GOING GREY IN THE GTA

AN ANALYSIS OF AGE-FRIENDLY PLANNING IN TORONTO'S SUBURBS

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ABSTRACT

Recent forecasts have predicted that by 2041, one in four Canadians will be senior citizens. Fueled by the baby boomer generation, significant improvements in life expectancy, and lower birth rates, the increase in the senior population is a demographic change that will have far-reaching implications for urban planners. Specifically, the growth of the older population necessitates an integrated approach to age-friendly planning, with increased housing, transportation, and land use options that meet the needs of both active and frail seniors. This is a particular challenge in suburban communities, where many features of the built environment act as impediments to the well-being of older adults.

The purpose of this research is to explore the complex challenge of planning for an aging population in Canada's largest metropolitan area. A comprehensive review of the literature is first applied to identify the challenges and best practices of age-friendly planning. A case study of the Town of Whitby then provides specific context to test how successful age-friendly planning initiatives have - or have not - been. Ultimately, this research finds that in the context of Canadian suburbs, there is a strong tension between the needs of the elderly, the legacy of the past, and the instruments of change. Lessons learned from this research are summarized as recommendations intended to guide planners, researchers, and city officials alike in the age-friendly planning movement.

RÉSUMÉ

Selon des prévisions récentes, en 2041 un Canadien sur quatre sera un aîné. Alimentée par la génération des baby-boomers, des améliorations significatives de espérance de vie et des taux de natalité plus faibles, l'augmentation de la population âgée est un changement démographique qui aura de profondes implications pour les urbanistes. Plus précisément, la croissance de la population âgée nécessite une approche intégrée de la planification adaptée aux aînés, avec des options accrues de logement, de transport et d'utilisation des terres qui répondent aux besoins des aînés actifs et fragiles. C'est un défi particulier pour les communautés banlieues, où de nombreuses caractéristiques de l'environnement bâti agissent comme des obstacles au bien-être des personnes âgées.

Le but de cette recherche est d'explorer le défi complexe de la planification d'une population vieillissante dans la plus grande région métropolitaine du Canada. Une revue complète de la littérature est d'abord une demande pour identifier les défis et les meilleures pratiques de la planification amiable. Une étude de cas de la ville de Whitby fournit ensuite un contexte spécifique pour tester le succès ou l'échec des initiatives de planification adaptées aux aînés. En fin de compte, cette recherche révèle que dans le contexte des banlieues canadiennes, il existe une forte tension entre les besoins des personnes âgées, l'héritage du passé et les instruments de changement. Les leçons tirées de cette recherche sont résumées comme étant des recommandations destinées à guider les planificateurs, les chercheurs et les représentants de la ville dans le mouvement des aînés.

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INTRODUCTION

CONTEXT

There is an unprecedented change in the global demographic makeup headed our way that we, as a society, must prepare for. Referred to as a “boom” (Foot, 2001), an “age-wave” (Dychwald & Flower, 1990), and even a “tsunami” (Kennedy, 2010), it is undeniable that the growing population of senior citizens is one of the most extraordinary trends to have occured in recent times. To be sure, the United Nations (2015) projects that almost one-third (32.5 per cent) of the global population will be aged 65 and above by 2050. By the same year, the median age will have exceeded 45 years old - a significant increase from 30 years old in 1970 (United Nations, 2015).

This age revolution is especially prevalent in Canada. In 1967 - the country’s 100th anniversary - Canada was still relatively young demographically, with only 7 per cent of the population aged 65 or older (Miller, 2011). By 2017, as the country celebrated its 150th birthday, the demographic picture has changed entirely. Fueled by the baby boomer generation, significant improvements in life expectancy, and lower birth rates, the Canadian populations share of seniors now sits at 16.9 per cent (Statistics Canada, 2017). Forecasts suggest that by 2041, one in four Canadians - more than 10 million - will be senior citizens (Miller, 2011).

While Canada’s population as a whole is aging, the impact of this demographic change is not evenly distributed across the country. Notably, projections have shown that the Greater Toronto Area (GTA) will experience the greatest increase in senior citizens, jumping from 11.8 per cent in 2008 to 20 per cent in 2036 (Ministry of Finance, 2009). Even more, the elderly group is expected to triple outside of the City of Toronto, particularly in and around the suburban regions of Durham, Halton, Peel, and York.

The substantial increase of the older population in the GTA will pose great economic, social, and political challenges. More specifically, the future growth of the older population will necessitate a more integrated aging infrastructure, with increased housing, transportation, social service, and health care options that meet the needs of both active and frail older adults. Municipalities must refocus community planning efforts to deal with the impact of decades-old car dependent suburban sprawl that risks leaving the less mobile seniors in isolation. The promotion of elder-friendly communities is thus not only an issue of growing importance, but poses the question of whether or not the GTA’s built environment is prepared to meet the needs of an aging population.

PROBLEM STATEMENT

Despite the initial enthusiasm of the World Health Organization’s Age-Friendly Community movement in 2007, the promotion of elder-friendly community planning is still very much a work in progress in the GTA (Miller, 2011). As a report by the Canadian Mortgage and Housing Corporation (CMHC) concluded, most communities have made “minimal progress in achieving smart growth and livability goals” to date, and are thus “ill prepared to accommodate the housing and mobility needs of an aging population” (2008). Further, a 2011 scan conducted by the Canadian Urban Institute (CUI) determined that although communities were successfully engaging with older adults to develop strategies and action plans, there was little evidence that municipal commitments to create age-friendly communities were leading to substantive changes in land-use policy as formulated in local official plans (Miller, 2011). Instead, most efforts at planning for older adults have focused on minor physical improvements, such as the addition of park benches, better lighting, or clearer signage.

As a result, many homes and neighbourhoods in which older people live may present impediments to their well-being. With a lack of flexible housing choices, active transportation infrastructure, and mixed-use neighbourhoods, the Durham, Halton, Peel, and York regions will not be successful in accommodating the needs of their growing elderly populations if they fail to adjust their built environments in the coming years.

Despite having had years to prepare for what now feels like a sudden need to adapt, the GTA is at a point when the need for major changes is blatantly evident. In conjunction with social service agencies, health departments, nonprofit organizations, and volunteer committees, urban planners will play arguably the most influential and integral role in either the continued negligence or potential success of age-friendly development. As such, in the coming years planners must prioritize both the special needs of older adults as well as the applicable land-use, transit, and housing measures to accommodate such needs.

RESEARCH QUESTIONS AND OBJECTIVES

Given the remarkable growth of the senior population, a focus must be given to understanding the landscapes that best suit their needs, priorities, and lifestyles. Once equipped with a better understanding of this population, planners, designers, and architects alike can develop environments that are more inclusive to their needs.

To be sure, this issue is one that has been acknowledged and there exists considerable dedicated literature on the topic of age-friendly communities (AFC). However, much of the existing research appears to focus on the architectural and design elements (e.g. grid pattern, increased street lighting) that best meet the needs of the elderly. While these features are crucial components of this supervised research project (SRP), there is a greater need to focus on how planners - in tandem with architects and designers - can contribute to accommodating the growing senior population. Growth policies, land use plans, and zoning by-laws are some of the important tools that planners use to influence the landscape, and this SRP will explore how such instruments can be used to accommodate these demographic changes.

Further, a greater contribution to the discussion of AFC within the Canadian context is required. Much of the existing literature on this topic is based within the United States, and while this research is still applicable to the Canadian case there remains a need to distinguish the two. The GTA is one of North America's fastest growing regions, which alone warrants a great deal of investigation into how it can be made more age-friendly.

The challenges discussed above raise the following research questions, which form the basis of this SRP:

1. How does the aging process influence seniors' lives, especially in regard to their relationship with the built environment?
2. What are the implications of this age revolution for planners working within the fields of housing, transportation, and land use?
3. How can planners design plans and policies that sufficiently support the growing elderly population?
4. In light of current age-friendly community planning efforts, have planners been successful?

METHODOLOGY

The general approach of this research is both exploratory and instructive; it seeks to understand as well as respond to the problematique addressed above. In order to do so, a number of methods and analyses are applied in order to provide relevant recommendations and a better understanding of the current issues and limitations of planning for an aging population.

The first method used is a comprehensive review of the literature. Over 70 peer-reviewed articles, books, and policy documents were consulted to identify the challenges and best practices of age-friendly planning. These sources were gathered by searching for key terms such as 'age-friendly planning', 'age-friendly communities', 'active aging', 'aging in place', and 'aging and the built environment'. The information and/or findings from each source was then categorized into one of the three foci of this SRP: housing, transportation, or land-use.

A case study is the second approach used to achieve the research objectives of this SRP. Specifically, a case study of the Town of Whitby entailed (a) placing challenges and best practices found in the literature in a specific context and (b) testing how successful age-friendly planning initiatives in Canada have been. This latter aim was achieved through review and analysis of relevant policies at the federal, provincial, regional, and municipal level. Due to the scope of this research, only those policy documents that directly govern planning in the Town were chosen for closer analysis. To complement the policy review, three field visits were conducted between January and March of 2018. In each visit, measurement and observation by the author were used to assess the age-friendliness of the Town's built environment insofar as it relates to the best practices found in the literature.

STRUCTURE

Part One of this SRP outlines the context and background, research objectives and questions, and significance of the study.

Part Two sets the stage by presenting a synopsis of current Canadian trends on aging. Laying out the shifting realities of how current and future seniors are aging will contribute to the primary research objectives by incorporating an understanding of how their unique needs and lifestyles can be either supported or limited by the built environment.

Part Three provides a literature review of the implications of an aging population for the planning profession. Relevant theoretical perspectives in the area of aging and the environment are presented, followed by overviews of both best and worst practices in the areas of housing, transportation, and land use.

Part Four presents an in-depth case study of one of the GTA's fastest growing suburban municipalities: Town of Whitby, Durham Region. Guided by the insights gained in all of the preceding analyses, this section explores if and how planners in the Town of Whitby are responding to their increasing senior population.

Part Five concludes the paper by offering both practical and policy recommendations for the implementation of AFCs in the Greater Toronto Area.

CANADIAN AGING TRENDS

This chapter sets the stage for the subsequent analyses by providing an overview of the geographic, demographic, and socioeconomic trends in Canadian aging. In regards to the former, a geographic analysis provides context by highlighting that Canada's age wave is not equally distributed across the nation; importantly, large urban areas (such as the GTA) will feel the impacts of this senior growth the most. In light of this, the SRP focuses on planning efforts in urban - rather than rural - communities. A demographic and socioeconomic focus on aging is then undertaken to explore the ever-changing lifestyles of the current and future senior population in Canada. As will be discussed, recent trends are showcasing a very different reality of what it means to be a senior, and these insights are crucial in age-friendly planning efforts.

GEOGRAPHY OF CANADIAN AGING

The aging of the general population is a trend that will continue to reach every corner of the country. The Organization of Economic Cooperation and Development (OECD) expects the number of seniors in Canada to reach 26.3 per cent of the population by 2050 (Colombo et al., 2011). This projection is higher than the OECD average of 25.4 per cent, and greater than that of the United States (20.2 per cent) (Colombo et al., 2011). Put otherwise, by 2038 the number of seniors in Canada (15.5 million persons) is projected to be almost equal to the current population of Ontario, Alberta, and Saskatchewan combined (CMHC, 2012). The number of those over 85 years will be more than the current population of Manitoba and Nova Scotia (CMHC, 2012).

While Canada's population as a whole is aging, the impact of this demographic change is not evenly distributed across the country. For instance, the Maritime provinces collectively have the highest average age (43.3), while the Prairies are somewhat younger (38.7). The largest and most populous provinces - Ontario, Quebec, and British Columbia - combined sit somewhere in the middle with an average age of 41.7.

Traditionally, rural and urban communities have had similar proportions in their senior population. In fact, some research suggests that until quite recently, senior shares in rural areas were above the Canadian average (Dandy & Bollman, 2008).

In 1971, the number of seniors in Census Metropolitan Areas (CMA) only slightly outnumbered those living in non-metropolitan areas (CMHC, 2012). However, between 1971 and 2011 the proportion of Canadians aged 65 and older living in CMAs increased from 1 million to 3.2 million (i.e. from 8 per cent to 14 per cent of the population in CMAs) (CMHC, 2012).

Overall, about 79 per cent of older Canadians live in urban areas, while 21 per cent live in rural communities (Statistics Canada, 2011b). The presence of or close proximity to comprehensive health care facilities and employment opportunities in urban settings is one of the many reasons for this trend (Mohanty & Muhaji, 2010).

As one of the fastest growing and populous metropolitan areas in the country, the GTA has experienced massive changes to its demographic makeup. However, it is imperative to distinguish and highlight that much of the age revolution will be felt in the four regional municipalities that surround the City of Toronto itself. In fact, the regions of Durham, Halton, Peel, and York all experienced a much larger change in the population of those aged 65+ between 2001-2011 than Toronto did (see Figure 1). This fact suggests that many of the seniors classified as living in urban areas are living in suburban communities, a notion of which has already been hypothesized by researchers at Queen's University (Gordon & Janzen, 2013).

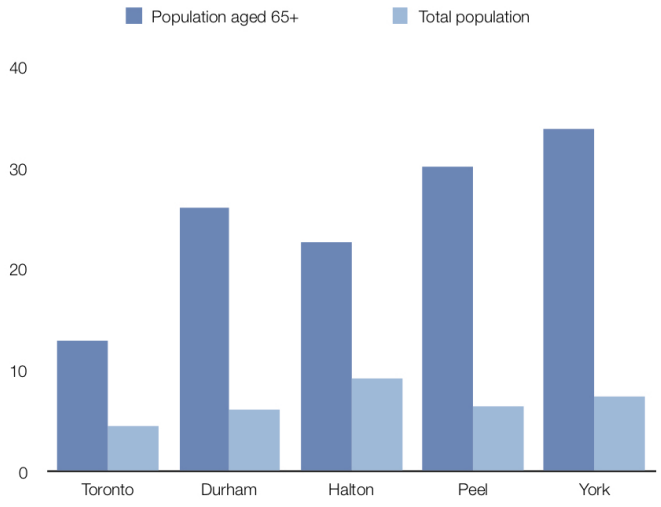

Figure 1: Population change from 2011-2016 for the age group 65 years and over. Statistics Canada.

