

AGING AND THE BUILT ENVIRONMENT
Observations from Three Town Centres in Surrey, British Columbia

BY
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ABSTRACT

Canada's population is aging rapidly, such that by 2031 it is estimated that one quarter of Canada's population will be aged 65 or older (Statistics Canada December 15, 2006). It is argued that urban environments are often not adequately designed for older people and can impair their ability to live independently into their elder years (Harris 2004). Proper planning can help people age successfully in their community. This research practicum assesses three town centres within the City of Surrey to determine whether they are age-friendly based on the perceptions of residents over the age of 65. Results from the research found that areas in need of improvement included public transit, the walking environment, clustering various land uses, parks amenities, and home assistance, among other things. The practicum concludes with recommendations of areas for further study.

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1.0 INTRODUCTION

1.1 Context and Background

Canada's population is aging rapidly, such that by 2031 it is estimated that one quarter of Canada's population will be aged 65 or older (Statistics Canada, 2006). The needs of older people differ from younger cohorts when it comes to health care, finances, housing and mobility (Smith and Sylvestre, 2001). Strategies, policies and programs have been developed by various levels of government directed towards older adults, however, the continued difficulties older people experience within urban environments indicate that these initiatives have not yet fully addressed their needs.

Urban environments are often not adequately designed for older people and thus impair their ability to live independently into their elder years (Harris 2004). Appropriate planning can help people age in their community and avoid the need for them to move into assisted living facilities prematurely. This research practicum assessed three town centres within Surrey, British Columbia, to determine if they were designed in an age-friendly manner (described in Chapter One, Section.3 *Context and Scope* below).

Investigating three distinct town centres described in Chapter Two *Surrey Context* below, this practicum evaluated their age-friendliness based on the perceptions of residents aged over 65.

1.2 Problem statement and key questions

The World Health Organization (WHO) is intently involved in active-aging research and programming. The WHO describes active-aging as allowing

People to realize their potential for physical, social, and mental well being throughout the life course and to participate in society according to their needs, desires and capacities, while providing them with adequate protection, security and care when they require assistance (World Health Organization 2002, p.12).

In 2006, the WHO devised a methodology for assessing age-friendly cities within the context of active aging (WHO 2006). The Age-Friendly Cities Project was created “to identify concrete indicators of an age-friendly city and produce a practical guide to stimulate and guide advocacy, community development and policy change to make urban communities age-friendly” (WHO 2006, p.3). It draws on the perspectives of older people grouped by age and socio-economic status. In 2007, the WHO published the results of a study conducted in 33 cities in 22 developed and developing countries worldwide (WHO 2010) which included its *Global Age-Friendly Cities: A Guide* (WHO 2007) and its *Checklist of Essential Features of Age-friendly Cities* (WHO 2007), which are now being used by organizations worldwide.

This research practicum builds upon the framework presented in the WHO Age-Friendly Cities Project and addresses the question: how does built form affect older people’s ability to navigate the urban environment? While the WHO project groups its participants by age and socio-economic status, this research practicum grouped its participants by unique geographic location, namely in three of Surrey’s six town centres. Within this context, the three key questions this research practicum addressed are:

1. How does built form affect the age-friendliness of a neighbourhood?

Clustered mixed-use locations may be more advantageous to older people because street blocks tend to be shorter, there is higher frequency of public transit, and there are many more amenities located within close proximity to one another, thus improving accessibility. Conversely, conventional suburban locations may be more age-friendly because there is the perception of a lower crime rate, and the neighbourhoods are generally quieter. The goal of this question was to identify the significant differences amongst varying urban development patterns and how they are experienced by older people.

2. How can an age-friendly checklist be used to evaluate the age-friendliness of a neighbourhood?

A checklist can be used to evaluate the age-friendliness of each town centre, and document key design features that facilitate or hinder the ability to easily navigate the urban environment as an older adult. It can be used to monitor key age-friendly indicators over time (WHO 2010, p.11) and the results could then be an appropriate tool to engage the appropriate stakeholders to promote change (Gallagher and Scott 1996, p.17).

3. What physical modifications can be made to neighbourhoods so that they are more age-friendly?

A key component of an age-friendly neighbourhood is the ability of an older person to navigate the urban environment independently and with minimal difficulty. Urban areas

can be designed in such a way to meet universal design standards. Providing appropriately spaced benches and incorporating tactile, audible and visual cues in the pedestrian environment are examples of features that can make outdoor urban environments more conducive to older people's needs. Conventional planning and development can make certain aspects of living in cities unfriendly towards aging. For example, Euclidean zoning regulations are prohibitive to mixing uses in close proximity to one another; building codes may not adequately address universal design; and, the continuation of constructing road standards that prioritise private automobile travel over other transportation modes such as transit, cycling and walking.

