleet within 10 years, transitioning the industry to a single type of license, and requiring taxicab owners to drive their own cars (Alcoba, 2013; Dale, 2014).

Simultaneously, innovative app-based taxi hailing services are being launched in the city, with the promise of improving the cab finding experience for customers and increasing the business profitability for cab

drivers. These services by-pass phone-based dispatchers, connecting passengers with drivers through mobile phone apps (The Globe and Mail, n.d.; Tim, 2012). While typically charging regulated fares, these providers are also experimenting with lower fares to attract new customers and test if lower prices could lead to higher demand for city cabs (Cross, 2014).

While some cabdrivers see these changes as good business opportunity (Friesen, 2014; Toronto Star Editorial, 2014), dispatchers are fighting regulations and new entrants alike (Balligall, 2012; Balligall, 2013; Davis, 2014), contending that their impact on the industry will be disastrous.

City officials are confident about the potential of new regulation to improve accessibility and quality of service through pride of ownership (Davis, 2014), but are cautious and to some extent still opposing some of the innovative approaches to taxi hailing, which breach current Municipal Code and are the cause of protests elsewhere in the world (Lu, 2014).

Implications for Accessibility

While the final outcome of these disruptions is unpredictable, they have the potential to make taxicabs more accessible and more affordable, which would enhance the alternatives available for mobility-constrained individuals to make unplanned, spontaneous trips.

Conversely, if the new licensing requirements prove to be too costly for drivers, cab supply will be reduced further, placing additional limits on the availability of flexible travel options.

The Death of Paratransit

Wheel-Trans struggles to handle growing demand with limited resources

Trying to balance major budget constraints and the needs of a growing population, Wheel-Trans prioritizes *important* (non-discretionary) trips and attempts to switch some of its less constrained users back to regular transit (Crean, n.d.; Kalinowski, 2012).

Various short-term options are being adopted with this purpose, including a pilot free-ride program to encourage current customers to use the accessible conventional transit system, and adjustments to the eligibility assessment process to ensure that applicants' abilities to use the conventional transit system are objectively and credibly appraised (Griffiths, 2012; Henderson, 2007; Kalinowski, 2011).

Implications for Accessibility

The highly unsustainable condition of this service, combined with the expected growth in demand, points to the urging need to approach the problem from a more systemic and inclusive perspective, instead of providing segregating services to groups with different abilities. However, dismantling these services before inclusivity in regular transit is achieved would be disastrous.

Trends Impacting The Travel Experience

Overstretched and Underfunded

Transit services continue to deteriorate due to lack of investment and poor decision-making

Once a beacon for proper transit planning, Toronto currently faces the consequences of decades of little to no investment in transit, as the demand continues to grow (Armstrong, 2014, March 13; City of Toronto, n.d.).

According to transit users' experience and TTC statistics, regular transit service level is poor, and has deteriorated over the years. Low reliability, frequent delays and crowded vehicles are currently the norm (Hume, 2014, Feb 14; Munro, 2013, Apr 18; O'Toole, 2013). Limited budget and politically loaded investment decisions have contributed significantly to the current situation.

Even though recent investments may bring some relief in the future (Kalinowski, 2013, Apr 5), the upcoming Mayoral elections can once again change the fate of an already chaotic system (Kane, 2013, Dec 11, Scarborough subway); Munro, 2013, Nov 26). Contenders unveil their ideas to deal with transit issues, some more promising than others (Flack, 2014; James, 2014, May 8; John Tory Policies, 2014; Kane, 2013, Dec 11, GO Train); McParland, 2014), but what gets to be implemented and how is still conditional on multiple levels of negotiation within the government, which may become an arduous process depending on how the elections turn out.

At the provincial level, Premier Kathleen Wynne allotted \$15 billion over 10 years for transit improvements in the GTHA, but how the money will be invested is still to be decided (McAllister, 2014). As investment decisions continue to be modified and delayed, the system becomes perceived as less accessible.

Implications for Accessibility

The increased level of uncertainty and congestion in the regular transit system due to lack of investment leads to the services being perceived as even less accessible to mobility-constrained users. As Wheel-Trans tries to entice these individuals to move back to the regular system, commitment to and investment in effective solutions that explicitly address accessibility issues and perceptual barriers is urgent.

Undoing the Deed

The City and the TTC try to reverse service cuts imposed by the Mayor's cost cutting policy

In early 2014, Maria Augimeri was appointed as the new TTC chair, based on her promise to focus on TTC operations, rather than on long-term discussions about new subway and LRT lines. Fulfilling on this promise, she has moved to revert service cuts that were implemented to address Mayor Ford's direction to reduce budget by 10% (Spurr, 2014).