Some researchers argue that the elderly pass through three different stages: young old (65-74), middle old (75-84), and old old (85+). This would suggest that planners need to be alert to not just one elderly tsunami but several, each of which will have very different requirements. This SRP will generally define seniors as those aged 65 years and older; this definition is consistent with the Government of Canada's age of eligibility for the Old Age Security Pension and Statistic Canada's standard age categories from both the Census of Population and Canadian Community Health Survey. Until quite recently, this age of 65 has been paralleled with a certain image of a 'typical' senior - retired, sedentary, and frail. However, the way that society looks at seniors - and the way seniors regard themselves - is changing rapidly in Canada.

HEALTH

For one, seniors are living longer and often in better health than ever before. In fact, many seniors do not see themselves as 'seniors' - one study showed that 87 per cent of those surveyed feel much younger than their actual age (Government of Ontario, 2017). Another study found that 45.8 per cent of seniors perceived their health to be 'very good' or 'excellent', while only 21.9 per cent considered their health to be 'fair' or 'poor' (Government of Ontario, 2017). Similarly, 67 per cent perceived their mental health to be 'very good' or 'excellent' while only 6.5 per cent reported it 'fair' or 'poor' (Government of Ontario, 2017).

Still, it is imperative to acknowledge that health inevitably declines with age and that many Canadian seniors live with one or more health condition. In the 2008 Canadian Survey of Experiences With Primary Health Care, three out of every four Canadian seniors (76 per cent) reported having at least one of eleven chronic conditions, compared with one in every two adults aged 45 to 64 (48 per cent) (Canadian Institute of Health Information, 2009).

Research has also found that the prevalence of most types of disabilities increases with age, particularly sensory and physical disabilities (Statistics Canada, 2012). In 2012, over 33 per cent of the population aged 65 and older had some form of disability; 26 per cent of those aged 65 to 74 and 43 per cent of those aged 75 and over (Statistics Canada, 2012). The severity of a disability increased with age; 6 per cent of seniors aged 65 to 74 reported having a very severe disability compared to 12 per cent of those aged 75 and older (Statistics Canada, 2012). 'Pain' (66.7 per cent), 'mobility' (61.6 per cent), and 'flexibility' (57.9 per cent) were among the highest reported types of disability by Canadians aged 65 and older (Statistics Canada, 2012).

EMPLOYMENT

Canada's seniors are continuing to work well into their older age. Retirement at the 'standard' age of 65 was established in an era when people's life spans were shorter, and the mandatory retirement has since been eliminated in most jurisdictions (CMHC, 2012). With this elimination, labour force participation rates for older Canadians increased between 2001 and 2011 (CMHC, 2012). In 2011, the labour force participation rate for men aged 55 to 64 was 69 per cent; 26 per cent for those aged 65 to 74; and 7 per cent for those 75 and older (Statistics Canada, 2011a). This same trend is seen in labour force participation rates for women, although these rates are lower than those for men in all age groups (CMHC, 2012). A survey of Canadians aged 45 to 59 years old found that about 37 per cent of working Canadians who are nearing retirement plan to retire at 65 or older, while 33.6 per cent plan to retire between 60 and 64 years of age (Statistics Canada, 2007). Retiring at later ages can be attributed to financial security, as recent studies of pension savings have identified that more than 3.5 million Canadians will not have saved sufficient funds to be financially secure in retirement years.

While financial security is an important motivation for retirement careers, a 2009 study by the Bank of Montreal (BMO) found that "staying mentally active" and "keeping in touch with people" were more important than "earning money" for Canadian boomers who planned to work in some capacity after retiring. Further, the 2013 Merrill Lynch Retirement Study found that retirees are seeing longevity as an opportunity for reinvention, with half of the respondents stating that they plan to "re-invent themselves" and "devote energy to pursuits they may not have been able to during their careers".

DIVERSITY

A significantly large immigrant population is another trend worth noting in regards to aging in the Canadian context. According to the 2016 Census, 7.5 million foreign-born people came to Canada through the immigration process, representing more than one in five persons in Canada. This trend is especially prevalent in Ontario, which has the largest immigrant population in the country (55 per cent of Canadian immigrants). While the number of non-visible minority seniors in Ontario increased by 16 per cent between 2011 and 2016, the number of visible minority seniors increased by 44 per cent (Laher, 2017). As many ethno-diverse cultures have distinct approaches to aging, a broader range of programs, services, and strategies must be offered.

TECHNOLOGICAL ADVANCEMENT

Another important trend regarding Canadian seniors is their increasing technological advancement. In fact, research has shown that seniors represent the fastest growing demographic of internet users (Government of Ontario, 2017). In 2010, 60 per cent of seniors aged 65 to 74 and 29 per cent of seniors aged 75 and over used the internet on a regular basis (Statistics Canada, 2010). This figure is a significant increase from 2000, when only 5 per cent of seniors aged 75 and older went online (Statistics Canada, 2010). Importantly, as internet-literate and technologically advanced baby boomers enter their later years, they represent a plethora of opportunities for smart home and transit technologies.

HOUSING

In terms of current living arrangements for seniors, 93 per cent are living in private households. In fact, according to data from the 2011 Census, senior-led households are more likely to own a home than non-senior households; in 2006, 72 per cent of all seniors' households owned their home, compared to 67 per cent of non-seniors households. Most seniors (63 per cent) live with a partner or spouse; 23.5 per cent live alone, while 11 per cent live with other relatives and 1.9 per cent with non-relatives.

In 2011, approximately 52 per cent of Canadian seniors lived in single-detached homes, although the proportion of older Canadians living in single- or semi-detached homes decreases with age. In later years and/or as their incomes decrease, many older Canadians may choose retirement homes or other housing and tenure. In fact, the 2015 report Future Care for Canadian Seniors: A Status Quo Forecast estimated that in the next decade the number of seniors living in a retirement home, supportive housing, or a long-term care home will grow to over 610,000. If this holds true, Canada will need an additional 131,000 spaces by 2026 and 240,000 by 2046.

AGING IN PLACE

On a related note, perhaps the most significant trend is that Canadian seniors are preferring to age in place. "Aging in place" can have several meanings: for some seniors, it may mean staying in the same house that they have occupied for years or decades, while for others it may simply mean staying in the same community, although in a different (usually smaller) unit (CMHC, 2012).

Nonetheless, studies have shown that an overwhelming number of the elderly population prefer to live independently and age in place until their health or economic circumstance force them to relocate to retirement homes or long-term care facilities. In one survey, 73 per cent of respondents strongly agreed with the statement that they would like to stay in their current residence as long as possible (Keenan, 2010). In another survey, 81 per cent of respondents older than 50 years preferred to remain in their current homes, and 64 per cent wished to do so even in the event of disabling illness (Cannuscio, 2003).

The desire for seniors to age in place can be attributed to a number of motivations. On a general level, the ability to age in place and remain in one's own home environment represents a sense of security as it holds memories and may be in close proximity to friends and family (Hodge, 2008). Scharlach and Lehning (2015) too bring up the importance of place attachment and that people give significant meaning to the place where they live, thus offering the notion that staying in one's own place of residence rather than moving is the ideal option for seniors. On other levels, aging in place can facilitate independence, mitigate social isolation, and enable choice in terms of living preference (Lawler, 2001; Wiles et al., 2012). Overall, aging in place means that residents have invested heavily in the communities in which they live; as such, seniors who wish to remain in their homes or communities should not have this decision defined by limitations brought out in the built environment (Ball, 2012; McDonald, 2011).

CONCLUSION

Of course, broad generalizations of older adults will be impossible; the elderly may in fact be one of the most diverse age groups as they have had very different life experiences. As this analysis has demonstrated, this age group covers a spectrum that includes both wage earners and retirees, urban and rural dwellers, those living with a number of health conditions and those in great health. Nevertheless, the habits, lifestyles, and aspirations of today's Canadian seniors paint a considerably different picture than those of generations before. Specifically, seniors are shaping up to be more healthy, urban, and active in both the workforce and their communities than ever before. As such, it is imperative that urban planners, architects, and designers alike ensure that seniors, as the fastest growing age group, can keep active as well as participate and remain in their community well into their later years. As the next section will demonstrate, much of this responsibility falls into the jurisdiction of housing, transportation, and land use planners.

PLANNING FOR AN AGING POPULATION

This section explores the implications of an aging population for the planning profession. To begin, the theoretical framework of environmental gerontology is presented before bridging into the key findings of the field. The existing academic research and literature on aging and the environment is reviewed, with focus given to the three areas of housing, transportation, and land use. Overall, this section highlights the significance of the physical environment to the aging process, as well as how planners are instrumental in either the success or failure of assuring suitable physical settings for seniors.

THEORETICAL BASIS

Research on aging, and in this case more specifically on how older persons move through space in daily life, has a long history. In the late 1960s, early development of the field of environmental gerontology was strongly intertwined with the foundation and growth of environmental psychology. During this time, the domain in gerontology was premised upon investigating the "fit" between older people and their environmental context (Lawton & Nahemow, 1973; Rowles & Bernard, 2013). For instance, Lawton's "environmental press" theory (1983) argues that when the fit between competence and press is excessively high or low, it is likely to adversely affect the ability of the person to function (see Figure 2).

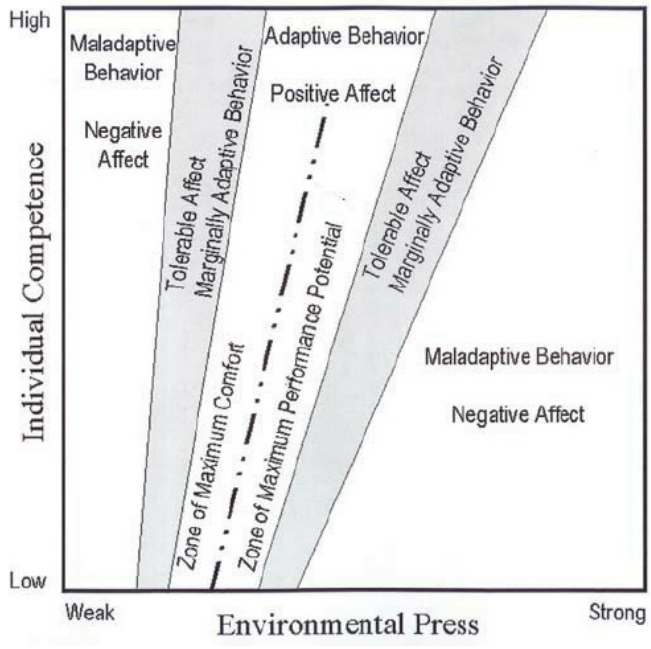

Figure 2: Competence Press Mode. M. Powell Lawton.

Since the 1970s, the strongly applied and theoretical focus of the field has been accompanied by a less prominent school of thought that has grappled with trying to understand the environmental experience of growing old (Rowles & Bernard, 2013). Understanding the meaning of place and home to older adults, and the manner in which this meaning evolves as a result of advancing age and environmental change, is one of the principal objectives of such research (Rowles & Bernard, 2013).

In recent years, cross-disciplinary research has emerged from fields such as human geography, transport research, geriatrics, and sociology (Schwanen & Paez, 2010). Topics studied have included the everyday life of older persons in relation to well-being (Schwanen & Ziegler, 2011; Nordbakke & Schwanen, 2013), social participation (Ziegler, 2012), quality of life (Metz, 2000; Banister & Bowling, 2004; Spinney, Scott, & Newbold, 2009), automobility (Rosenbloom, 2001; Rosenbloom & Ståhl, 2002), and travel patterns and accessibility (Alsnih & Hensher, 2003; Hjorthol, Levin, & Sirén, 2010).

AGING & ENVIRONMENT

The necessity to plan and adapt landscapes for an aging population stems from the argument that place is integral to how old age is experienced and constructed (Kontos, 2000). As Golant (2014) argues, "growing old is not just a personal affair" that can be reduced to a set of "individual indicators, such as health status and physical and cognitive functioning". Rather, successful aging depends heavily on the quality of older people's residential and community settings. More than any other age group, seniors' ability to conduct active and engaged lifestyles and be physically and mentally healthy depends on their occupying places - their communities, neighbourhoods, buildings, dwellings and rooms - with compatible physical and social environments (Golant, 2014). Especially at higher chronological ages, older people spend a great deal of time in their proximate environments and are thus more susceptible to the problems posed by their settings (Golant, 2014).

In all, the existing research on how older persons interact with their environment has

produced valuable knowledge as well as underscored the notion that with old age often comes unique needs that can be greatly supported or inhibited by an environment. For instance, studies have found that seniors may value social connections more than their younger cohorts. In this instance, social cohesion can be defined as a "feeling of belonging...[and] a psychological sense of community", and ensuring that seniors feel this is essential to maintaining their physical and mental health (OPPI, 2007). In fact, data from the Canadian Community Health Survey shows that seniors who report a strong sense of community belonging are 62 per cent more likely to be in good health compared to 49 per cent who feel less connected (Edwards & Mawani, 2006).

Further, research has shown that feelings of choice and control are important psychological needs for older adults (Ball, 2012; Ontario, 2017). The cessation of driving, reliance on fixed income, and downsizing of dwellings are all common changes that can lead to feelings of lost independence for seniors. The Canadian Mental Health Association (CMHA) (2010) notes that such effects can make seniors more susceptible to disorders such as depression, anxiety disorders, and addictions.

Finally, the physiological changes that come with age are some of the most important factors that affect how seniors interact with their environment. Simply put, health declines as people age and, in turn, mobility declines too (Burkhardt, 1999). Simple factors such as unsafe or unwelcoming sidewalks, traffic problems, and lack of seating can thus unintentionally double the risk of functional loss for older people. As injuries due to falls can threaten health status, independent living, and overall autonomy, older adults are more likely to exercise caution in maneuvering through the built environment than any other age group.

In all, growing knowledge of the effects of physical barriers on mobility, the way in which older adults perceive space, deeper understanding of the community to its older residents, and more sophisticated insight into their values have all been well documented. Through this knowledge, it becomes clear that the built environment has tremendous impacts on the older adults that move through it. By shaping behaviour, affecting thoughts, feelings, social interactions, physical well-being, and sense of self, the built environment is highly influential in the human experience and thus must be adapted to accommodate the ever-growing aging population in Canada (Rivlin, 1982).

