AGE-FRIENDLY CANADA

Are our development plans working for seniors?

Abstract

An analysis of development plans and guiding documents from three Canadian cities to determine the extent to which they support the creation of age-friendly communities.

Samantha Blatz

Acknowledgements

I would first like to thank my committee, Dr. Richard Milgrom, Dr. Orly Linovski, and Dr. Verena Menec. I am ever grateful for their feedback and assistance throughout this process. Their comments and conversations helped to develop and refine my ideas while researching and writing for this document and they will stay with me as I move forward. I would be remiss if I did not thank Daniel Broderick, Anton Metalnikov, and Zach Rostosky for their endless love, support, humour, commiseration, and celebration. The last two years, and this capstone especially, would not have been the same without them. Finally, I must thank my family and friends who have stood beside me through many years of higher education and who are here now to celebrate this exciting culmination of a decade of long nights and hard work.

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Executive Summary

Our society in North America, and in Canada, is aging rapidly and with this comes significant physical and social challenges. The intent of this research is to better understand the extent to which the development plans and guiding documents of Winnipeg, MB, Edmonton, AB, and Vancouver, BC support the creation of age-friendly cities and the ability to age-in-community. The planning of our cities for inclusivity can help start to address these challenges in a way that provides flexibility, independence, and dignity for older adults. This research is conducted through a document analysis of the development plans and supporting city documents from the three study cities. The results of this analysis show that while the documents address built form elements of age-friendly design, such as transportation, outdoor spaces and building, and housing, they do much less to address the social aspects of building age-friendly cities, such as social participation, respect and social inclusion, civic participation and employment, communication and information, and community supports and health services. As well the majority of the high level guiding documents from these cities lack specificity and do not adequately account for the particular needs of older adults. Specificity in goal setting and direction strategies that reflects the particular needs of seniors is what is needed in development plans going forward. As we turn to alternative methods of building that are more inclusive of all citizens it is necessary to include a more detailed plan for how to achieve these new goals.

Introduction

The world, including Canada, is facing a rapidly aging population, one which comes with unique physical and social needs (Hodge, 2014). As the majority of people age, both their mental and physical facilities begin to decline, resulting in the need for assistance with movement, memory, and cognitive reasoning. Many of these needs fall within the purview of the healthcare system and are the responsibility of the individual themselves, their caregiver, and their doctor. However, the built spaces of cities also have as much influence on our physical, mental, social, and emotional health as any other factors. The responsibility then also lies with city-builders, decision-makers, and citizens to create cities and communities that welcome, encourage, embrace, and empower people of all ages and abilities. The cities we currently occupy have used, almost exclusively, the template of a young, able-bodied man, to judge what is good, right, necessary design. This is the result, not of a sole leading vision of a male-centric city, but rather of small, every day, unquestioned norms, which have accumulated to create the modern urban form. And while this has resulted in seemingly functional cities, it has also led to the creation of spaces and places that are unfit for a wide range of people who lie partially or completely outside the margins of this template. These people find themselves shunted, sidelined, overlooked, blocked, rerouted, and often barred from participating fully in society. In addition to this it must also be noted that even young, able-bodied men, at some point during their lives, their weeks, their days, may find themselves in need of the barrier-free design that has typically been reserved for people who use mobility aids. What we are now recognizing is that when we design cities for those people who have been at the margins for far too long, we are creating spaces that are not only accommodating but also inviting and enabling for people of all ages and abilities. Within the field of industrial design, we have seen many examples of products that were initially designed for individuals with mobility challenges, but were so well liked by everyone who used them that they became widely available; it is time for interventions that create age-friendly cities to follow suit.

The concept of *age-friendly cities* has been in circulation for many years, however, it grew in popularity after the introduction of the World Health Organization's Global Age-Friendly Cities project in 2006 (Menec & Brown, 2018). The World Health Organization (WHO)

defines an age-friendly city as one that "encourages active ageing by optimizing opportunities for health, participation and security in order to enhance quality of life as people age" (World Health Organization, 2007). As part of its project the WHO conducted a study with participants from across the world to better understand what is needed to create an age-friendly city. These participants included seniors aged 65 and older, caregivers, and service providers from both government and non-government organizations. As part of this research the WHO used eight domains of age-friendliness to collect information from participants. These domains are i) outdoor spaces and buildings, ii) transportation, iii) housing, iv) social participation, v) respect and social inclusion, vi) civic participation and employment vii) communication and information, and viii) community supports and health services. These domains provide an inventory and checklist of aspects to consider when implementing age-friendly initiatives, and they have been used in many projects around the world. The WHO Global Age-Friendly initiatives are also noted in many of the development plans used around the world and across Canada however, these references do not address the domains in a meaningful way, but rather simply mention them in passing without outlining how they might be implemented.

The development plans and guiding documents that currently shape our cities have not always accounted for the needs and concerns of seniors and an examination is called for to better understand where and how these documents can better support all citizens (Hodge, 2014). To build accessible and inclusive cities it is essential that the needs of all individuals and communities, including older adults, should be acknowledged, understood, and addressed in each stage of the planning and decision-making process. Achieving this requires investing time and resources into consulting with and actively engaging seniors and caregivers before the plan has taken shape. While this is a serious undertaking, it is a necessary step to building community support which can determine the success or failure of an initiative. Building inclusivity and accessibility requires consideration of a wide range of social groups "differentiated from others by cultural forms, practices, special needs or capacities, [and] structures of power or privilege [that] emerge from the way people interact" (Young, 2000, 391-392). These groups share common attributes and interests but are not homogeneous in their thinking. It may very well be that "making communities age-friendly [is not] a particular concern for [all] older adults"

(Menec et al., 2011, 487). It is because of such diversity that community consultation and engagement is crucial for a plan or projects' success.

Through engaging with a wide range of communities, planners may also find that many of the components necessary for building age-friendly cities are beneficial to the general population. This interconnected nature of communities ought to be understood and conveyed to citizens and decision-makers throughout the planning process. For example, interventions such as increasing density, barrier-free design, variety in housing stock and pricing, and accessible public transit are beneficial to a wide range of communities, including seniors (Hodge, 2014, 25-31). However, these intersections can only be understood through the careful collection, investigation and comparison of diverse community needs. As well, it cannot be assumed that all solutions that work for one group will work for all groups, despite the possibility of overlap of needs between other domains. Currently, little is known about what solutions are appropriate or not when building age-friendly cities in distinct cultures and contexts around the world (Steels, 2015). This includes both physical design strategies and social participation programs and policies and is especially true of winter cities, which have climatic conditions which uniquely affect the mobility, health, and inclusion of seniors.

The inclusion of seniors' needs and concerns in development plans is an indispensable step toward building inclusive cities, however, just as important is the evaluation of those plans and their implementation. Through evaluation of development plans and guiding documents planners should be able to gauge the success or failure of individual plans and this evaluation is simply one step of many that are needed to understand how to better design age-friendly cities. While the evaluation of the plan is not necessarily an indication of a successful implementation, it is an essential first step.

This research aims to understand the extent to which the development plans from three cities in Western Canada acknowledge and support the creation of age-friendly cities. To convey this information, this capstone is structured in the following manner. The research methods section discusses the methods by which the selected documents were chosen, as well as the methods used for the analysis of the development plans and guiding documents. The literature

review examines a brief history of age-friendliness, as well as current definitions and models. It also examines the ways in which age-friendly initiatives have been evaluated to date. Following this is a brief introduction to the demographic and legislative context of each of the study cities. Next, the results of the document analysis are outlined. The results follow the structure of domains put forward by the WHO as well as the SMART goal scores given to each relevant action item found in the documents. The SMART goals represent Specific, Measurable, Achievable, Relevant, and Time-bound goals. Following the results is an analysis section which connects the results with findings from the literature review. The analysis section also identifies gaps in the development plans where age-friendliness has not been adequately addressed. Finally, the document will finish with a number of recommendations for future cities to consider when incorporating age-friendly elements into their development plans and guiding documents.

(S)pecfic
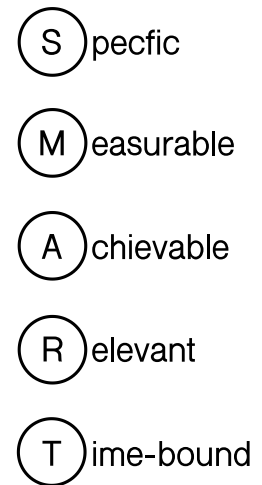(M)easurable
(A)chievable
(R)elevant
(T)ime-bound

Fig. 1 SMART Goals

Research Questions

i) To what extent do the development plans and guiding documents of each study city support age-friendly design and aging-in-community? A distinction is drawn here where aging-in-place refers to staying in a specific home or building while aging, while aging-in-community refers to aging in the same community or neighbourhood with the possibility or likelihood of moving between homes in that time. One such scenario is where a citizen lives in a single-unit house for most of their life but later in life moves to a duplex, apartment complex, or nursing home that is located near or within the same geographical neighbourhood.

Research Methods and Strategy

The goal of this research is to understand the extent to which each study city supports the principles of age-friendliness through their development plans and guiding documents. The three study cities Winnipeg, Manitoba, Edmonton, Alberta, and Vancouver, British Columbia, were chosen for their geographical locations, similar percentage of senior population, and presence of age-friendly initiatives. As well, both Winnipeg and Edmonton have winter conditions that are not currently well studied for their relation to age-friendly principles. For each of the study cities, the documents chosen included municipal development plans, transportation plans, housing strategies, and environmental strategies. To determine the extent of support for age-friendliness in these documents an examination of word/phrase frequency, "age-based" and "age-related" references to age-friendliness, and connections between age-friendliness and action items such as strategies or policies was conducted and analyzed (Alley et al., 2008, 13).

Analysis of these documents was carried out using both a manifest content and latent content analysis approach. The content analysis method was used to understand the extent to which age-friendliness is referenced in the documents and to then analyze what these findings revealed about the study cities' understanding and accommodation of the relationship between seniors and their physical and social environments (Berg, 2008). The chosen documents were coded into nodes using a combination of themes, concepts, and semantics based on age-friendly principles identified by the WHO in 2007 (Berg, 2008).

The documents selected from each study city included municipal development and transportation plans, as well as strategies for housing and open/green space. These documents were chosen because they represent the vision and goals of the City governments and citizens. With this decision, the assumption is that visions and goals stated in the guiding documents filter down into enforceable policies and bylaws where applicable. One notable exception from this document selection are the age-friendly guides which have been produced by each of the study cities. Though these guides offer directions and policies for cities and communities to follow in creating age-friendly spaces, they are not high level visioning documents that are meant to represent a City's goals and so were not included in this analysis. My intention with this research was to understand how well the development plans are supporting age-friendliness, so that city builders and decision-makers who are referring to these development plans are able to understand the importance of implementing age-friendly initiatives and can then look to the guides for further information. Including the age-friendly guides in the analysis would have drastically changed the results and further research should be done to examine these guides as well as their connection with the development plans and supporting documents. All documents are secondary data and were found through a search of each city's official website and were publicly available. See Fig. 4 for a full list of the documents analyzed.

I created a detailed set of criteria by which I chose my documents, as well as by which I coded references from the chosen documents (Gaber & Gaber, 2007). I chose to analyze high level guiding documents from each study city, as well as documents that were put forward by each city to directly support their guiding documents. The relationship of the documents was found through reading both the documents as well as each city's website which described the process of developing the documents. However, there is one notable exception. Not all of the cities had a high level guiding document related to housing, however this is an important component of AFCC and needed to be examined. And so, I chose to include policy documents from each city that addressed their housing needs.