This motion includes looking into improving service level and quality in the form of more frequent service and reduced crowding, introducing new services such as more express buses and a network of ten-minute-or-

better bus routes, and possibly extending the life of the current streetcar fleet to address capacity issues (Spurr, 2014).

This approach is consistent with the views of the city's chief planner, who is working with the TTC on a plan to implement a surface priority network to complement slower, costlier projects. This solution involves the effective operations of the buses and streetcars, partially along dedicated lanes, and combined with heated waiting areas and payment on the platform to speed boarding (Moore, 2013, Feb 11). In addition to these operational changes, a new Chief Service Officer has also come on board to help improve service level at the TTC (Kalinowski, 2014, Apr 3).

While various community members support these measures (Nursall, 2014, Jan 28), mayoral election outcome may impact the fate of this proposition, as the measures face the opposition of some mayoral candidates (Peat, 2014).

Implications for Accessibility

An increase in the level of service offered by surface transit can contribute to significantly increase the level of accessibility of mobility-constrained individuals. Being at the surface level, it eliminates a series of physical and perceptual barriers associated with underground trips. Better service quality means more frequent, less crowded cars, which should reduce the uncertainty around delays and transfers, as well as increase the comfort level while traveling. Overall, perceptual barriers should be reduced,

assuming the plans do get implemented as intended. However, election results may significantly impact the implementation process.

Citizens Drive Improvements

Concerned citizens take initiative to address chaotic transit conditions

Frustrated by the lack of action from the part of its Government, or simply driven by an entrepreneurial spirit, city residents and users of the public transportation system are developing solutions and recommendations to try to end the gridlock and improve the travel experiences in Toronto.

Multiple mobile apps that provide real time transit information are available for the dominant operating systems, and can be a very useful tool to help reduce the stress associated with on-route planning and adjustments (Avisinna, n.d.; Emrich, 2013).

A group of citizens has gone through the extensive effort of developing an encompassing report with recommendations to support a modal shift towards transit, including recommendations that touch the institutional governance and policy framework, passenger experience, affordability, leadership and public support, financial and environmental considerations (Western GTA MOVE taskforce, 2014).

In the meantime, some level of agreement seems to have been reached that this very complex problem will require a high level of collaboration to be addressed, as demonstrated by the creation of *Move the GTHA* (Pickering,

2013) – a collaborative partnership designed to pool resources and draw attention to key public consultation campaigns underway from Metrolinx (The Big Move) and the City of Toronto (Feeling Congested). Representing a diversity of perspectives, the partnership has fostered a culture of cooperation and dialogue required to solve the GTHA transportation issues.

Implications for Accessibility

This level of commitment and entrepreneurship can lead to significant improvement to the current conditions of the regular transit system, potentially reducing major barriers to accessibility, as they provide innovative solutions derived from users' needs.

Strengthening the communication and collaboration channels between City Hall and these entrepreneurs should lead to better solutions for service improvement being identified. Fostering the involvement of mobility-constrained individuals in this process would make it more likely that the solutions would also be inclusive.

Conclusion

Toronto is at a major crossroads and decisions made now will have a significant impact on the future of inclusivity in the city.

The trends and initiatives currently taking place can lead to extreme opposite levels of accessibility in the city, depending on the type of *decision-making* process and *design philosophy* chosen. Table 1 summarizes the types

of decisions that would be favorable or unfavorable to true accessibility within the context of each trend.

Table 1 – Decision-Making Impact on Accessibility

Areas of Impact	Trends	Favorable Choices	Unfavorable Choices
Travel Needs	Decentralizing the Urban Experience	Inclusive design of the built environment	Traditional design of the built environment
		Supportive complete streets infrastructure	Saturation of nearby transit and walking spaces
	Democratizing the Streets	Approach decision-making as human-centric solution for all citizens	Approach decision-making as war between modes
Travel Options	Lead Users Take Charge	Collaboration between City Hall and entrepreneurs to address issues with by-laws	Confrontation, stagnation of the entrepreneurship process
	Change by Choice of by Force	City supports and incentivizes preference changes towards multi-modal options	City fails to support/offer adequate multi-modal infrastructure
	Disrupting Taxi Services	Favorable regulations, licensing requirements and costs	Limiting regulations, high cost of licensing and compliance
	Death of Paratransit	Systemic, inclusive approach to accessible transportation services	Segregating approach to accessible transportation services
Travel Experience	Overstretched and Underfunded	Commitment to long-term investment in public transportation, above party affiliation	Uncommitted, short-term investment decisions
	Undoing the Deed	Increased, immediate investment in surface transit services	Delayed or reduced investment in surface transit
	Citizens Drive Improvement	Support citizen collaboration and participation in the idea-generating process	Make isolated decisions

In summary, a *collaborative decision-making* process that fosters an *inclusive design* approach will lead to a truly accessible system that enables all individuals to fully participate in society; a *competitive decision-making* process that fosters *specialized solutions* for different abilities will lead to congested systems and social exclusion.