HOUSING

The provision of adequate housing is vital for every age group, but this is especially true for older adults. Not only do seniors tend to spend more time in their homes than their younger cohorts, but certain elements - such as dwelling height, cost, and proximity to amenities - can be largely influential on their quality of life for many of the reasons discussed above. As such, the challenge of providing age-friendly housing has strong implications for planners, including concerns about social isolation, accessibility, and affordability.

CHALLENGES

Housing for seniors is a challenge across the country. According to a poll by Canadian Association of Retired Persons (CARP), just one-quarter (27 per cent) of respondents replied that housing is 'easy to find' and very few (4 per cent) replied that it is 'very easy' to find (CARP, 2009). Further, in an American study done by Scharlach (2009), more than 14 per cent of homes occupied by seniors were in need of major repair. This figure is even higher for seniors who have limited physical capabilities and require certain housing features (e.g. ramps, single-story housing, railings, etc) (CARP, 2009).

In general, many of the homes in which older people live were not designed for their changing needs and may present impediments to their well-being (Alley et al, 2007). The most common problems found within the literature include:

•Large homes on larger lots that require maintenance which older residents may not have the desire, ability, or funds to maintain.
•Homes pushed back from the street and away from each other, leaving minimal room and opportunity for social interaction between neighbourhood residents.
•Stairs and rigid floor plans that create barriers to changing bodies with a permanent or temporary disability.
•Single-use zoning where only one sort of housing type - most often single family detached homes - is constructed. Those seeking other types of housing are thus unable to live in neighbourhoods that they otherwise would like to.
•Similarly, large-scale developers constructing entire subdivisions at once, creating a lack of diversity in floor plan options (Ball, 2012).

Overall, the housing that is currently available to seniors will not be sufficient as this population continues to grow (Demirkan, 2007). However, the solution should not have to be relocation to retirement and nursing homes, as the choice and ability to live in one's own home is an important source of independence and autonomy for seniors. Therefore, both the design and location of housing for seniors must be considered.

BEST PRACTICES

Within the literature, the availability of housing choices - in terms of location, form, type, etc - is the most pressing point of action. Having a range of well-diversified and affordable housing alternatives contributes to a sense of control and choice for older adults and provides seniors with the option to remain in the same community in the event that their current residence is no longer an option (CMHC, 2008).

Such supply allows them to respond to sudden changes without abandoning familiar surroundings and the connections that they may have formed in that setting (CMHC, 2012). The CMHC notes that there is a need for more community-based choices, such as common or shared-living models. These are currently undersupplied in the housing market for seniors, despite offering affordable and manageable housing options that provide for social interaction (CMHC, 2012). An example of such housing can be found at Harbourside Cohousing in Sooke, British Columbia (see Figure 3). Located on two acres of waterfront property in close proximity to town amenities, residents are able to have their own private units while sharing all amenities and housekeeping responsibilities. The implementation of flexible zoning tools would be instrumental in the diversification of neighbourhood housing stocks (OPPI, 2009).

Figure 3: Harbourside Cohousing, Sooke, B.C. Cohousing Development Consulting.

In addition to the provision of varied housing choices, flexibility and adaptability should be incorporated into housing design. Specifically, as the CMHC argues, any housing unit should be adaptable as its residents age to promote aging in place. Features to ensure flexibility are generally unobtrusive, and roughing them into the original construction costs a fraction of what it would cost to add them on later (CMHC, 2012). One such example is to have the unit layouts compatible for the conversion of a two-storey home into a duplex or to allow the conversion of an attic into an additional living space for caregivers. In accomplishing this, designers and developers should be encouraged to revisit the concepts of “Flex-Housing” and Avi Friedman’s “Grow Home”, which allow for flexibility and intergenerational family living (OPPI, 2009).

In terms of the current housing stock, many cities have implemented innovative programs and policies to enable the adaptability of homes for seniors. For instance, the City of North Vancouver developed the Adaptable Design Policy, which creates apartment units that can be renovated inexpensively, or grab bars that can safely be installed. Further, the City of Gatineau offers financial assistance of up to

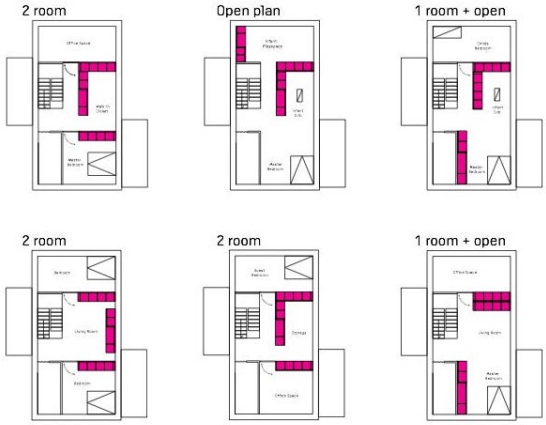

Figure 4: Adaptable housing floor plans. Henning Larsen.

$3,500 to low-income seniors aged 65 and older who are in need of minor modifications to their their permanent home. The program is designed to allow seniors to continue to live in their home independently and with a greater sense of security. In addition, the City has authorized the development of secondary suites on lots containing single-family dwellings in order to permit seniors to live with their families.

Finally, it is essential that housing is located in close proximity to other services and amenities. This issue is explored in greater depth in Section 3.6, but it should be underlined that mixed-use neighbourhoods are vital for the mobility and proper health of older adults.


Figure 5: A planned housing complex in Drøbak, Norway. To accommodate the town’s growing elderly population, the community will offer a range of different units and adaptable floor plans. Haptic Arch

TRANSPORTATION

Like all age groups, the transportation needs of the elderly are not homogenous. Lifestyle and the socio-demographic characteristics of seniors are varied and bring about different transport mode preferences (Hildebrand, 2003). There are also differing health situations and physical capabilities among older adults that affect transport choices. Nonetheless, the challenge of providing accessible transportation and addressing mobility issues among the elderly has far-reaching implications for planners. These include concerns about higher accident rates among older drivers as well as social isolation and lack of access to services and amenities following driving cessation.

CHALLENGES

It is well established in the literature that seniors are increasingly dependent on automobile use due to the sprawling and auto-dependent nature of the neighbourhoods that were built following World War II. Specifically, the baby boomers born in the post-war period lived in the middle of the automobile revolution and thus developed increased dependency on the private car for everyday activities (Mercado et al, 2010). Previous research has associated baby boomers with limited use of public transit and higher automobile trip rates, with vehicle miles traveled having doubled among the older population since 1983 (Rosenbloom, 2004). Such observations would suggest that older adults are hesitant to relinquish driving. In a study in the Minneapolis-Saint Paul region, seniors expressed fear of losing their driver's license and becoming unable to drive (Wasfi et al, 2012). In Canada, this same sentiment has been empirically validated in a number of studies (Miller & Mercado, 2010; Mercado & Páez, 2009; Newbold et al., 2005).

Seniors' reliance on automobile travel is problematic for a number of reasons, but perhaps the most pressing is because this age group has higher accident rates per distance traveled (Eberhard, 2008). In Ontario, the number of drivers aged 65 and older who have either been killed or injured has increased by 20 per cent between 1990 and 2003 (Ministry of Transportation, 2005). These higher observed accident and mortality rates can be attributed to cognitive changes that impact reaction time and awareness (McGwin et al, 2000), as well as increased frailty and decreased ability to recover in the event of an accident (Li, Braver, and Chen, 2003).

Nonetheless, studies have found that adults over age 65 drive less than their younger counterparts (Rosenbloom, 2004). In Canada, the number of licensed drivers decreases with age, as does the number of kilometres driven: in 2009, Canadians aged 45-54 years drove an average of 20,340 kilometres per licensed driver per year compared to 15,207 kilometres for those aged 65 or older (Transport Canada, 2011). Further, research from the United States and United Kingdom has found that older people start limiting or relinquishing driving from the age of 70 years (Burkhardt & McGavock, 1996; Rabbit et al., 1996). A complex web of factors may lead to such an event, but the most common is health status (Mercado et al, 2010). In a study by Dellinger et al (2001), more than 40 per cent of older drivers reported various medical conditions as the reason for driving cessation. Visual trouble, Parkinson's, dementia, and stroke are all common medical conditions that have been associated with the limitation or cessation of driving (Lafont et al., 2008).

Just as seniors' continued reliance on the automobile poses a set of challenges, their relinquishment of it does too. Specifically, the loss of a driver's license signifies the loss of independence, and for many seniors - especially those living outside of urban centres - losing the ability to drive limits autonomy and comprises quality of life. While many seniors rely on friends and family members to drive them to their destinations (Dumbaugh, 2008),

this is neither a sustainable nor ideal solution; an American Association of Retired Persons (AARP) (2012) survey found that 59 per cent of 1500 respondents agreed with the statement “I hate to depend on other people”.

Offering a range of transportation options is thus key to helping seniors age with dignity in their place of choice; as affirmed by the United Nations Centre for Human Settlements (UNCHS) (1993), “inaccessible transport continues to be a tremendous barrier to independent living, because it restricts the choices for housing…”. Further, access to different destinations or services through different modes of transportation has been identified as a key factor in the mobility of seniors and consequently their quality of life (Banister and Bowling, 2004). As such, an elderly person’s capacity to traverse urban space to undertake recreational activities and to obtain the various goods and services that contribute to social well-being is highly dependent upon their available transport options (Coveney & O’Dwyer, 2009).

BEST PRACTICES

To ease older adults out of driving while maintaining the same level of independence, high quality alternative travel modes - including public transit - are needed. Without better travel alternatives, older seniors will continue to drive to meet their transportation needs, even if driving is stressful (CMHC, 2008). As Rosenbloom (2003) notes, seniors would be more likely to consider public transportation if the service was adapted to better meet their needs. CARP (2010) also stresses the availability of transportation for seniors, recommending that public transit systems extend services to provide consistent and reliable service. For example, they suggest service in off-peak hours and the creation of stop request programs that allow seniors to be dropped off in between transit stops (CARP, 2010). In addition, Hodge (2008) urges that the physical environment - in terms of the terrain, presence of complete sidewalk systems, and the distance between transit stops - are significant factors that play into the choice of transportation for seniors.

Further, a paper by the New York Academy of Medicine for Age-Friendly New York City (n.d.) suggests that at least five attributes are needed to encourage seniors’ use of transit:

- Availability: seniors need transit mainly in the non-peak periods and their destinations are not usually workplaces, so transit that puts commuters first will not meet their needs.
- Accessibility: the transit available must be close enough to be convenient to use, and when a vehicle arrives, seniors should be able to get on it easily.
- Acceptability: the transit journey from beginning to end must be perceived as safe, comfortable, and pleasant—these experiences apply to transit stops and their surroundings as much as to vehicles; the attitude of transit staff is also a consideration.
- Affordability: seniors should consider the cost worth the journey, for example, short trips in non-peak periods should cost less than long trips at rush hour; this type of differential pricing entails smart cards combined with smart pricing policies.
- Adaptability: the transit system must be adapted for the needs of seniors who use walkers, wheelchairs, mobility scooters, or guide animals.

Similarly, a survey carried out in Chicago by Hossein and Mohammadian (2008) asked seniors what they considered the most important factors in making the switch to transit. The responses were divided into low-technology and high-technology features. Of the latter, real-time information on wait times at transit stops and low-floor buses were overwhelmingly important factors for seniors (Hossein & Mohammadian, 2008). In terms of low-technology features, the top three were information on schedules, greater frequency of services, and special routes for seniors (Hossein & Mohammadian, 2008).

The literature recommends the exploration of alternative models of transit that can be implemented in both large or small communities. For instance, the OPPI (2009) suggests a concept that combines the low fares of transit with the personalized services of a taxi, known as a “collectivo”. An innovative transit model - currently in place in the Town of Niagara on-the-Lake - includes a subsidized fee for service that provides on-demand taxi/transit service available to anyone without a driver’s license. Additional strategies for supporting the cessation of driving and promotion of alternative modes of transit for seniors include: using school buses off-hours for scheduled grocery or shopping runs for seniors (MacDonald & Hébert, 2010); financial incentives to carpool (MacDonald and Hébert, 2010); and smart pricing policies that ensure short trips cost less than longer trips (New York Academy of Medicine, n.d).

Regardless of the specific transit strategy, model, or alternative implemented, it should be able to approximate the private car’s level of reliability, convenience, spontaneity, personal security, and flexibility (Coughlin, 2001). Not only will this ensure a comfortable transition upon driving cessation, but also that seniors will be able to age in their place of choice and with independence.

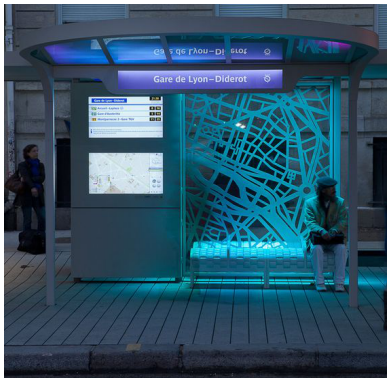

Figure 6: A transit stop in Paris, complete with adequate shelter, seating, lighting, and up-to-date wait times. Metalco.

LAND USE

As discussed, the idea that the built environment profoundly impacts the lives of older adults has a long history in gerontology (Lawton and Nahemow, 1973). However, much of this research has focused on the micro environment (i.e. institutional settings and home environments). By contrast, the macro environment - the community, neighbourhood, and region - and its influence on seniors’ quality of life has received an “astonishing” paucity of research (Kendig, 2003). Stafford (2009) similarly makes the argument that aging in place has been “erroneously” equated with aging in one’s home, and that the meanings of “place” have equally important holdings in a “larger spatial sense”. To be sure, public and shared spaces are critical environments that shape the conduct of everyday life and influence economic prosperity, environmental quality, and social equity (AARP, 2011). Even more, public spaces - or ‘third places’ (Oldenburg, 1989) - are tremendously important for seniors who live in isolation as they provide opportunities for socialization and congregation. Thus, the design, ambiance, and availability of these spaces is a critical element in determining older adults’ ability and willingness to venture forth from the comfort of their home.

