WALKABILITY

A Comparative Analysis of Pedestrian Plans in Canadian Cities

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EXECUTIVE SUMMARY

This research provides a comparative analysis of pedestrian and walkability plans in five Canadian city regions: St. John's, Halifax, the Greater Toronto Area, Edmonton, and Vancouver. As plans proliferate, Canadian planners are creating strategies to coordinate multiple plans; however, little research compares pedestrian plans in Canadian cities. The purpose of this research is to discover trends in walkability and pedestrian plans.

During the data collection phase of this project, I compared a total of 80 planning documents to identify similarities and differences that later revealed patterns in walkability planning. I categorized these plans into three groups. I identified the first group of plans according to the title of the plan. Primary data are stand alone plans that have "pedestrian", "walkability", or "walk" in the title of the plan. The second grouping of plans was transportation plans, which had sections that related to pedestrian and walkability aspects. The final group of plans, "other related plans", contained important information related to a city's walkability, but did not fall into the first two categories.

I evaluated the 80 planning documents using an analytical framework developed from key literature and a preliminary read through of plans. This framework indicated underlying themes that I compared. I conducted frequency counts to support the analysis of different themes. The main themes discovered focus on plan content, specifically the preparation of plans, coordination of vision statements, definitions of key terms, and the implementation process of the selected plans.

Walkability and pedestrian-friendly are common aspirations for each of the five Canadian city regions; however, plans do not have clear context or direction as to how these generic vision statements will be implemented in practice. Walkability is an omnipresent aspiration with limited substantive direction. Many of the plans assume that good urban design generates walkability. Plans also argue that pedestrian-friendly areas in cities are more attractive streetscapes that contribute to the vibrancy of the community.

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INTRODUCTION

Canadian cities have developed multiple plans and policies that influence community design. Cities create pedestrian and walkability plans that usually integrate smart growth and healthy community principles. Walkability is defined as "the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network" (Southworth, 2005, p.247-248). Benefits of designing walkable communities include improving physical and mental health, reducing noise and air pollution, and increasing sociability amongst community members.

As plans proliferate in cities, Canadian planners are creating strategies to coordinate multiple plans. Little research compares pedestrian plans in Canadian cities. Communities create plans for different reasons at different times, which can lead to overlapping themes such as accessibility, safety, sustainability, and healthy communities. It is useful to compare pedestrian plans from Canadian cities in order to identify trends in practice.

My research is part of a three-year project that compares the integration of multiple plans across Canadian cities. Research on coordinating multiple plans is funded by the Insights Grant Program of the Social Sciences and Humanities Research Council of Canada. Dr. Jill Grant is the principal investigator of this project. Other members of the research team include Patricia Manuel, Ahsan Habib, Eric Rapaport, and Pierre Filion. The Canadian Institute of Planners and Dalhousie University's transportation lab, DalTrac, are partners in this project.

RESEARCH PURPOSE

My research seeks to discover the trends in walkability and pedestrian plans in five Canadian city regions: St. John's, Halifax, the Greater Toronto Area, Edmonton, and Vancouver.

RESEARCH QUESTION

- What are the trends in walkability and pedestrian plans in five Canadian city regions?

RATIONALE

My research supports an ongoing study within Dalhousie University's School of Planning focused on comparing plans and planning approaches in different cities across Canada. Researchers involved in this study examined plan content and have conducted interviews with planners exploring the coordination of multiple plans in five Canadian city regions: St. John's, Halifax, the Greater Toronto Area, Edmonton, and Vancouver. These city regions are the focus of my comparative analysis. Planners, government officials, and community members can use my research to design and implement future pedestrian plans. The ideal outcome of my project is to create a better understanding of planning trends in order to see commonalities and identify some challenges. Understanding trends may spur change to improve walkability plans in Canadian cities.

LITERATURE REVIEW

History

Walking is the oldest mode of natural human transportation. Walking is accessible to all people who have the ability to walk. *Toronto's Pedestrian Charter* (2002) raises awareness to promote walkability in city policies by ensuring urban infrastructure is designed to meet pedestrian travel needs. Walking is a universal form of travel that is often viewed as a function of everyday life. Walking is often neglected in plan and policy development because societal values prioritize the automobile.

The decline in walkable cities started in the late 1920s when the automobile appeared and modernism emerged (Southworth, 2006). Cities were previously unintentionally designed for walkability. The automobile changed the way that planners and engineers designed streets in North American cities. The street patterns lost connectivity in ways that made cities less

walkable. Gunnarsson (2004) states that pedestrians were forced to move out of public spaces and streets. Gunnarsson (2004) believes that the goal for society today is to bring back pedestrian activity to public spaces, including streets. In order to create a sustainable future for cities, "the pedestrian should be the measure of the city" (Gunnarsson, 2004, p. 5). Current transportation projects focus on restructuring roads to make transportation more efficient for the automobile. Cities fail to invest in sidewalk improvements in order to reduce construction and maintenance costs and invest in infrastructure that prioritizes the automobile.

Southworth (2006) believes that a major policy shift is needed away from auto-centric planning towards pedestrian planning. For this policy shift to be successful, collaboration between urban planners and transportation planners is required. In the early 1930s, transportation and urban planning professions split into separate departments, one department specializes in the technical aspects of transportation planning, such as engineering, and another that focuses on place-making design (Southworth, 2006). Before this division, city planning took a more collaborative and unified approach to urban design. Southworth (2006) believes that a new generation of urban planners need to break down barriers between disciplines. The notion of departmentalization has created a lack of coordination between disciplines in Canadian cities. Departmentalization in the automobile era resulted in hostile streets for pedestrians.

Background

Walkability is a term that is frequently used in plans and planning approaches, but is not always well-defined in planning documents. Southworth (2005) defines walkability based on operational measures. Six criteria for walkable cities are: "1) connectivity of path network, both locally and in the larger urban context, 2) linkage with other modes of transportation like busses, trains, and ferries, 3) fine grained and varied land use patterns, 4) safety both from traffic and social crime, 5) quality of path including paving, width, landscaping, signage, and lighting, and 6) path context including street design, visual interest of the built environment, transparency, spatial definition, landscape, and overall explorability" (Southworth, 2005,

p.249). Some examples that promote walkability in cities include mixed land-use zoning and improved sidewalk design regulations.

Walkability is a complex concept influenced by many factors. Doyle, Kelly-Schwartz, Schlossberg & Stockhard (2006) argue that walkability and safety are the main factors that promote active and healthy communities. Their research indicates a trend that walkable communities tend to have lower crime rates. Safety is a major theme that should be investigated when comparing pedestrian plans and walkability policies.

Renewed attention to walkability and a better pedestrian environment is influenced by smart growth planning principles. Song (2005) states that an essential smart growth principle is to design pedestrian-friendly cities. In the *British Columbia Sprawl Report*, Tomalty & Haider (2009) show that smart growth policies are adopted as a way to guide municipal planning and development decisions that include planning for pedestrian environments. Case studies in the District of Invermere in British Columbia recognize smart growth and active transportation as important walkability and health issues, but work is still needed to implement these principles. The District of Invermere has limited policy development and follow-through as a result of poor data collection and underdeveloped indicators to measure a plan's success. Many municipalities lack measures to evaluate the effectiveness of plans and policies once they are adopted (Tomalty & Haider, 2009). Song (2005) shows that some efforts have been made in an attempt to reshape existing neighbourhoods to become more pedestrian-oriented. Song (2005) discovered that most neighbourhoods lack mixed-uses. The task for future planners is to expand the dimensions of land use bylaws and policies to encourage mixed land uses. Song (2005) believes that mixed land uses can reduce the number of vehicle trips and promote walkable communities.

Walkability is a new urbanism principle that contributes to healthy and active citizens. The 10 principles of new urbanism include: walkability, connectivity, mixed-use and diversity, mixed housing, quality architecture and urban design, traditional neighbourhood structure,

increased density, green transportation, sustainability, and quality of life (New Urbanism, 2016). Existing urban design studies demonstrate a lack of walkability plans for cities. Chung (2015) discovered two factors that discourage walkability in cities, which emerged from urban studies. These factors include inadequate or lack of places to sit and difficulties crossing the road. Crossing the road is especially challenging for elderly community members. Recommendations that emerged from Chung's (2015) study include prioritizing the pedestrian network in the same way that public transportation is prioritized and improving existing pedestrian facilities and walkways in cities.

The concept of new pedestrianism was developed by Michael E. Arth in the 21st century (Arth, 2008). "New pedestrianism is an attempt to bridge the gap between the automobile age and the information age by building towns for the future that meets everyone's needs" (Arth, 2008, p.2). The main design feature in new pedestrianism style villages or city centers is that the vehicle lane is eliminated from the front of homes that face the street (Arth, 2008). Although the vehicle lane is eliminated from the street front, there is still a back lane that accommodates vehicles. The street is then used for a pedestrian lane, which contributes to healthier and active lifestyles. New pedestrianism street design is dependent on connectivity with other services and amenities that community members may require (Arth, 2008). New pedestrianism is essentially a more pedestrian-oriented and ecological version of new urbanism.

Pedestrian and Walkability Studies

Pedestrian plans often focus on sidewalk design. Evans-Crowley (2006) examined 14 small cities in Ohio to determine the problems cities face in pedestrian planning. She found that seven of the 14 cities examined have plans and/or policies for sidewalk development and maintenance. The study suggests a need for future research as Evans-Crowley (2006) recommends reviewing plans, bylaws, and regulations to find patterns and trends that promote walkability in cities. Evans-Crowley (2006) suggests North American cities should review and modify existing policies in order to encourage sidewalk development, which will in turn improve

pedestrian walkability and mobility. Concerns over healthy communities have encouraged planners and government officials to adopt a long-term approach to implementing pedestrian plans.

Pedestrian perceptions of urban design street features impact the walkability of a city. There is evidence that human-centered design can improve pedestrian satisfaction levels, thus enhancing the overall walkability of the community. Choi et al. (2015) conclude that major design features can either increase or decrease pedestrian satisfaction levels. An important design element that increases pedestrian satisfaction is planting strips and other greenery near sidewalks. Transportation features that decrease perceived pedestrian walkability include a large number of street lanes for vehicles and the presence of driveways. Pedestrian perceptions are important to acknowledge in order to gain a better understanding of what makes a community walkable.

Understanding local context considerations is essential when examining plans and policies in different cities. Policies are a key component in pedestrian plans; however, considerations of connectivity and demographics are also crucial. Grant et al. (2010) conducted a study that considers older people's perspectives on neighbourhood walkability in Ottawa. The implications relate to two major themes: walkability assessment and policy. Seventy-five participants 65 years of age or older were involved. All participants identified a gap in their understanding of safety regulations associated with intersection design. Safety regulations and intersection design are important to ensure pedestrian activity. Older residents indicated the need for clarity about policies that affect pedestrian safety. Many older residents expressed that they experienced ambiguities and concerns related to pedestrian travel rules in the context of shared public spaces (Grant et al., 2010). This suggests the need for clear communication of regulations to residents. Communicating regulations would reduce ambiguities and provide more clarity to pedestrians.

Older people's perceptions related to neighbourhood walkability are not only focused on infrastructure such as sidewalks, but also on the connections required in order to reach destinations. Grant et al. (2010) determined that connections between public transit and pedestrian infrastructure were challenging during the winter months. One participant from a focus group session expressed concerns about pedestrians getting on busses at public transit stops in the winter. It is difficult for many people to walk over the large snow banks and icy areas. Grant et al. (2010) reveal that walkability and pedestrian movement is heavily influenced by the larger connectivity and context of the transportation system. A common theme of winter maintenance is important to consider when analyzing walkability components in a city.

Research suggests that residents in Canada's largest metropolitan cities prefer neighbourhoods that support walking as a main mode of active transportation. The strong preference of walkable neighbourhoods reflects a desire for healthy community benefits. A major finding from the study of 2,748 adults was that 45-61% of Toronto participants and 52-64% of Vancouver participants prefer walkable neighbourhoods, in contrast to auto-oriented neighbourhoods (Frank et al., 2014, p.19). This number range was discovered based on criteria for neighbourhood trade-offs that compared walkable characteristics to auto-oriented designs. Some of the trade-offs analyzed include closeness to shops and services, level of activity and mix of housing, street design and travel options, and commuting distances. Each of the trade-off criteria were supported with two images that participants were asked to rate according to their preference (see Figure 1 below). Participants in the study had stronger preferences for walkable urban environments because of the increase in opportunities for social interaction and additional everyday physical activity. Frank et al. (2014) report that despite the preference for walkable neighbourhoods in Toronto and Vancouver, there is an unmet demand for walkability design features in residential areas.

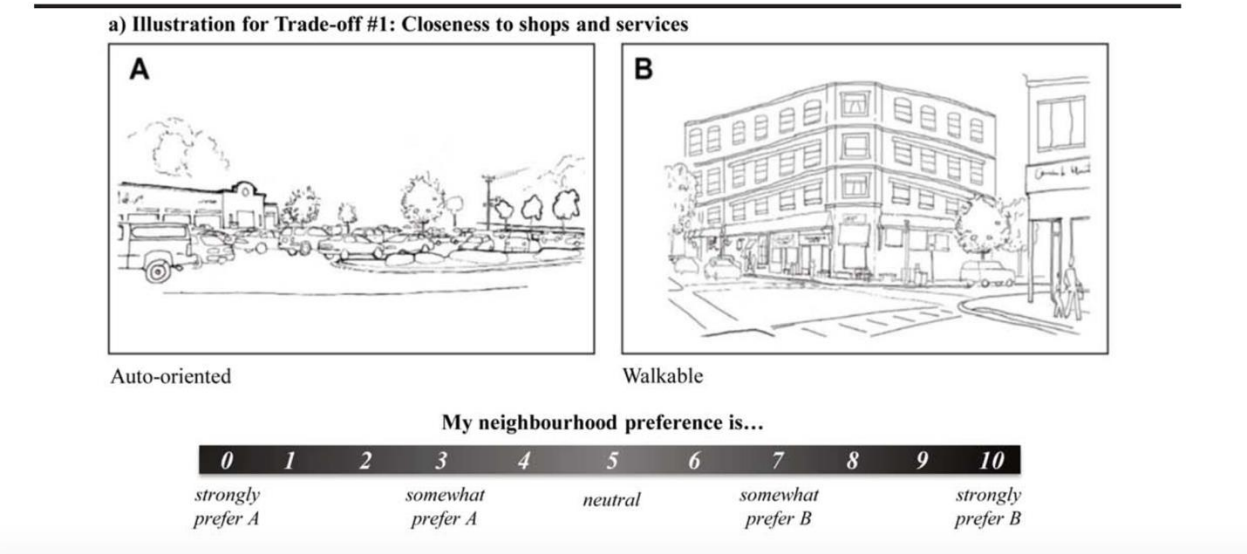

Figure 1: Criteria for Closeness to Shops and Services (Frank et al, 2014, p. 14)

Walkability is an important concept in sustainable urban design. Although Jane Jacobs' ideas created controversies in the planning world because she critiques the popular notion of orthodox urbanism, which is the urban setting of the 1960s, her four conditions for a vital urban life influence the goal of walkability in urban streetscapes. Sung, Lee & Cheon (2015) examine Jane Jacobs' urban design theories in the context of Seoul, Korea. Jane Jacobs describes a "sidewalk ballet" as the movement of pedestrian activity at different times of the day. Sung, Lee & Cheon (2015) suggest that plans and policies should recognize this diverse rhythm of pedestrian activity.