Expanding on the opportunities offered by these trends is key to enabling true accessibility in Toronto.

Chapter 7 – Strategic Choices – Achieving the Envisioned Future

Toronto is already engaged in a large number of initiatives that, if properly supported, can lead to true accessibility in the future. Some potential strategies to build on these trends and pursue the true accessibility path are presented below. A detailed analysis of these initiatives for feasibility and desirability is required before further pursuit, but is outside of the scope of this research.

Travel Needs – Developing Complete Neighborhoods

Complete neighborhoods, an extension of the complete streets concept – are neighborhoods that are accessible to all people. The development of such spaces throughout the city, through a partnership involving Government, developers, businesses, lead-users/innovators and the community should contribute to reduce the need to travel and enhance opportunities for social inclusion. This strategy is an extension of the Metrolinx mobility hubs strategy. It supports the principle of ensuring that *the transportation system is an integral part of an accessible urban system*, and it includes three major components:

Retrofit and Diversify the Environment

The proliferation of mixed-use development initiatives in Toronto represents a very timely opportunity to increase inclusivity. New mixed-use developments will need to, at the very least, comply with new accessibility

codes, which should enable barrier-free (if not inclusive) access to goods, services and activities in these locations. Stimuli for developers to spread the location of such developments throughout the city should be considered to enhance the distribution of attractive destination and the opportunity for social engagement.

These new developments, however, represent just a small part of Toronto's neighborhoods and built environment, but it is important that the whole city be accessible. Businesses and City Hall working in collaboration with lead-users (e.g., stopgap.ca) and other innovators (e.g., design schools) can foster the generation and implementation of cost-effective ideas to help the city, businesses and builders retrofit the already built spaces.

Clear the Path

Walkability, in conjunction with the retrofitting and diversification of the build environment, is fundamental to the operationalization of this proposition, as it ensures that individuals are able to access local spaces or transit options, if desirable. As such, complete streets should be an inherent, required component of new mixed-use developments, as well as a major component of neighborhood retrofitting projects.

This would require a shift away from mode-competition, towards a more holistic approach to multi-modal solutions designed for people, possibly through collaboration between City Hall and the various agencies

engaged in the development of more equitable, accessible streets, through the Move the GHATA partnership.

Spread the Word

As the built environment becomes more accessible, it is important to make that information available, to both increase the awareness of mobility-constrained individuals about places they can go to engage in a variety of activities, and incentivize other service providers to follow the same path. Supporting initiatives such as that of AccessTO can help spread the word and hopefully accelerate the move towards full inclusivity.

For example, sponsoring a campaign to get more businesses certified with the AccessTO accessibility seal of approval and linking that information to the City's webpage on accessibility may increase awareness about the citywide efforts towards inclusivity, and increase the number of businesses that may go beyond compliance with their accessibility adjustments.

Travel Options – Creating Flexible Alternatives

An *inclusive* strategy that *enables spontaneity* should be based on a single, integrated and inclusive transit system, be affordable and provide choices to expand the travel options currently available to individuals facing mobility constraints. A few suggestions are presented below.

Fund Improvements on Surface Transit

City planners are already collaborating with the TTC to improve services through a more effective surface transit operation. In addition to

improving the service quality at a faster pace than some of the more complex alternatives would, this approach has the added benefit that it is a lot more accessible. Because it is at ground level, it doesn't require the use of stairs, escalators or elevators, which add complexity, difficulty and stress to the travel experience of mobility constrained individuals. All the buses are already accessible, and the new LRT will be accessible as well, which will significantly expand the city coverage by accessible transit.

Shorter intervals between stops, typical of ground-level services, mean less walking, and therefore easier access. Heated waiting areas mean less discomfort until the next vehicle comes along, particularly if the stops offer a seating area and inclusive access. Frequent, evenly spaced, service along multiple lines (in combination with other measures discussed herein) should lead to much less crowded vehicles.