CHALLENGES

As noted in earlier sections of this paper, baby boomers are increasingly residing in suburban settings. In Canada, the physical elements that make up suburbia typically include widely dispersed, low-density residential development with rigid separations between homes, shops, and workplaces (Ewing et al, 2003). There is often a lack of distinct thriving activity centres, and road networks are associated with large block development and poor access from one place to another (Ewing et al, 2003). Much of this spatial structural pattern has to do with zoning regulations, which often mandate homogenous subdivision developments by requiring singular, uniform development standards and building types (Ball, 2012). Municipal massing, setback,

and architectural standards are often applied uniformly to all developments - regardless of scale - and mixed-use development and retail districts are pushed away from residential ones - usually to areas that are only accessible by car (Ball, 2012).

Unfortunately, the current emphases on assisted living facilities, senior-oriented paratransit, and driver screening programs do not address these larger issues with the built environment (Dumbaugh, 2008). Greater attention needs to be given to understanding the relationship between suburban neighbourhood design and aging, and specifically to how the former can act as a barrier to the success and comfort of the latter. From the existing empirical work, the neighbourhood characteristics that are typical of post-World War II development indeed act as barriers to the mobility of older adults who tend to be particularly transport deficient in sprawling suburban environments (Clarke, Ailshire, & Lantz, 2009; Kim, 2011; Rosso, Auchincloss, & Michael, 2011). Further, older adults with declining physical functioning have been found to be less able to perform daily instrumental activities then when they lived in mixed-use areas (Clarke & George, 2005).

On a related note, a number of research studies on aging indicate the strong relationship between poor health and suburban neighbourhoods (Dunn & Hayes, 2000; Stafford & Marmot, 2003; Masters et al., 2004; Pampalon et al., 2007). The concept that neighbourhood design influences the amount of physical activity undertaken by inhabitants (Balfour and Kaplan, 2002) - thereby influencing the overall state of health of inhabitants (Jackson, 2003) - seems plausible. On the one hand, these landscapes have been found to promote more sedentary lifestyles; in their study of socio-economic inequality in the Netherlands, van Lenthe et al (2005) reported that poor neighbourhood design is related to a high probability of inactivity. These findings are important as such inactivity can, of course, contribute to the decline of both the physiological and mental health of older adults. In regards to the latter, there is growing evidence that physical activity can improvecognitive function (Angevaren et al., 2008) among older adults, as well as those with mild cognitive impairment (Baker et al., 2010; Angevaran et al., 2008). In addition, physical activity has been found to reduce Alzheimer's risk (Larson, 2008) and clinical depression and depressive symptoms in the short-term (Sjösten and Kivelä, 2006).

Another health problem related to urban form is that of urban heat islands. The hard infrastructure that dominates suburban landscapes (e.g. roads and roofs made with black asphalt) absorbs the sun's heat rather than reflecting it back, thereby raising surface temperatures and overall ambient temperatures (OPPI, 2007). Coupled with the increase of smog, this is particularly problematic for elderly people who are already at risk of heat-related health problems (OPPI, 2007).

In addition to mobility and health, the safety of older adults has been found to be incredibly compromised in suburban neighbourhoods. In a poll conducted by AARP (2011), over 40 per cent of adults aged 50 and older reported inadequate sidewalks in their neighbourhoods. More sobering, nearly 50 per cent reported that they cannot cross main roads close to their home safely (AARP, 2011). It is perhaps thus unsurprising that pedestrians aged 65 and older accounted for 18 per cent of all pedestrian fatalities and about 10 per cent of all pedestrian injuries nationwide in 2008 (AARP, 2011). Fast traffic, wide streets, and short crossing times at intersections are only some of the safety hazards that, coupled with increased fragility and frailty, make older adults more likely than their younger counterparts to be killed while walking (AARP, 2011).

BEST PRACTICES

On a general level, compact development that is typical of prewar development and features local shops, services, and amenities is more conducive to maintaining the mobility of the aging population (Michael et al., 2006). Certain tenets of smart growth communities are especially important to seniors striving to remain independent members of their community: pedestrian-friendly orientation of streetscapes; mixing of land uses; availability of transit options; and the existence of affordable and diverse housing stock. While these age-friendly principles can be easily incorporated into the design of new neighbourhoods, it should be noted that there is greater difficulty in achieving these features in existing suburban neighbourhoods. However, as the following sections will highlight, there are many small-scale and manageable design interventions that can help retrofit sprawling, transit-oriented communities into pedestrian-focused ones.

Walkability and Connectivity

Planning for walkable communities is an important factor relevant to maintaining a high quality of life for elderly people. 'Walkability' is a frequently employed index of the quality of the neighbourhood, and is determined by factors such as residential density, land-mix-use, street connectivity, aesthetics, and safety. Design plans that feature walkability create safe environments for seniors, facilitate community engagement, reduce feelings of isolation and promote active lifestyles —all of which are essential for successful aging in place and improved physical and mental health. In fact, a study in the International Journal of Clinical Practice found that regular exercise reduces the risk of 25 different health conditions (Alford, 2010). A study over 9 years by Erickson et al (2010) also found that walking a relatively long distance (6 to 9 miles) each week is associated with greater grey matter volume, which is in turn associated with a reduced risk of cognitive impairment, including the onset of memory problems and dementia. The more physically active participants who had retained more grey matter saw their chances of developing a cognitive impairment cut in half (Erickson et al, 2010). Further, more active individuals have been found to be less depressed and anxious and have higher ratings of quality of life (Nelson et al., 2007). One study found that living in more walkable areas was related to fewer depressive symptoms among older men (Berke et al., 2007). Researchers have suggested that this may be due to a greater sense of social connectedness (Berke et al., 2007).

Additionally, one study showed that older women who walked at least 8 blocks per week had fewer depressive symptoms and cardiovascular disease (CVD), improved gait speed and lung function, and less decline in walking speed and functional performance than women who walked less (Simonsick et al., 2005). Older adults who walked at least one mile per day were 50 per cent less likely to die from all causes (Smith et al., 2007) and less likely to die from some types of CVDs (Smith et al., 2007; Noda et al., 2006). Several intervention studies have shown that increases in walking can lead to increases in maximal oxygen capacity in adults (Shin, 1999; Pollock, Carroll, & Graves, 1991); this is important as it relates to many health outcomes (Blair, Cheng, & Holder, 2001; Dionne et al., 2003). Other intervention studies have shown positive effects of amount of walking and additional health benefits for stroke risk, functional capacity, disability, hospitalization days, and physical function (Purser et al., 2005; Tully et al., 2005). A meta-analysis of walking interventions suggested that walking increased aerobic capacity, decreased body weight and body mass index (BMI) and body fat, and improved diastolic blood pressure among sedentary adults (Murphy et al., 2007).

Collectively, this research indicates that regular walking produces weight-related and cardiorespiratory health benefits as well as improved strength and flexibility.

Given that the loss of strength and flexibility often results in the need for assisted living, such findings further suggest that regular walking may help prolong older adults' capacity for independent living (Kerr et al., 2012).

From the perspective of older adults, the elimination of high-speed through-traffic is important (Dumbaugh, 2008). Roadways in senior-friendly communities should be designed not to expedite through-moving automobile traffic but rather to encourage slower and more consistent operating speed; this could be achieved by traffic calming design features such as narrower roads, more curves, street parking, and slower speed limits (Kerr et al., 2012). Grid-pattern neighbourhoods with frequent street intersections similarly work to slow traffic, enhancing the comfort and safety of older pedestrians and addressing the safety needs of older drivers (Kerr et al., 2012). Further, as several authors have observed, permitted left-turns should be abandoned in favour of four-way stops and signalized turns to prevent the left-turn crashes prevalent among older adults (Dumbaugh, 2008). Wide, paved shoulders along higher speed roads not only provide room for bicyclists, but give older drivers added maneuvering room for turns (AARP, 2011).

Connectivity is the primary indicator of street network integrity, and an important factor in the walkability of the landscape. While poor connectivity is not solely an older adult issue, older adults are more vulnerable to its negative effects and have more at stake (Ball, 2012). Of particular concern for older adults who do not drive, a poorly-connected network is difficult to serve with transit and can thus be isolating (Ball, 2012). Even for older adults who do drive, a poorly-connected network concentrates more traffic on high-speed arterials that are dangerous to enter from the lower speed roads (Ball, 2012). Further, poor connectivity makes it difficult to establish a mixed-use neighbourhood where local retail, services, and amenities can be accessed.

Figure 7: An example of improved connectivity. Scott Ball.

In a large sample of older adults, Freedman et al (2008) found that street connectivity was associated with a reduced risk of limitations in instrumental activities of daily living. Similarly, Li et al. (2005) found that walking was more likely in neighbourhoods with higher street connectivity.

Ball (2012) notes that there are a number of rule-of-thumb measures that balance pedestrian comfort and automobile mobility for optimum connectivity:

•Regular intersections spaced at comfortable distances (i.e. every 200 to 500 feet).
•Small block sizes, averaging perimetre measurements of no more than a quarter mile;
•Generous number of street intersections, ranging from 120 to 240 per square mile;
•Good ratio of four-way intersections to three-way intersections.

In addition to traffic calming measures and improved street connectivity, previous research has found a number of design and land-use features that promote walkability for older adults. For one, density has emerged as a prominent feature that can either promote or discourage walking in the elderly.

Specifically, some researchers have found that high density is negatively associated with attractiveness for walking (Borst et al., 2008). Although no direct explanation for this finding exists, there may be several possibilities: streets within densely populated areas may be surrounded by high-rise buildings and thereby reduce the scenic quality of the built environment; or high density surroundings may portray a sense of concealment or enclosure and thus be perceived as unsafe (Nasar & Fisher, 1993). The latter is probable, given that a high perceived risk of crime has been found to reduce the incentive to walk in the case of elderly adults (Michael et al., 2006).

Other studies have found that the presence of activity on the street is positively associated with physical activity in older adults. As Borst et al. (2008) note, busy streets might be considered attractive for walking because they are typically wider or because of the presence of human activity. Interestingly, the presence of vacant buildings has been found to discourage walking which would suggest that even the perceived presence of human activity is important to older adults (Borst et al., 2008). Overall, land use with a mix and proximity of shops, services, and recreational facilities is an imperative environmental feature for walkability in older adults. This premise is supported by findings that show access to destinations (e.g. places of employment, shoppings, and parks) is positively associated with walking in older adults (King et al., 2011; Li et al., 2005; Michael et al., 2006). Further, a Seattle study concluded that having grocery stores, restaurants, and cafes is the best predictor of how much older adults will walk (King et al., 2011). The presence of recreation facilities has also been found to be supportive of older adults' walking (Berke et al., 2006).

The overall quality of the street itself has been found to be a significant factor in the walkability of older adults. Michael et al. (2006) found that well-maintained streets (e.g. absence of litter and graffiti) increased elderly people's incentive to walk. Several other studies have found that features such as falls hazards - presented by features such as uneven or cracked sidewalks - are significant deterrents to walking (Aronson & Oman, 2004; Lockett, Willis, & Edwards, 2005; Michael et al., 2006; Kealey et al., 2005).The quality of street curbs has been well-established in the literature, noting that curbs should be designed to make crossing for older adults with wheelchairs or other aids easier (Kerr et al., 2012). An example of this is found in Tokyo, where a curb cut program aims to improve the conditions for pedestrians through the use of textured surfaces used to indicate changes in level and direction of pedestrian crossings. Moreover, the use of lights and colours in addition to providing an extra 20 seconds for the elderly or individuals with disabilities to cross an intersection are used as making environments more age-friendly.

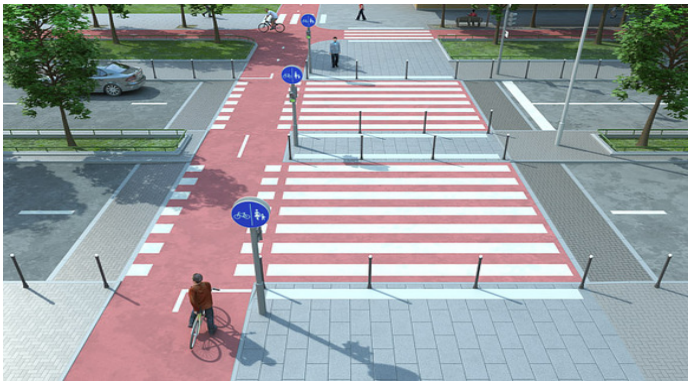

Figure 8: Colourful raised crossings provide texture and visibility for seniors. Vladimir Zlokazov.

Finally, many studies have found that elderly people appear to find routes surrounded by greenery and vegetation attractive to walk along (Li et al., 2005; Nagel et al., 2008; Shigematsu et al., 2009; Wilcox et al., 2000). As noted by Michael et al. (2006), trees and front gardens along links as well as within parks are perceived as being attractive for walking. While some have associated this finding with the enjoyment of scenery and having interesting features to look at (Kealey et al., 2005), others note that certain greenery (e.g. planting strips between the sidewalk and the road) emanate an important sense of safety for older adults (Michael et al., 2006).

Mixed Uses

To live full and independent lives, seniors need to be able to access basic services such as health care, grocery stores, retail shopping, community facilities, and recreational opportunities. As such, one of the principle goals of planning for an aging population should be to encourage and develop amenity rich neighbourhoods where basic services are located within short walks of residences and/or at transportation nodes.

In order to achieve this, zoning changes and tax exemptions can be used to bring local stores and services back to residential neighbourhoods (Cao et al., 2010). Municipalities need to consider creating local hubs that bring together public services from all levels of government - e.g. a place to pay taxes, buy stamps, get government forms, renew licenses, sign up for municipal programs and health services, etc (OPPI, 2009). Many successful neighbourhoods with cores or main street hubs demonstrate the role these play (OPPI, 2009). By locating recreational and social services within communities where people live - rather than in commercial clusters accessible only by car - they will become more accessible and used (McDonald, 2011). This is especially true in light of an increasingly retired population who are not necessarily operating within the same peak retail demand periods of working adults (e.g. 9:00AM, 12:00PM, and 5PM). Therefore, older adults can provide an important market segment for retail by providing business during off-peak hours (Ball, 2012).