Analysis of the documents was conducted through three rounds of coding, with each stage extracting more detail. Each document was coded first to find references to age-

friendliness, which were sorted into nodes of the eight domains of age-friendliness from the WHO. These eight principles include Outdoor Spaces and Buildings, Transportation, Housing, Social Participation, Respect and Social Inclusion, Civic Participation and Employment, Communication and Information, and Community Support and Health Services. An overview of these domains will be discussed later in this document and can also be found in Fig. 6 on page 28. During the first round of coding references were also marked as "age-based" or "age-related" (Alley et al., 2008, 13). "Age-based" references indicate actions and policies "specifically intended to address the needs of older persons" (Alley et al., 2008, 13). While "age-related" references indicate actions and policies "from which older person may benefit, but that address issues relevant to the broader community or to specific subgroups, such as, disabled or dependent residents (e.g. children) or minority groups" (Alley et al., 2008, 13). For example, Winnipeg's development plan, *OurWinnipeg,* stated that the city will, "incorporate age-friendly and accessible features in the renovation and maintenance of City facilities" (City of Winnipeg, 2011, pg. 78). This reference was coded as being an age-based reference under the principle of outdoor spaces and buildings. Conversely, the *Transportation Master Plan* stated that the City will, "demonstrate leadership in transportation projects by incorporating barrier-free and universal design principles" (City of Winnipeg, 2011, pg. 33). This reference was coded as being an age-related reference under the principle of transportation. The reason for this coding is that, while this second reference addressed an initiative that is beneficial to seniors, it does not include a direct reference to age-friendliness. For the purposes of this capstone, keywords such as age-friendly, old age, seniors, elderly, older adults, age/aging-in-place, age/aging-in-community, all ages and abilities, and lifelong learning were used to represent a direct connection to age-friendly principles, or an age-based reference.

The second round of coding examined only the references identified as relevant in the first round of coding. These references were sorted into two categories, background information or action item. The references marked as background information expressed recognition of age-friendliness, which took a variety of forms. These references were found within highlights of a city's demographics or current status, as well as high level vision statements, which often make mention of age-friendliness, seniors, or an aging population. References sorted into the action item category implied a level of intent on the part of the city and include key directions,

strategies, or policies. The variety in language used for the action items differed from city to city.

The third round of coding reviewed the selected action items. Each action item referenced, both age-based and age-related, was given one point for meeting each criteria for being a SMART goal. The SMART goal strategy was used to ensure that goals were well organized and understood to assist with clarity during implementation, SMART stands for Specific, Measurable, Achievable, Relevant, and Time-bound (MacLeod, 2012; Tracy, 2014). A description of each SMART goal can be found in Fig. 2 on page 12. This method of analysis was chosen to provide a clear scoring rubric for determining the extent to which the development plans are setting actionable goals above and beyond high level visioning.

Goals scored as specific are written clearly using plain language; and while they do not always include measurable items, they imply a direction for the action to take (MacLeod, 2012). For this research, goals were deemed specific when it was clear what action, or set of actions, would be taken to achieve the goal. For example, Winnipeg's *Transportation Master Plan* document stated the City will, "demonstrate leadership in transportation projects by incorporating barrier-free and universal design principles" (City of Winnipeg, 2011, 33). The goal here was to "demonstrate leadership in transportation projects" and the method chosen to achieve this is through "incorporating barrier-free and universal design principles" (City of Winnipeg, 2011, 33). It should be noted here and for all of the SMART scores, the determination of what is clear or not comes from my own perspective as someone who is familiar with the planning process and various planning interventions.

Measurable goals, as the label implies, are those that offer means by which they can be measured. These goals offer an idea of how one might determine whether the goal was a success or a failure (MacLeod, 2012). This could include a variety of methods, such as surveys to judge customer satisfaction or counts of the number of design interventions installed. For example, Edmonton's *Capital City Downtown Plan* stated the City will "[d]evelop Universal Access guidelines that list elements that must be included in 10% of the units in all multiple family developments to ensure Universal Access to housing for seniors and persons with disabilities"

(City of Edmonton, 2010, 85). The goal was given one point for being measurable if it listed a clear action that can be judged either a failure or a success without undue interpretation. This differs slightly from the score for being specific, which might still receive a point despite needing some interpretation.

Achievable goals take into account the time and resources necessary to complete the recommended action. For this research a goal was considered achievable if it was also given one point each for being measurable and time-bound (MacLeod, 2012). In essence, the question is "achievable by when" and "achievable with what resources" (MacLeod, 2012). Through connecting the achievable score to those scores for being measurable and time-bound it was possible to say whether a goal can possibly achieve the action it recommends in the time-frame suggested. As well, it was beyond the scope of this research to investigate the resources available to the different study cities and so the achievable element does not suggest whether or not a goal was feasible for the study city. Relevant goals are those that contribute to the higher level vision of the plan (MacLeod, 2012). In this research the higher level vision that was focused on was creating an age-friendly city and only goals related to this topic were included, resulting in all goals being given a score of one for being relevant.

Lastly, time-bound goals are those that have a clear timeline imbedded in or attached to them (MacLeod, 2012). When working with large municipal development plans these deadlines may be far-reaching, such as five or ten years in the future, as well, they might include slightly ambiguous phrases such as short term and long term. For example, Vancouver's transportation plan, *Transportation 2040,* stated the City will, "[e]xpand and maintain a pedestrian wayfinding system that is consistent, legible, and user-friendly.

SMART Goals

Specific	Goals scored as specific if they were written clearly* using plain language and implied a direction for action items to proceed with.
Measurable	Goals were considered Measurable if they included elements that could be clearly* measured to judge the success or failure of a policy or direction strategy.
Achievable	Goals were scored one for being Achievable if they were also given a point for being Measurable or Time-bound.
Relevant	All goals selected for this research were chosen for their connection to the topic of age-friendliness and so all references were given a point for being Relevant.
Time-bound	Goals were considered to be Time-bound if they included a time-frame such as short, medium, or long-term completion, or completion within a certain number of years.

*For all SMART scores, the determination of what is clear or not comes from my own perspective as someone who is familiar with the planning process and various planning interventions.

Fig. 2 This table outlines the criteria by which each SMART score was assigned.

Provide data in an open format to support third-party mobile application development" on a short term timeline (City of Vancouver, 2012, A3). Vancouver identified the short term timeline as being within two years of implementing the plan.

To calculate the scores for each SMART element I created an excel spreadsheet and added each reference to the document with corresponding cells for the SMART scores. From this I added together the points from each individual SMART element and proceeded to convert that to a percentage based on the number of references that were coded for either the City, document, or domain. A limitation of this approach is that it does not reflect the particular weight of each of the SMART elements. For example, it may be more important for references to be time-bound or achievable rather than specific, however, this scoring system is not able to take that into account. This is a limitation that should be addressed in future research.

A final round of coding was conducted, once more using the action items. This round of coding used word frequency to explore the words and phrases used to explain the action items. The reason for this round of coding is to identify the strength of wording used throughout the document on action items related to age-friendliness (Berke & Conroy, 2000). The analysis of the strength of wording included an examination of words that are ambiguous in terms of action, such as "encourage", "support", or "promote"; as well as words that are strongly linked to action such as "shall", "must", and "will" (Berke & Conroy, 2000).

Limitations

I used three study cities from Western Canada for the capstone and so cannot make comparisons across all of Canada. As well, while this research examines the development plans and supporting documents of each study city, it does not dive deeper into the related policies and regulations. The limitation here is that a deeper examination of these policies might shed light on the details that support the guiding documents, where lack of detail has been identified as one of the shortcomings of the documents examined.

This capstone looks solely at the municipal context, however, to achieve age-friendliness in cities and communities it is necessary to address sectors that are the responsibility of the provincial government such as healthcare and housing. Creating AFCC needs be a collaborative endeavor between all three levels of government in Canada and so further research is needed to better understand how the municipal, provincial, and federal plans, guides, and policies work in tandem or are inconsistent with one another.

To address concerns of semantic internal validity I chose to code my documents using a semantic and conceptual approach (Berg, 2008; Gaber & Gaber, 2007). This approach ensured that I was coding references that were relevant to the topic, rather than key words or phrases that might have been present but not related to age-friendliness. As well, the categories I used for coding are defined by the WHO research and so sorting of the references follows the criteria laid out within this research. This was augmented by my own interpretation of the domains.

To achieve stability in reliability, I closely followed my reference selection criteria, as well as performing each round of coding twice (Gaber & Gaber, 2007). Unfortunately, I was unable to meet tests of reproducibility or accuracy because there is no co-research available to test my coding of the documents (Gaber & Gaber, 2007). As well, there is no similar study to which I can compare my final results. One option for achieving stability in reliability that could be used in future research would be to use intercoder reliability, which is where a second coder analyzes the documents using the same criteria to determine whether another person would code the references into the same categories.

Literature Review

The literature review offers a brief overview of the current state of research on age-friendliness. This literature review is divided into three sections that demonstrate the various theories associated with aging and age-friendliness, the components that contribute to making a city age-friendly, and the means by which age-friendliness can be evaluated. The first section covers theories of aging and age-friendliness that are found throughout the literature. It also highlights the models and frameworks of age-friendliness that have been created by various authors. The second section outlines the components that contribute to creating an age-friendly city or community including both physical and social characteristics and the interrelation between them. While there are several models of age-friendliness in use, this research is based on the eight domains published by the WHO. The third section of this literature review focuses on the evaluation methods that have been used to determine the success of age-friendly initiatives.

Age-Friendly Theories

There are several models for age-friendliness in use today that have been published by a variety of organizations and authors. These include the Environmental Protection Agency's (EPA) Age-Friendly model; the American Association of Retired Persons' (AARP) Livable Communities model; the New York Visiting Nurses Association's (NYVNA) AdvantAged Initiative; and the World Health Organization's (WHO) Global Age-Friendly Cities model. Each model offers categories or domains for target areas, as well as strategies for achieving these goals. However, as a precursor to these models, theories on the environmental context of aging were developed to better understand the "interplay between the person and the environment" (Lawton & Nahemow, 1973).

In the 1970s researchers moved away from a specific focus on the interactions of aging and the home environment to a broader view of how seniors are affected by their surrounding environment and how they also have an effect on that environment (Phillipson, 2011). This research was begun by Lawton and Nahemow (1973) with their introduction of the "press-competence (PC) model" (281) which examined the dynamic relationships between older people

and their environments (Phillipson, 2011). Lawton and Nahemow argue that a person's behaviour and satisfaction are determined by their interactions with the surrounding environment (Phillipson, 2011). These interactions comprise of the demands put forward by the environment, the "press", (281) and skills and abilities of the individual to adapt to the demand, the "competence" (Phillipson, 2011, 281).

Following this, Rowles (1978) applied theories of identity to that of environmental context. His work focuses on the interaction between self-identity and environment (Phillipson, 2011). His theory of "insideness" (281) refers to the many ways in which people form attachments to their homes, neighbourhood, and cities over time spent "repeatedly… traversing familiar space" (Rowles, 1978 in Phillipson, 2011, 281). Rowles argues that this attachment to place has consequences for aging in place, specifically the importance of creating a sense of place or belonging within neighbourhoods or streets to help older adults continue to independently navigate their cities and contribute to their society, which helps older adults "[maintain] a sense of identity (Buffel et al., 2012, 601; Phillipson, 2011).