Jacobs' theories have influenced urban design. Her four conditions for urban diversity play a significant role in relation to pedestrian activities and designs, specifically in the context of large cities like the significance of sidewalks as a central measure of a city for children to play, public interactions, and community safety. Sung, Lee & Cheon (2015) state that in order to evaluate Jacobs' conditions of a vital urban life, it is necessary to consider the importance of diversity, accessibility, and proximity to public services. Recent studies have been conducted that reveal the importance of accessibility features in urban pedestrian settings.

Pedestrian accessibility in the past has been analyzed according to street configuration. Street configuration analysis evaluates pedestrian traffic flows, but neglects the consideration of important destinations. Nakamura (2015) examined route quality for pedestrian accessibility based on pavement, shops, and cross traffic considerations. It is crucial to identify context specific considerations in order to propose potential improvements to pedestrian linkages in each city region. Nakamura (2015) found that accessibility features used to evaluate strategic pedestrian connections need to consider key destinations.

These pedestrian and walkability planning studies focus on sidewalk design, pedestrian perceptions, safety regulations/policies, and connectivity. These four components are the typical walkability content in plans. The studies reveal that pedestrian plans were created for different reasons; thus it is important to compare and evaluate the coordination of multiple plans.

Plan Evaluation

Policy analysis based on content evaluation is an effective method to compare pedestrian and walkability plans. Although some municipalities use strategic impact assessment, other municipalities often agree on new plans and policies without considering the impact or potential consequences that these plans and policies may have on existing plans. Talen (1996) noticed a gap in plan content and implementation was the lack of tools to evaluate and compare plans. Existing evaluation focuses on the planning profession as a whole rather than the content of the plans. She notes that many cities are redeveloping plans without considering the implementation of the initial plan. Plans that fail to meet the original goals may indicate the need for different goals. Although Talen's (1996) research is not recent, it identifies that plan evaluation should consider implementation processes.

Berke & Conroy (2000) analyze and compare 30 sustainable development plans to determine the extent to which the policies mentioned in the plans support sustainability. The method identifies two steps of standard practice for plan comparison, including sample

selection and a plan evaluation method. The sample selection incorporates a group of plans that specifically state the concept of sustainable development and a group of plans that do not state the concept but have high-quality relevant information (Berke & Conroy, 2000). The sample of high-quality plans included natural resource protection plans, inner city redevelopment plans, growth management plans, and other urban design plans (Berke & Conroy, 2000). Each of these plans reflect theories or themes that relate to the underlying concept of sustainable development. Berke & Conroy's (2000) evaluation is an example of a plan selection that can be used when conducting a comparative analysis. An example of high-quality relevant information related to research on walkability are active transportation plans, sprawl reports, and pedestrian charters. Although these high-quality plans do not use walkability as an organizing concept, the plans include sections that focus on pedestrians and/or walkability.

Relevance

The literature suggests that there has been a recent upsurge in walkability planning due to a recognition that our cities are expensive to operate when they sprawl. This recognition has resulted in a desire for more efficient urban design because of the negative health impacts that sprawl has through inactivity. Many planning scholars have studied the benefits of walkable communities. Despite these benefits, few studies have compared pedestrian and walkability plans in Canadian cities. Identifying patterns and analyzing trends can enable cities to create a better understanding of the current state of walkability and pedestrian planning.

APPROACH

My research uses a qualitative approach. Using systematic plan and policy analysis methods, I evaluated and compared the content and trends of pedestrian plans in five Canadian city regions. According to Creswell (2014), philosophical worldviews give a general understanding of the world based on a researcher's beliefs. These beliefs often shape the methodological approach a researcher chooses. The social constructivist worldview is my perspective and approach to qualitative research. Social constructivists believe that

"individuals seek understanding of the world in which they live and work" (Creswell, 2014, p. 8). Social constructivists typically employ a methodological approach based on text analysis. Some researchers believe that language predates concepts and influences the way an individual experiences the world (Andrews, 2012). For this reason, social constructivism is sometimes referred to as interpretivism in qualitative research studies (Andrews, 2012).

METHOD

The methods used to conduct the comparative analysis involved the following five steps:

1. Data Collection

I collected various forms of data for my comparative analysis. Some examples of plans that I collected include pedestrian plans and strategies, transportation plans, and official community plans. These plans contain data, which is the plan content. Walkability plans may also be indicated in a community's official plan. These planning documents are the objects of my research. I examined data embedded in these plans using content and discourse analysis.

I collected the plans based on an in depth document search. The first step for locating pedestrian and walkability plans was searching the websites of the selected cities. A challenge that I encountered was navigating the five different city region's websites, as the layout of each website was not uniform. In order to ensure I accurately collected all the cities different planning documents located on-line, I contacted the city planners to ensure that I had all the necessary and relevant information.

2. Data Organization/Plan Sorting

After collecting the plans, I divided them into three groups: 1) pedestrian or walkability plans that explicitly state those terms in the title, 2) transportation plans, and 3) other related plans. I applied Berke & Conroy's (2000) method of organization and data collection to my research. Their grouping method includes a group of plans that explicitly state the concept under study and another group of plans that do not specifically state the concept but have high-quality and relevant information (Berke & Conroy, 2000). Some examples of other related walkability plans include pedestrian charters, complete street policies, downtown

redevelopment plans, and official community plans. Although such plans and policies from other related plans do not use the term walkability as an organizing concept, the plans do include sections that focus on pedestrian and walkability components.

3. Framework Development

An in-depth literature review provided me with a preliminary framework (See Table 1). The framework analyzes the main components that appear in each plan and/or policy. Creswell (2014) recommends organizing overlapping themes into a maximum of ten categories. During the preliminary review of pedestrian and walkability plans, the identification of local context considerations was recorded in the "other" category. The categories identified continued to evolve after a preliminary review of planning documents.

Table 1: Preliminary Analytical Framework

Province: **City:** **Title of Plan or Policy:**
Vision:
Purpose:
Goals:
Strategies:
Policies:
Actions:
Implementation Process:
Theories and Principles:
Adoption Date:
Partnerships:
Other (Local Considerations):

The ten categories shown in the table above ensure consistency and accuracy when examining multiple walkability and pedestrian plans. During the preliminary review of planning documents, I divided the text into categories. These labelled categories reflect themes of

reoccurring content in each plan. The plans are described and explained as much as possible through manual interpretation. Based on the preliminary review of the selected plans, I modified the framework to address specific content that exists in a variety of the sampled pedestrian and walkability plans. The framework continued to be adjusted until I read each plan through entirely. The full framework used to record each plan's content appears in Appendices of this report (See Appendix 1).

4. Frequency Counts

I further analyzed the information using a content frequency table (See Table 2). I used a frequency table for each of the five Canadian city regions. I counted content in pedestrian and walkability plans based on key words and phrases that I identified from the preliminary framework. I evaluated the frequency portion of the document analysis according to key themes and defining characteristics that are evident in walkability and pedestrian plans. I used the frequency counts to compare plans in the five Canadian city regions.

Table 2: Frequency Counts

Number of Plans	**Frequency**
• Total # of plans in "Pedestrian and Walkability" group	
• Total # of plans in "Transportation" group	
• Total # of plans in "Other Related Plans" group	
Plan Creation (of the total number of plans collected)	**Frequency**
• Total # of plans created by a municipality	
• Total # of plans created by a consulting firm	
• Total # of plans created by another source	
Definitions	**Frequency**
• Total # of times the term "pedestrian", "pedestrian-friendly",	

"walkability", or "walkable" was mentioned	
• Total # of times the terms above were explicitly defined	

5. Data Analysis of Themes

After developing the preliminary framework and frequency counts, I was able to identify similarities, differences, and gaps between multiple plans according to planning themes. The data analysis for planning themes linked the plans back to the information identified in my literature review. Walkability and pedestrian themes are important to compare because they reveal paradigm patterns that are embedded in each plan's content. Some examples of planning paradigms identified in my literature review include smart growth principles, new urbanism, and healthy community planning principles. Safety is another important theme to examine in pedestrian plans. I used a key word search to identify the different planning themes and paradigms that are embedded in plan content. The key words that I looked for are summarized in Table 3 below.

Table 3: Key Word Search to Analyze Planning Themes and Paradigms

Planning Theme or Paradigm	Key Words
Smart Growth Principles	Growth, smart, smart growth, efficiency, road networks, a variety of different transportation options, protecting the environment
New Urbanism	Urbanism, new urbanism, public realm, public spaces, comfort, art and other attractions, connectivity, connections, architectural design, architectural quality
Healthy Community Planning Principles	Fitness, active, physical activity, health, cleaner air and water, reduced greenhouse gases, air pollution

Safety	Safety, safe, crime, comfort, Crime Prevention Through Environmental Design (CPTED), lighting, pedestrian and/or vehicle collisions, traffic injuries, emergency response procedures

Once I identified these planning themes and paradigms, I reviewed all plans again according to these main themes. I summarized the findings of walkability plans in tables that show examples of the underlying planning paradigms that are prominent in each plan. Examples include samples or key phrases and words that describe each particular planning theme or theory.

My findings on plan content and planning paradigms identified patterns and trends in Canadian pedestrian and walkability plans. I related these findings to the information presented in my literature review in order to further my comparative analysis.

RESULTS & ANALYSIS

Types of Walkability and Pedestrian Plans

The total number of plans evaluated included 80 plans from five major Canadian city regions (See Table 4 Below). (Refer to Appendix 2 and 3 for a complete list of plans).

Table 4: Total Number of Plans Collected

City Region	Number of Plans Collected
Vancouver	20
Edmonton	17
The Greater Toronto Area	28
Halifax	9
St. John's	6
Total Number of Plans Collected	80

Within the five Canadian cities, I identified three types of pedestrian and walkability plans. I classified the three types of plans according to the plan's title: 1) Stand Alone Plans:

plans with the term “pedestrian” or “walkability” in the title or 2) Transportation Plans: plans with sections related to pedestrians and 3) Other Related Plans: plans that do not use these terms in the title, but have important sections in the plan that contain high quality and relevant information related to walkability.

Most of the plans that contain information about pedestrians and walkability are in the third category of “other related plans”. Most walkability and pedestrian information is embedded in other city plans. The Greater Toronto Area has the most pedestrian and walkability information in the transportation plan group with a total of 14 transportation or active transportation plans. Most cities do not have stand alone plans that focus strictly on planning for pedestrians and walkability. Only 14 of the 80 total plans collected are stand alone walkability and/or pedestrian plans. (See Figure 2 Below).

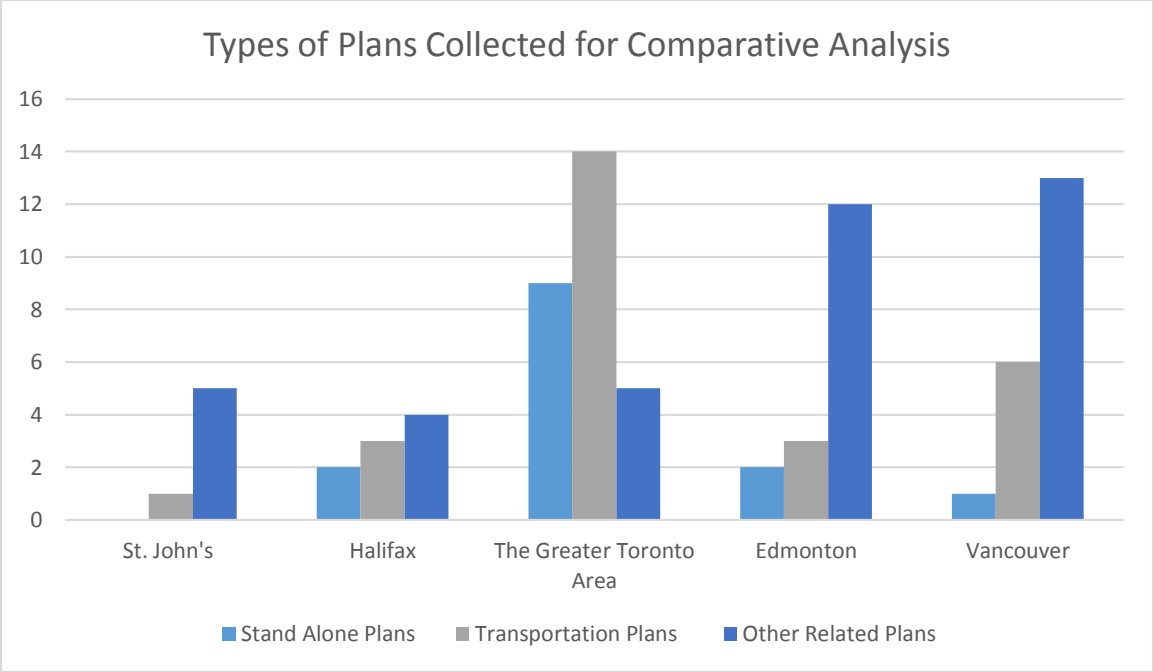

Figure 2: Types of Plans Collected For Comparative Analysis

Local Context Considerations

All five Canadian city regions focus on urban areas. Each city region has unique local context considerations that are important to acknowledge when comparing walkability and pedestrian plans. I recorded local context considerations in my framework because these

considerations provide valuable insight on the current state of planning in each city region under study.