Rethinking the way the city uses existing spaces, such as schools and community centres, can spur the creation of new community hubs. Using community facilities to provide multiple services can save taxpayer dollars and provide better access to services, as well as promote community cohesiveness for older adults (AARP, 2011).

For example, a school might share unused space for use as a senior centre or health clinic, or open its gym, kitchen, or library for community use after hours. According to Ashe et al. (2007), these are “modifiable factors in the physical environment” and relatively easy and accessible solutions that can dramatically improve the quality of life for older adults.

Figure 9: Plans for the adaptive reuse of an industrial building in central Toronto. The site will become a vibrant mixed-use community hub. Diamond Schmitt.

CONCLUSION

As this section has sought to underscore, seniors have a significant relationship with the physical environment that is unique to their age group. Put otherwise, due to physiological changes as well as new lifestyles and habits, older adults face a range of limitations and impediments in the urban fabric that younger cohorts likely do not even consider for themselves. It is thus vital that planners, as well as policymakers in other fields, take notice of the link between aging and the environment so as to prevent the many challenges that can stem from a community that is not age-friendly.

In all, there are a variety of age-friendly designs and strategies noted in the literature. Age-friendly neighbourhoods have different types of homes for people at different stages of life, walking paths and public transit to make it easy to get around without a car, and parks, shops, services, and homes that are closer together. Age-friendly communities make it easier for residents to access services and move around their environment; they encourage healthier lifestyles. Communities can be built to encourage walking, biking, and active use of parks so that people of all ages get exercise in the course of daily life. Residents are also more likely to be socially engaged when they live in communities that have easily accessible transit, welcoming public spaces and opportunities to shop and meet people near their homes.

Moving forward, it should be stressed that such neighbourhood designs are not only to the benefit of older adults. As Hawkins et al. (1999) note, the promotion of AFCs can produce “multiple benefits from single expenditures”. As communities become denser and more pedestrian-friendly, they will realize the multiple benefits of reduced road and utility expenditures, positive tax revenue to service cost ratios, smaller ecological or carbon footprints, and reduced greenhouse gas emissions. More specifically, factors such as reduced stormwater runoff, shorter travel distances, less pollution, and a healthier population are all likely results of AFC design. Social capital is valued in the clustering of homes, jobs, recreation, shopping education, and health services, and heightened social connectivity across age groups is seen as healthier citizens are actively involved in community renewal (Putnam, 2000; Kemmis, 1995), reduced absenteeism, and increased productivity.

CASE STUDY: WHITBY,ONTARIO

In the previous sections, the age revolution in Canada was described in relation to its geographic, demographic, and socioeconomic context as well as in terms of its implications for the planning sector. While such a shift will present numerous challenges, the literature identifies many best practices and ways to adapt the built environment that benefit both seniors and the wider population.

In this section, a case study approach is used to examine the planning guidelines of a suburban municipality in Ontario in relation to the aforementioned best practices. Specifically, the research, employing both qualitative and quantitative methods, explores the extent to which the municipality has - or has not - implemented planning policies for age-friendly development. Using a case study approach serves as a ‘progress check’ on age-friendly planning in Canada, and underscores the role of planners in ensuring that the built environment is suited to the needs of the fastest growing age group.

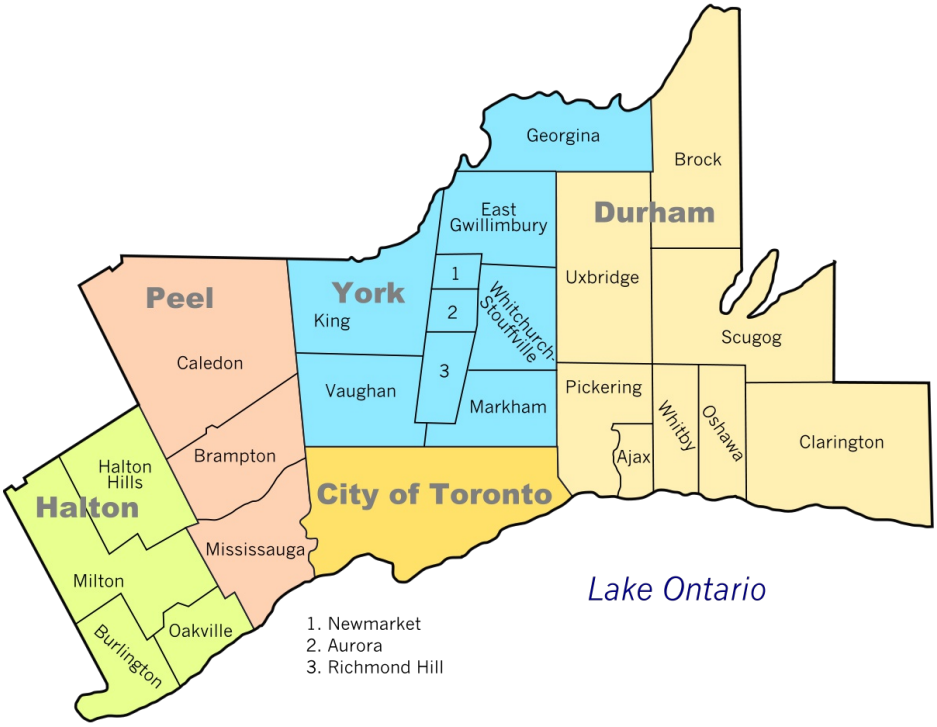

Figure 10: Map of the Greater Toronto Area. Wikipedia.

With a population of 6,417,516, the Greater Toronto Area is the most populous metropolitan area in Canada. While the entire region has seen rapid population growth in recent years, the suburban municipalities have seen exponentially greater increases than the City of Toronto itself. In fact, while the City saw a 4.5 per cent increase in total population between 2011-2016, towns such as Milton (30.5 per cent), Whitchurch-Stouffville (21.8 per cent), and Brampton (13.3 per cent) experienced much greater increases.

In addition to general population growth, many of the 'bedroom communities' within these four regional municipalities are aging faster than the City. While Toronto itself saw the number of residents aged 65 and older grow by 13.1 per cent between 2011 and 2016, Brampton's share of seniors increased by nearly 40 per cent during the same time frame. In Whitby, the increase was 31.3 per cent, and the population aged 85 and older in Vaughan grew by 53 percent - more than twice the increase among the same age cohort in Toronto.

With a total area of 2,523.80 km², Durham Region is the largest of the four that surround the City of Toronto. Between 2011-2016, the Region experienced a 6.2 per cent population increase, which was felt in each of its eight municipalities:

- Town of Ajax
- Township of Brock
- Municipality of Clarington
- City of Oshawa
- City of Pickering
- Township of Scugog
- Township of Uxbridge
- Town of Whitby.

The communities along the southern border of the region are generally suburban in nature, while those to the north can largely be defined as more rural. Overall, Durham Region has the lowest population density in the GTA (255.9/km²), and approximately 72 per cent of dwellings in the region are low-density. Nonetheless, the region is preparing for greater development and population growth.

TOWN OF WHITBY

The focus of this case study is the Town of Whitby, located in the southcentral pocket of Durham Region. This specific municipality was selected as the basis of study for a number of reasons. For one, it holds the second largest population in Durham Region and accounts for over 20 per cent its total population. Importantly, the Town of Whitby has among the largest senior population in the region (16,530 in 2016), and its proportion of this age group relative to any other is increasing significantly (see Figure 11).

Whitby was also selected for the case study due to its primarily suburban landscape. While development along the lakeshore began as early as 1836, it has since progressed northbound in a similar manner to suburbs across North America. Notably, the completion of Highway 401 - linking Toronto to the rest of the GTA - spurred rapid population growth in Whitby (see Figure 12). To support population growth from the baby boom, large suburban neighbourhoods were built that favoured automobile-oriented design. Further, single-use zoning codes were developed in an attempt to separate land uses that did not fit well together, especially due to the existing industrial presence in the southern part of Whitby. As a result, the majority of Whitby is currently defined by sprawling pockets of low-density residential neighbourhoods interspersed with big box commercial developments. The lakeshore remains the site of a number of indutrial parks, however deindustrialization over the years has left many brownfields as well.

While grid-pattern layouts and historical buildings can be found in the downtown, the area struggles to compete with both the economic opportunities found in nearby Toronto as well as the comfort and ease of suburban amenities in the rest of Whitby.

As discussed in earlier sections, the suburban built environment poses a number of challenges for the increasing senior population. In August 2014, the Town of Whitby acknowledged this by making an application for membership into the World Health Organization's Global Network of Age-Friendly Cities and Communities. By December of that year, approval was received, committing the municipality to the development of an action plan and to engaging with seniors in the review of characteristics for an age-friendly community. In 2017, the Age-Friendly Whitby Action Plan was released, which addresses both the strengths and gaps of the town in terms of its age-friendliness. Importantly, the Plan lists four goals that, coupled with other department mandates, are to guide the Town's Council in its next work term:

1. To build downtowns that are pedestrian-focused destinations;
2. To enhance the safety of local streets and neighbourhoods;
3. To remain the community of choice for families and become the community of choice for seniors;
4. To realize the economic and social potential of downtowns, waterfront and green spaces in developing local tourism; and to create more things to do and places to enjoy.

	2016	2011	2006	2001	1996
0-14 years	19.9%	20.8%	22.4%	23.8%	25.2%
Change	-0.9%	-1.6%	-1.4%	-1.4%	
15-64 years	67.2%	68.9%	68.8%	67.7%	67.0%
Change	-1.7%	0.1%	1.1%	0.7%	
65+ years	12.9%	10.3%	8.8%	8.5%	7.8%
Change	2.6%	1.5%	0.3%	0.7%	

Figure 11: Distribution (%) of the population by broad age groups in Whitby. Statistics Canada.

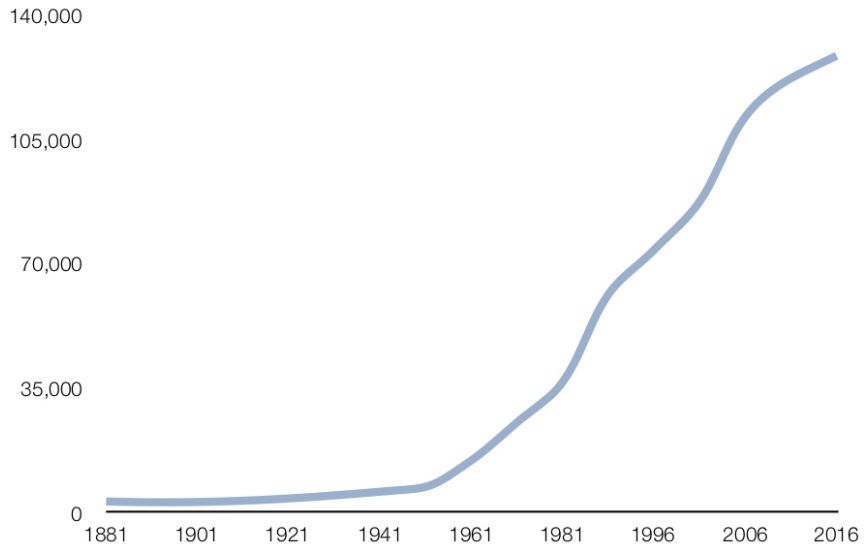

Figure 12: Population growth in Whitby, 1881-2016. Statistics Canada.

Durham Region also received funding to examine age-friendly communities region-wide. As the timing was similar, a partnership was formed with the Region to share resources and participate in community consultations together. This is significant given that the governance structure of the Region gives it principal scope over its municipalities for services such as transit, long-term planning, and housing. In April 2017, the Age-Friendly Durham Strategy and Action Plan was released.

Despite this commitment from both the Region and the Town, recall that a report by the CUI determined that although communities were successfully engaging with older adults to develop strategies and action plans, there was little evidence that municipal commitments to create age-friendly communities were leading to substantive changes in the physical environment. In fact, according to Miller (2011), age-friendly planning in Ontario is still very much a work in progress. In the remaining subsections, the applicability of this premise to the case of the Town of Whitby is explored in detail. The insights gained in the earlier portion of this paper are used to guide a policy review of the Town's current housing, transportation, and land-use frameworks, followed by a closer analysis of how and if such frameworks are being implemented.

HOUSING

As noted in the literature review, the availability of housing choices - in terms of location, form, costs, etc - is a vital component of age-friendly communities. Having a range of well-diversified and affordable housing options contributes to a sense of control and choice for older adults, and also provides seniors with the option to remain in the same community in the event that their current residence is no longer a good fit (CMHC, 2008).

POLICY FRAMEWORK

There are a range of policies that mandate the provision of a diverse housing stock. In terms of hierarchy, the Provincial Policy Statement, 2014 (PPS) is central as it provides direction on matters of provincial interest related to land use and development, and all planning decisions across the province must comply with the regulations laid out in the PPS. Importantly, Section 1.1.1 stipulates that "healthy, liveable and safe communities" are sustained by "accommodating an appropriate range and mix of residential (including second units, affordable housing and housing for older persons)...needs". While less formally, the Growth Plan mandates the provision of a diverse housing stock by enforcing

intensification and density targets that will require the development of townhouses and apartments in delineated built-up areas.

Furthermore, the Housing Services Act, 2011 came into effect in 2012 and serves as the Province's social housing and rent-geared-to-income legislation. An important feature of this policy is the requirement for municipalities to develop and implement ten-year housing and homelessness plans to address local housing needs and priorities. The Region of Durham's housing strategy, At Home in Durham - Durham Region Housing Plan 2014-2024, provides policy direction for ensuring a mix of housing options across its municipalities. Within the Plan, there is a recognition of the lack of diversity in housing type across the region and that it needs to "diversify housing options by type, size, and tenure" as well as "improve access to safe and secure housing that supports the needs of a diverse community". The Plan also explicitly states that there is a need for "more affordable rental housing options for low- and moderate-income households". To achieve this, the Plan stipulates that the Region will promote higher density development, intensification and brownfield redevelopment, encourage municipalities to develop enabling policies for secondary and garden suites, and continue to partner with health-care agencies to support assisted living opportunities for seniors. In terms of promoting affordability, the Region also promises to increase both the privately- and government-funded affordable rental housing supply, and to increase rental assistance for low-income households.