These measures, combined with real-time information on transit schedule provided by a number of apps already available in the marketplace should significantly diminish some of the issues that lead to emotional barriers to use transit. Complemented by the complete streets program, these measures should make transit significantly more accessible, and help address some of the travel needs of mobility-constrained individuals. Reverting the impact of accumulated experiences to reduce perceptual

barrier to using transit will still be needed, though⁶, if transit is to be successful.

Co-Sponsored Taxi Coupon Program

Wheel-Trans is struggling to address its growing demand with limited budget, and has for a long time relied on accessible taxi services to supplement its supply. Many of the community-based providers also struggle to keep up with the demand for door-to-door transportation services, and that is typically not the central focus of their offer.

The recent disruptions to the taxicab industry presents an opportunity to address the door-to-door services need in a more effective way: the *accessible taxi coupon program*. This would be a partnership between the TTC, the community-based agencies, the taxicabs and the taxi hailing app developers.

The service, similar to what is offered in Ottawa and in the Peel Region (OC Transpo, n.d.; Region of Peel, 2014), would enable eligible customers to buy coupons at a discounted price to pay for taxi rides. A limit is imposed on the maximum number of coupons that can be purchased per month, and a tiered fare could be offered to differentiate between regular and spontaneous trips.

⁶ See *The Travel Experience* in Chapter 2

This service could be co-sponsored by the TTC and the community service agencies with funds currently allocated to Wheel-Trans and special transportation services programs. Special fares could potentially be negotiated with taxi hailing app developers and taxicabs in exchange for pre-loading of coupon amounts and an increase in demand.

Such a service would not only enable spontaneous trips, but also significantly reduce the planning burden and the wasted waiting and travel times of non-spontaneous trips, as the hailing apps, combined with a 100% accessible fleet allow for immediate response to service request.

Multi-Modal Vehicle Sharing Program

A more long-term strategy would be the implementation of an urban mobility system such as Mo (Tree Hugger, 2011; Yuan, 2011), with a built-in travel behavior modification incentive system.

This mobility sharing service would offer multiple transportation mode options that users could choose from as needed, and would also be connected with the public transportation network. It would include a smartphone app to keep track of each member's usage of the various modes.

Usage of more sustainable modes would earn points that could later be used towards car sharing or accessible taxi rides. This long-term strategy would support the multi-modal citizen view (as opposed to drivers vs. bikers

vs. pedestrians) and be consistent with mixed-use neighborhoods and complete streets.

The Travel Experience – Enhancing Perceived Accessibility

Reversing years of accumulated experiences to improve the perceived accessibility of the public transportation system will require a concerted effort in education, dialog and follow-up on feedback, in addition to real improvements in service (discussed above). A few possible steps include:

Marketing and Educational Campaign

Improvements made to the level of service of the transit system will need to be followed by a campaign to demonstrate the improvements to the target groups and to educate them in how to use and navigate the improved system. This could be an extension of the initiatives currently being delivered by Wheel-Trans to convince some of its current users to shift back to the regular system.

The Perceived Accessibility Index

Additionally, a “perceived accessibility index” could be created as an ongoing evaluation of how accessible the population perceives the system to be. This index would include ratings of various components of the service – the specific components would be derived through research – and an overall accessibility rate. This information would help the TTC address specific problems and communicate the results back to the population.

Fostering a Culture of Empathy and Inclusion – The IncluCITY Portal

The most fundamental barriers to accessibility identified in this study are the lack of awareness about many of the issues faced by mobility-constrained individuals, and a general lack of empathy from other stakeholders in the system towards these individuals. These barriers, which are not dealt with by the AODA, have a profound impact on perceived accessibility of the system and need to be addressed if other strategies are to be successful. This is the objective of the IncluCITY Portal.

The IncluCITY Portal

IncluCITY⁷ was originally ideated as an annual event to raise awareness about and generate ideas to solve the barriers to accessibility faced by individuals with mobility constraints in Toronto. This event – described in the Appendix, combined with its natural extension – the IncluCITY Portal, has a strong potential to address a number of the accessibility issues faced by Torontonians.

Sponsored by the city in partnership with businesses, developers and philanthropists, the IncluCITY Portal would include the following components:

⁷ See Appendix for an overview of the original idea.

The IncluCITY Ideation and Collaboration Platform

This consists of an online site where Torontonians can:

- Upload details about accessibility problems identified throughout the city (particularly after awareness is raised through the annual event).
- Participate in ideation sessions to address some of the identified problems.
- Pitch ideas to improve inclusivity for crowdfunding.
- Find partnerships to develop and implement potential solutions to accessibility.