St. John's

St. John's has received numerous comments and requests for speed bumps, raised intersections and curb extensions each year. Due to these pedestrian improvement requests, the city has hired a consulting company, IBI Group. IBI Group worked with the city to develop a traffic calming policy. This policy includes a prioritization planning process to respond to these requests.

Halifax

In 1996, four municipalities within Nova Scotia amalgamated to create Halifax Regional Municipality (Task Force, 2007). Amalgamation affected the consistency of installations for crosswalk treatments, safety education, and law enforcement (Task Force, 2007). Although Halifax has experienced recent growth and expansion, according to the Moving Forward Together Draft Plan, the transportation network has not seen significant upgrades since the early 1990s (Halifax Transit, 2015). The Moving Forward Together Draft Plan is being developed in order to improve the existing transit network to accommodate the changes in travel trends and land uses throughout Halifax Regional Municipality (Halifax Transit, 2015).

According to Halifax's 2015-16 Pedestrian Safety Action Plan, the recent increase in pedestrian activity in urban areas in Halifax can be attributed to two factors (HRM, 2014). The first factor relates to active transportation for health benefits and recreational enjoyment (HRM, 2014). Many jurisdictions are now providing walkability improvements in their communities that encourage walking as a viable mode of transportation for everyday activities. The second important factor is context specific. Halifax has an aging population, which is leading to more seniors walking (HRM, 2014).

The Universal Accessibility Plan also addresses the importance of diversity and inclusiveness in plans. "A specific consideration in the context of the province of Nova Scotia is that the disability rate is estimated at 20% or 179,100 people and the number of transportation disabled people is expected to increase from 385,255 in 2011 to 21,250 in 2021" (IBI Group, 2011, p.7).

The Greater Toronto Area

The Greater Toronto Area has a fully integrated public transportation system that offers accessible travel choices such as subways, streetcars, busses, and trains (City of Toronto, 2002). With a larger transportation system, the vast majority, 91%, of people who live in Toronto walk to transit stops. Despite Toronto's integrated and diverse transportation system, statistics indicate that only 7.1% of Toronto residents walk to work (City of Toronto Public Health Department, 2012). More Toronto residents walk to school, shopping or other leisure activities as their main choice of transportation, with a total of 31% of people studied (City of Toronto Public Health Department, 2012). Toronto benefits from mixed use development and a dense downtown urban core. These characteristics contribute to walkability benefits in the city.

Edmonton

Edmonton is known for its financial and administrative center. The metropolitan population of the city of Edmonton is over 1 million and is ranked the sixth largest market in Canada, after Toronto and Vancouver (City of Edmonton, 2012). Transportation, including parking facilities and infrastructure, compromises 14.2% of the downtown land use area (City of Edmonton, 2012). There is a lack of park and open space in the downtown area, partly due to the recent increase and focus on residential developments (City of Edmonton, 2012).

Edmonton's climate and sprawling communities are two of the main challenges that the city encounters when promoting and encouraging walking as a main mode of transportation (City of Edmonton, 2010). Despite the increased interest in accessibility design in the city, some suburbs in Edmonton are still left without sidewalks. Many of the industrial areas in the city

lack sidewalks. Another factor that Edmonton recognizes that impacts the walkability of the city is that there are ample parking opportunities in the city (City of Edmonton, 2010).

Edmonton also lacks a mixture of uses. Since the 1980s, urban development and planning in the city has segregated single use developments (City of Edmonton, 2010). Many shopping areas in the city, which are common destinations for local community members, are separated from residential neighbourhoods (City of Edmonton, 2010). A mixture of uses usually encourages and improves density. Both of these factors make it easier to encourage walkability within a city. Edmonton has a low residential density compared to other cities in North America (City of Edmonton, 2010).

Spruce Grove is another community that had plans selected for this comparative analysis as it is located within close proximity to Edmonton. It is approximately 11 km east of Edmonton (City of Spruce Grove, 2010). Spruce Grove has attracted young families due to affordable housing options and its proximity to Edmonton.

Vancouver

Vancouver faces numerous challenges such as a growing city with limited road space, a demand for transit, high cost of living, and an aging population (City of Vancouver, 2012). Vancouver's downtown core is growing, since more people are now living in cities than in rural locations (City of Vancouver, 2014). "By 2030, more than 60 per cent of the world's population will live in an urban setting. That will rise to 70 per cent by 2050. In Canada, 80 per cent of the population lives in urban areas, and Vancouver is expected to grow by 23 per cent to an estimated population of 740,000 by 2040" (City of Vancouver, 2014, p. 6). Due to the growing downtown core, it is important to plan with future expansion in mind.

Plan Content Trends

Preparation of Plans

One of the components in my framework recorded information to answer the question: Who prepared the plan? The majority of the plans in the five Canadian city regions are prepared by the city and/or municipality staff (See Figure 3 below). (See Appendix 4 for a complete list of frequency count data).

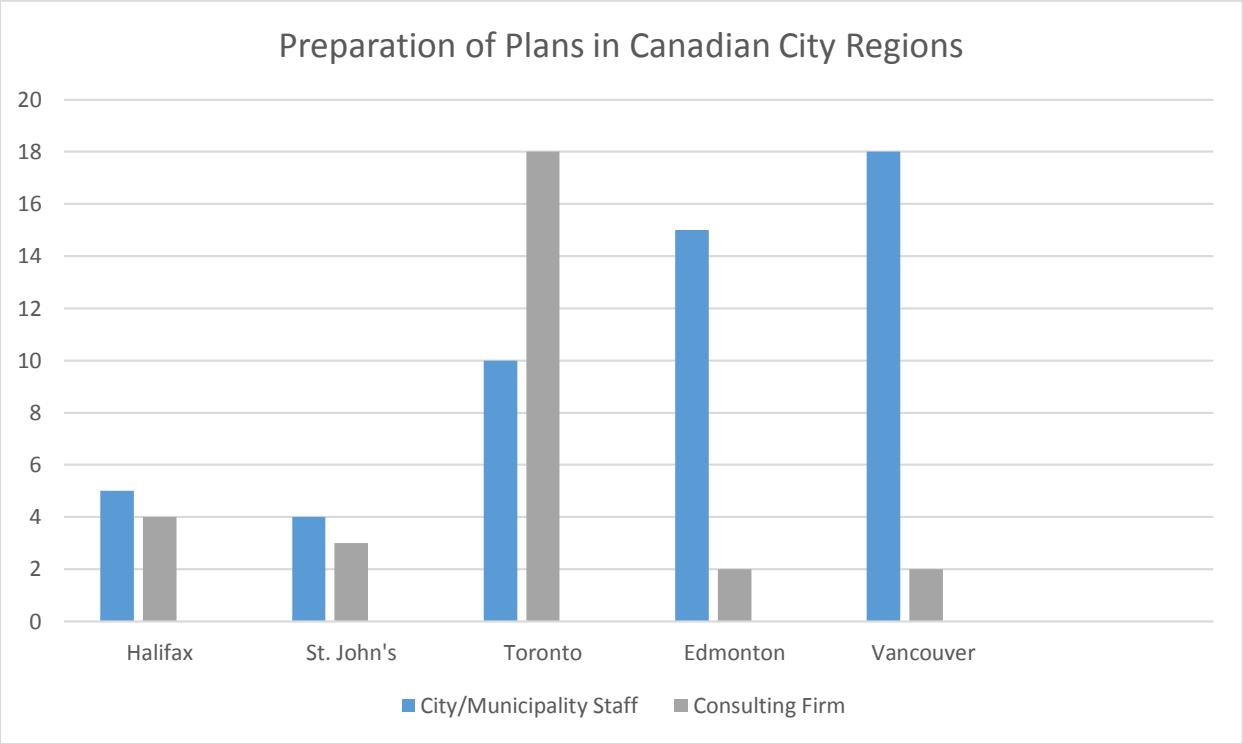

Figure 3: Preparation of Plans in Canadian Cities

An exception to this general trend is Toronto, where the majority (64%) of pedestrian and walkability plans are prepared by MMM Group, which is a consulting firm that specializes in transportation planning issues (See Figure 4 below).

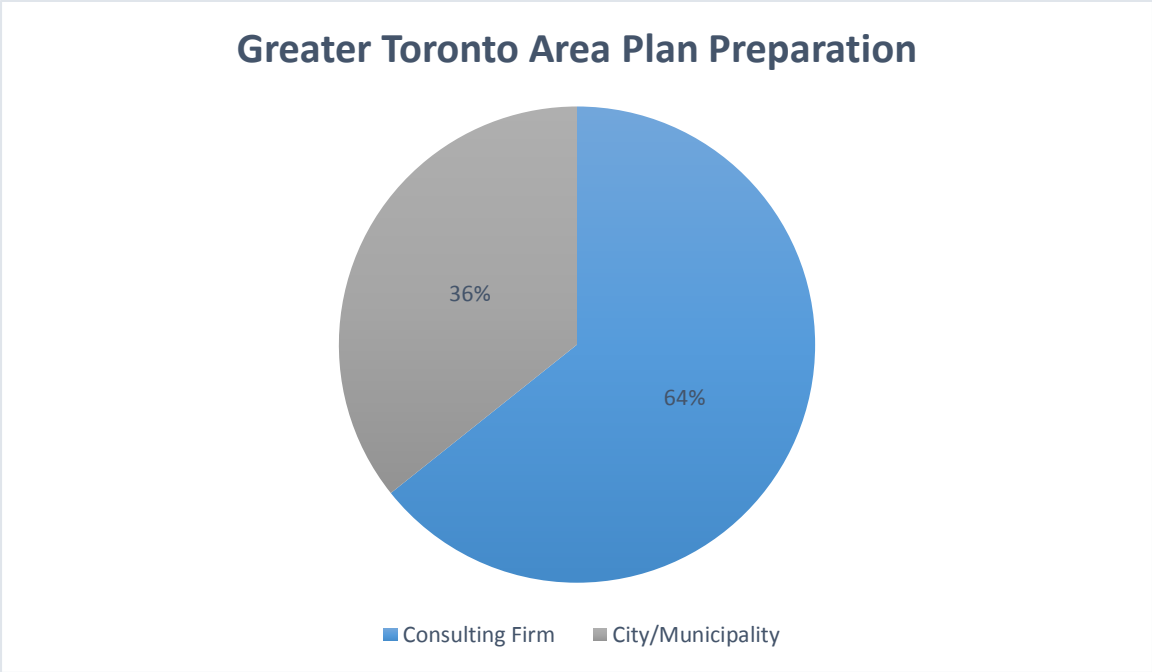

Figure 4: Greater Toronto Area Plan Preparation

Other consulting firms that have prepared plans in the five Canadian city regions include IBI Group, Stantec, and Urban Systems Ltd. Consulting firms are typically hired to take on cities urban and/or community planning projects because they may have conducted previous studies that relate to pedestrian, walkability, or transportation in that particular place. Sometimes hiring a consulting firm to develop and prepare a study or plan for a city is a way for city planners to validate something that they already know. Gaining an outsider's perspective can add to the legitimacy of the plan or study for community members.

Consulting Firms

MMM Group has been consulting for over 60 years in both private and public sectors across Canada (MMM Group Limited, 2016). MMM Group was recently bought by WSP Inc., and has merged mission statements to be "a solution-driven advisor with outstanding expertise" and has the vision to "always be the first choice for clients, partners, and employees" (MMM Group Limited, 2016). MMM Group's active transportation planning projects include the development of master plans and design guidelines in the provision of pedestrian planning

and design (MMM Group Limited, 2016). Three examples of plans prepared by MMM Group are Brampton's Transportation Master Plan, Richmond Hill's Pedestrian and Cycling Master Plan, and Oakville's Active Transportation Plan. A recent plan, from June 2015, prepared by WSP is King Township's Transportation Master Plan.

IBI Group's mission statement is "to be our clients' preferred partner by using our innovative thinking, systems knowledge, planning expertise, and design excellence to define the cities of tomorrow" (IBI Group Services, 2016). The consulting firm focuses on transportation planning. Plans and projects related to the movement of people are relevant to walkability and pedestrian aspects (IBI Group Services, 2016). Three examples of plans that IBI group prepared are Halifax's Metro Transit Universal Accessibility Plan, Ajax's Pedestrian and Bicycle Master Plan Final Report, and St. John's Development of a Traffic Calming Policy and Warrant.

Stantec Consulting started in 1954 (Stantec, 2016). Stantec's mission statement is "we design with community in mind" (Stantec, 2016). In order to achieve this mission statement in practice, the company is dedicated to being active members of the communities where they are developing or preparing plans. This consulting firm works directly with municipal governments on plans for community design services and transit-related initiatives (Stantec, 2016). An example of a plan that Stantec Consulting Ltd. prepared is Edmonton's Proposed Walkability Strategy.

Urban Systems Ltd. was established in 1975 (Urban Systems, 2016). Urban Systems Ltd.'s tag line is "spirit in service for vibrant communities – the higher calling that is at the very core of all that we do" (Urban Systems, 2016). The privately-owned company elaborates on what is meant by vibrant. "Vibrant describes what we help communities to be – prosperous, sustainable, resilient and healthy" (Urban Systems, 2016). From a transportation planning perspective, Urban Systems Ltd. incorporates land uses, urban design, and servicing considerations when developing transportation plans. The company also has a separate department of active transportation employees that promote more sustainable modes of

transportation such as pedestrian and walkability planning (Urban Systems, 2016). Three examples of walkability plans prepared by Urban Systems are Spruce Grove's Transportation Master Plan, Vancouver's Transportation 2040 Plan, and North Vancouver's Long Range Transportation Plan.

Timing of Plans

Since pedestrian and walkability planning has recently become more popular in Canadian cities, it is relevant to note when the selected plans were created. The oldest plan in the sample was prepared in 2002. As indicated in my literature review, there has been a recent upsurge in walkability planning, therefore my sample contains plans mostly from recent years. Walkability plan adoption in the city regions in this study spiked in the year 2014 (See Figure 5 Below). Walkability had a slow start but then started to pick up speed in 2006 and 2007. There was a cluster of activity between the years 2009-2012.