In addition, Durham Region created The Affordable and Seniors' Housing Task Force in 2016 as an ad hoc committee of Council to identify strategies that support the creation and maintenance of affordable and seniors' housing. In the 2017 report Championing Affordable Rental and Seniors' Housing Across Durham Region, the Task Force established a number of recommendations for the Region that included:

- Work with federal, provincial, municipal and community (e.g. school board) partners to develop an inventory of all publicly owned surplus land in Durham Region.
- Develop a list of priority sites for affordable rental housing in each municipality in Durham Region with municipal partners.
- Support local municipalities to implement tools, such as pre-zoning, inclusionary zoning, minimum standards for high density development and a community planning permit system, for lands in appropriate locations across the region to support development of affordable housing.
- As densities continue to increase across Durham Region, encourage municipalities to consider applying the provisions of Section 37 of the Planning Act (height and density bonusing) to realize affordable rental housing and seniors' housing objectives.
- Request the Province expand the definition of "Affordable Housing" in the Provincial Policy Statement to address households with the greatest need, to better reflect the depth of affordability issues experienced by vulnerable low income households

Since the Town of Whitby does not have its own housing plan, the Official Plan (OP) is the chief municipal source of direction for the provision of housing. Within the OP, there are several provisions that mandate the construction of a diverse collection of housing types:

- 7.1.1 The Municipality shall encourage the provision of a range of residential accommodation by housing type, tenure, size, location and cost to meet the Town's housing needs.
- 7.1.3 Council shall implement standards in the Zoning By-law(s) to ensure that an affordable mixture of housing is available in the Municipality.
- 7.4.2 It shall be the policy of Council, as part of a comprehensive land use strategy, to encourage plans of subdivision to provide a mix of housing by type, tenure and density, in accordance with the requirements of the Plan for providing affordable housing.

•7.5.1 Council shall recognize the housing requirements of special needs groups including senior citizens' housing throughout the Municipality and encourage infilling and intensification activity to provide appropriate housing for these groups.

Further, the OP recognizes and promotes the production of affordable and rental accomodations within the housing market. In fact, one of the listed "General Purposes" of the plan is to "provide policies which ensure the provision of affordable housing in Whitby". The stated definition of affordable housing found within the OP is "housing with market price or rent that is affordable to households of low and moderate income, which are households within the lowest 60 percent of the income distribution for the Housing Region". Section 7.6.1 stipulates that the municipality "shall encourage the production of rental accommodation that is affordable to a broad spectrum in the population" and Section 7.6.2 states that "the provision of housing for individuals and families unable to afford adequate housing" should be encouraged.

Given that the OP is a guiding document in the planning and development of the municipality, such stipulations must be present. However, the Zoning By-law (ZBL) is an equally authoritative document that more closely governs the permitted residential and non-residential uses, and as such is highly influential in the provision of housing mix. The Town of Whitby is governed by three by-laws: ZBL 2585, which governs land uses within the historic Town of Whitby; ZBL 1784, which governs land uses in the former Township of Whitby; and ZBL 5581-05, which governs land uses in the Oak Ridges Moraine.

While the ZBLs include a range of permitted dwelling types, it must be noted that most zones in both ZBL 2585 and ZBL 1784 only permit one type of dwelling unit. As a result, many - if not most - neighbourhoods likely have a lack of housing types, forms, tenures, and costs to choose from. This sort of zoning is problematic as it may force seniors who require a change in dwelling type out of their neighbourhoods, even if they wish to remain there because of proximity to family and friends, amenities, parks, etc.

IN PRACTICE

Overall, it could be argued that Whitby (with the exception of the ZBLs) has the policy and planning framework required for the provision of a diverse housing stock. However, how well is this policy approach reflected in current development and availability of housing options? Is there a range of dwelling units offered? How attainable are senior-friendly options? Importantly, is there a wide spectrum between independent living and long-term care that can offer the support some seniors need?

For decades, most housing units in Whitby have been built for ownership: since 1997, a total of 19,287 units have been constructed and only 380 (2 per cent) have been for rental. In fact, more than 63 per cent of rental housing was built prior to 1980. As a result, capital repairs could lead to rent increases, and decreased affordability and failure to invest in the maintenance of these units could lead to a permanent loss of rental accommodation. As of August 2017, there were approximately 6,800 applicants on the waitlist for subsidized rent-geared-to-income housing. This high demand for affordable rental housing has many implications, the limited options for seniors looking to cut costs being a significant one.

In addition to rental affordability, many seniors are concerned with increasing the range of housing choices available to them. In fact, while some seniors do face affordability issues, the vast majority of seniors in Whitby are primarily looking for a wider range of housing choices to meet their needs. Although medium- and higher-density construction is beginning to take place, there is little overall diversity in the existing housing stock across Whitby. In 2011, the vast

majority of the housing stock (71.3 per cent) in Whitby was single-detached dwellings. By contrast, there were only 2,473 apartment units with a low vacancy rate of 1.3 per cent. While these figures suggest that the housing market is vastly heterogenous and lacks diverse options, it is worth taking a closer look at the housing that is currently being constructed. Not only will this give a better idea of what the housing market will look like in the coming years - when the tail end of the boomers turn 65 - but it is a better reflection of efforts instilled given the relatively recent commitment of the Region and Town to age-friendly planning.

To analyze the current housing developments in Whitby, the CMHC Housing Market Table was consulted. This source provides accurate data on the number of dwelling units started, under construction, and completed for a given month or year. Figure 13 details each of these for the Town of Whitby in 2017. To note, of the 505 units under construction last year, the majority (64 per cent) were condominium units. As highlighted in the literature review, condominium units are an attractive option for older adults who may wish to own without the commitment of land and service maintenance.

While the construction of single-detached dwellings remained high and rental apartment units low, these figures from 2017 can be argued to signal the start of an effort towards a more diverse range of housing in Whitby.

Whether this is actually fueled by a commitment to age-friendly planning or by other engagements (such as the Growth Plan), the construction of more condominium units should be considered a step in the right direction towards adequate housing for the senior population.

As noted in the literature, community-based options, such as common or shared-living models, are prime alternatives for seniors looking for affordable and manageable housing that provides for social interaction. In Whitby, there are currently 14 co-operative housing projects, four of which are specifically targeted towards seniors. Unfortunately, three of the four are concentrated in the same downtown neighbourhood (see Figure 14) and all appear to be quite dated. The fourth, while newer, is surrounded by clusters of big box developments and does not seem to provide for the sort of safe or pleasant pedestrian activity outlined in the literature review (see Figure 15).

In terms of retirement homes, there are currently seven different options across the Town. While there are many different levels of care provided (e.g. independent units to long-term care), the wait list is long and growing: currently, there are more than 9,000 people in Durham Region on the list. This suggests that the current supply of retirement homes in the Region and Town is not sufficient in meeting the needs of the growing senior population.

	Ownership							Rental		
	Freehold				Condo					
	Single	Semi	Row	Total	Row	Apartment	Total	Row	Apartment	Total
Starts	71	0	67	138	254	0	254	0	38	38
Under Construction	82	0	61	143	310	14	324	0	38	38
Completed	151	20	97	268	71	262	333	0	4	4

Figure 13: Whitby Housing Market Table, 2017. CMHC.

Figure 14: Cluster of senior-targeted cooperative housing units. Google Maps.

Figure 15: Providence Place Christian Homes (centre). Google Maps.

CONCLUSIONS

Overall, a comparison of Whitby's housing framework and the actual situation returns a number of both successes and gaps. In regards to the former, the analysis of the housing starts, constructions, and completions of 2017 reveals that progress has been made in the diversification of housing types, specifically in regards to condominium units. However, this same analysis also demonstrated that the housing market in Whitby continues to be dominated by ownership tenure. Perhaps this is unsurprising given that land use and zoning regulations do not provide for an adequate supply of apartment dwellings and townhouses. Coupled with extremely long waitlists for co-operative housing and retirement homes, the lack of rental and affordable options suggests that the housing market in Whitby has a long way to go before being age-friendly.

TRANSPORTATION

The literature review highlighted that seniors have varied lifestyle and socio-demographic characteristics and thus bring about different transport mode preferences (Hildebrand, 2003). Although many seniors are reluctant to give up the ease and independence that the private automobile offers, the inevitable change in health or financial status in later years often forces the cessation of driving. As such, the provision of high quality alternative travel modes is necessary in ensuring that seniors are able traverse urban space to undertake recreational activities and to obtain the various goods and services that contribute to their social well-being.

POLICY FRAMEWORK

In a wider policy context, there is a range of policy and legislation that mandates the promotion of alternative transportation choices. For instance, the PPS states that efficient land use patterns promote "...transportation choices that increase the use of active transportation and transit before other modes of travel". Further, the Growth Plan describes how land use should be planned to support transit and active transportation modes, and envisions transit-supportive communities and pedestrian-friendly urban areas. It describes policies for optimizing existing infrastructure and planning new transportation corridors, ultimately giving priority to public transit when planning transportation infrastructure.

In 2008, the Metrolinx Board adopted the first regional transportation plan for the GTA: The Big Move. This plan describes a common vision for a more coordinated, efficient and sustainable transportation system throughout the GTA, supported by ten core strategies. While the plan includes all transportation modes, transit is the central focus and some 350 kilometres of new rapid transit infrastructure recommended in the plan is currently operating, under construction, or has committed funding. This includes important

corridors in Durham Region such as Bus Rapid Transit on Highway 2, electrified high-capacity Regional Express Rail on the Lakeshore East GO Rail line, and the extension of inter-regional rail service from Oshawa to Bowmanville.

On a more local scale, the Durham Transportation Master Plan (DTMP) is a strategic planning document that defines the policies, programs, and infrastructure modifications needed to manage anticipated transportation demands to the year 2031 and beyond. The DTMP recognizes that "the Region will face increasing pressure to provide efficient and convenient transportation alternatives...as the senior population grows" and acknowledges that "public transit provides access to opportunity for those who cannot (or choose not to) drive a car, including many youth, seniors, low-income families, new Canadians, and persons with disabilities." As such, improving mobility choices is a fundamental goal of the DTMP, and a range of measures is planned to address this:

- Provide transit service within a reasonable walking distance of almost all residences and workplaces in Durham Region's urbanized areas. The current standard is to provide area coverage, which is measured as a 400 metre distance from transit stops with service during the peak periods, where 400 metres represents a five minute walk at an average walking speed.
- Create a travel demand management (TDM)-supportive development strategy to help ensure that new developments are planned and designed to support transit, active transportation and carpooling.
- Continue expansion of Bus Rapid Transit (BRT) in the Regional Highway 2 corridor from the Toronto boundary to Downtown Oshawa.
- Implement a High Frequency Network that includes transit priority measures and buses operating in High Occupancy Vehicle (HOV) lanes on key corridors.

In addition to the DTMP, the 2016 Durham Region Transit Five-Year Service Strategy defines five guiding principles that are in line with many of the best practices found in the literature:

1. Availability: Most residents and employees in urban areas of Durham Region should be able to walk less than 800 metres to reach the nearest transit stop (ideally less than 600 m), and service at that stop should run from early morning to late evening.
2. Consistent: Most services should operate over the same hours and follow the same routes throughout the week, and should remain on schedule.
3. Seamless: Convenient connections between DRT and GO Transit, Toronto Transit Commission (TTC) and York Region Transit (YRT)/Viva should minimize waiting times.
4. Direct: Routes should operate on a grid pattern to maximize travel speeds and cost-effectiveness.
5. Frequent: Minimum frequencies should be attractive, and greater frequencies in major corridors should effectively enable spontaneous travel by transit.

Although the Region is the principal command of public transit, the Town of Whitby has its own transportation master plan that guides the future direction of its transit needs. In the 2010 Transportation Master Plan Study, the Town recognizes that transportation alternatives are currently deficient and that "missed opportunities for planning an efficient transportation system could result in operational problems with intensification". In the vision of a "desirable future mobility state" in Whitby, the Town will work towards a "balanced range of mobility options and choice for all users" through an "integrated, accessible, and financially sustainable transportation system". As of April 2018, Whitby's Active Transportation Plan is still under review, but is intended to "evaluate options and identify opportunities and make recommendations for...encouraging, promoting, creating, and improving active transportation facilities and events for non-motorized transportation".

Finally, the Official Plan mandates the provision of varied transportation choices that are affordable, accessible, and convenient. For instance, Section 8.1.1.1 states that the transportation system should "benefit all resident groups" by providing a "safe, convenient, and efficient" service. Further, Section 8.1.2.2 emphasizes that "all transportation modes, including public transit, non-motorized and pedestrian movement" be encouraged. Specific policies outlined include:

•8.1.3.1.6 Reserved bus lanes and High Occupancy Vehicle lanes may be implemented to reduce transit travel and improve the convenience of transit services, subject to the consideration of the reduction in road capacity available to other vehicles, and the need to widen the road.
•8.1.3.1.7 The Municipality will encourage a more grid-oriented street network in the planning of new development areas in order to distribute vehicular traffic more evenly, and provide for more accessible and efficient transit services.
•8.1.3.8.5 Major development applications and plans of subdivision shall be reviewed and assessed to incorporate the needs of the public transit service within the public street system to assist in the creation of a transit supportive urban area.
•8.1.3.8.7 As a target, a network of transit routes in urban areas shall be developed to ensure that patrons generally have a maximum walking distance of 400 metres to transit.

IN PRACTICE

As with housing, there is a solid planning framework in place for the provision of adequate transportation options in Whitby. From top-tier provincial legislation down to the Town's OP, ensuring that a variety of transportation modes are available, affordable, and accessible is a priority in current and future planning goals. However, is this truly reflective of the transportation system in Whitby? Are there many options for seniors who do not drive and, if so, how accessible are these options?

As mentioned, local transit service in Whitby is provided by Durham Region Transit (DRT). Currently, there are 13 bus routes that service Whitby, and coverage across the urban area is relatively comprehensive as nearly all major transit corridors receive service. Route design is generally in a straight line pattern (north-south, east-west), with small loops to provide increased coverage. Almost all bus routes are interconnected with service to the Whitby GO Station, which provides interregional opportunities across the GTA.