The IncluCITY Information Central

The IncluCITY movement can expand beyond transit issues by creating an “inclusiveness rating system” for the service industry that provides a crowdsourced star rating that indicates the accessibility level of a given restaurant, theatre, etc. This could include partnering with bloggers such as AccessTO to expand the reach of their rating system and spark more discussion about the inclusiveness of establishments. As part of this initiative, the IncluCITY Information Central would:

- Provide centralized access to information regarding accessibility of neighborhoods, places and services throughout the city, based on the inclusiveness rating system.
- Keep track of accessibility improvements throughout the city, particularly those started from ideas generated by the IncluCITY annual challenge.

The IncluCITY Empathy Building Program

Similar to the 40 hours of required community service that high school students in Ontario must fulfill before graduating, the IncluCITY Empathy Building Program would engage youth in a number of activities to allow them to build empathy for someone with a disability (could be mobility disability or expanded to include others). The program could also have a component for young children, along the lines of Roots of Empathy (Roots of Empathy, n.d.), in which individuals with disabilities visit the schools (or the children visit these individuals) to share experiences and learn about each other. The program could be developed as a partnership between the city, the TDSB and some of the organizations involved in creating awareness and providing services and support to people with disabilities.

This platform should provide a forum for discussion and improvement of inclusivity in Toronto in the near future, through innovative ideas, and in the long term, through empathy building in the younger generations.

Conclusions

This chapter identifies ways in which we might create a transportation system that is *truly accessible* to Torontonians.

The suggestions proposed herein build on trends and initiatives already taking place around Toronto, to ensure that true accessibility becomes a feasible option in the AODA 10-year timeframe.

- *An Accessible Urban System: The Complete Neighborhoods* proposition builds on the mixed-use developments trend and integrates the support of lead users who are otherwise driving their own, independent initiatives, to expedite the development of a more accessible built environment, leading to a better distribution of accessible activity engagement opportunities citywide, and potentially reducing the need to travel.
- *Enabled Spontaneity: The Creating Flexible Alternatives* proposition supports already made decisions to invest in ground-level services to offer more accessibility on the regular transit system. It is an effective way to expand existing resources to create an integrated, accessible, inclusive transit system. It also expands changes already taking place in the taxicab industry to provide more flexible, affordable options to mobility constrained individuals than what is currently offered by Wheel-Trans and community services in the short-term. The multi-modal sharing program component expands the scope of transportation-as-a-service initiatives already in place, and fosters long-term behavioral changes that would enforce collaboration between modes and better services overall.
- *Enhanced Perceived Accessibility: The Enhancing Perceived Accessibility* proposition expands on initiatives such as educational programs on regular transit for Wheel-Trans customers and the MOVE the GTHA

partnership to give users a voice, act on their feedback, and promote the outcome, creating a positive loop to enhance the perceived level of accessibility of the regular transit system.

- *Inclusive by Design*: The *IncluCITY Portal* combines a series of collaboration, co-creation and empathy building tools to change the prevailing culture in the city towards a more inclusive one by means of a collaborative approach to problem solving. It expands the scope of some of the collaboration initiatives such as MOVE the GTHA and opens more space for citizens, users and entrepreneurs to join the search for solutions.

Evaluating these high-level strategies for desirability and feasibility would be the next stage.

Chapter 8 – Concluding Remarks and Further Research

Concluding Remarks

In this research, I identified ways in which we might create a transportation system that is *truly accessible* to Torontonians.

A combination of systems thinking, user-centric design and strategic foresight methodologies was used to (i) identify perceptual barriers to accessibility in the public transportation system; (ii) define the meaning of accessibility from the perspective of those facing mobility constraints; (iii) set the principles to be followed if a user-centric level of accessibility is to be reached; (iv) assess how likely it is that the system will become accessible in the future, according to these principles, given current trends and conflicting views; and (v) propose directions to ensure that the user-centric vision of accessibility will be achieved within the AODA legislation 10-year timeframe.

The process determined, based on users' input, that a truly accessible system should:

- Offer *inclusive services*;
- Be *perceived as accessible* by the population it is designed to serve;
- *Enable spontaneity*; and
- Be an *integral part of an accessible urban system*.

Following an environment scan, the research builds on current trends and initiatives to propose strategic directions to achieve true accessibility in Toronto. The research offers three main contributions:

True Accessibility Principles

The research proposes and illustrates a set of human-centric principles to define and assess the level of accessibility of a public transportation system. While useful to guide this specific analysis, and potentially generalizable for further applications, this framework needs to be further developed, tested and validated with a larger, representative sample of the target population, using a combination of qualitative and quantitative methodologies. Nonetheless, it represents a starting point towards a human-centric approach to accessibility.