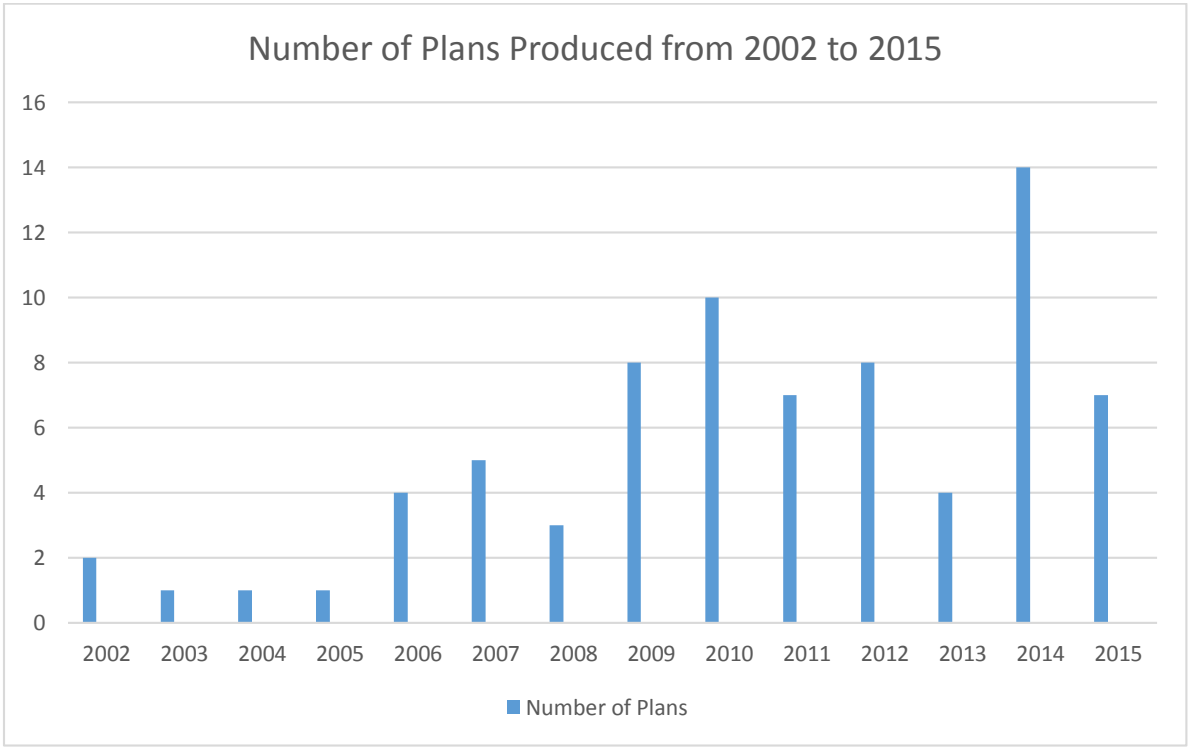

Figure 5: Number of Plans Produced in Years from 2002 to 2015

Some of the funding for transportation plans in the Greater Toronto increased between the years of 2010-2012 because the Ministry of Transportation Ontario's Transportation Demand Management Municipal Grant Program awarded active transportation grants to over 22 municipalities with a total investment of $1 million (City of Toronto Public Health Department, 2012). The City of Toronto's Transportation Services Department only has 5% of their total capital expenditures dedicated to walking and cycling infrastructure improvements each year (City of Toronto Public Health Department, 2012). The plans for St. John's, Halifax, Edmonton, and Vancouver indicate that the city is responsible for project funding, but do not go into details regarding increased grants or other funding programs.

Vision Statements

Vision statements are important to compare since these statements set out the priorities that the city wants to achieve over a certain period of time. Vision statements in the selected plans highlight the purpose and provide an overview of the city's values. Since vision statements provide an overview, they are intended to be broad in order to encompass a variety of planning and design aspects. Community vision statements are sometimes established from public consultation and engagement initiatives during drafting phases of the planning document.

Edmonton is the only Canadian city region, of the five under study, that has plans coordinated with the same overarching vision statement. All of the Edmonton plans start by stating the same vision statement or stating the way in which the plan hopes to achieve the city's overall vision but with a focus on a specific aspect such as transportation, sustainability, or economy. The three aspects all contain context related to walkability planning. The city vision for Edmonton that appears in all plans is: "Take a river boat from one shore of the world's largest urban park to the other, from the university to the legislature. From the water, look up and consider the skyline, the bustling core and the towers and urban villages to the east and west. The people on the sidewalks and trails, from First Nations to new Canadians, linked by a common purpose — to learn, to prosper, to celebrate. Take the LRT in any direction from

here and you'll be in the heart of somewhere special. Welcome to Edmonton, the capital of Alberta, a northern city of art and ideas, research and energy" (City of Edmonton, 2014). The statement relates to idea of "being". The vision statement is written in the present tense, which is an imperative statement.

Despite the fact that pedestrian and walkability plans have similar underlying principles, goals and objectives, the broad vision statements in other city region plans incorporate a variety of different key words. Most vision statements set out general aims for future generations (See Table 5 Below). Few vision statements clearly identify walkability or pedestrian aspects. This goes hand in hand with the fact that many of the plans are not stand alone plans, and thus do not include these terms in the title of the plans but have sections that specifically relate to pedestrian and walkability concepts.

Vision statements in pedestrian plans differ from vision statements in general plans like in the transportation plans and other related plans group. The three categories of aims that I coded for vision statements are growth and prosperity, safety, and walking versus walkability. Vision statements in the growth and prosperity section contain key words such as "growth", "prosperity", "identity", "quality of life", and "diversity". Vision statements that use safety as the main aim include words like "safety", "efficient", and "smart". Walking versus walkability vision statements use words like "walkability", "walking", "walkable", "pedestrian, and "connections".

Table 5: Sample Vision Statements Coded by Different Aims

Vision Statements From Other Related Plans

St. John's	"Conception Bay South is a family-oriented community which values its scenic coastline, landscape, waterways and recreational opportunities. The Town strives to ensure high standards of environmental protection, a **vibrant** commercial sector, and an **efficient** street network **connecting** **safe**, well-designed neighbourhoods that enable healthy and active lifestyles" (Town of Conception Bay South Municipal Plan 2011-2021).

St. John's	"A future of continued **economic prosperity** and **diversity**, where citizens have a strong sense of **identity** embodied" (Envision St. John Municipal Plan)
Edmonton	"Take a river boat from one shore of the world's largest urban park to the other, from the university to the legislature. From the water, look up and consider the skyline, the bustling core and the towers and urban villages to the east and west. The people on the sidewalks and trails, from First Nations to new Canadians, linked by a common purpose — to learn, **to prosper**, to celebrate. Take the LRT in any direction from here and you'll be in the heart of somewhere special. Welcome to Edmonton, the capital of Alberta, a northern city of art and ideas, research and energy." (Plans that start with "The Way We…")
Vancouver	"In 2031, the City of North Vancouver will be a **vibrant**, **diverse**, and highly **livable** community that is resilient to climate or other changes, and sustainable in its ability **to prosper** without sacrifice to future generations" (2014 Official Community Plan)

Vision Statements from Transportation Plans

Halifax	"Develop a region-wide, visible and **connected** Active Transportation network of on-road and off-road facilities that are convenient, accommodate the needs of existing and future users and promotes an increase in non-motorized vehicle travel, particularly for short distance trips. This network will be supported by various programs, policies and strategies that will help and encourage Active Transportation year-round, and improve **the quality of life** for both residents and visitors to the area and make HRM one of the *most desirable municipalities in which to live, work and visit in North America*." (Active Transportation Plan)
The Greater Toronto Area	"To define a comprehensive, fully integrated and sustainable transportation network to accommodate population and employment **growth to** the year 2031." (Ajax Transportation Master Plan Update)
The Greater Toronto Area	"Peel Region will have a **safe**, convenient, **efficient**, multi-modal, sustainable, and integrated transportation system that supports a **vibrant** community, respects the natural environment, meets the **diverse** needs of residents and contributes to a **higher quality of life**" (Peel Region Long Range Transportation Plan)
Vancouver	"By 2040, we envision a city with a **smart** and **efficient** transportation system that supports **a thriving economy** while increasing affordability; healthy citizens who are mobile in a **safe**,

	accessible, and **vibrant** city; and a city that enhances its natural environment to ensure a healthy future for its citizens and the planet." (Transportation 2040)

Vision Statements from Stand Alone Plans

Halifax	"to provide a review of activities carried out in promoting pedestrian **safety** as well as an assessment of any trends or recurring issues impacting the **safety** of **pedestrians** on Halifax's roadways" (2015-16 Pedestrian Safety Action Plan)
The Greater Toronto Area	"to develop a comprehensive and **connected** network of **pedestrian** and cycling facilities consisting of off-road multi-use pathways, on-road bike lanes and routes, boulevard pathways and sidewalks that will help to facilitate **walking** and cycling in the City for leisure and commuting purposes." (Vaughn Pedestrian and Bicycle Master Plan Study Final Report)
The Greater Toronto Area	"An urban environment that encourages and facilitates **walking** supports community health, vitality and **safety**. It will increase use in public transit; decrease car dependence; reduce conflict between vehicles and **pedestrians**; lead to cleaner air; greener public space; and support green tourism. Such an environment creates opportunities for the informal social interaction that is one of the main attributes of a **vibrant**, **livable** city" (Proposed Framework for a Toronto Walking Strategy – adopted by Toronto Pedestrian Charter)
Edmonton	"to develop an integrated set of potential actions to address a range of identified barriers to improving **walkability** in the city of Edmonton" (Proposed Walkability Strategy)
Vancouver	"creating **walkable** neighbourhoods" (City of Surrey Walking Strategy)

<u>Vision Statement Patterns</u>

Growth and Prosperity

The first category, growth and prosperity, is evident mostly in other related plans and transportation plans, but only appears in one stand alone plan. Growth and prosperity is an underlying aim in all of the sample vision statements explained above. Growth often means economic growth. Growth in transportation plan vision statements is reflective of an expanding transportation network for pedestrians, cyclists, and public transport systems. Growth and prosperity does not solely reflect ideas of expansion and economic growth, but also

encompasses aspects like quality of life. All of these references to growth in vision statements indicate that plans are developed with a future oriented mindset.

Safety

The second category, safety, focuses on pedestrian safety from a street perspective. Many of these vision statements refer to pedestrian safety from vehicular traffic. The term safety is often used in the same sentence as efficient because efficient land use and street networks are more likely to encourage pedestrian comfort and safety. Safety and efficiency are important components of walkability. The reason that these words are apparent in walkability and pedestrian plan's vision statements is because of the traffic engineering discipline. Traffic engineering is defined as "a branch of civil engineering that uses engineering techniques to achieve the safe and efficient movement of people and goods on roadways" (Homburger, Kell & Perkins, 1992, p.4-4). Traffic engineering focuses on safety and efficiency in transportation related infrastructure such as sidewalks, crosswalk installments, street configuration, and traffic lights.

Walking Versus Walkability

Most of the stand alone plans fall under the third category of aims that relates to walking and walkability. It is important to distinguish the difference between walking and walkability. Walking is an activity, whereas walkability is a state. The Greater Toronto Area uses the word walking to develop a vision based on aesthetics such as sidewalks and boulevards for commuting and recreational purposes. Walking as an activity also relates to connections, which is addressed in stand alone plans, transportation plans, and other related plans. Walkability is described in Edmonton's vision statement to describe a state of planning. Vancouver's stand alone plans do not include walking or walkability in its vision statement; however, the term walkable is used. Walkable is a vague idea that is difficult to categorize the aim of the vision statement. Since the third category of vision statement aims does not include information presented in the growth and prosperity or safety aims, stand alone plans use the terms walking and walkability to improve the aesthetics and attractiveness of the city region.

Vision Statements with Vague Ideas

Vision statements with vague ideas focus on key reoccurring words such as sustainability, health, vibrancy, connections, diversity, and comprehensiveness. Some of the reoccurring words in vision statements can be difficult to define, like vibrant. What does it mean to be a vibrant city? The definition of vibrant is "full of energy and life" (New Oxford American Dictionary, 2010). It is difficult to identify when a city has achieved the vision of becoming vibrant. Vibrancy is not only difficult to define, but is also challenging to measure. The meaning is sometimes lost since many cities overuse the word in their vision statements. Vision statements that include vibrancy in different documents make it difficult for cities to adopt a unique definition based on important local context characteristics. Becoming a vibrant city also does not correlate directly to becoming a more pedestrian-oriented and walkable city. However, as identified in literature findings, streets that are more vibrant and attractive may increase the number of citizens that frequent places. This type of "vibrant" street or community also relates to the common word "diversity", which is mentioned in city's visions, because the greater number of diverse users in public spaces is typically a result of a variety of activities or destinations in the area.

The more diverse a streetscape, the more pedestrians are likely to frequent due to the array of amenities that the place offers. Diversity in a streetscape or city is often the result of mixed-use development. Connections are also difficult to measure and determine when the city has achieved its vision. Connections are context specific as they are dependent on the popular places citizens go to in their city. Some examples of connections are places where people walk to from public transit stops. It is important to understand where these connections are in order to implement walkability plans policies to enhance the pedestrian environment. Connections relate to walking as an activity, which is one of the categories of vision statement aims explained above.

Although these vague words may not be relevant to the overall walkability of each city region, they point towards particular planning paradigms that often include concepts regarding active transportation and walkability.

Public Consultation

Many of the vision statements in municipal planning documents were prepared in consultation with community members and stakeholders. Public consultation is mentioned in all of the plans selected for comparative analysis. Public consultation often has legal connotations and are part of a city's formal regulatory process. At the city level, municipal governments have the obligation to ensure that programs and policies in plans reflect citizens' needs.

All plans in St. John's resulted from public consultations sessions. These sessions were extensive in the development of certain plans like the Municipal Plan, which had 18 public sessions and a public open house that covered all of the 21 defined planning areas. St. John's also mailed out brochures outlining the plan review process, inviting citizens to public meetings and hearings, and also encouraging them to provide comments back. Public consultation in other plans within St. John's were required to hold a minimum of two public meetings in order for the development of the plan to progress.