While having the service in place is of course a necessary prerequisite to usage by seniors, both the literature review and policy frameworks recognize the need for such service to be accessible and reliable. In terms of the former, the DRT has recently announced that every bus in the fleet is now fully accessible. 'Kneel' features can lower the bus to a position level with the curb for easy access, and extendable access ramps can be used for added assistance. In addition, two wheelchair/scooter securement areas are located at the front of every bus. For those who require specialized services, the DRT provides an accessible door-to-door transit option for eligible persons with disabilities. However, according to a participant in the Senior Strategy Survey, "there is a long waiting list for specialized transport services".

The accessibility of transit stops have been identified as equally important to the accessibility of vehicles themselves. In Whitby, the provision of adequate transit stops and shelters is certainly a work in progress, as noted by a number of respondents in the Senior Strategy Survey:

•"There are no shelters or waiting bus sheds along Taunton from Brock Street up to Lakeridge."
•"Accessible stops are not available at all locations."
•"Lack of transit shelters greatly impacts accessibility and health and safety."
•"Because buses (most) run every half hour, there should be shelters with seats."

To test this, an analysis of the quality of transit stops along two of the major bus routes in Whitby was conducted. The first route tested was 305 Thickson Road, which serves as a major north-south artery in the Town. Of the 17 transit stops along the route, only seven of them have shelters and/or seats. These tend to be located at intersections with heavy commercial activity, where adequate seating and lighting as well as the presence of human activity can already be found. The remaining 10 stops without shelters or seats are either poorly-marked posts off the side of the road (see Figure 16) or patches of concrete straddled between two roadways (see Figure 17). Further, these stops are located closer to residential neighbourhoods, where adequate lighting, seating, and human activity is not as plenty.

Figure 16: A poorly-marked bus stop on Thickson Road. Google Maps.

Figure 17: A bus stop with no lighting or seating, stradled between Thickson Road and Fieldnest Crescent. Google Maps.

The second bus route tested was the 900 Pulse Highway 2, which serves as a major east-west route in Whitby and cross-regionally. By contrast to the 305 Thickson Road, only five out of the 17 transit stops along this route in Whitby do not have shelters or seats. Of these five, all are located in downtown Whitby and are generally in front of public buildings (e.g. library, government office) that already have shelter and seating.

In addition to the quality of the stops themselves, the quantity and location is a good indicator of adequacy for seniors' usage. Specifically, there should be a good number of stops located within short walking distances to residential and commercial services to ensure that seniors can conveniently access them. To test this, the same two bus routes were analyzed in regards to the number and location of stops. The 305 Thickson Road route has 17 transit stops spread along approximately 5.60 kilometres. While the distance between stops varies from 136 metres to 477 metres, the average distance measures 291 metres. Importantly, transit stops are located at almost every intersection along the route, including those that lead into smaller residential neighbourhoods. The same can be said for the 900 Pulse Highway 2 route, which has 17 stops across approximately 7.3 kilometres in Whitby. On average, stops are located every 315 metres and are present at most intersections in both residential and commercial neighbourhoods.

Finally, the frequency of transit is an important indicator of its age-friendliness. A service that does not operate enough times throughout the day is problematic for seniors who rely on it for their daily functions. While quicker service during peak hours may be beneficial for those who work conventional hours, retired individuals need reliable service in non-conventional hours such as in the late morning or early afternoon. Currently, the DRT service in Whitby only has four "high frequency" bus routes, meaning every seven to eight minutes during peak hours and ten minutes throughout midday.

Of these routes, three are the east-west arteries that service the entire Durham Region, and only one is a north-south route. The remaining nine bus routes in Whitby are not “high frequency” and on average run every 30 minutes or more. According to a number of the Senior Strategy Survey respondents, this is not frequent enough:

- “Transit is not frequent enough to allow for travel within reasonable windows of time.”
- “The reliability of transit is not sufficient to make appointments, get to where I want to go and when I want to go.”
- “Transfer times between buses, particularly on major routes is deplorable and as such a deterrent for using the bus system.”
- “Buses not always reliable (come and go before scheduled time).”
- “Availability of buses require long waits before and after appointments.”

CONCLUSIONS

A comparison of the transportation planning framework and the actual quality of service in place returns mixed results. On the one hand, bus coverage and connections across Whitby are quite comprehensive, and there are transit stops in walking distance from most residential neighbourhoods and all commercial centres. In addition, all buses have been made accessible to those with decreased mobility. However, there is room for improvement. As demonstrated, many transit stops are not accessible and pose a number of safety concerns, which can act as a major deterrent to transit use for seniors. Further, the frequency of buses has been identified as inadequate for seniors, especially since they are more likely to travel during non-peak hours. Overall, while a range of adequate transportation options for seniors in Whitby is not completely missing, certain features need to be improved for transit to become a top modal choice over the automobile.

LAND USE

In addition to housing and transportation options, public and shared spaces are critical in shaping the conduct of seniors’ everyday lives; the design, accessibility, and safety of these spaces is a critical element in determining older adults’ ability and willingness to venture forth from their homes. The literature review highlighted a number of best practices in planning for age-friendly public spaces, many of which draw on the design principles of movements such as smart growth and new urbanism. Specifically, mixed-use and pedestrian-oriented environments have consistently been mentioned in both academic literature and policy frameworks for their promotion of active and healthy aging.

POLICY FRAMEWORK

The promotion of mixed-use and pedestrian-oriented environments is not only found in age-friendly policies, but in wider provincial legislation as well. Within the PPS, various sections allude to these two design principles as being key to healthy communities. For instance, Section 1.1.1 stipulates that “liveable and safe communities” are sustained by “improving accessibility for persons with disabilities and older persons” and “removing land use barriers which restrict their full participation in society”. Further, Section 1.5.1 states that “healthy, active communities” are supported by “planning public streets to...meet the needs of pedestrians” as well as “foster[ing] social interaction and facilitat[ing] active transportation and community connectivity”. In addition, the Growth Plan is extremely instrumental in the design of public environments. By the year 2031, and for each year thereafter, a minimum of 60 per cent of all development occurring annually within each upper- or single-tier municipality will be within the delineated built-up area (of which Whitby is one). This mandate places massive pressure on municipalities to develop a strategy to achieve the minimum intensification target, which is often achieved through mixed-use, high-density development.

The Durham Regional Official Plan (DROP) provides policy and planning direction for mixed-use and pedestrian-oriented environments. In fact, one of the principal directions of the DROP is to create “urban areas that are people-oriented” and provide “compact, efficient, and accessible urban areas comprised of mixed uses”. Section 8.1.14 further states that a goal of the Region is to “restore the historic integration of the shopping function with other traditional functions, such as housing, employment, recreation, social activities, and cultural facilities”. Overall, three of the stated general principles with which “planning and development shall be based on” are:

1, A more compact urban form which promotes transit-supportive urban areas;
2. A mixture of uses in appropriate locations;
3. A grid system of arterial roads, and collector roads, where necessary.

Within the Town of Whitby’s OP, a guiding principle is, similarly, to “encourage the orderly and compact, mixed-use pattern of urban growth...” through “...intensification proposals and the provision of...municipal infrastructure and community facilities”. While a considerable amount of intensification in the form of medium and high-density development was already encouraged, the OP was amended in 2016 to conform to the Growth Plan and DROP insofar as it relates to the 2031 population and employment targets. This process provided the Town with a significant opportunity to establish planned and coordinated “intensification areas”, of which six are currently defined. In addition to building height, massing, and design guidelines, development in these areas must conform to certain “amenity area and public realm” guidelines - many of which align with the best practices found in the literature. For instance, buildings are to be “sited and massed in a manner that maintains safe and walkable streets”, and features such as “soft landscaping, lighting fixtures, benches and public art” are encouraged for every project design.

Further, “well-articulated and visible pedestrian walkways” are to be provided, as are barrier free access features such as “level surfaces, ramps and curb cuts, railings, automatic door openers and rest areas”.

Outside of these intensification areas, the OP still covers a list of general urban design guidelines that conform to the best practices found in the literature. For example, Section 6.2.3.18 states that the design of roads “shall incorporate good civic design principles”, including “...landscaping...crosswalks, sidewalks, boulevards” and that these principles should be incorporated into a design standards document. In addition, “...direct pedestrian street access to buildings, malls, and squares shall be encouraged” in all central areas and mixed use developments.

In terms of land uses, the OP defines 12 categories: of these, two are explicitly intended to promote the mix of uses. The first, “Mixed Use Areas” is used to “encourage mixed residential and commercial development to ensure an intensive and efficient use of land, particularly in central areas”. The second category, “Central Areas”, is intended to “integrate the historic and traditional retail and personal service functions...with other activities such as leisure, entertainment, culture, and heritage, housing, employment and social activities”. Through this blend of land uses, the "Central Areas" category promotes “the more efficient use of urban land and the establishment of a human-scale pedestrian environment”. Beyond these two categories, singular land uses are quite strictly defined and divided. For instance, the only other uses stated as permitted in the “Residential Areas” category are community uses (such as schools, parks, and places of worship) and limited, individual professional services subject to a site specific amendment to the ZBL. Similarly, residential uses in the “Commercial Areas” are only permitted in site specific circumstances and highly dependent on the compatibility with the general character of the area and adjacent uses.

Like the OP, both of the ZBLs that govern the Town of Whitby divide land usage quite strictly into single-use zones. In both ZBL 1784 and ZBL 2585, a large majority of Residential zones do not permit any non-residential uses (with the exception of places of worship and parks). Similarly, residential uses are prohibited in most Commercial zones in both by-laws. In ZBL 1784, the “CMU - Commercial Mixed Use” zone permits a range of commercial and recreational uses, as well as apartment dwellings, long-term care facilities, and retirement homes. In ZBL 2585, the “C3-R - Mixed Use” zone also permits a wide range of non-residential uses as well as apartment dwellings located on top of such permitted non-residential uses. With the exception of these two zones, the ZBLs do not offer much in the way of efficiently providing for mixed-use development in the Town.

IN PRACTICE

While every applicable level of policy and legislation is in favour of pedestrian-oriented and mixed-use environments, the planning framework in place for the Town of Whitby does not seem to allow for such design principles to be implemented without tedious and time-consuming amendment processes. Given this discrepancy, is it possible for Whitby to truly be age-friendly? How pedestrian-oriented is it, and do mixed-use areas exist?

Like many suburban municipalities, Whitby was largely developed around the automobile; this is apparent through looking at the street network of the Town. To be sure, there are roughly ten major arteries (four east-west, six north-south) in Whitby, all of which support constant through-moving automobile traffic with large roadways and high speed limits. Off of these arteries are sprawling, low-density residential pockets that provide poor formal connections between one another (see Figure 18). Coupled with the fact that most services and amenities are concentrated along these major arteries, this poor connectivity between residential neighbourhoods gives pedestrians few options other than to walk along major roads. This pattern is problematic for a number of reasons, especially when considering the needs of the elderly as discussed in the literature review.

In addition to walking alongside fast-moving vehicles, intersections and crosswalks on these roads are located few and far between; this was confirmed using Ball’s (2012) connectivity criteria on samples of four of the major arteries in Whitby (see Figure 19). Instead of having regular intersections spaced at comfortable distances (every 200 to 500 feet), all of these arteries had an average intersection distance of more than 1,300 feet. Even for those pedestrians who do not have limited mobility, it is undeniable that having to walk this distance before being able to cross the road is far too long.

Figure 18: Residential neighbourhoods off of Anderson Street with poor connectivity to one another. Google Maps.

,	Taunton Road	Thickson Road	Brock Street	Rossland Road
Intersection 1-2	2672.58	2964.95	2467.51	1671.58
Intersection 2-3	1864.73	2070.39	2151.33	751.94
Intersection 3-4	786.24	1719.86	2242.32	617.62
Intersection 4-5	1444.12	1911.53	1959.61	1308.23
Intersection 5-6	1272.99	1546.68	2211.48	2021.60
Intersection 6-7	832.43	2475.14	1851.65	660.48
Intersection 7-8	1185.62	807.31	710.24	1260.24
Intersection 8-9	754.01	584.60	800.75	1449.57
Intersection 9-10	2643.94	907.87	378.10	2710.84
Intersection 10-11	2710.56	1985.25	1959.71	1809.55
Average Spacing	1616.72	1697.35	1673.27	1375.88

Figure 19: Sample of intersection spacing (measured in feet) on four major arteries, Whitby.
Note: Intersections were only counted if pedestrian crossing was available at every corner.

Apart from the streets themselves, many of the public spaces in Whitby are poorly-design for the pedestrian. As previously mentioned, most of the commercial centres in Whitby are comprised of big box retailers planned around parking lots with little consideration given to the safe and efficient mobility of pedestrians.

It should be noted that the historic downtown neighbourhood is a rare exception to the poor pedestrian planning found in most other parts of Whitby. Because this neighbourhood was built in the late 19th and early 20th century, streets are designed in a grid pattern with short blocks and regular intersections. Trees, planters, and other landscape features are also more prevalent in this part of the Town, and shops and amenities have direct pedestrian street access. However, downtown Whitby has declined over the years as newer neighbourhoods have flourished. As a result, many of the sidewalks and other pedestrian features (e.g. parks, benches, lighting) are aged and in need of repair. Respondents of the Senior Strategy Survey acknowledge this, with 63 per cent noting that adequate places to sit or rest in Downtown Whitby are lacking. Further, a respondent wrote that the sidewalks around the central library "are uneven and narrow in places", causing them to have "fallen when carrying books". Another wrote that "the parks are not as well maintained as they could be", and that they have had to "pick up garbage every time [they were] there". In regards to the lighting, one respondent wrote that they "do not feel safe walking after dark" as "the light does not filter from one lamp to the next".

As previously noted, the land use designations and zoning for the Town of Whitby do not reflect the promotion of mixed-use development found in a number of applicable planning policies and documents. Rather, these land use tools rigidly separate residential development from commercial activity by prohibiting the use of one in the category of the other. While there are mixed-use categories defined in both the OP and ZBLs, these are not proportional to the categories that permit only one sort of use. Further, upon closer inspection of the areas that are designated and zoned for mixed-use, it appears that most are still only comprised of one use. For example, a large site at the intersection of Taunton and Thickson Road is zoned CMU-7 (a zone that permits apartment dwelling units) and is currently comprised of a number of big box retail shops (see Figure 18). Another parcel, located at

Dundas and Hopkins Street, is zoned CMU-10 and yet only contains a number of car dealerships. A third site - an intersection which has a number of CMU-zoned parcels around it - again lacks the residential component of mixed-use development.