As mentioned earlier, there are several models of age-friendliness in use today, many of which rely on the ecological theory of aging from Lawton and Nahemow (1973), specifically their focus on the interplay between person and environment. One such model is the conceptualization of age-friendliness put forward by Menec, Means, Keating, Parkhurst, and Eales (2011). Similar to the WHO model of age-friendliness, this model focuses on domains which represent the diverse needs of seniors. However, the focus here is on seven domains, which are "(a) the physical environment, (b) housing, (c) the social environment, (d) opportunities for participation, (e) informal and formal community supports and health services, (f) transportation options, and (g) communication and information" (Menec et al., 2011). Along with the seven domains the authors anchor their research in five principles of ecological theory which "relate to age-friendly communities and social connectivity

1. Factors in the environment are interrelated and interact with each other to influence social connectivity.

2. Environmental influences can be described in terms of their immediacy to individuals or groups (close versus distal).

3. The fit between the person and the environment is critical in determining social connectivity.

4. Personal characteristics and environmental conditions change over time and their relationship to social connectivity is dynamic.

5. There are certain "leverage points" (within the person or the environment) that are particularly key in determining social connectivity" (Menec et al., 2011, 484).

In this article Menec et al. proposed the concept that social connectivity is a key benefit of creating age-friendly communities and linked social connectivity to the seven domains they focused on (Menec et al., 2011). Following this, in 2017 Menec published an additional article on the concept of social connectivity in age-friendly communities, expanding the work done previously with her colleagues. This new research introduces social connectivity as a set of four components, each of which is examined through the "level of the individual, organization, and community" (Menec, 2017, 101). The four components are 1) creating connections; 2) empowerment; 3) social influence; and 4) access to material resources and services. Here Menec stresses that while social connectivity can be seen as a benefit of building age-friendly communities, it can also be a determinant of age-friendliness and a process within age-friendliness which can bring about progress in other domains (Menec, 2017).

In contrast to many of the age-friendly models in use today there are alternative strategies for achieving a community for aging in place. Some of these strategies include naturally occurring retirement communities, villages, and campus-affiliated retirement communities. Bookman elaborates on these alternatives, proposing that they "suggest that elders are a significant asset for society, a source of untapped human capital, that if effectively supported and organized can connect to multiple generations, and be of benefit to all" (Bookman, 2008, 435). Bookman's research is a response to aging in place principles in action in the United States. She states that "aging in place is a model in which elders are seen as clients and passive recipients of services, not as people who can still contribute to their families, friends, co-workers, neighbors,

and communities, and play an active role in their own care" (Bookman, 2008, 423). This provides a contrast to typical aging in place models, which seek to create change in existing communities (Glicksman & Ring, 2017).

Many authors have created their models in response to the research conducted by the WHO on age-friendly cities. In 2007, the WHO released the report: Global Age-Friendly Cities: A Guide (World Health Organization, 2007a) to stimulate the creation of accessible and inclusive urban environments and promote active aging. The WHO defines active aging as being the chance to "optimiz[e] opportunities for health, participation and security in order to enhance the quality of life as people age" (WHO, 2007). As part of the research to create their age-friendly guide, the WHO conducted focus groups with seniors aged 60 years and older in 33 cities around the world (World Health Organization, 2007a). Focus groups were also conducted with service providers and caregivers in most of the cities (World Health Organization, 2007a). From these interviews there emerged eight domains that form their framework for age-friendliness (World Health Organization, 2007a). These domains are i) outdoor spaces and buildings, ii) transportation, iii) housing, iv) social participation, v) respect and social inclusion, vi) civic participation and employment vii) communication and information, and viii) community supports and health services (World Health Organization, 2007a). For each domain, participants discussed the aspects of the domain that relate to urban living and the barriers and gaps in service they experienced within that realm (World Health Organization, 2007a). Participants also discussed many suggestions for improvement, which were subsequently included in the guide as an informal checklist (World Health Organization, 2007a).

Age-Friendly Components
Within the many available models of age-friendliness there are numerous components that can be used to create an age-friendly city. The WHO guideline offers a brief description of each of the eight domains which are derived from the focus group conversations conducted with older adults from around the world. The first three of these eight domains involves elements of the built form, namely, outdoor spaces and buildings, transportation, and housing. These three domains focus most closely on the interaction between people and the physical environment. However, interventions related to these domains can include both hard infrastructure and service

provision. The last five domains, which are social participation, respect and social inclusion, civic participation and employment, communication and information, and community supports and health services, represent the socially focused aspects of creating age-friendly cities.

Beyond the eight domains proposed by the WHO, several other themes arose from the literature that suggest components for building age-friendly cities. The first of these is the importance of understanding that seniors, as a community, comprise a diverse group of individuals and sub-communities with a wide range of needs. The diversity within the seniors population will thus produce a wide variety of opinions, as within any social group "there is usually wide disagreement among people" (Young, 2000, 390). Diversity within this group must also be understood in part as vulnerabilities within vulnerabilities; for example, it is essential to account for the "power differentials… within the older adult population… such as those living in poverty, socially isolated individuals, the homeless, and individuals with mental health problems" (Menec, 2017, 106). Similar to any other sector of the population, throughout the population of seniors there are "disparities in health, well-being, and aging in place" (Smith & Lehning & Dunkle, 2013, 93). The result of these factors is that the seniors population cannot be approached as a homogeneous group of individuals with one set of needs, but rather as "particular groups of older people" with diverse needs (Buffel & Phillipson & Scharf, 2012, 598; Menec et al., 2011).

To account for the diverse needs of seniors it is essential that they be included in the planning process and that "the inclusion of elderly people… be viewed as a key part of the agenda" (Phillipson, 2011, 286). Seniors must be identified as key stakeholders in the planning process and valued for the perspectives and knowledge they bring about their communities. It is noted throughout the literature that the participation of seniors in the planning process is essential for success (Buffel & Phillipson, 2012; Garon et al., 2013; Menec et al., 2011). Many NORC and Village programs "explicitly call for older adults [to be] leaders of the programs" as well as the EPA model of age-friendliness (Greenfield, 2012, 7; Bookman, 2008; Ring et al., 2017). While most authors call for inclusion of seniors in the planning process, but not for seniors to lead the specific programs or initiatives. As well, despite these recommendations this has not always been seen in practice (Greenfield, 2012).

The next of the domains emerging from the literature addresses the necessity for collaboration across all levels of government. Both Menec et al. (2013) and Menec & Brown (2018) discuss the importance of having municipal leadership and positive political will for projects to succeed. Inter-governmental collaboration is especially crucial for age-friendliness in the Canadian context because many of the issues that affect seniors are the responsibility of or are greatly affected by the provincial government, such as healthcare, housing, and transportation (Menec et al., 2013). These partnerships have already begun across Canada, as the "provincial governments led the way in promoting and enabling [age-friendly] action in collaboration with municipal governments" (Plouffe & Kalache, 2011, 132). However, it should also be acknowledged that it is not always government agencies who are implementing age-friendly initiatives. In several cases projects are led by the communities themselves (Steels, 2015).

Age-Friendly Evaluation

The last of the themes that arose from the literature is the need for evaluation. Evaluation is important at all stages of the planning process. However, evaluation is most commonly seen during the plan-making process. This may include public consultation and engagement, where a number of plans or options are presented to the public and their choices and feedback are then integrated back into the plans. This stage of the process may also involve robust discussions with stakeholders who will be affected by the project in various ways and to various extents. Unfortunately, this level of evaluation is not often seen in later parts of the planning process (Stevens, 2013).

In recent years, evaluation as a tool of planning has fallen to the side and now receives much less attention than its partner, plan-making, however, "without rigorous evaluation, it is impossible to assess the impact of [age-friendly] programmes" (Steels, 2015, 49; Guyadeen and Seasons, 2016). It has been suggested by both Glicksman et al. (2013) and Phillipson (2011) that the key to achieving more effective evaluation is to facilitate greater collaboration between researchers, program leaders, and policy-makers. This link has been achieved in part through "indicator" lists that have been published by a variety of authors (Feldman & Oberlink, 2003; Orpana et al., 2016; Kano & Rosenberg & Dalton, 2017). These indicators cover both physical,

social and political factors and are directly related to the creation of age-friendly cities. Some of these indicators include walkability, housing affordability and accessibility, and engagement in volunteer activity (Kano et al., 2017).

Gaps in Literature

The literature identifies evaluation as a key aspect in the success of age-friendly initiatives. Currently there are many methods available for evaluation age-friendly initiatives of a variety of scales and in a variety of contexts. Using these methods, a number of case studies have been published that evaluate specific age-friendly projects (Bookman, 2008; Garon & Paris & Beaulieu & Veil & Laliberté, 2014; Menec & Novek & Veselyuk & Mcarthur, 2014). However, there are little to no evaluations of specific development plans or the implementation of development plans where age-friendliness is concerned. This gap is being addressed, in part, by the research presented in this capstone.

As well, there are few references to how climatic conditions affect age-friendly cities and communities or specific initiatives. In the literature reviewed, only Steels (2015) addressed this issue. She suggests the need for specific research regarding "seasonal changes, both summer and winter as well as dry and wet, and how they may affect older persons" (2015, 51). Such research is made more necessary in the face of climate change and the possibility of extreme weather changes beyond typical seasonal changes (Steels, 2015).

Context

12.1%

Edmonton

15.5%

Vancouver

15.5%

Winnipeg

Fig. 3 Percentage of
seniors
in the population.

The three study cities selected are Winnipeg, MB, Edmonton, AB, and Vancouver, BC. Each has a different make up of citizens and rests within a different provincial and municipal political and legislative context though still within the federal legislative framework of Canada. The world in general, including North America, is encountering an aging population. "By 2050, the global population of people over the age of 60 years is expected to reach almost two billion" (Steels, 2015). As well, in Canada, "from 2011-2021 the number of seniors will grow by nearly 40 percent" (Hodge, 2014). This presents a unique opportunity for cities to change the way they design both their built form and the social services they provide for their citizens. As well, understanding the aging population and incorporating that understanding into city-building practices will result in more inclusive and accessible cities for citizens of all ages.

Winnipeg, MB has a population of 778,489, with 120,085 people, or 15.5% of the population, over the age of 65, which is the most cited age at which a person is considered a senior citizen (Statistics Canada, 2016). Winnipeg's municipal development plan is OurWinnipeg, with supporting documents such as Complete Communities, Sustainable Transportation, the Transportation Master Plan, and the Pedestrian and Cycling Strategy. These documents work together to guide the development of the city according to visions and goals determined through the public engagement conducted when OurWinnipeg was first developed.

Edmonton, AB has a total population of 932,546, with 112,440 people, or 12.1% of the population, over the age of 65 (Statistics Canada, 2016). Edmonton's municipal development plan, The Way We Grow, is supported by several direction plans that address topics of Moving, Living, Greening, Finance, and Prosperity. The guiding development documents in Edmonton were created through considerable public engagement (City of Edmonton, 2010a). Their official community plan is currently under review and is being subject to additional public consultation with a potential publishing date in 2020.

Vancouver, BC has a total population of 631,486, with 97,570 people, or 15.5% of the population, over the age of 65 (Statistics Canada, 2016). Vancouver is unique in that it does not have a single municipal development plan, but rather several smaller development plans that are neighbourhood specific. Two of these neighbourhood plans were chosen for analysis as part of this research, the Downtown Eastside Plan and the West End Community Plan. Alongside these, there was also a transportation plan for the City of Vancouver and a housing strategy.