All plans in Halifax have incorporated some form of citizen engagement or public consultation process in the development of walkability and pedestrian plans. Some forms of public consultation include public meetings and stakeholder meetings. Other forms of public consultation in Halifax included workshops and newsletter comment areas as well as telephone calls. Media tools have also been used in Halifax as a way to engage the public, including the use of online surveys and Twitter accounts throughout various phases of plan development.

Consultation in Edmonton's plans is clearly explained in Edmonton's Proposed Walkability Strategy which includes a public involvement plan, youth consultation, working

group meetings, stakeholder meetings, focus group meetings, and Walkable Edmonton Committee meetings. The other plans in Edmonton only mention that public consultations were reviewed when developing the plan, but do not indicate the type of consultation or the results of what was heard during the consultation phases of walkability and pedestrian plan development. Despite the coordination of Edmonton's city vision, consultation processes are not clearly identified or explained in the city's plans.

The Greater Toronto Area included public consultation processes for the majority of walkability and pedestrian plans. Many of the plan development public consultations included public meetings and open houses, stakeholder vision workshops and other public workshops. The Greater Toronto Area used interactive consultation techniques. Ajax's Pedestrian and Bicycle Plan included cycling and walking tours as a part of their public consultation and citizen engagement strategy when developing planning documents. These tours enabled community members to show city planners and the consulting team first hand some of the opportunities and also the current barriers to walkability in the city.

Vancouver's West End Community Plan included more creative public consultation techniques. These techniques included multicultural circle groups, local food systems workshops, and the Davie Street "walkshop". The purpose of a "walkshop" is to encourage community members to think about the way we design city buildings, streets, sidewalks, signage, street furniture, and any other element that contributes to a vibrant and active commercial street. This is a fun way to allow community members to have a say and be a part of the planning process for a community plan. The results of the Davie Street "walkshop" included rainbow painted crosswalks to raise awareness for the 35th anniversary of pride week and the installation of a new public plaza that included colourful picnic tables, decorative lighting, and green space landscaping elements. These designs contribute to the creative community located nearby Davie Street, but also promote walkability features by having places for people to sit and having art for people to stop and look at. These art installations also relate to the new urbanism design principle of quality architecture and urban design.

Definitions

Content analysis is used to study a range of text, including important definitions. The terms "pedestrian", "pedestrian-friendly", "walkability" and "walkable", are referred to frequently in almost every plan. The table below illustrates the number of times that these key terms appear in walkability plans (See Table 6 below). These reoccurring terms are rarely explicitly defined. Walkability is only defined in Edmonton's *Proposed Walkability Strategy*. Edmonton's definition in this report is described as "the measure of the overall walking and living conditions in an area is defined as the extent to which the built environment is friendly to the presence of people walking, living, shopping, visiting, enjoying, or spending time in the area" (Stantec, 2009, p.3).

Table 6: Definition Frequency Counts

Term	St. John's	Halifax	GTA	Edmonton	Vancouver
Pedestrian	127	1601	4028	1208	2170
Pedestrian-Friendly	26	63	70	71	178

Term	St. John's	Halifax	GTA	Edmonton	Vancouver
Walkability	3	19	61	604	39
Walkable	5	24	107	151	87

The term pedestrian-friendly is rarely explicitly defined; the term is typically used to refer to public spaces and street areas (See Table 7 Below). Although the term is not defined, the word has specific purposes in relation to designing attractive streetscapes for pedestrians by incorporating green space, vegetation and other landscaping elements. In Halifax plans, pedestrian-friendly refers to safety features of street design. The four other cities focus on pedestrian-friendly as a concept that is implemented through infrastructure such as benches, street crossings, sidewalks, fountains, and other physical building designs and street setbacks.

Table 7: References to the Term "Pedestrian-Friendly"

Vancouver	
Surrey Transportation Strategic Plan (2008)	"compact, mixed-use and connected communities emphasize a sense of place and have pedestrian-friendly designs" (p.29)
Norquay Village Neighbourhood Centre Plan (2010)	"create an attractive, pedestrian-friendly, and safe streetscape along Kingsway with **wider sidewalks, safer pedestrian crossings, and green buffers**" (p.11)
Downtown East Side Local Plan (2014)	"which include additional **transit shelters, seating, public plazas, and drinking fountains**" (p.177)
Transportation 2040 (2012)	"streets that feel safe, comfortable and interesting" (p.66)
Long-Term Transportation Plan (2008)	"a community that supports **walking** as a main mode of transportation" (p.115)
Edmonton	
Strathcona Area Redevelopment Plan (2015)	"may include such things as entrance features, **outdoor sitting areas, canopies, architectural features** that lend visual interest and create a human scale of development along street frontages, **landscaping**" (p. 56)
St. Albert Downtown Area Redevelopment Plan (2010)	"In addition to land use, the **physical characteristics of buildings** such as their height, massing, setbacks, placement on the block, materials, and street interface have a big role to play in creating an attractive and pedestrian-friendly downtown with active streets." (p. 75)
Capital City Downtown Plan (2010)	"create pedestrian-friendly streets by adopting a comprehensive set of policies and design parameters and by implementing design initiatives and public improvement programs" (p.115)
The Greater Toronto Area	
Town of Oakville Active Transportation Master Plan (2010)	"**land development** to reduce single-occupant motor vehicle use" (p. 33) "**land development** and streetscape design that supports the Town of Oakville's vision to

	become the most livable town in Canada" (p.12)
Richmond Hill Pedestrian and Cycling Master Plan (2010)	"encouraging people **to walk** more often for both recreation and utilitarian purposes" (p.56)
Oshawa Integrated Transportation Master Plan (2015)	Pedestrian-friendly environment: "one-way streets are often more dangerous for pedestrians than two-way streets, primarily due to higher vehicular speeds on one-way streets" (p. 34)
Road to Health: Improving Walking and Cycling in Toronto (2012)	Streetscapes that often include "**public spaces, benches, fountains, restrooms, art installations, vegetation, and effective exterior lighting**" (p. 69)
St. John's	
Town of Conception Bay South Municipal Plan 2011-2021 (2012)	Achieved through "installation of **sidewalks and use of landscaping** to improve the area's visual appearance" (p. 20)
Halifax	
Active Transportation Plan (2006)	"related to **infrastructure features** such as **speed bumps and sidewalks**" (p. 27)
Making Connections 2014-19 Active Transportation Plan (2014)	Elements of a pedestrian-friendly design include: "1) Interconnected streets and **sidewalks** reduce travel distance for pedestrians. Providing pedestrians with the most direct routes and with a choice of routes encourages **walking**. 2) Pedestrian median refuges allow for crossing only one direction of traffic at a time. 3) Reduced crossing distances minimize the amount of time pedestrians are exposed to vehicle traffic when crossing a street. Use the smallest practical curb radii to shorten crosswalk length. 4) Small block sizes of 100 meters or so are best to support **walking**. Where block sizes are large, retrofitting with **pedestrian paths and crossings** can improve **walkability**. 5) Pedestrian over- and underpasses force walkers to change levels, and do not generally encourage **walking**, but may be needed in some cases for safety reasons. 6) A constant **sidewalk level** improves comfort for all walkers, especially

	persons with disabilities. 7) Dedicated AT paths connecting dead-end streets provide access even where cars cannot pass. 8) Mid-block vehicular driveways and curb cuts on streets with heavy foot traffic interrupt pedestrian continuity. Vehicular driveways and ramps should be designed to minimize contact between cars and pedestrians. 9) Consider removing right turn channel lanes in urban settings with high pedestrian volumes and low right turn vehicle volumes." (p.31)

The different references to pedestrian-friendly in the selected plans are compared according to two categories: inputs and outputs. Inputs are classified according to the bold black words in Table 7 above. Inputs are physical design features and infrastructure like benches and sidewalks. Outputs are highlighted in bold blue letters in Table 7. The outputs in this case are aspects that emerge from input designs such as encouraging and supporting more walking. Outputs are prominent in Vancouver, the Greater Toronto Area, and Halifax plans, whereas inputs are included in all five Canadian city regions walkability plans.

Theme: Safety

Many of the themes that have led to a recent upsurge in pedestrian planning are not acknowledged in plan development. Safety is the only theme that is mentioned in reference to specific planning principles. Safety is referenced in a variety of pedestrian and walkability plans in relation to Crime Prevention Through Environmental Design (CPTED) principles. Halifax has a policy specifically related to CPTED principles, which include pedestrian amenities and comfort in the Downtown Halifax Regional Municipal Planning Strategy. The policy states that "HRM shall consider using Crime Prevention Through Environmental Design Strategies in accordance with the Transportation & Streetscape Design Functional Plan to enhance safety in the design of public spaces in downtown Halifax" (HRM Council, 2014, p. 44). CPTED principles were also addressed in Halifax's Active Transportation Plan. The plan specifically indicates the four important components of CPTED principles when planning an active transportation network. These factors include natural surveillance, territorial reinforcement, natural access control, and

maintenance (See Table 8 Below). This plan also recognizes that CPTED principles relate to Jane Jacobs's planning theories of "eyes on the street". CPTED is considered when locating facilities and emergency response procedures on pedestrian and cycling trail networks.

Table 8:CPTED Principles Identified in Halifax's Active Transportation Plan

Natural Surveillance	"users of the network should be easily visible to people on adjacent roadways where possible" (p.4-14)
Territorial Reinforcement	"because bushes or other shrubbery can provide hiding places for potential offenders, caution should be exercised in their placing. Bushes that are planted further back from paths and sidewalks make it more difficult for people to sneak up on others"(p.4-14)
Natural Access and Control	"pedestrian and bicycle routes should be located in areas with significant street frontage (and associated doors and windows) as opposed to streets with few buildings fronting onto them"(p.4-14)
Maintenance	"network facilities should be well maintained. Burned out lights, overgrown paths, or damaged sidewalks/bike routes indicate a general state of disrepair and detract from the feeling of security of the area"(p.4-14)

CPTED principles in North Vancouver's Long Range Transportation Plan focus on safety through lighting, which is one of the features for walking and a potential pedestrian facility treatment (City of Vancouver, 2014). Pedestrian safety is defined in the plan as "a greater application of Crime Prevention Through Environmental Design audits and design practices" (City of Vancouver, 2014, p.30). CPTED is indirectly referenced in Vancouver's 2014 Official Community Plan. In the community well-being chapter of the plan, the city indicates that CPTED is a related policy and plan that can help with the implementation of creating walkable communities (City of Vancouver, 2014). The chapter focuses on the importance of walkable

land use patterns, recreational facilities, and affordable housing which all facilitate and enhance community well-being (City of Vancouver, 2014).

Many of these references to CPTED and safety planning principles are embedded in pedestrian and walkability programs like Safe and Active Routes to School. Safe and Active Routes to School is a national campaign that works in a variety of local communities to increase active transportation starting by targeting children at a young age (Ecology Action Centre, 2016). The benefits of this program include increased physical activity, reduced air pollution and greenhouse gas emissions, and improved traffic safety. Different programs in Halifax include: school travel planning, making tracks, WOW (we often walk or wheel), walking school bus, pace car, youth trans-actions, international walk to school month, and winter walk day (Ecology Action Centre, 2016). PEEL Region also has developed a program for Safe and Active Routes to School. This program has expanded to the high school level by creating a Transportation Demand Management Program that is run by high school students. "This project aims to reduce the number of vehicles around schools at drop-off and pick-up times, improve local air quality, create safer streets for young pedestrians and cyclists, and increase the number of physically active students" (Region of Peel, 2012, p.92). This program also allows students to be a part of government planning processes and decision-making.

Safety is often mentioned in relation to creating physical design solutions. These design solutions are sometimes implemented through infrastructure like sidewalks, benches, and lighting. The plans intend on getting more people walking by designing infrastructure to create safe, walkable areas. A gap in the walkability plans interpretation of safety is that more people walking and busier streets can sometimes cause social issues. Walkable streets can sometimes attract panhandlers, thus forcing other pedestrians to take side routes to avoid coming in contact with panhandlers.

Underlying Planning Paradigms

After a preliminary review of all plans, I completed a second review of planning documents specifically in search of planning paradigms identified from literature. The purpose of critically analyzing planning paradigms was to identify the influences that these paradigms have on walkability plans in five Canadian city regions. Underlying paradigms such as smart growth, new urbanism, and healthy community planning principles are not explicitly referred to in plan development or the rationale for creating plans, but are apparent when critically analyzing and comparing walkability plans (See Table 9 Below). In the introduction of many of the Canadian city's plans, information is presented about the benefits of creating a walkability plan or active transportation plan, but do not recognize that these benefits directly relate to smart growth, new urbanism, and healthy community planning paradigms.