Furthermore, little mixed-use development is planned in the near future for the Town of Whitby. To note, in March 2017 the old fire hall was privately acquired and is planned for mixed-use development with both residential and commercial capabilities. Specifically, the one-acre property located downtown will include 23 modern townhouse units - 12 of which are planned to have ground floor commercial space. In addition, the Port Whitby neighbourhood and adjacent area around the GO Station were identified in 2012 as the future sites of a mixed-use community, boasting 12,500 people with minimum residential densities of 75 dwelling units/net hectare. However, beyond these two sites, few mixed-use projects have been announced for the Town.

Figure 20: A parcel zoned for mixed-use, but currently only the site of big box commercial activity. Town of Whitby. Google Maps

CONCLUSIONS

For the most part, the reality of land usage in Whitby is that large residential neighbourhoods are clustered around commercial pockets located at major intersections. This rigid separation between homes, shops, and workplaces has created a lack of distinct thriving activity centres and reinforced dependency on the automobile. Pedestrian-oriented neighbourhoods are not prevalent, and connectivity from one superblock to another is lacking. As the senior population continues to grow, these sorts of landscapes will present themselves as incredible challenges to the health, mobility and safety of older adults.

CONCLUSION

The purpose of this case study has been twofold. First, it has described, for one municipality, many of the challenges and best practices of age-friendly planning as discussed in earlier chapters. Second, it has shed light on the age-friendly policy and planning frameworks of the Province of Ontario, Region of Durham, and Town of Whitby, and specifically on how such legislation has translated into practice in the Town.

Overall, this case study has supported the notion that while communities are making efforts to develop strategies and action plans to accommodate their growing senior populations, there is still much progress to be made. In the Town of Whitby, applicable frameworks from every level of government support the development of age-friendly practices, yet there are still many shortcomings in regards to housing, transportation, and land use.

RECOMMENDATIONS & CONCLUSIONS

This Supervised Research Project has sought to answer the following questions: what are the geographic, demographic, and socioeconomic contexts of the current age revolution in Canada? How does the aging process influence seniors' lives, especially in regard to their relationship with the built environment? What are the implications of this age revolution for planners working within the fields of housing, transportation, and land use? How can planners design plans and policies that sufficiently service the growing elderly population? In light of current age-friendly community planning efforts, have planners been successful? Which elements have failed, and why? The narratives and findings in the first several sections of this SRP have provided answers to these questions. To conclude, this final chapter will summarize key takeaways and provide recommendations for how the Town of Whitby can work towards better age-friendly planning, as well as broader recommendations for strengthening AFCs across the country.

In the first two chapters, the age revolution that is currently taking place in Canada was defined. To note, these sections highlighted that many of today's seniors are residing in urban areas, are in better health than their parents and grandparents, are working past the age of 65, and have a strong desire to age in place. Following this, Chapter 3 opened up with the theoretical basis for studying the relationship between aging and the built environment. Because the aging process brings about a number of physiological, psychological, and lifestyle changes, seniors have a unique relationship with the urban fabric that can prove to be incredibly influential on the quality of their lives. As professionals who play a large role in the design and quality of built environment features, urban planners are therefore an integral player in the success of age-friendly communities. A variety of challenges as well as best practices in the provision of adequate housing, transportation, and land use planning for older adults was then presented.

The availability of a range of housing choices, high-quality transit systems, and walkable and mixed-use neighbourhoods stood out as the most desirable elements of age-friendly communities.

Chapter 4 sought to put into practice the insights gained in previous sections, as well as test how successful age-friendly planning initiatives in Canada have truly been. To do so, a case study of the Town of Whitby was undertaken which analyzed both the age-friendly planning and policy framework in place as well as the actual situation in practice. In summary, this case study highlighted that age-friendly planning in the Town is still very much a work in progress. While some efforts have been made in regards to housing choice and transit accessibility, there is still much to be improved on in the way of walkability and mixed use neighbourhoods.

As a whole, there are three foundational themes that have emerged from this research: the needs of the elderly, the legacy of the past, and the instruments of change. Importantly, this SRP has found that in the context of age-friendly planning in Canada, there exists a strong tension between these three pillars. On the one hand, the varied needs of the elderly are poorly served by patterns of post-war development that have left a legacy of car-dependent, sprawling suburban communities. On the other hand, the current planning instruments in place, such as use-based zoning tools, are at odds with the needs of seniors as they do not easily allow for the implementation of best practices. As a three-pronged issue, the challenge of age-friendly planning in Canada's suburbs is a complex one that requires both large and small scale action from a range of public and private actors. In the sections that follow, a number of recommendations that seek to ease the tension between the needs of the elderly, the legacy of the past, and the instruments of change are offered.

RECOMMENDATIONS FOR WHITBY

As seen in Chapter 4, the policy tool kit for age-friendly planning in Whitby is already quite comprehensive. From high-level provincial legislation to regional and municipal strategies, Whitby is not without the framework needed to incorporate age-friendly elements into the widespread planning and development of its neighbourhoods. Nevertheless, there is certainly room for additional tools and techniques that are not currently in place.

UPDATE OFFICIAL PLAN

The first recommendation for the Town of Whitby is to further update its Official Plan and policies with stronger language to more explicitly assert the importance of age-friendly planning. Currently, the aging of the population is not listed under the “Basis” section of the OP, despite a number of other population trends being mentioned. Further, while there is mention of older adults and the attention that they warrant in current and future planning decisions, the OP tends to group them under the general category of those with “special needs”. Given how significant the proportion of senior citizens will soon be, it is crucial that the OP - being a top-tier planning document - includes more policy direction that is specifically targeted at seniors. The aging of the population should also not be described as being at odds with growth and development. Rather than being presented as a challenge, there is an opportunity to address and update the OP to position age-friendly planning as a positive development that will benefit every member of society.

ADOPT ALTERNATIVE ZONING MODELS

The second recommendation for the Town of Whitby is to seriously consider the transition from use-based zoning code to more flexible alternatives. Due to the rigid separation of residential from commercial zones, retail and services are isolated from neighbourhoods and can often only be reached by vehicular travel. From a zoning perspective, integrating shops and amenities back into neighbourhoods can be accomplished through a range of alternative methods. For example, spot zoning provides only a one-time exemption from typical zoning requirements for a single development proposal. Further, overlay zoning creates a special zoning district, placed over an existing base zone(s), which identifies special provisions in addition to those in the underlying base zone. Overlay zoning is most effective when it provides for a single special use, such as specialized age-segregated senior housing developed to a greater density than would normally be allowed of general population housing. Finally, form-based code can be very effective in promoting mixed use development. Rather than allow a one-time exception or provide wider opportunity for a specialized urban form, form-based code takes into consideration the physical form of land to regulate development based on scale on form, rather than on specific uses.

DEVELOP AN URBAN DESIGN MANUAL

The third recommendation is for the Town to develop a more comprehensive Urban Design Manual. Currently, with the exception of policies laid out in the OP, Whitby does not have an urban design document that enforces design guidelines for the entire town. Many of the other municipalities in the GTA - including even the most suburban ones with similar population sizes to Whitby - have urban design manuals that lay out in great detail the design stipulations for development at both the residential and commercial scale. Not only does this allow for a certain level of accountability, but urban design manuals generally promote a more human-scaled approach to development.

CONTINUE COLLABORATION EFFORTS

The fourth recommendation is for the Town of Whitby to continue its close collaboration with the Region of Durham and other levels of government. Due to the municipal governance structure in Ontario, lower-tier municipalities such as Whitby do not have scope over certain domains such as affordable housing and public transportation. Whitby should thus work closely with the Region to communicate the needs of its residents and formulate policies and frameworks to meet such needs. In addition, the Town should look for greater funding and partnership opportunities with the provincial and federal governments as well as with non-governmental organizations.

ESTABLISH A SENIORS COUNCIL

The fifth recommendation is for the Town to establish a Seniors Council. Currently, the only sort of organization in place is the Seniors Services Committee, which oversees the social recreational programs, However, committee members are elected by Town Council, and there is no quota in place to ensure that a proportion of membership is reserved for seniors. By contrast, many cities have begun to establish ad hoc seniors councils who aid in the development of age-friendly community planning efforts. Such committees are effective in ensuring that the voices of seniors are part of the decision-making process, as well as in leveraging the skills, experience, and resources that reside within the seniors of the community.

INVEST IN THE DOWNTOWN

A final recommendation for the Town is less specific, but equally important: invest in the downtown. The historic core of the municipality, downtown Whitby already has in place many of the features of age-friendly communities: a grid pattern street network, pedestrian-oriented retail and services, access to waterfront trails and parks, and mix of housing types. Unfortunately, the downtown has declined as big box commercial centres have flourished and access to amenities in the rest of the GTA have improved. With proper planning and investment, there is no reason that the downtown cannot once again serve as a local and regional hub for commercial, employment, and residential activity. To start, the Town should identify surplus or underutilized publicly-owned land and buildings in the downtown that could be future sites for intensification. Further, maintenance and improvements should be made to the existing built environment, including sidewalk and curb repairs, landscaping projects, public art installations, and building retrofits. Once these initial steps are completed, a range of programs and strategies can be launched that encourage economic and cultural activities and importantly provide for a ‘local hub’ that the Town is currently without.

BROAD RECOMMENDATIONS

In addition to the aforementioned recommendations, the analyses of this Supervised Research Project have given rise to additional policy and planning directions that can be applied in a broader context. Particularly, the recommendations in the following section are directed at suburban municipalities looking to improve the quality and success of their age-friendly planning efforts.

UNDERSTAND HOW AGING INTERSECTS WITH OTHER TRENDS

The first recommendation given to any municipality is to ensure that a long-term planning outlook is always taken. Planners cannot afford to be taken by surprise, and they must work to shape futures rather than stumble into them as they emerge. In order to do so, planners should have a comprehensive understanding of what the future will look like, especially in regards to demographic changes and shifts in society.

Importantly, a trend that planners must recognize is the changing ethnocultural makeup of the senior population. As discussed in earlier sections of this paper, visible minority seniors are becoming the fastest growing segment of the aging population. As such, it is imperative that planners across Canada consider the ethnocultural and linguistic experiences that intersect with the age-related needs of seniors. For instance, as social isolation is generally higher among older adults than other age groups, special attention should be given to ensure that there is adequate access to cultural and linguistic resources for visible minority seniors.

Further, it has been found that this generation of seniors has a desire to continue working or pursuing goals and aspirations well into their later years. This raises a host of implications for planners; for example, local planning tools should be revised to permit for alternative work spaces such as co-working offices and live-work units.

Overall, a close collaboration between planning bodies and applied research can be an effective way to prepare for the changes that an aging society will produce. Applied research plays an important role in helping planners understand what age-friendliness means in different contexts, and how to go about making communities more age-friendly.

LINK AGE-FRIENDLINESS TO OTHER POLICY PRIORITIES

At every level of government, the notion of age-friendly communities competes for attention with many other policy concerns. Provincially, there are concerns over economic crises, environmental challenges, rising healthcare costs, and unemployment rates. At the municipal level, top priorities might include the maintenance of road infrastructure, elimination of crime, or treatment of the water and sewage system.

In light of this, the second recommendation for planners and policymakers is to link age-friendliness to other governmental priorities. In doing so, the age-friendly agenda has a greater chance of moving forward and interdisciplinary collaborations can be formed.

INCORPORATE GERONTECHNOLOGY

A third recommendation is take advantage of the current and future advanced technologies that can bring an important element to the design of age-friendly communities. A great amount of research is currently underway on smart technologies for aging - a field known as “gerontechnology” - to develop everything from wireless home monitoring systems to assistive robotics to support those who want to stay in their homes. This is a rapidly evolving field, and housing and transit providers will benefit from staying on top of developments in this area, especially given that baby boomers are more comfortable with technology than previous generations of seniors.

RETROFIT THE SUBURBS

A fourth and final recommendation is for planners to ensure that they are not neglecting existing communities in the push for age-friendly design. Put otherwise, there is an impression in the literature and policy frameworks that the achievement of age-friendly principles can best be reached through building brand new communities. However, this sort of premise is not only unsustainable but ignores the fact that seniors often want to stay in their own homes and neighbourhoods. As such, planners must ask themselves how they can best retrofit established environments to meet the needs of the growing elderly population. To be sure, this no easy or simple feat in suburban settings, but there are a number of strategies that can be undertaken to progressively transform landscape barriers and limitations into age-friendly ones.

For example, a study could be done to identify ‘desire paths’ that pedestrians frequently - but perhaps illegally or unsafely - use. The results of this study could then be used to install new streets, paths, or crosswalks to improve connectivity. Further, a study could be done to articulate all of the vacant or underutilized parcels of land in a given municipality, which could then be prioritized as sites for future intensification. Even smaller scale initiatives, such as reducing the size of existing parking lots to make way for parkettes or other pedestrian facilities, can be effective measures to retrofit suburban environments.

CONCLUSION

As this Supervised Research Project has revealed, there are still many gaps between age-friendly policy and practice. Despite initial enthusiasm surrounding the WHO’s Age-Friendly Community Movement, many municipalities - Whitby included - have yet to demonstrate substantive progress in achieving smart growth and livability goals to date. While becoming age-friendly is a process that requires virtually every discipline, planners must recognize the instrumental role that they play. In fact, the notion emerging from this paper that planners can become leaders in creating age-friendly cities is a significant one. As generalists, planners have the power to bring together a wide array of fields across sectors and levels of government to provide for communities that are inclusive to the needs of every age group. Indeed, it is an exciting time to be interested in the link between aging and planning; with the baby boomers entering their seniors years, the importance of this relationship will only increase. Perhaps this is planning’s ‘moment’, their opportunity to lead meaningful change at an important juncture of demographic transformation. Only time will tell, but it is crucial that if planners choose to act, they do so now as the age “boom”, “wave”, or “tsunami” is not slowing down anytime soon.

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