Federal

There have been efforts to create age-friendly cities and communities across all levels of government in Canada. One of these includes the participation of four Canadian cities in research conducted by the WHO. This participation prompted a document from the federal, provincial, and territorial ministers entitled *Age-Friendly Rural and Remote Communities: A Guide* (2009). The Public Health Agency of Canada (PHAC), along with key partners, joined this initiative through the creation of five pan-Canadian milestones for creating age-friendly communities:

1. "Establish an advisory committee that includes the active engagement of older adults.
2. Secure a local municipal council resolution to actively support, promote and work towards becoming age-friendly.
3. Establish a robust and concrete plan of action that responds to the needs identified by older adults in the community.
4. Demonstrate commitment to action by publicly posting the action plan.
5. Commit to measuring activities, reviewing action plan outcomes and reporting on them publicly" (PHAC, 2016).

Four cities in Canada took part in the initial WHO AFCC project in the mid-2000s. These were Saanich (BC), Portage la Prairie (MB), Sherbrooke (QC), and Halifax (NS) (PHAC, 2016). Shortly after this in 2007, the Federal, Provincial, and Territorial governments released the Age-Friendly Rural and Remote Communities guide that focused on ten rural and remote

communities from across Canada, highlighting the unique challenges that arise when striving to create age-friendly communities outside of an urban environment (Federal/Provincial/Territorial Ministers Responsible for Seniors, 2006).

Provincial

Age-Friendly Manitoba Initiative

The Age-Friendly Manitoba Initiative (AFMI) was developed in response to both the WHO Age-Friendly research as well as the work done by the PHAC. There were four Canadian cities who participated in the research conducted by the WHO, one of which, Portage la Prairie, is located in Manitoba. The AFMI project offers a process by which municipalities can apply to the province to have Age-Friendly status (Province of Manitoba, n.d.). Currently, municipalities that wish to receive Age-Friendly status must achieve the five milestones put forward by PHAC for creating age-friendly communities (Public Health Agency of Canada, 2016).

Age-Friendly Alberta

The Age-Friendly Alberta initiative follows much the same structure as AFMI as it adheres to similar milestones put forward by PHAC. However, their steps terminate at creating an action plan and do not include steps for implementation or evaluation. Alberta also has an organization, Community of Practice, which was put in place to help communities who are considering becoming age-friendly or who are already in the process of developing an age-friendly action plan. The province of Alberta also offers an Age-Friendly Alberta Recognition Award. All communities are able to apply for this award, granted they have implemented age-friendly initiatives. However, one notable difference between this and the AFMI recognition is that the AFMI recognition requires an age-friendly action plan, while the Alberta recognition only requires an age-friendly initiative, which might be of any size or impact. The Alberta award also includes $1000 to go towards a plaque or sign to promote the initiative. (Province of Alberta, n.d.).

Age-Friendly British Columbia

As with the initiatives in both Manitoba and Alberta, the age-friendly initiative in British Columbia follows the milestones set out by PHAC. BC also incorporates a system by which age-

friendly status can be revoked if implementation and evaluation of the action plan is not carried out. The province has published a step-by-step guide for cities and communities to become age-friendly. They also have an Age-Friendly BC recognition program. As part of this program the recognized community will have their achievements promoted in the BC Healthy Communities Society as well as becoming eligible for Pan-Canadian AFC Recognition (Ministry of Health, 2017).

Municipal

As is found in this research, each of the municipalities offer recognition and support of age-friendly initiatives to some extent. Each city also has an age-friendly action plans, which differ in content and detail. For example, Winnipeg's Age-Friendly Winnipeg Action Plan was published in 2014 and includes a combination of forward thinking initiatives whose implementation would benefit seniors and outlining initiatives that are currently in place. However, the document is slightly dated and some of the programs listed are no longer in effect. The City of Winnipeg also has the Mayor's Age-Friendly and Seniors Advisory Committee, which was formed in 2007 and reconstituted in 2012. The committee is meant to provide advice to the Office of the Mayor annually, however the most recent available report is from 2011. (City of Winnipeg, n.d.)

Age-Friendly Edmonton is a joint initiative between the City of Edmonton and the Edmonton Seniors Coordinating Council (ESCC). Also published by the ESCC is the *Vision for an Age-Friendly Edmonton,* which is an action plan meant to facilitate the provision of services for meeting seniors' needs. This document was created through engagement with seniors and their caregivers, as well as service providers and other key stakeholders (City of Edmonton, n.d.). This document was not included in this research as it is not viewed as an official development plan or a primary supporting document.

The City of Vancouver has an Age-friendly action plan including over 60 actions to make the city a more inclusive and accessible space for older adults. This action plan was created with input from over 400 seniors living in Vancouver. The plan covers six areas of interest, including

active and healthy living, human services, physical built environment, safety and emergency services, training and awareness, and coordination and monitoring (City of Vancouver, 2013).

Results

These results are the product of a content analysis of 22 development plans and supporting documents from Winnipeg, MB, Edmonton, AB, and Vancouver, BC, which can be viewed in Fig. 4. The information gathered from these documents is presented according to the eight domains of the WHO age-friendly model, as well as a review of the SMART score of each separate document from the study cities. The eight domains from the WHO research are listed from most referenced to least referenced with the SMART scores following after that. For each domain an overview is given to highlight the variety of ways in which the study cities are addressing the issue. This method allows for a comparison of interventions between the study cities. Within each section there is also a distinction between action references that are coded as age-based versus age-related. The references that are age-based are those that specifically mention age-friendliness or seniors using one or more of the previously identified keywords. The age-related references pertain to interventions that would benefit seniors but do not attempt to include seniors or seniors' needs as part of their language. Following this is the analysis section which will focus on connecting the findings with information from the literature review to identify gaps in the municipal documents.

Edmonton

Capital City Plan	2010
The Way We Grow	2010
The Way We Live	2010
The Way We Prosper	2009
The Way We Move	2011
The Way We Green	2013
Urban Parks Management Plan	2016
Affordable Housing	2006

Vancouver

Downtown Eastside Plan	2018
West End Community Plan	2017
Transportation 2040	2012
Affordable Housing Policy	1991
Housing Vancouver Strategy	2017

Winnipeg

OurWinnipeg	2011
Complete Communities	2011
Sustainable Transportation	2011
Transportation Master Plan	2011
Pedestrian and Cycling Strategy	2014
Winnipeg Housing Policy	2013
Housing Policy	2014

Official Community Plan

Supporting Plan

Transportation Plan

Environmental Plan

Housing Strategy

Fig. 4 List of documents analyzed.

General References

Throughout all of the documents from each study city there are references to age-friendliness that are considered background information. These references are included in context sections as well as introductory paragraphs for chapters and sections. They give an

overarching idea of each city's vision for its growth and how that growth might begin to include age-friendly elements. The main focus of these results is on the actionable items included in each document, however this section will include a brief overview of the background references to age-friendliness that are included in the documents. Fig. 5 shows a comparison of the number and percentage of age-based and age-related references found within all the studied documents from each city.

Throughout the majority of the documents there are references to age-friendly design or designing for all ages and abilities. The most detailed explanation for an age-friendly community comes from *OurWinnipeg*,

> "Through our commitment to social sustainability, the City will be working to ensure the needs of older Winnipeggers are addressed and that people can participate meaningfully in work and in their communities at all stages of their lives regardless of ability. We will provide the option of 'aging in place' by providing complete, walkable communities with multiple housing options, communities where people can be close to various employment opportunities and remain as connected and independent as possible" (2011a).

However, these do not include an explanation of what it means to create an age-friendly place, what it means to create places for a wide range of ages and abilities, or why it is important or beneficial to create age-friendly cities and communities. This lack of detail provides little guidance for city builders and decision-makers.

Winnipeg		Edmonton		Vancouver	
Age–Based	Age–Related	Age–Based	Age–Related	Age–Based	Age–Related
27	311	19	118	32	149
9.70%	90.7%	13.9%	86.1%	17.5%	81.4%

Fig. 5 A breakdown of the age-based and age-related references that are found throughout the documents from each study city.

Transportation

WHO Domains of Age-Friendly Cities

Transportation	Relates to all modes of movement, walking, cycling, rolling, driving, transit. But there is a specific focus on walking and transit initiatives.
Outdoor Spaces and Buildings	Focuses on creating accessible public spaces and buildings. Including retrofitting current spaces and ensuring that new spaces meet higher standards for accessibility.
Housing	Concerned with affordable and accessible housing for seniors, as well as locating housing near amenities to create walkable neighbourhoods.
Communication and Information	Refers to the extent to which seniors are aware of and have access to information about city programs and services for a wide range of concerns.
Community Supports and Health Services	Deals with the specific programs and services themselves and a concern here is with the physical accessibility of the services, such as where in the city are they located?
Civic Participation and Employment	Concerned with the ability of seniors to participate in city life, including remaining in the workforce in either a paid or voluntary capacity.
Social Participation	Primarily concerned with participation in the social and cultural realms of the city.
Respect and Social Inclusion	Concerned with societal views of seniors and creating attitudinal shifts to ensure that the knowledge of older adults is respected and included in plan–making processes.

Fig. 6 This table outlines the eight domains found through research done by the WHO.

The theme of transportation as it applies to age-friendliness, both as age-based and age-related references, was found most frequently throughout the selected documents. This is in part due to the inclusion of transportation plans from each of the cities, however, each of the municipal development plans also referenced transportation issues extensively. This domain includes references to transportation interventions that are supportive of an age-friendly community. These interventions include pedestrian route improvements, public transit connections, and cycling infrastructure for all ages. Each of the study cities includes a variety of policies, tools, strategies, and actions that can be used to improve transportation for seniors. However, within these the majority are coded as being age-related references. And so, while

there were many references to interventions that benefit seniors, there were few places where the reference specifically includes seniors and seniors' needs into the policy, tool, or action being recommended. Some of the age-based references include "design guidelines for a range of pedestrian and cycling infrastructure… for a range of ages and abilities" (City of Winnipeg, 2011c, 40), "reduce pedestrian crossing distances by providing narrower roads and lanes and considering curb extensions or median islands… in areas with high concentrations of children, seniors" (City of Winnipeg, 2014a, 208), "designing all pedestrian facilities to support safe, direct, and convenient routes for people of varying abilities using… age-friendly... principles" (City of Edmonton, 2009, 56), and "adopt and implement planning and design guidelines to support a network of routes that feel comfortable for people of all ages and abilities" (City of Vancouver, 2012, 26). These references all refer to the built environment and do not address how these modes of transport may be made more socially accessible to seniors through training programs.

The domain of transportation is one that focuses primarily on the built form, and so many of the references within this domain are related to improving infrastructure for active transportation. While active transportation interventions are often perceived as cycling improvements, however, references to active transportation are included in the analysis because of their inclusion of pedestrian infrastructure. Several of the references to active transportation are age-based and mention the importance of providing "cycling opportunities for all ages and abilities" (City of Vancouver, 2017a; City of Winnipeg, 2011c; City of Winnipeg, 2014a). Some of the active transportation improvements mentioned included identifying and connecting gaps in the sidewalk network (City of Vancouver, 2012, 23; City of Winnipeg, 2014a, 50), as well as widening sidewalks in appropriate places for better pedestrian flow and accommodation of pedestrians with mobility challenges (City of Edmonton, 2010a,

Transportation Master Plan

Age-Based	Age-Related
8	57
1.20%	86.4%

Fig. 7 Winnipeg

The Way We Move

Age-Based	Age-Related
6	10
37.5%	62.5%

Fig. 8 Edmonton

Transportation 2040

Age-Based	Age-Related
6	36
14.3%	85.7%

Fig. 9 Vancouver

139; City of Vancouver, 2017a, 67; City of Vancouver, 2018, 123; City of Winnipeg, 2011b, 36, 69; City of Winnipeg, 2014a, 131). Other improvements to infrastructure include at-grade crossings at intersections which involved the condition of the walking surface, pedestrian signals (City of Vancouver, 2012, A2; City of Winnipeg, 2014a, 208), pedestrian refuge islands (City of Edmonton, 2010a, 140; City of Winnipeg, 2014a, 208), push button crossings (City of Vancouver, 2012, A2) and curb ramps and extensions (City of Vancouver, 2018, 56, 174; City of Winnipeg, 2014a, 208). As well, Winnipeg includes references to improving and developing new crossings over rivers and railways (City of Winnipeg, 2014a, 217). Additional sidewalk infrastructure improvements are referenced throughout the documents but are included in the outdoor spaces and buildings section because of their explicit connection to the livability of the public realm over that of the transportation network. Beyond the references to cycling infrastructure for "all ages and abilities" the few other age-based references are broad policy statements that stated encouragement for comfortable networks for all ages and abilities but are not linked to a specific action or intervention and are thus included in the general references category.