Accessible Toronto

The research also identifies opportunities and proposes strategic directions to ensure that Toronto will become a truly accessible city within the AODA 10-year timeframe⁸. It looks at a set of alternatives to address the identified travel needs, the lack of travel options and the poor experiences that raise a perceptual barrier to transit use (see Table 2 for a summary). The full development and assessment of the proposed strategies for feasibility and desirability are still required, but out of the scope of this research.

It should be noted that while true accessibility may never be completely reachable, it is proposed as a vision to help set a higher inclusivity target for Toronto. This city was once a beacon of proper transit planning,

⁸ It is important to highlight that a longer timeframe and a stronger focus on foresight rather than on user-centric design approaches for short-term problem solving might have lead to different solutions being identified. See Further Research, in Chapter 8, for additional discussion.

and the opportunity to become a leader in accessibility can now be grabbed. However, it is important that action is taken now to ensure that the window of opportunity is not missed.

Table 2 – Strategies for a Truly Accessible Toronto

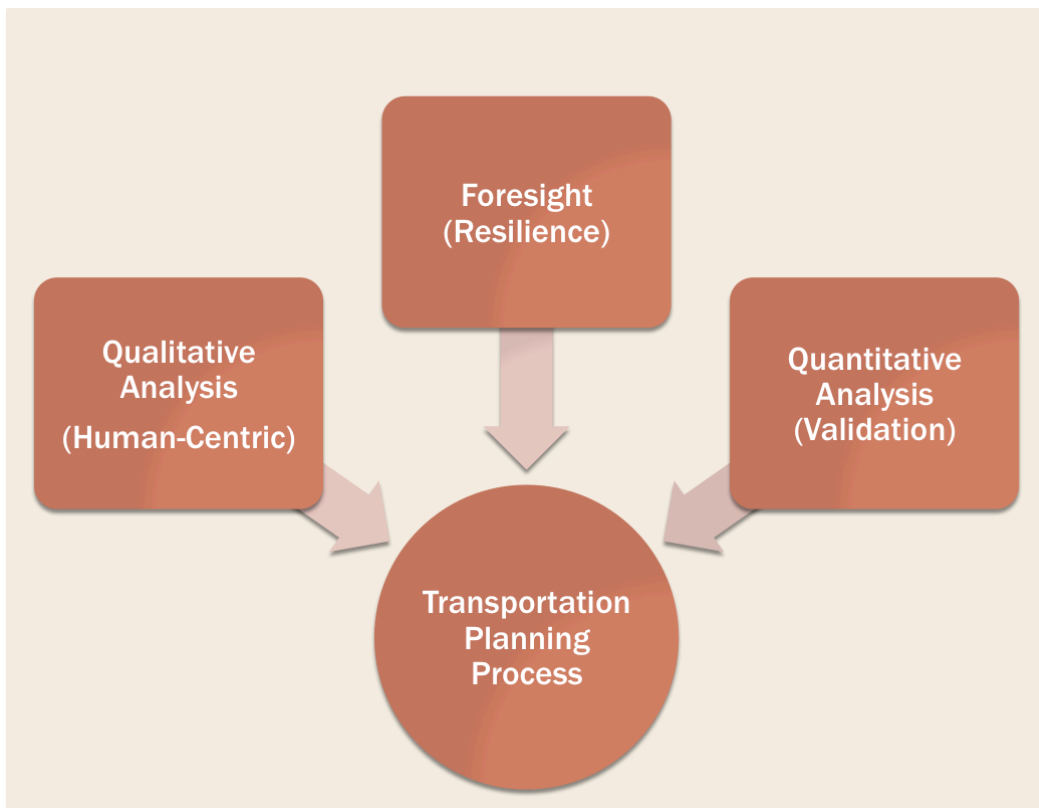
TRUE ACCESSIBILITY PRINCIPLES	ACCESSIBLE TORONTO
Be an integral part of an accessible urban system	Develop complete neighborhoods
Enable spontaneity	Create flexible travel alternatives
Be perceived as accessible by target population	Enhance perceived transit accessibility
Offer inclusive services	Foster a culture of empathy

Transportation Planning Framework

Finally, the research demonstrates the initial steps of a process to integrate strategic foresight (in particular the *Three Horizons* methodology) and design thinking into transportation planning (see Figure 9), which could be very useful to ensure that future-proof user-centric solutions are identified for such a complex problem. In a logical follow-up, the qualitative findings regarding the travel experience would be validated by primary quantitative research and incorporated into transportation demand

forecasting systems. The strategy generation process would involve a panel of experts and representatives of all major stakeholders so that issues with the propositions can be identified and addressed during the ideation process, leading to solid recommendations.