Table 9: Benefits that Reference Planning Paradigms

Plan	Benefits	Planning Paradigm
Halifax: Active Transportation Plan	"Typical Benefits of an Active Transportation Plan Health and Fitness – less obesity, more physical activity, less disease, less productivity loss **Transportation –** less traffic congestion, lower **road construction and maintenance** costs, improved road safety, and less demand for parking spaces Environmental – lower air pollution, lower noise pollution, and **more efficient land use**" (p.1-6)	6Relates to 3 Smart Growth Principles • Provide a variety of **transportation** choices • Encourage growth in existing communities – investments in **infrastructure such as roads** are used efficiently • Protect and enhance **land**

Toronto: Richmond Hill Pedestrian and Cycling Master Plan	"Benefits of Walking and Cycling <u>Recreational, Health and Fitness Benefits –</u> reduce risk of coronary heart disease, premature death, high blood pressure, obesity, adult-onset diabetes, depression and colon cancer which can also reduce the cost of medical care, decrease work absenteeism and maintain the independence of older adults **<u>Transportation</u>** <u>Benefits</u> – reduced **road** congestion and maintenance costs, less costly infrastructure, increased **road** safety and decreased user costs, decrease in amount of parking spaces required <u>Environmental Benefits</u> **–** mitigates global climate change, local air pollution, photochemical smog, acid rain, water pollution and hydrologic disruptions, **land** use and noise pollution" (p.18-20)	Relates to 3 Smart Growth Principles • Provide a variety of **transportation** choices • Encourage growth in existing communities – investments in **infrastructure such as roads** are used efficiently • Protect and enhance **land**
Vancouver: Cambie Corridor Plan	Walking and Cycling: "creating attractive pedestrian- and cyclist-friendly streetscapes. • Provide pedestrian and cyclist related **public realm** improvements including wide sidewalks in shopping areas and around rapid transit stations, additional bike lockers and racks, street trees and landscaping, public **art**, benches and lighting • Create accessible public plazas and other small-scale **public spaces** to add to the **comfort** of pedestrians" (p.81)	Relates to New Urbanism Principles • Quality of Architecture and Urban Design – buildings emphasize beauty, aesthetics, and **comfort** and establish a sense of place; **public spaces** function as civic **art**, establishing an attractive, quality **public realm**
St. John's: Envision Municipal Plan	Urban Design **Public Realm** Policies: "10) Ensure that new developments and redevelopment contribute to	Relates to New Urbanism Principles

	the **public realm** through Appropriate attention to **architectural design** and detail particularly in areas of heavy pedestrian traffic such as commercial areas, areas identified for intensification and the downtown and Provision of **connections** designed to encourage pedestrian activity." (p.35)	• Quality of Architecture and Urban Design – buildings emphasize beauty, aesthetics, and comfort and establish a sense of place; public spaces function as civic art, establishing an attractive, quality **public realm** • Connectivity – an interconnected street grid disperses traffic and encourages walking
Toronto: A Road to Health: Improving Walking and Cycling in Toronto	Health Benefits from Active Transportation • "Increased fitness and reduced obesity • Reduces risk of cardiovascular disease, diabetes, stroke, and cancer • Improved mental health • Reduced risk of all-cause mortality • Reduced noise and **air pollution** and in turn reduced greenhouse gas emissions" (p.11)	Relates to Healthy Community Planning Principles • Cleaning the **air** and water
Edmonton: Proposed Walkability Strategy	The Walkability Strategy and Health • "Improving population levels of physical activity is expected to positively impact a wide range of chronic diseases and **injury** types • Equalizing access to some of the features of the built environment that promote health" (p. 19)	Relates to Healthy Community Planning Principles • Getting people outdoors and active – reducing traffic **injuries**

Policies

Policies direct urban design and development. Policies are often adopted to establish the design objectives and goals for city plans. Few plans include specific policies that relate to walkability and pedestrians. The plans that do refer to specific policies are those that include planning principles like complete streets. The Markham Official Plan contains Markham's Complete Streets Policy. Many of the references in the Official Plan to the Complete Streets Policy encourage designing streets for pedestrians, transit users, and cyclists of all ages and abilities. Despite the reference to the policy, the plan still lacks implementation processes and indicators to measure the success of the principles that are part of the Complete Streets Policy. Halifax's Making Connections 2014-19 Active Transportation Plan also identifies the need to explore a Complete Streets Policy as these policies are intended to direct planners and engineers to design and operate the entire roadway with all users in mind, including pedestrians of all ages and abilities, bicyclists, and public transit.

Although Markham's Official Plan incorporated a complete streets approach, the plan does not indicate any project or case study examples of complete street designs in the city region. Adopting a Complete Streets Policy is a step in the right direction; however, implementation is not a guaranteed outcome of the policy adoption. Halifax's Making Connections 2014-19 Active Transportation Plan is exploring the idea of a Complete Streets Policy as the city region currently has programs and pilot projects that are attempting to create complete streets. The Argyle Street pilot project intended to create a more pedestrian-friendly street by incorporating both complete street and shared street design principles (Yanchyshyn, 2016). The street project encouraged active transportation by giving equal priority to pedestrians and vehicles (Yanchyshyn, 2016). On certain days of the week, a section of the street is closed off to vehicular movement and is used as a pedestrian plaza (See Figure 6 Below). Halifax has yet to adopt a policy, but does have current projects that adopt a complete streets design approach (Yanchyshyn, 2016). The two examples in Markham and Halifax indicate that policies do not automatically implement design or project developments and vice versa.

Figure 6: Rendering of Argyle Complete Street Design (Yanchyshyn, 2016)

Edmonton's Proposed Walkability Strategy refers to a parking policy because parking, especially the low cost of parking in downtown areas, makes driving more convenient and thus increases vehicle traffic. The strategy provides two solutions to address the issue of parking and its impact over choosing walking as a mode of transportation. The solutions include establishing parking limits in particular areas of the city through zoning and also implementing a parking management strategy.

Other policies are vaguer and appear to be written similarly to other plan's goals or objective sections. An example of West End Vancouver Community Plan's goal is to "make walking safe, convenient and delightful for all ages and abilities, and ensure streets and sidewalks support a vibrant public life that encourages a walking culture, healthy lifestyles, and social connectedness" (p. 61). Three policies referred to in the City of Burnaby's Transportation Plan relate to pedestrian facilities. "Policy 23 states that safe and comfortable pedestrian facilities be provided on City roads and in street oriented commercial areas. Policy 24 says that town centre areas should be developed as pedestrian-oriented centers. Finally, policy 25 indicates that the City develop pedestrian facilities with full access for the mobility impaired" (p.30).

Specific policies are not prominent in many of the walkability and pedestrian plans in five Canadian city regions. Since these policies are not identified in the plans, many of the city plans assume that good urban design generates walkability.

Implementation Processes

Due to vague vision statements, definitions and policies, it is important to evaluate the implementation process of each plan in greater detail. Almost every selected plan has an implementation section, but implementation processes vary. Literature suggests that plan evaluation and comparison should consider the implementation process. Some implementation plans establish indicators to measure progress whereas others are simply aspirational statements (See Table 10). Implementation of pedestrian and walkability plans are dependent on city staff, partnerships, government funding, and other municipal plans and policies. The city's roles and responsibilities are not explained in detail in any of the plans; therefore, it makes it difficult to determine whether or not the plan is effective or successful. Roles and responsibilities need to be delegated in order for walkability plans to meet their intended purpose and goals. Aspirational statements highlight the general trend that walkability has become a kind of short hand for other planning attributes.

Table 10: Aspirational Implementation Statements

Aspirational Statement Examples	
St. John's: Envision Municipal Plan	"Successful implementation of the Plan involves: effective administration, appropriate investment in infrastructure, adoption of development regulations, preparation and adoption of Secondary Plans and Development Schemes, preparation of incorporation of recommendations from research and studies, a consistent procedure for considering amendments to the plan, and an effective and fair appeal process" (p.67)
St. John's: Development of Traffic Calming Policy and Warrant	"Implementation does not mean completion: Conditions must be monitored to determine if the traffic calming devices fully addressed the problem. Post- implementation data

	collection is equally important as pre-implementation" (p. 5)
Vancouver: City of Surrey Walking Plan	"Implementation of the Walking Plan is a city-wide effort and is the responsibility of all city staff" (p.18)
Vancouver: City of Richmond Official Community Plan	"An implementation strategy will be prepared to identify roles and responsibilities" (p.24)

Implementation plans and strategies are evident in most of the plans. Implementation plans are a way to measure progress. Indicators are typically established to indicate whether or not the plan has achieved its vision, goals, objectives or other intended outcomes. Few plans include indicators in the implementation section in walkability and pedestrian plans. The pattern with implementation processes and strategies is that all indicator examples come from transportation plans (See Table 11). These numeric targets are established from census data that is available to the municipality on commuter travel patterns and statistics.

Table 11: Indicator Examples

Indicator Examples	
Vancouver: Transportation 2040	"Making the majority (over 50%) of trips on foot, bike, or public transit by 2020" (p. 11)
Edmonton: City of Spruce Grove Transportation Master Plan	"The City will reduce the proportion of commuter trips made by Single Occupant Vehicles (SOV) from about 77% in 2010 to about 65% by the Year 2040." (p.16)
Toronto: Ajax Transportation Master Plan Update	"Increase the levels of walking, cycling, and public transit from a current 21% of trips to 30% of trips" (p.33)
Halifax: Active Transportation Plan	"Double the number of person-trips by Active Transportation modes within 20-years by encouraging more people to choose Active Transportation modes more often for both utilitarian and recreational/fitness purposes" (p.1-9)

Many of the implementation sections focus on phasing by dividing the steps or targets for the plan according to years (See Table 12). This phasing timeframe relates to the priority

actions in the plan. This implementation technique does not indicate when the plan has achieved the intended outcome; however, it is a way to measure how the city plan is intended to progress for future years. Since many plans do not have implementation processes with indicators to measure the plan's success, there are no consequences or outcomes for not completing a task within the intended timeframe. Implementation phasing is not a useful tool to measure the success of walkability and pedestrian plan goals and visions.

Table 12: Implementation Phasing Examples

Implementation Phasing Examples	
Halifax: Making Connections 2014-19 Active Transportation Plan	**5 Year** Implementation Plan divided into **4 categories** 1. Pedestrian infrastructure 2. Cycling Infrastructure 3. Multi-Use Facility 4. Active Transportation Education and Promotion & "Implementation projects and activities depend on a number of factors such as funding, regional council and community council approval or particular projects, staff, and community capacity, property acquisitions/easements and coordination with other capital projects" (p.62)
The Greater Toronto Area: Toronto Walking Strategy	Implementation plan shows action items, lead division or agency, **timeframe (divided into immediate, 0-2 years, 3-5 years, 5-10 years)**, and investment. An example of Action item "5.1 Develop Pedestrian Streets, Lead Division or Agency – Transportation Planning and City Services, Time Frame – Action Initiated in 0-2 year time frame and continues to 5-10 years, Investment – new funding)" (p.46)
Edmonton: WALK Edmonton Steps to a Walkable City	Implementation for each of the solutions in the report indicates the lead department, other partners, priority, timing, resource status, and resources. An example is the solution for increasing and improving pedestrian collection data "Lead Department – Transportation, Other Partners – Community Services, Asset Management & Public Works, Priority- Low, Timing – **Short-Term (up to 3 years)**, Resource Status- Existing Resources, Resources - The

	Transportation Department is working on improvements in this area. Both survey and technological enhancements would be integrated into department budgets. An Integrated Trails Group is also working to coordinate use of this technology. (PWS Solution 5.11.1.1, Page 99)" (p. 35)
Vancouver: City of Langley Master Transportation Plan	"The MTP is intended to provide a long-term direction for the City's transportation system. To achieve the goals of the MTP, an implementation strategy is necessary to provide a framework for advancing specific improvements over the **short-term** (0 to 5 years), **medium-term** (5 to 10 years) and **long-term** (10 or more years). For each of the capital investments identified in the MTP, conceptual order-of-magnitude cost estimates in current dollars (2013 dollars) were developed to provide guidance on prioritizing transportation investments over the next 20-years." (p.9)

Branding

Since walkability is a common aspiration but has limited implementation and follow-through capacity in the plans studied, becoming a "walkable" city is a way for plans to brand their city's identity. Cities are attempting to brand themselves as walkable places. Cities brand themselves as walkable communities by using marketing techniques such as logo design in pedestrian and walkability planning documents. A pattern with walkability and pedestrian is branding through the use of logos in all five Canadian city regions. The most common colour is blue, which is the same colour that is used for accessibility designs such as wheelchair accessible entrances and parking spaces (See Figure 7 Below).

Figure 7: Branding Logos

These logos that are used to illustrate important walkability and pedestrian design components are also sometimes incorporated into wayfinding strategies. Wayfinding is a navigation technique that is used in pedestrian networks. Edmonton has a Detailed Wayfinding Strategy. In the strategy, many of the signs located in the downtown core for pedestrian navigation have the same logo positioned on the top of the sign (See Figure 8 Below).

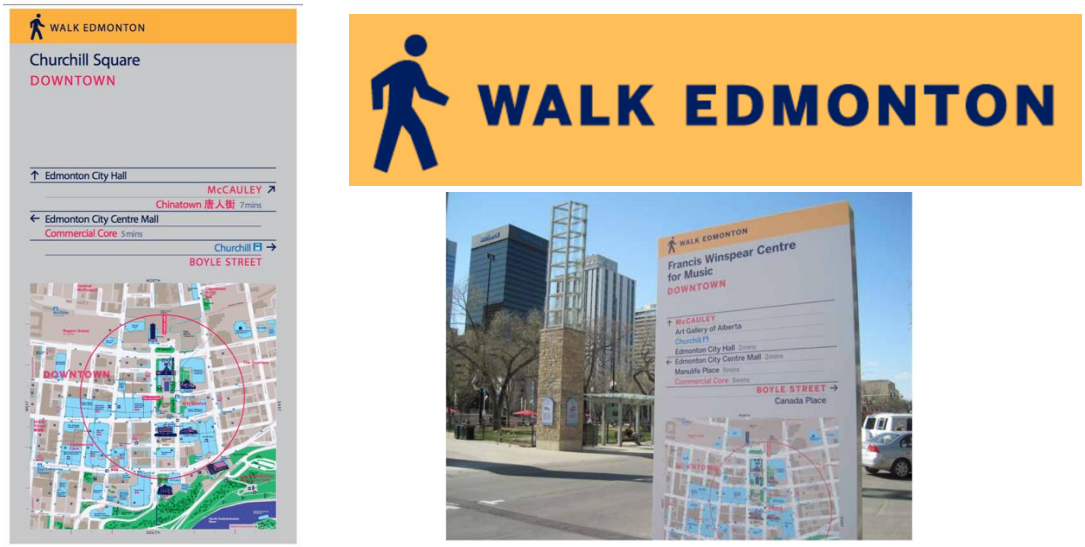

Figure 8: Wayfinding Branding Walkability

The branding standardization is the use of a stick figure logo. Branding also goes beyond logo design. Branding is an effort for planning design principles and solutions to coordinate. Edmonton is the only city with a coordinated vision statement. In Edmonton's plans, the vision

is also referred to as “the brand”. The city of Edmonton’s logo redesign is an effort of coordination to transform the city for future changes.

All five city regions in this project want to become walkable and pedestrian-oriented for future generations; however, most of the city visions and intended outcomes are similar. Branding and marketing cities as walkable is a way for them to showcase their identity. Since the plan content in walkability and pedestrian plans is similar, branding is a way to appear different and establish an identity that is different than other Canadian city regions. Place branding is a way for cities to develop policy, pursue economic development, but more importantly to allow community members to identify with their city (Papadopoulo, 2004).