Following infrastructure improvements, references to public transit are the next most cited, all of which are age-related references. These included references to built form elements of transit, as well as operating elements such as frequency, speed, fare accessibility, and reliability. The built form elements addressed in the documents are wide-ranging in both type and scale. Of these, the largest in scale are policies for land use that would connect transit with various land uses throughout the city (City of Winnipeg, 2011b, 62, 97; City of Winnipeg, 2014a, 239). In some documents, these policies call for higher density and mixed-uses that would support easier transit use for commuting, as well as non-work trips (City of Edmonton, 2009, 41; City of Edmonton, 2011a, 18; City of Edmonton, 2016, 9). Other built form elements include proximity of transit stops in residential and commercial areas as well as near seniors' homes (City of Edmonton, 2009, 49; City of Edmonton, 2010b, 47). Specifically, Winnipeg's Transportation Master Plan includes a goal to have "95% of city residences… within a 5 to 10-minute walk of transit service" (2011c, 50). Winnipeg also briefly mentions a goal of having inter-municipal transit services, which would benefit seniors in both rural and urban areas (City of Winnipeg, 2011c, 50). Each of the study cities also reference smaller scale built form elements in their

documents. These include improvements for shelters and stops to make them more accessible, as well as maintaining or improving the surrounding sidewalks (City of Vancouver, 2012, A7; City of Vancouver, 2017a, 70; City of Vancouver, 2018, 125; City of Winnipeg, 2011c, 49, 50). The operating elements of public transit that are referenced in the documents include improved access to fares, greater frequency on high-use routes, improvements for transfers, and improvements in information availability (City of Vancouver, 2012, A7; City of Winnipeg, 2011c, 49; City of Winnipeg, 2011d, 24).

Lastly, both Winnipeg and Edmonton have unique climatic conditions to consider when dealing with their outdoor spaces. Each city makes note of the transportation safety concerns that arise from snowfall and respond with recommendations to create snow-clearing and maintenance policies that would ensure response times to snowfall are timely and effective so that pedestrian and cycling routes can be used year-round (City of Edmonton, 2009, 56; City of Winnipeg, 2014a, 239). Edmonton also makes reference to the dangers that can arise when snow and ice fall from buildings and recommend policies to mitigate this effect (City of Edmonton, 2010b, 48).

Outdoor Spaces and Buildings

The domain of outdoor spaces and buildings is the second most referenced domain overall in the documents and includes a similar amount of age-based references to the transportation domain. Within this domain the references include interventions within the public realm that are intended primarily for pedestrians. Across each of the study cities the references break down into three broad parts that are identified as parks, urban spaces, and buildings. References to park space include introducing accessible elements into existing parks, while also ensuring that accessibility is taken into account in the planning and design of new parks (City of Edmonton, 2006, 33). This includes physical accessibility, such as transit, pedestrian, and cycling connections, as well as visual accessibility,

Complete Communities

Age-Based	Age-Related
2	122
1.60%	98.4%

Fig. 10 Winnipeg

Urban Parks Management Plan

Age-Based	Age-Related
0	6
0%	100%

Fig. 11 Edmonton

meaning that "parkland is visually accessible (e.g., must not create the impression of use by a selected few while applying street frontage requirements)" (City of Edmonton, 2006, 33). Both Edmonton and Winnipeg documents include references to improving and maintaining their trail networks and public access to their rivers (City of Edmonton, 2010b, 44; City of Edmonton, 2010c, 40; City of Edmonton, 2011a, 29; City of Winnipeg, 2011b, 31). Winnipeg's *OurWinnipeg* document also directly refers to the development of age-

**Downtown
Eastside Plan**

Age–Based	Age–Related
22	63
25.9%	74.1%

Fig. 12 Vancouver

friendly communities and a "priority of multi-use and intergeneration opportunities" (2011a, 60). The inclusion of references to intergenerational opportunities is seen seldom throughout the documents.

In addition to park spaces, each of the study cities separately reference improvements to urban spaces such as plazas and sidewalks. These improvements include such things as lighting (City of Edmonton, 2010a, 140, 153; City of Vancouver, 2017a, 70, 76, 77, 78, 126; City of Vancouver, 2018, 125, 132, 174; City of Winnipeg, 2011a, 43; City of Winnipeg, 2011b, 20, 131), wider sidewalks (City of Edmonton, 2010a, 139; City of Vancouver, 2017a, 67; City of Vancouver, 2018, 123; City of Winnipeg, 2011b, 36, 69; City of Winnipeg, 2014a, 131), additional curb ramps and extensions (City of Vancouver, 2018, 56, 174; City of Winnipeg, 2014a, 208), landscaping (City of Edmonton, 2010a, 140; City of Edmonton, 2010b, 49; City of Winnipeg, 2011b, 20, 97, 131), street trees (City of Vancouver, 2012, A3; City of Vancouver, 2017a, 67; City of Vancouver, 2018, 50, 53, 123, 133; City of Winnipeg, 2011b, 36, 69, 97), lightscaping (City of Winnipeg, 2011b, 17), benches (City of Vancouver, 2018, 123), public art (City of Vancouver, 2017a, 77, 87, 101, 126; City of Vancouver, 2018, 48, 53, 132; City of Winnipeg, 2011b, 17, 29, 36, 69), public washrooms and drinking fountains (City of Vancouver, 2018, 158, 174, 176), and wayfinding (City of Edmonton, 2010a, 141; City of Vancouver, 2012, A3, A4; City of Vancouver, 2017a, 67, 68, 70, 76, 77; City of Vancouver, 2018, 45; City of Winnipeg, 2011b, 17, 28; City of Winnipeg, 2014a, 268). Several of these interventions are referenced in connection with safety concerns and the implementation of Crime Prevention Through Environmental Design principles (City of Edmonton, 2009, 56, 58; City of Edmonton,

2010a, 60, 127; City of Edmonton, 2010c, 53; City of Winnipeg, 2011b, 17, 21, 31). Along with these interventions Vancouver also includes recommendations for improving transit areas through seating, signage, lighting, and landscaping (City of Vancouver, 2017a, 70, 76, 77, 78, 126; City of Vancouver, 2018, 125, 132, 174). As well, along with goals to achieve accessibility and universal designs standards, both Edmonton and Winnipeg include directions for creating a "sense of place" within various districts throughout each city (City of Winnipeg, 2011b, 17, 28, 109).

The final theme of the outdoor spaces and buildings domain is focused on buildings. For the most part this includes buildings owned and operated by the City. The documents include references to upgrades of City-owned facilities to ensure they meet Universal Design standards. This includes ensuring that any new construction meets Universal Design and Accessibility standards. Vancouver's West End Community Plan also includes a reference to encouraging "local business areas that are easily accessible, and reflect the local scale and character" (2017a, 34). The *OurWinnipeg* development plan also states that the City will "incorporate age-friendly and accessible features in the renovation and maintenance of City facilities" (2011a, 78). However, unlike the Vancouver documents, *OurWinnipeg* does not refer to any specific standards for these retrofits.

Housing

The housing domain is the next most referenced and includes several age-based references. The majority of the references, both age-based and age-related, are concerned with the availability of affordable housing. For example, Vancouver aims to "increase affordable housing options for all residents, including social housing (1,400 in the first 10 years)" (City of Vancouver, 2018, 189). While Edmonton and Winnipeg do not list specific targets, they each include goals for increasing affordable housing such as Edmonton's goal to create "a strategy to incorporate affordable housing units as a component of other municipal buildings" (City of Edmonton, 2016, 9). In Winnipeg, the push for more affordable housing is seen in key

Housing Policy Implementation

Age-Based	Age-Related
0	6
0%	100%

Fig. 13 Winnipeg

Affordable Housing

Age-Based	Age-Related
0	14
0%	100%

Fig. 14 Edmonton

directions to "provide incentives for affordable housing", and to "develop long-term funding strategies related to affordable housing" (City of Winnipeg, 2011, 56). Several of these references make clear connections to age-friendliness, such as goals to "encourage greater affordability for low-income singles (including seniors)" (City of Vancouver, 2018, 100), and "encourage seniors housing that provides for 'aging-in-place'" (City of Edmonton, 2010a, 85). Interestingly enough, these comments are from the

Housing Vancouver

Age–Based	Age–Related
3	3
50%	50%

Fig. 15 Vancouver

Downtown East Side Plan and Capital City Plan respectively, and not the Affordable Housing strategy from Edmonton. For each study city, statements regarding affordable housing are spread throughout the guiding documents and not restricted to specific housing strategies.

Throughout the documents, age-based references are most concerned with accessibility. This is seen through recommendations to "encourage and support principles of Universal Design and/or visitability in new housing" (City of Winnipeg, 2011a, 54), or "consider mobility and sensory limitations of seniors and other individuals" (City of Vancouver, 2018, 100). Accessibility of housing also includes the connection between housing and land use. Several documents include goals that discuss the location of housing and the importance of being close to amenities. This is found in the *OurWinnipeg* development plan, which states as a key direction, "encourage new and infill development... that provides opportunities to reduce transportation costs and that allows people to live, work and play in the same neighbourhood" (2011a, 56). As well the importance of being close to amenities, Edmonton's transportation plan, *The Way We Move*, includes a policy to "encourage neighbourhood design that locates facilities such as high density residential or seniors housing at or near transit routes", expanding the concept of closeness to include places that can be reached by public transit (2009, 49).

Lastly, each of the study cities makes references to the importance of having a variety of housing types throughout a neighbourhood or district. For example, in Edmonton's *Capital City Plan*, they state a goal to "encourage a variety of housing forms in the Downtown to provide for a broad range of housing types, tenure types and price ranges. Include housing for families, seniors (including aging-in-place housing), students, persons with special needs and persons with

disabilities" (2010a, 64). Winnipeg's *Complete Communities* document outlines the various types of housing that might be incorporated into infill strategies, such as duplexes, low rise apartments, secondary suites, semi-detached homes, townhouses, and carriage houses (2011b). The connection between infill housing and variety in housing type is made throughout each of the study cities. In Vancouver, goals for infill are connected to a push for more laneway housing, as well as targets for social housing. For example, "seek to secure 100 social housing units through infill opportunities on existing social housing sites", and "seek to secure approximately 400 secure market rental housing units in the Corridors, and encourage infill on existing market rental sites in the Neighbourhoods" are both goals included in the West End Community Plan (2017a, 124).