Figure 9 – Transportation Planning Framework



Further Research and Developments

A number of issues and ideas identified in this study are presented as potential topics for exploration in further research.

- *Validation of Qualitative Findings at the Population Level:* As discussed throughout this document, this is a qualitative study, based on a small sample of the population and supported by additional reviews of the

literature and similar experiences narrated by the Seniors Hub in Vancouver (2014). A broader survey with the target population would be required to validate the qualitative findings and reinforce or redirect the proposed recommendations.

- *Development and Assessment of the Proposed Solutions:* Once the findings and needs have been validated at the population level, the proposed solutions need to be further developed and assessed for desirability and feasibility.
- *Generalization of the Approach for Additional Scope:* The focus of this study was on Torontonians 50-70 years old facing a permanent mobility constraint. For compatibility with the AODA scope, the approach needs to be expanded to integrate other demographics, other disabilities and other geographic context. While the framework may be generalizable, the scope of the findings and solutions will certainly be expanded.
- *Formalization of the Complete Framework:* As indicated previously, this study represents the initial steps of an integration of strategic foresight and design thinking into transportation planning. The further research proposed herein would be additional components of a complete framework that needs to be tested and formalized.
- *Expanding the Foresight Component:* This study was developed to add a user-centric layer to an existing vision of accessibility proposed for a

short-term horizon (10 years for complete implementation of the proposed solutions). As such, its focus is on current needs that are not being addressed, rather than on how needs and the environment might evolve in the longer term, and what these services might look like in 20 to 30 years. A stronger focus on foresight for longer term planning might have led to the consideration of different trends, yielding different solutions. For example, the development of assistive partner robots may significantly reduce what are currently perceived as major mobility constraints; the driverless cars may disrupt many of the public transportation services and significantly enhance personal mobility; higher frequency of severe weather events, or massive human migrations may take place and have an impact on the demand for and configuration of transportation services. These aspects need to be addressed with further research.

- *Implementing the IncluCITY Portal:* My hope is that this study serves to move Toronto one step closer to true accessibility. I see the further development and implementation of the IncluCITY Portal proposition as the next step towards enhancing the accessibility and inclusivity in the city.

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Appendix A – IncluCITY⁹: The Original Idea

The Concept

IncluCITY is an annual event that allows people to design, experience, and act for a more inclusive Toronto. It was designed to engage all the main stakeholders in the system in a manner that not only raises awareness about accessibility challenges on the TTC, but instills a sense of empathy for those who face these challenges each day so that these stakeholders can have the courage to act towards creating change at a faster pace than required by The Accessibility for Ontarians with Disabilities Act.

IncluCITY is a citywide race between two-person teams, but the catch is that one of the team members must be confined to a wheelchair at all times. This will force teams to learn how to navigate the accessible TTC routes and experience the frustration of not having easy access to the full public transit experience. IncluCITY includes a prep challenge (teams have the option of designing their own wheelchairs to use in the race) and a business challenge (teams have the option of participating in a business venture competition upon completing the race, where they must use things they identified during the race as inspiration for a new business idea) in an attempt to allow people to participate more fully in the systemic challenge of an inclusive city.

⁹ Original idea by Medina Abdelkader, Adriana Bernardino, Michelle Blanchard and Terence Smith, as part of the Systems Thinking course at the SFIN program at OCAD.

IncluCITY is a proposition that engages ten major stakeholders in this system:

1. *Differently Abled*: Those who face the TTC with mobility challenges each day are encouraged to participate and potentially have an advantage given their experience navigating the system.
2. *Families*: Since teams must have one able-bodied person, family members are an easy source of team participants for the challenge.
3. *Communities*: Prominent local universities and colleges provide a great resource for participants in all legs of the race (e.g. University of Waterloo Engineering students can be engaged to design new chairs, athletes can be engaged in running the race, and Rotman business students can be engaged in the business challenge).
4. *Agencies*: The Canadian Paraplegic Association and MS Society of Canada are likely to be supportive of this event and may lend money or resources to fund advertising or other costs.
5. *Businesses*: Local businesses that support an active lifestyle, such as Goodlife, may participate through sponsorship or by advertising the event to their club members.
6. *Developers*: Developers can be engaged to sponsor the design and business challenges, as they may receive some innovative ideas or at least generate goodwill among potential talent.