DISCUSSION & SYNTHESIS

The motivation for this comparative analysis is due to the lack of systematic overview for walkability planning in Canadian city regions. Comparing walkability and pedestrian plans revealed that there are multiple different types of plans that contain relevant information about walkability. Few cities have stand alone plans that are dedicated to walkability. In the five Canadian cities selected for this study, the oldest plan analyzed was from 2002. Many of the plans were created, prepared and adopted in recent years, which indicates the importance and value that walkability has in Canadian cities.

Walkability and pedestrian-friendly are common aspirations for each of the five Canadian cities; however, plans do not contain clear context or direction as to how these generic vision statements will be implemented in city design plans. Walkability is an omnipresent aspiration with limited substantive direction. Many of the plans assume that good urban design generates walkability. Plans also argue that pedestrian-friendly areas in cities are synonymous with more attractive streetscapes that contribute to the vibrancy of the community. Many walkability and pedestrian plans in the five Canadian city regions do not contain specific policies that direct walkability.

CPTED planning principles identify safety as a main theme in pedestrian and walkability plans. Safety is the only planning theme that specifically identifies CPTED planning theories. Southworth (2006) identifies six criteria for walkable cities. The fourth criterion is to ensure safety both from traffic and social crime. CPTED principles in walkability plans are a way to address safety. Safety design features typically focus on pedestrian safety from vehicular traffic. However, the "eyes on the street" philosophy focuses on lighting at night and neighbourhood watch programs that have been known to decrease crime rates. CPTED planning principles achieve both of Southworth's important aspects for safety criteria. CPTED is the dominant means through which safety emerges as a theme in relation to the walkability plans I reviewed. Other planning paradigms are embedded in plan content but are not explicitly acknowledged in plan development.

Planning paradigms such as smart growth, new urbanism, and health community planning principles are underlying reasons for cities to prepare walkability and pedestrian plans but are not explicitly indicated in the plans. The reader has to infer and interpret these theories within various sections of walkability and pedestrian plans.

The reoccurring presence of the words pedestrian-friendly and walkable have different uses, thus translating to different meanings in different plans. Due to the overuse of the word, it is easy to generalize these statements as visions and aspirations for the five Canadian city regions. The use of these words reflect a current trend of the language that is used in planning related documents. Using these words in official plans is a way for cities to brand themselves in the planning world. If these terms were explicitly defined, it would help create a distinctive and measurable identity for the city because existing language explicitly defining these two key terms is minimal in walkability and pedestrian plans. Due to the lack of definitions, the language used directly relates to the implementation of plans.

Since walkability is a common aspiration but with limited implementation and follow-through capacity, becoming a "walkable" city is a branding gimmick in the plans studied. Cities

are attempting to brand themselves as walkable places. The format of this branding typically starts with developing a vision statement followed by marketing and logo design. Given that implementation processes are a fundamental part of successful walkability and pedestrian planning, the planning community needs to address the barriers to achieving the intended results of the plan by providing solutions to create better implementation and monitoring processes. Official city plans are integral to the success of creating a walkable community and pedestrian-oriented designs.

The research purpose of the comparative analysis was to discover trends in walkability and pedestrian plans in five Canadian city regions: St. John's, Halifax, the Greater Toronto Area, Edmonton, and Vancouver. The main trends are centered around the type of plans that contain relevant information to a city's walkability, main planning themes and underlying planning paradigms, and implementation processes. Most of the walkability content in the plans studied are in transportation plans and other related plans. The main theme that is evident in walkability planning documents is safety. Other planning paradigms such as smart growth and new urbanism are embedded in plan content; however, these paradigms are not explicitly acknowledged. The main implementation content of the plans is displayed through aspirational statements and timeframe phasing. Few plans have specific indicators to achieve specific targets. The plans that do contain indicators are discovered in transportation and active transportation plans.

LIMITATIONS & MOVING FORWARD

The scope of this research project is limited to a selection of plans in five Canadian city regions. In order to gain a deeper understanding of the current trends in pedestrian planning with potential context on walkability in the country, further research could evaluate and compare walkability plans in other Canadian cities. The breadth of this project scope provides a general overview of a selection of pedestrian and walkability plans. The research is exploratory. Extending the selection of pedestrian plans to other urban, rural, and suburban areas would provide a more accurate representation of the overall state of pedestrian planning in Canada.

Due to limited access to municipal data, this research project focused on walkability and pedestrian plans that were publicly accessible online. Other plans that are only accessible within municipal databases may contain more relevant information and could be compared and contrasted to publicly accessible planning documents, particularly in relation to the topic of walkability.

Another avenue for future research would be to examine strategies and challenges that connect to coordinating implementation processes of walkability and pedestrian plans in different Canadian cities. This avenue of future research could be supplemented with best practices of implementation planning.

CONTRIBUTIONS TO THE FIELD

An evaluation and comparative analysis research approach contributes to creating a better understanding of the current state of pedestrian and walkability planning trends in Canada. The patterns established in regards to plan content, underlying themes and planning paradigms that shape these plans, and implementation processes are useful to understanding planning practice. Understanding these patterns and trends has the potential to improve future walkability plans in Canadian cities by creating measurable targets to achieve the city's vision statement. This comparative analysis contributes to planning research, practices, and planning education. The comparative analysis provides a snapshot of Canadian plans and gives a broad overview of the national perspective and current state of walkability and pedestrian planning. The sample selection offers information on current planning trends to planning professionals and other academics.

CONCLUSION

The current trends indicate that walkability and pedestrian planning aspirations are embedded in city plans. Due to the lack of coordination and few stand alone walkability/pedestrian plans, the concept has limited direction for many Canadian city regions.

Each Canadian city region has unique local characteristics that help define the community. These local characteristics need to be acknowledged and taken into consideration when examining and comparing trends in walkability and pedestrian plans. Due to the recent upsurge in pedestrian planning, it is continuously evolving. Walking and proposed walking strategies often focus on safety as the main theme; however, many other planning paradigms such as smart growth principles, new urbanism, and healthy community planning principles are pervasive in the selected plans. These planning paradigms need to be explicitly explained as reasons for creating a walking or walkability strategy for the five Canadian cities under study. Strategic plans should be linked to planning paradigms in order to effectively implement best practices in walkability planning. Many Canadian city regions have goals of becoming "the most walkable city"; however, implementation strategies do not focus on the specific steps that the community needs to take in order to achieve the goal. Implementation is a challenge that pedestrian and walkability planning faces. Although the selection of plans in this study have made efforts to display indicators and targets to measure progress, the majority of implementation plans and processes are simply aspirational statements.

Walkable and pedestrian-friendly cities are common but generic aspirations. Although these terms are used frequently, they are often used without clear context or direction. This is partly due to the lack of identification of the city's roles and responsibilities to ensure the plan is implemented. Vision statements for walkability and pedestrian plans are also vague and difficult to measure. The plans do not have clear context, since important terms such as pedestrian-friendly, walkable, and walkability are not explicitly defined.

The five Canadian city regions are attempting to brand themselves as walkable places. Plan content trends indicate that many vision statements, definitions, policies, and implementation processes are vague. Walkability is an aspirational statement for many of the five Canadian city regions. Clear context, direction, definitions, and indicators to measure a plan's success are integral in order to successfully create a walkable city region.

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GLOSSARY

Complete Streets – an approach to planning, design, operations and maintenance of roadways to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation (Halifax Regional Municipality, 2014, p. 83).

Continual Sidewalk Ballet (originally comes from Jane Jacobs) – the movement of pedestrian activity at different times of the day (Sung, Lee & Cheon, 2015)

Departmentalization – an aspect of organizational design that includes the subdivision of a business into units based on their function or other criteria (Grimsley, 2008)

Frequency Table – a tabulation of data values that displays the number of times each value or group values occurs in the dataset (WE & Friends Mathematics and Science Projects, 2012)

Healthy Communities – a community that continuously creates and improves both physical and social environments, helping people to support one another in aspects of daily life and to develop to their furthest potential (U.S. Department of Health and Human Services, 2010)

New Urbanism – promotes the creation and restoration of diverse, walkable, compact, vibrant, mixed-use communities composed of the same components of conventional development, but assembled in a more integrate fashion, in the form of complete communities. (New Urbanism, 2016).

Pedestrian – any person walking, standing or in a wheelchair along a road or in a developed area (Southworth, 2005, p.248)

Safety – the condition of being protected from or unlikely to cause danger, risk or injury, pedestrian safety means safety both from traffic and social crime (Doyle, Kelly-Schwartz, Schlossberg & Stockhard, 2006)

Smart Growth – planned economic and community development that attempts to curb urban sprawl and worsening environmental conditions (Tomalty & Haider, 2009)

Walkability – the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network (Southworth, 2005, p.247-248)

APPENDICES

Appendix 1: Framework to Analyze Plans

Province: **City:** **Title:** **Date:** **Prepared By:**
Vision:
Purpose:
Goals/Objectives:
Definition of "Pedestrian":
Definition of "Pedestrian Friendly":
Definition of "Walkability":
Strategies:
Policies:
Timeline:
Budget:
Action:
Implementation Process or Plans:
Projects/Initiatives: (that implement walkability)
Theories:
Principles:
Citizen Engagement/Consultation:
Partnerships:
Targets: (long term aims)
Indicators: (measure progress)
Climate (winter conditions):
Topography
Other (Local Considerations):

Appendix 2: Sampling Frame – A Complete Document List

City Region	**Stand Alone Plans**	**Transportation Plans**	**Other Related Plans**
St. John's		Development of Traffic Calming Policy and Warrant (2011)	St. John's Municipal Plan (2003)
			Envision St John's Municipal Plan Draft (2014)
			Quidi Village Development Plan (2006)
			City Plan 2010: Mount Pearl Municipal Plan (2011)
			Town of Conception Bay South Municipal Plan 2011-2021 (2012)

City Region	**Stand Alone Plans**	**Transportation Plans**	**Other Related Plans**
Halifax	2015-2016 **Pedestrian** Safety Action Plan (2015)	Making Connections 2014-19 Halifax Active Transportation Priorities Plan (2014)	Regional Municipal Planning Strategy (2014)
	2014-2015 **Pedestrian** Safety Action Plan (2014)	Moving Forward Together (2015)	Downtown Halifax Secondary Municipal Planning Strategy (2014)
		Crosswalk Safety in Nova Scotia Final Report (2007)	Universal Accessibility Plan (2011)

City Region	**Stand Alone Plans**	**Transportation Plans**	**Other Related Plans**
	Ajax **Pedestrian** & Bicycle Master Plan Final Report (2010)	Ajax Transportation Master Plan Update (2013)	Toronto Official Plan (2002)
	Proposed Framework for a Toronto **Walking** Strategy (n.d.)	Brampton Transportation Master Plan (2015)	Toronto Strategic Plan 2013-2018 (2013)
	Richmond Hill **Pedestrian** & Cycling Master Plan (2010)	Halton Region Transportation Master Plan (The Road to Change 2031) (2011)	Markham Trails Master Plan: Report & Design Guidelines (2009)
	Toronto **Pedestrian** Charter (2002)	Hamilton Transportation Master Plan (2007)	Markham Official Plan (2014)
	Vaughn **Pedestrian** & Bicycle Master Plan (2007)	King Township Transportation Master Plan (2015)	Markham Complete Streets Policy Analysis (2013)
	York Region **Pedestrian** & Cycling Master Plan (2008)	Oshawa Active Transportation Plan (2015)	
The Greater Toronto Area	PATH: **Pedestrian** Network Master Plan (2012)	Oshawa Integrated Transportation Master Plan (2015)	
	A Road to Health: Improving **Walking** and Cycling in Toronto (2012)	PEEL Region Long-Range Transportation Plan (2012)	
		PEEL Active Transportation Plan (2011)	
		East Gwillimbury Active Transportation & Trails Master Plan (2012)	
		Oakville Active Transportation Plan	

	(2009)	
	Whitby Transportation Master Plan (2010)	
	Vaughn Transportation Master Plan (2012)	
	York Region: Moving on Sustainability Transportation Master Plan Update (2009)	

City Region	**Stand Alone Plans**	**Transportation Plans**	**Other Related Plans**
Edmonton	Proposed **Walking** Strategy (2009)	The Way We Move: Transportation Master Plan (2009)	Wayfinding Detailed Strategy (2014)
	WALK Edmonton: Steps to a **walkable** city (2010)	The Way We Move: Shifting Edmonton's Transportation Mode (2014)	The Way Ahead (Updated in 2014)
		City of Spruce Grove 2012 Transportation Master Plan (2012)	Our Progress on The Way Ahead (2014)
			The Way We Green (2011)
			Strathcona Area Redevelopment Plan (2015)
			Capital City Downtown Plan (2010)
			Spruce Grove Your Bright Future: Municipal Development Plan 2010-2020 (2010)
			St. Albert Downtown Area Redevelopment Plan (2010)
			LeDuc County Municipal Development Plan (n.d.)
			City of Leduc 2012 Municipal Development Plan (2012)
			City of Fort Saskatchewan

			Municipal Development Plan 2010-2030 (2010)
			City of Fort Saskatchewan Downtown Area Redevelopment Plan & Design Guidelines (2009)

City Region	**Stand Alone Plans**	**Transportation Plans**	**Other Related Plans**
	City of Surrey **Walking** Plan (creating **walkable** neighbourhoods) (2011)	Long-Term Transportation Plan (2008)	2014 Official Community Plan (2014)
		Transportation 2040 (2012)	A Healthy City for All (2014)
		Cycling Network and Greenway Plan (2007)	Greenest City 2020 Action Plan (2015)
		The Burnaby Transportation Plan (2004)	Cambie Corridor Plan (2011)
		City of Surrey Transportation Strategic Plan (Transportation Working for Everyone) (2008)	Downtown East Side Local Area Plan (2014)
		City of Langley Master Transportation Plan (2014)	Marpole Community Plan (2014)
			Mount Pleasant Community Plan (2010)
			Norquay Village Centre Plan (2010)
Vancouver			West End Community Plan (2013)

		Official Community Plan Burnaby British Columbia (2014)
		Langley Official Community Plan (2006)
		Southeast False Creek North Official Development Plan (2007)
		Richmond Official Community Plan (2009)