Communication and Information

Within the domain of communication and information only the theme of wayfinding is consistent across all three cities. References to wayfinding include creating better strategies and signage around trail routes, transit stops, through parks and urban spaces, and along cycling and pedestrian routes. Some of the options for this include creating wayfinding guidelines to ensure consistency across the city, connecting physical signage with mobile apps to better support multi-modal transportation, and using wayfinding to help create a sense of place in individual districts.

Pedestrian and Cyclying Strategy

Age-Based	Age-Related
5	38
11.6%	88.4%

Fig. 16 Winnipeg

The Way We Live

Age-Based	Age-Related
6	18
25.0%	75.0%

Fig. 17 Edmonton

Other strategies for communication and information are unique to each of the study cities. For example, Winnipeg includes goals for making library resources more accessible and promoting community heritage through education (City of Winnipeg, 2011a, 62). As well, Winnipeg's Pedestrian and Cycling Strategy states that the City should "work with vulnerable groups and find out what their key issues are in order to better communicate with them" (2014a, 281). The same document also encourages the support of

events and programs that inform citizens about the benefits of walking and cycling, as well as safest and best practices for each activity.

They also include a policy to "provide information and education to Edmontonians about their roles and responsibilities as active citizens" (City of Edmonton, 2010c, 65). In Edmonton, communication and information focuses on increasing awareness of crisis supports, city programs, services, and opportunities (City of Edmonton, 2010c, 55).
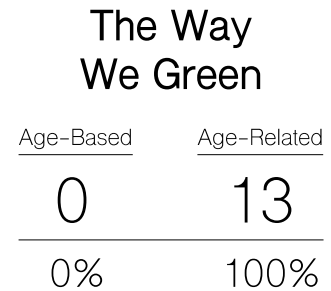
The Way We Green

Age–Based	Age–Related
0	13
0%	100%

Fig. 18 Edmonton

In Vancouver, the Transportation 2040 plan includes a goal to "advocate for making walking and cycling safety awareness a key component of all driver training courses and examinations in British Columbia, including for commercial licenses" (2012, 58), as well as to "work with the VPD to enhance enforcement, education, and awareness approaches targeting behaviours that endanger vulnerable road users… [with a] focus on preventing collisions by improving interactions between people riding, driving, and walking" (City of Vancouver, 2012, 59). This is one way that Vancouver is using public education and training to protect older adults.

Community Support and Health Services

Each of the study cities incorporates goals for social services and programs for vulnerable groups, including seniors. In most cases these goals refer to general social services, active living programs, or neighbourhood specific programming. In Vancouver, some of the specific programs referenced in the policies include "dementia-friendly, caregiver-inclusive adult programs, including multilingual and multicultural programs" (City of Vancouver, 2018, 85). While in Edmonton, the policies refer to offering lifelong learning opportunities, as well as "a robust range of programs to enable older adults to contribute to the cultural life of the community including intergenerational learning programs" (City of Edmonton, 2010a, 82). Lastly, in Winnipeg, key directions also strive to create lifelong learning opportunities, as well as "properly fit recreation facilities to community needs, including potential multi-use and inter-generational needs" (City of Winnipeg, 2011a, 60) and "link persons with ongoing public safety issues to

appropriate long-term support" (City of Winnipeg, 2011a, 44). Winnipeg also includes a goal to "develop and encourage support programs to encourage resident sidewalks snow removal", which can provide assistance to older adults who have trouble or are no longer able to clear their walkways of snow (City of Winnipeg, 2014a, 237).

Civic Participation and Employment

The domain of civic participation and employment includes references to job creation and retention for both paid employees as well as volunteers. Both Vancouver and Winnipeg encouraged the recognition of contributions from volunteers (City of Vancouver, 2018, 118; City of Winnipeg, 2011a, 82). Vancouver's Downtown Eastside Plan encourages "businesses which hire workers with barriers to employment" (2018, 116), as well as the creation of "appropriate and accredited volunteer programs to transfer skills and enable access to employment opportunities" (2018, 118). In the case of Edmonton, the goal is to engage residents in the "planning and designing [of] their cities and communities" (City of Edmonton, 2011a, 19). This is one of the few references throughout all of the documents that makes note of citizens' contributions to the planning process. Lastly, in Winnipeg the goal is to "enhance existing workforce integration and life-skill programs" as well as generating "more opportunities to retain existing, experienced employees in the workforce" (City of Winnipeg, 2011a, 51). These measures can help to ensure that older adults are able to lead full and productive lives as they age.

Social Participation

The domain of social participation includes references that involve the participation of citizens in leisure activities that are distinguishable from employment or activities related to city governance or function. Across all of the study cities there is a focus on social participation as it pertains to arts and culture. For example, in Vancouver, one goal is to "provide residents with opportunities to participate in celebratory or creative experiences in public spaces such as parks, streets and plazas" (City of Vancouver, 2017a, 87) And in Winnipeg, to "collaborate with community partners to provide opportunities for arts education at all ages and abilities", as well as "build the capacity of communities to express themselves through a wide range of programs that engage people of all ages and abilities through arts and culture" (City of Winnipeg, 2011a, 85). In Edmonton this is shown in the goal to continue the "tradition of festivals and events for

all seasons and ages" which are events that bring generations together (City of Edmonton, 2010c, 43).

Respect and Social Inclusion

The domain of respect and social inclusion is only found in the Winnipeg and Vancouver documents. These references include goals for social cohesion, belonging, and inclusion. For example, in Vancouver some policies are to "create an enhanced sense of inclusion, belonging, and safety for all, with a focus on greater safety for women, children, and seniors", "retain, improve, and celebrate key community assets, and foster a sense of community belonging, inclusion, dignity, and safety for all", and to "support projects that promote inclusion/belonging for all residents through grant funding" (City of Vancouver, 2018, 89). While in Winnipeg, there are key directions to "work collaboratively to develop an inclusive built environment that fosters social cohesion", and to "support community-led initiatives aimed at fostering equity and inclusion or opposing discrimination" (City of Winnipeg, 2011a, 58).

SMART Goals

For each action item, whether it is age-based or age-related, there is a corresponding score to determine its SMARTness. Each item was given one point for each portion of the goal that it met. For example, if a goal included a timeline within which it was to be completed, it received one point for being "time-bound". Because of the variability in the size and scope of each of the documents it is difficult to make comparisons across documents using the SMART score. However, these scores can give us important insights into the nature of the goal and gives an idea of how effective the goal might be when it comes time for implementation. The insights from each score will be discussed further in the Discussion section.

Overall each of the study cities received a high score for being Specific and Relevant. This was expected as only references that were directly or indirectly related to age-friendliness were included in the research. Because of this each city received a score of 100% for being Relevant. The scores for being Specific were only slightly lower as some references were included but were not detailed. For example, in Winnipeg's *OurWinnipeg* there is a goal to "facilitate safety and accessibility on streets and sidewalks", which would benefit seniors but does not include enough elements to be determined actionable (2011a, 43).

Winnipeg		Edmonton		Vancouver	
Specific	92.1%	Specific	99.3%	Specific	98.9%
Measurable	18.0%	Measurable	6.90%	Measurable	18.0%
Achievable	57.8%	Achievable	59.5%	Achievable	70.5%
Relevant	100%	Relevant	100%	Relevant	100%
Time-bound	20.1%	Time-bound	0%	Time-bound	69.4%

Fig. 19 A summary of the SMART scores for each study city.

In Vancouver, there was variation in scores for Measurability, Achievability, and being Time-bound. However, in the specific documents the variation is noticeable between all elements. For example, both the Downtown Eastside Plan and the Transportation 2040 plan scored 100% for being Time-bound. This is because each of these documents included an appendix listing the timeline by which each action item would be completed including short, medium, and long term timelines. However, each of these plans, as well as the West End Plan, scored medium to low for being Measurable. For example, in the West End Plan there is a goal to "encourage local business areas that are easily accessible, and reflect the local scale and character" (2017a, 34). While this is a relevant goal, it does not offer any means by which it could be judged a success or a failure. The element for being Achievable was scored higher for all of the Vancouver documents. This is in part due to the way in which the Achievable element was scored in relation to the Measurable and Time-bound elements. If a goal was scored one for being Measurable or Time-bound, it was also give one point for being Achievable. Both the Downtown Eastside Plan and the West End Plan scored medium to high for being Achievable.

Similar to Vancouver, the Edmonton documents also showed variability between the scores for Measurability, Achievability, and being Time-bound. For all of the documents from Edmonton there was an overall score of zero for being Time-bound as none of the references included a timeline by which the action or policy should be completed. Overall, the Edmonton

documents also scored low for being Measurable. Within the Edmonton documents only the Affordable Housing Strategy received a higher score for being Measurable. This is due to several goals that include targets for measuring affordable housing such as, "number of existing affordable housing units per 1,000 Edmonton households" (City of Edmonton, 2016, 17).

In Winnipeg, overall the documents received low scores both for being Measurable and Time-bound. However, similar to Vancouver's Downtown Eastside Plan and Transportation 2040 Plan, Winnipeg's Transportation Master Plan includes an appendix with short, medium, and long term timelines for each goal and so scored 100% for being Time-bound. However, because none of the other selected documents incorporated timelines into their plans, this affected the Achievability scores for each document. As well, while the overall score for being Measurable was low, there was variety within the individual documents. For example, *OurWinnipeg* and *Complete Communities* both scored very low, while the Sustainable Transportation Plan scored very high.

Discussion/Analysis

The goal of this research is to provide an examination of development plans and supporting documents to understand the extent to which the documents themselves support age-friendliness. These documents were chosen as they represent a City's vision and goals for the future. The following analysis offers an examination of the themes emerging from the document analysis as well as an integration of information and themes from the literature review. The first focus of this section considers the alignment of coded references with the WHO framework, including the eight domains identified for creating age-friendly cities and communities. Following this is an analysis of the age-based and age-related references, including the implications of having few age-based references. Building on information included in the literature review on evaluation, there is a section discussing the importance of language in recommending actions for future growth. The literature review also revealed the need to understand the diverse nature of seniors and their needs and concerns, and so this analysis includes a section discussing the ability of the selected documents to address the needs of seniors. Lastly is an examination of the assigned SMART scores and what these scores imply about the recommended goals and actions. The intention of these results and discussion is to provide the reader with an overview of how age-friendliness is currently being addressed in development plans and an idea of whether or not this is adequate for building age-friendly cities and communities.

Alignment with WHO Framework

As was found in the literature review there are several models of age-friendliness available for use by cities and communities. For this research the WHO framework was chosen to assist in the evaluation of the selected documents. The WHO framework offers eight domains to be considered when creating age-friendly cities and communities. Each development plan and guiding document was analyzed in terms of its inclusion of references related to the eight domains. Across all of the documents, the domains relating to the built form were most frequently referenced, whereas those relating to the social sphere and social services received less attention.

Within the transportation section, there are many age-based references to improvements for public transit. These improvements are beneficial to seniors however, it is possible that they do not cover the range of services seniors require of a public transit system. For example, reduced fares for seniors should be available and appropriately advertised. As well, priority seating on transit must be provided for seniors, with an accompanying education campaign to ensure that all transit users abide by a consistent protocol. The documents also include references to the connection between public transit and land use, however, these most often refer to the commute between home and work and do not account for the many small trips for shopping, doctor's appointments, and socializing that seniors make at many times throughout the day (Hodge, 2014). Understanding the transportation patterns of seniors can contribute to more specific recommendations for land use integration.