7. *TTC*: The TTC will be the playground for this race, generating positive public exposure for the organization and potentially more budget for building an accessible transit system.
8. *City of Toronto*: The municipal government will see this as one step forward to becoming an even better world-class city that is inclusive of cultures and of disabilities.
9. *Province of Ontario*: The provincial government will support the event because it is helping to make progress on the goals of the Accessibility for Ontarians Disability Act goals before 2025.
10. *Media*: The media will want to cover this event because it's never-before-seen and because it's a feel-good story, which is great for morning television (e.g. CityTV Breakfast Television).

Our hope is that IncluCITY is a strong anchor for a variety of systemic interventions that can build awareness, instill empathy, and inspire courage to act towards a more inclusive city, such as:

- *Empathy Training*: Similar to the 40 hours of required community service that high school students in Ontario must fulfill before graduating, Empathy Training would require high school students to engage in a number of activities that allow them to experience life in the shoes (or chair) of someone with a disability (could be mobility disability or expanded to include others).

- *Inclusiveness Awareness Hour*: For one hour each month, stairs and escalators in inaccessible subway stations are put out of order or blocked entirely so that able-bodied people can experience the frustration of facing an unexpected delay that would be resolved with a more inclusive city.
- *Inclusive Rating System*: The IncluCITY movement can expand beyond transit issues by creating an “inclusiveness rating system” for the service industry that provides a crowd-sourced star rating that indicates the accessibility level of a given restaurant, theatre, etc. This could include reaching out to bloggers (e.g. BlogTO) who could start using the symbol on their website restaurant reviews and spark discussion about the inclusiveness of establishments.

Implementation

Based on our analysis, we have decided that triggering empathy is the key foundation for our innovation and will be our accelerant to more sustainable change. IncluCITY will allow our stakeholders – family, community, developers, government, etc. to experience the mobility challenges across the city.

Experiential opportunities build both awareness and empathy, but it can also highlight many of the negative aspects of a city, a business and the community. In order for our innovation to succeed, we need buy-in from the more influential stakeholders who may see this as a risk, such as the

government and businesses. To get their buy-in, we will align ourselves to some of their priorities, namely in assisting them to meet their Accessibility for Ontarians Disability Act goals before 2025.

They will receive several sources of value from IncluCITY:

- Ideas from the masses on how to improve current services and infrastructure
- Young minds of the future workforce working on mobility issues now and coming up with solutions to targeted challenges to accelerate progress
- Increased exposure to the issues, which can then lead to increased funding, sponsorship and innovations from both private and public sector

Once we have buy-in from the more influential stakeholders, the other key factor in the success of our intervention is to effectively engage the community to participate. Their participation is what will drive outcomes to demonstrate its success, which will then lead to increased attention, leading to increased sponsorship, incremental participation and finally greater awareness to then influence politicians/policy.

The introduction of the new accessible streetcars in the very near future provides a great opportunity to introduce Torontonians to a broader discussion about accessibility. We recognize that IncluCITY will face a giant

hurdle of visibility in its attempt to get noticed in Toronto, as the city is filled with charity runs, cultural festivals, and many other distractions. Our hope is that the unique challenge posed by IncluCITY will attract participation in the critical early years of the event and create support year over year for larger and more elaborate races.

We recognize that IncluCITY may affect other systems as well, in both positive and negative ways:

- The City of Toronto may divert budget from other valid programs to support inclusive transit.
- An increase in wheelchair usage on the TTC may make it more difficult for others to use in the long run (e.g. imagine a day when everyone is in a wheelchair waiting for an elevator).
- IncluCITY may inspire broader accessibility action in the City of Toronto (i.e. raise awareness so that IncluCITY goes beyond transit to include restaurants, entertainment venues, etc.).

Despite some potential negative system effects, we feel IncluCITY is a giant step forward (pun intended) for Toronto.

Appendix B – Additional Remarks on the Data Collection Process

As initially designed, the primary research described in the methodology would use a focus group approach to gather information. Participants would be invited to participate in a face-to-face group discussion about transit accessibility. The groups would be held at a location deemed accessible by transit. Individuals would be asked to take transit to get to the meeting.

Individuals who agreed to participate and did make it to the meeting would be taken through a discussion about their recent trip experience including issues, concerns, considerations they had to make to get to the meeting, what helped and what made it difficult, what could have made the trip easier. Individuals who didn't agree to the focus group or who did agree but eventually didn't make it would be interviewed over the phone.

The main purpose of this design was to talk to participants immediately after a trip had happened so that most of the issues and concerns associated with traveling would be very vivid in their minds for the purpose of discussions. As it turns out, due to inclement weather during the data collection period (Winter 2014), the focus groups were not a feasible option for the intended participants, a situation that typifies a major accessibility issue faced by these individuals, as described by their experiences.