Appendix 3: A Complete Document List with URLs

St. John's

Plan Title	URL
St John's Municipal Plan	http://www.stjohns.ca/publications/st-johns-municipal-plan-2003
Envision St John's Municipal Plan Draft	http://www.stjohns.ca/sites/default/files/files/publication/Envision%20St.%20John%27s%20Draft%20Municipal%20Plan.pdf
Quidi Vidi Village Development Plan	http://www.stjohns.ca/sites/default/files/files/publication/Quidi%20Vidi%20Village%20Development%20Plan.pdf
Development of Traffic Calming Policy and Warrant	http://www.stjohns.ca/sites/default/files/files/publication/TrafficCalmingWarrant%5B1%5D_0.pdf
Town of Conception Bay South Municipal Plan 2011-2021	https://www.conceptionbaysouth.ca/getFileByName/093114-Conception-Bay-South-Plan-FIN-July-20121.pdf

City Plan 2010 (Mount Pearl Municipal Plan)	http://www.mountpearl.ca/ckfinder/userfiles/files/planning/PDD%20City%20Plan%202010-Consolidated-2015-08-21.pdf

Halifax

Plan Title	URL
Making Connections 2014-19 Halifax Active Transportation Priorities Plan	http://www.halifax.ca/boardscom/atac/documents/makingconnections2014-2019halifaxactivetransportationprioritiesplan_attachment1.pdf
Regional Municipal Planning Strategy	https://www.halifax.ca/planning/documents/Halifax_MPS.pdf
Active Transportation Plan	http://www.physicalactivitystrategy.ca/pdfs/Halifax%20AT%20Plan.pdf
Downtown Halifax Secondary Municipal Planning Strategy	https://www.halifax.ca/planning/documents/DowntownHalifax_MPS.pdf
Moving Forward Together	http://www.halifax.ca/boardscom/SCtransp/documents/160324tsc1213.pdf
Universal Accessibility Plan	https://www.halifax.ca/boardscom/SCtransp/documents/UniversalAccessibilityPlan.pdf
Crosswalk Safety in Nova Scotia Final Report	https://www.halifax.ca/traffic/documents/crosswalksafetytaskforcefinalreport.pdf
2015-2016 Pedestrian Safety Action Plan	https://www.halifax.ca/council/agendasc/documents/150203ca1152.PDF
2014-2015 Pedestrian Safety Action Plan	https://www.halifax.ca/council/agendasc/documents/140318ca1110.pdf

The Greater Toronto Area

Plan Title	**URL**
Ajax Transportation Master Plan Update	https://www.ajax.ca/en/doingbusinessinajax/resources/ajaxtransportationmasterplanupdate.pdf
Ajax Pedestrian & Bicycle Master Plan Final Report	https://www.ajax.ca/en/doingbusinessinajax/resources/AjaxPedestrianBicycleMasterPlanFinalReport.pdf

Brampton Transportation Master Plan	http://www.brampton.ca/EN/Business/planning-development/transportation/Documents/Final_TMPU_Sept2015.pdf
Durham Transportation Master Plan	http://www.durham.ca/departments/works/TMPNov2005.pdf
Halton Region Transportation Master Plan (The Road to Change 2031)	http://www.halton.ca/cms/one.aspx?objectId=57549
Hamilton Transportation Master Plan	https://www.hamilton.ca/sites/default/files/media/browser/2014-12-17/transportation-master-plan-chapter1.pdf
King Township Transportation Master Plan	http://www.king.ca/Government/Departments/Engineering%20%20Public%20Works/Documents/131-16794rep20150514KingTMP_Final_woApp.pdf
Oshawa Active Transporation Plan	https://www.oshawa.ca/city-hall/resources/ES_ATMP-March-3-2015.pdf
Oshawa Integrated Transportation Master Plan	https://www.oshawa.ca/city-hall/resources/ES_-ITMP-March-3-2015.pdf
PEEL Region Long-Range Transportation Plan	https://www.peelregion.ca/planning/residents/transportation/LRTP-Report.pdf
PEEL Active Transportation Plan	http://www.walkandrollpeel.ca/projects/pdf/TTR-ATplan-part1-final-v2-2011-11-23v2.pdf
Proposed Framework for a Toronto Walking Strategy	https://www1.toronto.ca/City%20Of%20Toronto/Transportation%20Services/Walking/Files/pdf/walkable_city.pdf
Richmond Hill Pedestrian & Cycling Master Plan	https://www.richmondhill.ca/documents/pedestrian_cycling_master_plan_study_final_report.pdf
Richmond Hill Transportation Master Plan	http://www.richmondhill.ca/documents/transportation_master_plan.pdf
Toronto Walking Strategy	https://www1.toronto.ca/City%20Of%20Toronto/Transportation%20Services/Walking/Files/pdf/walking-strategy-highres.pdf
East Gwillimbury Active Transportation & Trails Master Plan	http://www.eastgwillimbury.ca/Assets/5+2015+Government/0.4+Publications/0.1+Town+Plans+and+Strategies/Active+Transportation+$!26+Trails+Master+Plan.pdf?method=1

Oakville Active Transportation Master Plan	http://www.oakville.ca/assets/general%20-%20town%20hall/atmpreport.pdf
Whitby Transportation Master Plan	http://www.whitby.ca/en/resources/pw-report_tmpr-finalreport.pdf
Vaughan Transportation Master Plan	https://www.vaughan.ca/projects/projects_and_studies/transportation_master_plan/General%20Documents/Vaughan%20TMP%20-%20Main%20Report.pdf
Vaughan Pedestrian & Bicycle Master Plan	https://www.vaughan.ca/projects/projects_and_studies/pedestrian_master_plan/General%20Documents/PED%20AND%20BIKE%20FINAL.pdf
York Region Pedestrian & Cycling Master Plan	https://www.york.ca/wps/wcm/connect/yorkpublic/d1d11ce3-96bc-40b0-9d15-22660dcf64e3/Pages+from+York+Region+PCMP+Study.pdf?MOD=AJPERES
York : Moving on Sustainability Transportation Master Plan Update	https://www.york.ca/wps/wcm/connect/yorkpublic/7f667dc2-d6d1-4df5-b194-75114721af95/Transportation+Master+Plan+-+Final+Report+(2009)+(low+res-web).pdf?MOD=AJPERES
Toronto Official Plan	http://www1.toronto.ca/planning/chapters1-5.pdf
PATH: Pedestrian Network Master Plan	https://www1.toronto.ca/city_of_toronto/city_planning/transportation_planning/files/pdf/path_masterplan27jan12.pdf
Toronto Pedestrian Charter	http://www.toronto.ca/legdocs/2002/agendas/council/cc020521/plt6rpt/cl005.pdf
A Road to Health: Improving Walking & Cycling in Toronto	http://www.toronto.ca/legdocs/mmis/2012/hl/bgrd/backgroundfile-46520.pdf
Toronto Strategic Plan 2013-2018	https://www1.toronto.ca/City%20Of%20Toronto/City%20Manager's%20Office/City%20Manager%20Profile/City%20Initiatives/Strategic%20Actions%20for%202013%20to%202018_FINAL.pdf
Markham Pathways and Trails Master Plan: Report & Design Guidelines	https://www.markham.ca/wps/wcm/connect/markhampublic/e47688b1-3d2a-464e-bc7e-9256642745ad/MkmTMP_04_Content_01.pdf?MOD=AJPERES&CACHEID=e47688b1-3d2a-464e-bc7e-9256642745ad
Markham Official Plan	https://www.markham.ca/wps/portal/Markham/BusinessDevelopment/PlanningAndDevelopmentServices/OfficialPlan/2014OP/!ut/p/a1/hZDJDoIwFEW_xQXb9kmhLe7qhOCAmlSxG4MGEcNgEOX3ReKGxOHtbnJO7s3DCvtYZcEjjoIyzrMgeWVF9wZfi8F4AasNk0Nw3L5lS4-5y6lZA7saGNhiYrAZAEi7BtiqL735lIBD2_54qVvgjIYT4tge4R68ffhyAv71b7FqkF8LGuBHhYtVfEhRdUwRIMpMSijhlt7Vedcir4UiOxAeYVWEp7AIC3

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Edmonton

Plan Title	URL
Proposed Walking Strategy	http://www.edmonton.ca/transportation/PDF/WalkabilityStrategy200909.pdf
WALK Edmonton: Steps to a walkable city	http://www.edmonton.ca/transportation/PDF/WalkEdmontonReport.pdf
Wayfinding Detailed Strategy	http://www.edmonton.ca/transportation/Edmonton_Wayfinding_Detailed_Strategy_Aug_2014.pdf
The Way We Move: Transportation Master Plan	http://www.edmonton.ca/city_government/documents/land_sales/TransportationMasterPlan.pdf
The Way We Move: Shifting Edmonton's Transportation Mode	http://www.edmonton.ca/city_government/documents/PDF/CoE_ModeShiftReportMarch2014.pdf
The Way Ahead	http://www.edmonton.ca/city_government/documents/The_Way_Ahead_(Final-Web).pdf
The Way We Green	http://www.edmonton.ca/city_government/documents/PDF/TheWayWeGreen-approved.pdf
Our Progress on The Way Ahead	http://www.edmonton.ca/city_government/documents/PDF/TWA_progress_report_2014.pdf
Strathcona Area Redevelopment Plan	http://www.edmonton.ca/city_government/documents/Strathcona_ARP_Consolidation.pdf
Capital City Downtown Plan	http://www.edmonton.ca/go_downtown/documents/PDF/Capital_City_Downtown_Plan_May_27_2010.pdf
City of Spruce Grove 2012 Transportation Master Plan	http://www.sprucegrove.org/Assets/pdf/plans/trans_master_plan.pdf
Spruce Grove Your Bright Future: Municipal Development Plan(2010-2020)	http://www.sprucegrove.org/government/development/zoning/mdp/plan.htm
St. Albert Downtown Area Redevelopment Plan	http://stalbert.ca/uploads/PDF-reports/Downtown-Area-Redevelopment-Plan.pdf
LeDuc County Municipal Development Plan	http://capitalregionboard.ab.ca/-/media/13-Leduc-County-MDP-and-Amendments.pdf
City of Leduc 2012 Municipal Development Plan	http://www.leduc.ca/Assets/Departments/Planning+and+Development/2012_MDP_final-copy_march-15-2012.pdf
City of Fort Saskatchewan Municipal Development Plan (2010-2030)	http://www.fortsask.ca/home/showdocument?id=110

City of Fort Saskatchewan Downtown Area Redevelopment Plan & Design Guidelines	http://www.fortsask.ca/home/showdocument?id=118

Vancouver

Plan Title	URL
Long-Term Transportation Plan	https://www.google.ca/search?client=safari&rls=en&q=vancouver+long+term+transportation+plan&ie=UTF-8&oe=UTF-8&gfe_rd=cr&ei=F1j9VtGaAuTK8geeuoKIBw#
2014 Official Community Plan	http://www.cnv.org/your-government/official-community-plan
Transportation 2040	http://vancouver.ca/files/cov/Transportation_2040_Plan_as_adopted_by_Council.pdf
A Healthy City For All	http://council.vancouver.ca/20141029/documents/ptec1_appendix_a_final.pdf
Greenest City 2020 Action Plan	http://vancouver.ca/files/cov/Greenest-city-action-plan.pdf
Cycling Network and Greenway Plan	https://westvancouver.ca/sites/default/files/Cycling-Network-and-Greenway-Plan-Report-19Jun07.pdf
Cambie Corridor Plan	http://vancouver.ca/files/cov/Cambie-Corridor-Plan.pdf
Downtown East Side Local Area Plan	http://vancouver.ca/files/cov/downtown-eastside-plan.pdf
Marpole Community Plan	http://vancouver.ca/files/cov/marpole-community-plan.pdf
Mount Pleasant Community Plan	http://vancouver.ca/files/cov/MP-community-plan.pdf
Norquay Village Neighbourhood Centre Plan	http://vancouver.ca/docs/planning/norquay-community-plan-2010.pdf
West End Community Plan	http://vancouver.ca/files/cov/west-end-community-plan.pdf
The Burnaby Transportation Plan	https://www.burnaby.ca/Assets/city+services/roads+and+traffic/Transportation+-+Burnaby+Transportation+Plan+2009.pdf
Official Community Plan Burnaby British Columbia	https://www.burnaby.ca/Assets/city+services/policies+projects+and+initiatives/community+development/OCP+PDFs/OCP+1998+(full+version).pdf
City of Surrey Walking Plan (creating walkable neighbourhoods)	https://www.surrey.ca/files/Surrey_Walking_Plan_2011.pdf
Transportation Strategic Plan (Transportation Working for Everyone)	http://www.surrey.ca/files/Transportation_Strategic_Plan.pdf

City of Langley Master Transportation Plan	http://www.city.langley.bc.ca/sites/default/files/uploads/Engineering/DOCSLANG-%23129347-v2-Master_Transportation_Plan_2014.pdf
Langley Official Community Plan	http://www.city.langley.bc.ca/business-development/official-community-plan
Southeast False Creek North Official Development Plan	http://vancouver.ca/files/cov/false-creek-north-official-development-plan.pdf
Richmond Official Community Plan	http://www.richmond.ca/__shared/assets/city_centre556.pdf

Appendix 4: Frequency Counts (Plan Creation)

St. John's

Plan Creation	
Total # of Plans Created by the Municipality	3
Total # of Plans created by a Consultant	3
Total # of Plans created by another source	0
Total # of Plans in St John's region	6

Halifax

Plan Creation	
Total # of Plans Created by the Municipality	6
Total # of Plans created by a Consultant	1
Total # of Plans created by another source	2
Total # of Plans in Halifax	9

The Greater Toronto Area

Plan Creation	
Total # of Plans Created by the Municipality	18
Total # of Plans created by a Consultant	10
Total # of Plans created by another source	
Total # of Plans in the GTA	28

Edmonton

Plan Creation	
Total # of Plans Created by the Municipality	14
Total # of Plans created by a Consultant	3
Total # of Plans created by another source	0
Total # of Plans in Edmonton region	17

Vancouver

Plan Creation

Total # of Plans Created by the Municipality	17
Total # of Plans created by a Consultant	3
Total # of Plans created by another source	0
Total # of Plans in Vancouver region	20