There are many age-related and some age-based references within the domain of outdoor spaces and buildings that are beneficial to seniors. However, the ambiguity in the recommended goals and actions suggests a lack of understanding of the specific needs of seniors. For example, while many of the plans suggest that seating can improve the public realm and pedestrian experience, the frequency of seating is especially important to seniors and their ability to independently navigate their communities. And so, while the documents encourage seating in public spaces such as parks and plazas, there is also a need for seating along the routes that lead to these places, to ensure that the path is accessible to seniors from their home or transit stop to the destination.

Also within the domain of outdoor spaces and buildings is the issue of publicly available washrooms. The only city to mention this issue is Vancouver in their *Downtown Eastside Plan*. The availability of public washrooms is essential for seniors, and all citizens, to enjoy public spaces. It is especially essential to include this issue in development plans and high level guiding documents because this is not an issue that is often accounted for in other policies and regulations.

For the domain of communication and information, attention is paid to wayfinding systems, awareness of city programs and services, and ensuring that information is accessible in

an age-friendly format. Throughout the documents Winnipeg's Pedestrian and Cycling Strategy comes closest to offering a system for communicating with individuals when they state that the City should "work with vulnerable groups and find out what their key issues are in order to better communicate with them" (2014a, 300). However, beyond this none of the documents include strategies for ensuring that communication with seniors and groups of seniors is taking place. The literature suggests that having community "champions" is a helpful way to ensure that age-friendly projects are being advocated for and that information is being disseminated throughout the senior community (Menec et al., 2013; Menec & Brown, 2018).

Concentrated vs. Integrated

All of the references included in this research are related to age-friendliness in some way. However, this includes both age-based and age-related references. As described in the methods section, the age-based references specifically address age-friendliness or seniors and their needs, while the age-related references do not mention age-friendliness but are related to interventions that can benefit seniors. Across each of the study cities the majority of the references were coded as being age-related. Within all the documents only the *OurWinnipeg* development plan and Vancouver's *Housing Strategy* include concentrated short sections describing age-friendliness. Other documents, which include age-based references to age-friendliness, do not devote sections to the issue but rather spread the references throughout various sections of the documents, such as transportation, housing, and creating complete communities.

The methods of grouping age-friendly references into one concentrated section or integrating them throughout a document each has advantages and disadvantages. Having one section that is dedicated to the topic of creating age-friendly cities would seemingly ensure that the issue is raised and due consideration is given to the needs of seniors. However, though both Winnipeg and Vancouver include short sections dedicated to seniors, these sections are not comprehensive in addressing the myriad needs of an older population. Rather, *OurWinnipeg* (2011) calls for the incorporation of "age-friendly design" and "accessible features", but neither *OurWinnipeg* nor its supporting document *Complete Communities*, elaborate on what these features are or how they might be achieved. A similar situation is found in the development plans in Edmonton, where goals include references to "age friendly design" and "accessible design"

but do not elaborate on the specifics of this design. The development plan, *The Way We Grow,* however, does offer some guidance in its glossary, where it defines the concept of age-friendly as follows

> "an age friendly built environment includes a safe pedestrian environment, safe street crossings, easy to access shopping centres, a mix of housing choices, nearby health centers and recreational facilities. Additional age friendly urban design features could include non-slip materials on footpaths, adequate street and park furniture and awnings for weather protection, legible and pedestrian scale signage, well-lit walking areas, and the incorporation of Crime Prevention Through Environmental Design Principles" (2010).

Many of the documents employed the second method of referencing and spread their inclusion of age-friendliness throughout the whole plan. As was found in the literature, to create age-friendly cities it is essential to integrate interventions from a wide variety of domains. Including references to age-friendliness across the whole of the document suggests it is more likely that all necessary domains are including aspects of age-friendliness in their subsequent supporting documents, policies, and regulations. The success of this method can be partially judged by examining the age-based references included throughout the document, as was done in the results section of this document. The success or failure that is judged in the results section is based on recognition of the needs of seniors. The next step of evaluation requires understanding how the goals are implemented and is beyond the scope of this research. An evaluation of implementation would require a rigorous examination of interventions throughout each of the eight domains to understand how and when the goals of the plan were achieved.

For guiding documents, such as *OurWinnipeg,* the *Downtown Eastside Plan,* or *Edmonton's The Way We Live,* it is understandable that references to age-friendliness are high level and do not contain much detail. However, it is then expected that supporting documents would begin to provide more detail on how to achieve the vision and goals of the guiding development plan. For example,

OurWinnipeg includes a short section outlining goals related to age-friendliness and prompts the reader to consult with *Complete Communities* for further direction. However, *Complete Communities* does not directly address plans or actions for age-friendliness anywhere in its pages. In Edmonton, the strategic plan, *The Way Ahead,* does not directly address age-friendliness, and the six supporting plans directly reference age-friendliness very little. Edmonton has the *Vision for an Age-Friendly Edmonton,* which outlines the ways in which Edmonton can become an age-friendly city. However, these principles are not echoed in the development plan, which may result in the exclusion of these principles from all levels of development. In comparison with Winnipeg and Vancouver, it is expected that Edmonton's reference to age-friendliness in their development plans would be slightly less as their aging population is not as large as those in the other cities.

The presence of age-based and age-related references raises an important question about the purpose of guiding documents. The failure to include age-based references, for any given issue in the plan, results in an ambiguous document that does not provide guidance for decision-makers and city builders. However, it can also be argued that the open-endedness of the document allows for those same individuals to be creative and innovative in their approach to the City's vision. In this scenario, it is then the responsibility of decision-makers to ensure that the proposals they see are in keeping with the vision and goals found in the development plan. What this method assumes is that decision-makers will continually interpret the vision, goals, and directions of the development plan consistently over time and through political changeover. This is a particularly large assumption, especially given the depth of knowledge required to understand the intricacies of land use planning coupled with the great number of responsibilities placed on decision-makers. As well, the open-endedness of development plans may allow for creativity and innovation, but without parameters, it is difficult for city growth to be shaped in a way that builds a unique character and sense of place.

Meeting the needs of seniors

As seen in the literature, the population of seniors in any given city is comprised of a diverse number of communities and individuals (Menec, 2017). As well, the creation of age-

friendly cities, and subsequently meeting the needs of seniors, requires input from a variety of different domains (Phillipson, 2011). And so, another concern is whether the references in the documents are able to adequately address the needs of seniors.

As covered in the literature review, there are many models of age-friendliness which outline the varied needs of seniors. The model of age-friendliness used for this research is the Age-Friendly Model put forward by the WHO, which is organized into eight domains identified as necessary for creating an age-friendly city. While the *OurWinnipeg* development plan does briefly reference the principles of the WHO when speaking of the incorporation of age-friendliness into city growth, the majority of the documents do not give details regarding the needs of seniors. Throughout the documents, seniors are often listed together with a number of other vulnerable groups, such as children, newcomers or immigrants, and persons with disabilities. As mentioned earlier, it is often the case where solutions that incorporate barrier-free and accessible design are able to meet the needs of a wide range of individuals and communities. However, it is a mistake to assume that all vulnerable groups share the same needs and thus require the same solutions. Overall in the documents there is a lack of specificity which acknowledges seniors apart from other vulnerable groups. As well, there is a lack of understanding regarding the diversity of both people and needs that is found within the seniors population. It is possible that this lack of understanding has contributed to the large number of age-related references found within the actionable items of the development plans.

Within the domain of transportation there are references to snow-clearing, highlighting the importance for pedestrians of having unobstructed sidewalks and crossings. This is a necessary acknowledgment of the unique climatic conditions faced by some cities. However, the city of Winnipeg also faces extreme heat waves throughout the summer months, which can be as perilous to seniors as an icy or uneven sidewalk. Following the framework from the WHO, adaptations to extreme heat would likely fall under the category of outdoor spaces and buildings. Possible interventions for this are regularly placed benches, awnings along south-facing street walls, public drinking fountains, and building design that discourages heat refraction off of glass facades. While the city of Vancouver does not experience extreme heat waves similar to Winnipeg, they do experience a significant amount of rainfall and have adapted their documents

to include rain cover policies to ensure that pedestrians are protected as they move through the city (City of Vancouver, 2012, 22).

As mentioned in the literature review, both Rowles (1973) and Law (1997) examined the importance of the connection between place and identity and the notion of creating a sense of place within a city or neighbourhood. Both Edmonton and Winnipeg include references to creating a sense of place through a variety of interventions, such as wayfinding, heritage preservation, signage, lightscaping and landscaping (City of Winnipeg, 2011b, 17). However, a sense of place is a difficult thing to define and while these interventions are helpful, they do not have a definition that grounds them. The *Downtown Eastside Plan* comes closest to linking tangible elements to a guiding concept. It states that "each community's sense of place can often be linked to significant historical events, spiritual connections to previous generations, diverse faiths, access to resources, the physical environment and built forms" (2018, 37).

SMART Goals

The SMART scores offer a method by which the potential effectiveness of each relevant action item in the development plans and guiding documents can be analyzed. The most concerning issue arising from the results of the SMART scores is the low to medium Measurability scores for almost all of the documents. This implies that the majority of these plans have little to no criteria by which they can be measured to be a success or a failure. For example, the *OurWinnipeg* development plan states that implementation, as well as the means to monitor and evaluate the plans will be outlined in subsidiary plans and future implementation plans, such as an "implementation toolbox", which is "a variety of tools [that] will be employed to make sure that proposed projects that align with Complete Communities objectives are approved in a timely manner" (Sustainable Winnipeg, 2011). However, no such toolbox could be found. As well, the subsidiary plans of *Complete Communities* and *Sustainable Transportation* contain little to no measurable action items and there are also no publicly available implementation plans. Without measurable indicators it is impossible to evaluate the development plan and as was noted earlier, "without rigorous evaluation, it is impossible to assess the impact of these programmes" (Steels, 2015, 49).

Closely related to the factor of Measurability is the element of being Time-bound. Only Winnipeg and Vancouver included any time-frames for achieving goals within their plans. The time-frames given were mostly focused around transportation plans, with the exception of the *Downtown Eastside Plan* from Vancouver. Each of the plans that offer time-frames do so according to a short, medium, and long term framework. As well, the Vancouver documents specify the length of time that each time-frame relates to, though this is different for each document; for example, a short time-frame in the *Downtown Eastside Plan* is within ten years, while a short time-frame in the *Transportation 2040* plan is within two years. The discrepancy here may be due to the nature of the goals being recommended, e.g. infrastructure vs. social services. While the inclusion of short, medium, and long term time-frames is helpful for evaluating the plans, it is not enough on its own and must also be linked to the Measurability factor.

Several of the documents refer to evaluation measures that are available or that will be created in response to the plan. For example, though the City of Edmonton does not offer a publicly available monitoring and evaluation plan, it did publish a progress report on their strategic plan, *The Way Ahead.* This progress report offers citizens an idea of how well their guiding documents were able to fulfill the vision and goals of the city. Unfortunately, it did not contain any mention of age-friendliness or seniors generally. This is in part due to the presence of their *Vision for an Age-Friendly Edmonton.* This connects back to the question of the best way to integrate age-friendly principles into development documents, in a concentrated format or integrated throughout documents and departments. While it is important that there is a concentrated plan for age-friendliness, it is still necessary to include age-friendly principles that are integrated throughout development plans and supporting documents. As well, specifically regarding age-friendliness, the *OurWinnipeg* development plan is the only plan to reference the WHO framework for age-friendly cities, though it does not make reference to the indicators published by the WHO. As well, none of the study cities include references to the PHAC's pan-Canadian milestones for creating age-friendly cities.

Recommendations

The goals, strategies, directions, actions, and policies that are put in place to address the diverse needs and concerns of seniors must be specific. All of the documents selected for this research scored very high for being Specific, however, this specificity was not often directly connected to seniors needs. While it is not feasible for each action to include an in depth discussion of how it is meeting the needs of seniors, it is possible to connect the actions to a number of needs through the use of the context or background section.

The development plan should contain a more detailed section addressing the specific needs of vulnerable communities within the city. As Young highlights, there is diversity among groups that seem homogenous at first glance (2000). This would include seniors, but would also include a host of other communities. Special attention should be paid to each group and the diverse needs and concerns that arise from consultation with them (Phillipson, 2011, 286). There can then be analysis conducted on where the needs of various groups overlap (Smith & Lehning & Dunkle, 2013, 93). In this way, when actions or policies are recommended, it is possible to easily show how one step can have benefits for a variety of individuals and communities.

For example, a section outlining the needs and concerns of seniors would include access to public transit, maintenance and connectivity of pedestrian routes, availability of affordable and accessible housing, access to information regarding city programs and services, and a number of other things. Similarly, an examination of the needs of homeless people might find that there is significant overlap between the two communities (Menec, 2017, 106). For example, an easily accessible and understandable low-income fare pass for public transit would benefit both communities. As well, examining the needs of children might reveal that connected pedestrian and cycling routes are essential for having safe routes to schools, with this information decision-makers can more confidently invest in maintaining and filling gaps in the sidewalk network, knowing that is benefiting many communities. The cross-examination of seniors and children's needs is especially relevant in the city of Edmonton, where the seniors population is growing but the number of families with children is also high.

It is necessary to include both milestones and timelines in development plans and guiding documents to allow for proper evaluation. In terms of age-friendliness, this can be achieved, in part, by referencing the pan-Canadian milestones for creating age-friendly cities and communities, which was published by the PHAC (2016). However, this is simply the first step toward creating appropriate milestones for age-friendliness. It is also necessary to include specific milestones and timelines for action items within the development plans (Steels, 2015, 49; Guyadeen & Seasons, 2016). These milestones need to have clear measurable elements that can be easily evaluated, such as is found in various indicator lists (Feldman & Oberlink, 2003; Orpana et al., 2016; Kano & Rosenberg & Dalton, 2017). For example, including the number or percentage of affordable housing that should be added, or including the percentage of seniors served by health programs or information campaigns. Without the ability to evaluate the various actions and policies within a plan it is impossible to understand the success or failure of individual initiatives. If planners fail to conduct this evaluation it is very well possible that initiatives that are ineffective or inefficient will be continued at the expense of citizens and their needs.

When understanding the needs of seniors and the interventions required it is necessary to fully understand the local context. This includes the physical and social realms, as well as the political realm, in which the intervention will be implemented. In Canada, and specifically Winnipeg and Edmonton, this includes accounting for climatic conditions such as snowfall and heat waves. As recommended by Winnipeg's *Pedestrian and Cycling Strategy* a protocol should be put in place that outlines how snowfall should be cleared and stored in a way that allows for accessible pedestrian and cycling routes, as well as accessible parks and urban spaces.

Conclusion

Cities have been built in much the same way for a long while now so for the most part planners and decision-makers know how to put those methods into practice. However, as we turn to alternative methods of building that are more inclusive of all citizens it is necessary to include a more detailed plan for how to achieve these new goals. The details of these new plans will need to explain the interconnected nature of cities and the necessity of overlapping domains of research and practice. As well, these explanations need to be repeated in many different ways and in many different places before these practices become a natural part of the way we build cities. This roadmap of sorts will take us into territory that we have not explored before, however, we have the means to see ahead and so we should use them.

The research in this document aims to determine the extent to which the development plans and guiding documents support the building of age-friendly cities and communities. These documents represent the vision and goals and City holds for its development and growth over the long term. They are also meant to represent the needs, concerns, and hopes of the diverse array of social and structural groups found within the city. As well, the visions and goals found in these documents inform policy and regulation that are meant to enact and enforce said visions and goals. And so, it is essential that they include details that outline what the needs and concerns of citizens are and how these will be addressed.

Three study cities were chosen for this research, Winnipeg, MB, Edmonton, AB, and Vancouver, BC. The development plans and guiding documents of these cities were analyzed through a series of coding exercises to determine the extent to which they encourage and support the creation of age-friendly spaces and places. The results of this analysis show that the documents contain many age-related references to built form elements such as transportation, outdoor spaces and buildings, and housing, but very few age-based references. Age-related references are those references found in policies or direction strategies that relate to interventions or programs that would help older adults but are not put in place specifically for their benefit. This is in contrast to age-based references which are policies or direction strategies that are directly linked to benefits for older adults.

In addition to references to built form elements, there are also social elements of the city to consider within the plan. These include communication and information, community support and health services, civic participation and employment, social participation, and respect and social inclusion. These social elements are addressed far less in the documents compared to the built form elements. However, a larger percentage of the references found in these domains were age-based references.

Along with the examination of the inclusion of age-based and age-related references, each of these references was also given a score for being SMART. SMART goals are Specific, Measurable, Achievable, Relevant, and Time-bound. Each age-based or age-related reference was given a point if they met the criteria of each of the elements of being a SMART goal. The result of this scoring system was a glimpse into trends in the direction strategies and policies found in the documents. For example, there were very few documents that included timeframes for their goals and were thus given a very low score for being Time-bound. As well, the documents that did include timeframes were almost exclusively transportation plans, with the exception of two community plans from neighbourhoods in Vancouver. With this information we can begin to question why timeframes are not being attached to all policies and directions put forward by a City and whether it is possible to measure the success of a policy if we do not know by when it should be completed.

Moving forward with this information it is important to understand that as a group, older adults have a diverse range of interests and concerns and must not be treated as a homogenous group. These interests and concerns should be documented and analyzed alongside the needs of other vulnerable populations within a city to ensure that policies and direction strategies are engaging with needs of more than one group as often as possible. As well, by taking the time to explain the interconnected nature of cities, and the citizens who inhabit them, planners will have an easier time convincing citizens and decision-makers of plans that are clearly beneficial for a wide range of individuals and communities.

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Appendix 1 age-based vs. age-related references

OurWinnipeg

Age-Based	Age-Related
23	65
26.1%	73.9%

Complete Communities

Age-Based	Age-Related
2	122
1.60%	98.4%

Pedestrian and Cyclying Strategy

Age-Based	Age-Related
5	38
11.6%	88.4%

Transportation Master Plan

Age-Based	Age-Related
8	57
1.20%	86.4%

Sustainable Transportation

Age-Based	Age-Related
0	13
0%	100%

Winnipeg Housing Policy

Age-Based	Age-Related
0	3
0%	100%

Housing Policy Implementation

Age-Based	Age-Related
0	6
0%	100%

Capital City Plan

Age-Based	Age-Related
7	25
21.9%	78.1%

The Way We Grow

Age-Based	Age-Related
7	24
22.6%	77.4%

The Way We Live

Age-Based	Age-Related
6	18
25.0%	75.0%

The Way We Move

Age-Based	Age-Related
6	10
37.5%	62.5%

The Way We Green

Age-Based	Age-Related
0	13
0%	100%

Affordable Housing

Age-Based	Age-Related
0	14
0%	100%

Urban Parks Management Plan

Age-Based	Age-Related
0	6
0%	100%

Downtown Eastside Plan

Age-Based	Age-Related
22	63
25.9%	74.1%

West End Plan

Age-Based	Age-Related
7	40
14.6%	81.6%

Transportation 2040

Age-Based	Age-Related
6	36
14.3%	85.7%

Housing Vancouver

Age-Based	Age-Related
3	3
50%	50%

Affordable Housing

Age–Based	Age–Related
1	0
100%	0%

Appendix 2 SMART scores

OurWinnipeg

Specific	93.2%
Measurable	4.50%
Achievable	49.4%
Relevant	100%
Time-bound	0%

Complete Communities

Specific	90.3%
Measurable	4.00%
Achievable	48.0%
Relevant	100%
Time-bound	0%

Pedestrian and Cyclying Strategy

Specific	100%
Measurable	44.2%
Achievable	72.1%
Relevant	100%
Time-bound	4.70%

Transportation Master Plan

Specific	93.9%
Measurable	28.8%
Achievable	70.5%
Relevant	100%
Time-bound	100%

Sustainable Transportation

Specific	76.9%
Measurable	100%
Achievable	100%
Relevant	100%
Time-bound	0%

Winnipeg Housing Policy

Specific	100%
Measurable	0%
Achievable	50%
Relevant	100%
Time-bound	0%

Housing Policy Implementation

Specific	100%
Measurable	33.3%
Achievable	75.0%
Relevant	100%
Time-bound	16.7%

Capital City Plan

Specific	100%
Measurable	7.80%
Achievable	81.3%
Relevant	100%
Time-bound	0%

The Way We Grow

Specific	100%
Measurable	3.20%
Achievable	51.6%
Relevant	100%
Time-bound	0%

The Way We Live

Specific	100%
Measurable	0%
Achievable	50%
Relevant	100%
Time-bound	0%

The Way We Move

Specific	100%
Measurable	0%
Achievable	50%
Relevant	100%
Time-bound	0%

The Way We Green

Specific	92.3%
Measurable	7.70%
Achievable	50%
Relevant	100%
Time-bound	0%

Affordable Housing

Specific	100%
Measurable	35.7%
Achievable	67.9%
Relevant	100%
Time-bound	0%

Urban Parks Management Plan

Specific	100%
Measurable	0%
Achievable	50%
Relevant	100%
Time-bound	0%

Downtown Eastside Plan

Specific	98.8%
Measurable	9.40%
Achievable	58.2%
Relevant	100%
Time-bound	100%

West End Plan

Specific	100%
Measurable	41.7%
Achievable	70.8%
Relevant	100%
Time-bound	0%

Transportation 2040

Specific	100%
Measurable	11.9%
Achievable	100%
Relevant	100%
Time-bound	100%

Housing Vancouver

Specific	100%
Measurable	0%
Achievable	50%
Relevant	100%
Time-bound	0%

Affordable Housing

Specific	100%
Measurable	0%
Achievable	50%
Relevant	100%
Time–bound	0%

Appendix 3 SMART scores by domain

Winnipeg Transportation

Specific	93.0%
Measurable	35.0%
Achievable	70.2%
Relevant	100%
Time-bound	48.0%

Winnipeg Outdoor Spaces + Buildings

Specific	83.0%
Measurable	0%
Achievable	41.5%
Relevant	100%
Time-bound	0%

Winnipeg Housing

Specific	100%
Measurable	4.80%
Achievable	54.0%
Relevant	100%
Time-bound	2.4%

Edmonton Transportation

Specific	100%
Measurable	0%
Achievable	68.8%
Relevant	100%
Time-bound	0%

Edmonton Outdoor Spaces + Buildings

Specific	97.3%
Measurable	5.4%
Achievable	51.4%
Relevant	100%
Time-bound	0%

Edmonton Housing

Specific	100%
Measurable	25.0%
Achievable	62.5%
Relevant	100%
Time-bound	0%

Vancouver Transportation

Specific	100%
Measurable	11.6%
Achievable	76.7%
Relevant	100%
Time-bound	88.4%

Vancouver Outdoor Spaces + Buildings

Specific	98.1%
Measurable	18.1%
Achievable	72.7%
Relevant	100%
Time-bound	65.5%

Vancouver Housing

Specific	100%
Measurable	30.6%
Achievable	67.3%
Relevant	100%
Time-bound	46.9%