1.3 Scope of the Research

Most of Canada's older population is living in suburban environments. Many older residents would prefer to continue to live in these neighbourhoods, the same places they lived while raising families. While moving might increase their chances of finding more suitable housing, they would lose social ties with their neighbours (Chapman and Howe, 2001). With this in mind, this practicum assessed the age-friendliness of Surrey town centres and offers recommendations as to how these neighbourhoods may be retrofitted to become more age-friendly in the coming years.

An age-friendly city is defined by the World Health Organization as one that:

- recognizes the great diversity among older persons
- promotes their inclusion and contribution in all areas of community life
- respects their decisions and lifestyle choices, and

- anticipates and responds flexibly to aging-related needs and preferences

In an age-friendly community, there is a culture of inclusion shared by persons of all ages and ability levels. Policies, services and structures related to the physical and social environment are designed to support and enable older people to "age actively", that is, to live in security, enjoy good health and continue to participate fully in society (WHO 2006, p.3).

The scope of this research is limited to people aged 65 and older. Individuals over the age of 65 were chosen because it is an age that many Canadian research studies and programs use to determine whether a person would qualify for programming targeted at older adults. It should be noted that the WHO Age-Friendly Cities Project studied individuals aged 60 and over.

While the intent of the research is to build upon the WHO Age-Friendly Cities Project Methodology in the context of geographic location, there are limited resources available for this research practicum. As such, not all topics covered in the WHO Age-Friendly Cities Project were covered in this research practicum. The topics addressed are limited to sidewalks and crosswalks, traffic pattern, transportation options, street trees and landscaping, parks and open space, public art and signage, and shops, services and other features.

It should also be noted that warm-weather retirement destinations, age-segregated retirement communities, and assisted living institutions are not included in the scope of this research. Rather, the focus is on community-dwelling older adults living in conventionally-designed neighbourhoods. Furthermore, this research explored existing

neighbourhoods (as opposed to proposed developments) to identify opportunities for adapting the neighbourhoods where older people currently live into age-friendly places.

1.5 Significance of the Study

The study evaluated the age-friendliness of three town centres within Surrey, British Columbia. It employed the principles of an age-friendly checklist to observe and record age-friendly features within an urban environment. The City of Surrey can benefit from this research by incorporating lessons learned into its various policy documents, by expanding some of the principles into the three other town centres and across the city as a whole. Recommendations from this study, although perhaps not directly applicable, can benefit other organizations outside of Surrey such as the regional transportation authority, (Translink), the regional health authority (Fraser Health), and non-profit organizations with interests in the health and well-being of older adults.

Applying some of the recommendations in this research may also benefit older adults in other facets of their life, by addressing broader transportations and mobility issues, facilitating civic engagement, and promoting health and safety. Lessons learned in this research may also benefit other marginalized groups such as children, people with cognitive disabilities, people with physical disabilities, and recent immigrants.

1.6 Ethics

This project involved minimal risk to human subjects. A large portion of work was conducted using publicly available literature, documents and data. Interviewees and focus

group participants were not from vulnerable populations and were asked to complete a standard consent form guaranteeing confidentiality to encourage meaningful discussion and granting permission to abstain from any portion or withdraw entirely from the study at any time. Privacy and confidentiality of the participants have been protected throughout the research and writing. Names or identifying data from focus group participants have been omitted from the final document and key informants have been identified by code. Reference may be made to their professional roles only to highlight context and relevance.

Photographic evidence through this research has emphasised the built form of the neighbourhoods examined. Persons captured in the photographs were all in public spaces, with no expectation of privacy. Photographs where a person is the main subject of the image have been omitted or blurred.

1.7 Assumptions and Limitations

The scale of this research, with small sample sizes (5 key informants, 3 service providers, and 17 focus group participants) and narrow scope, may limit application of the findings to other contexts and is limited by the knowledge and biases of the participants. All efforts were made not to direct participants' responses.

Key informants were selected by the researcher based on their specific areas of expertise. Focus group participants were selected by the researcher based on recommendation by the key informants and may therefore not be an adequately representative sample of the

community. Results and insights from this study were grounded in the Surrey context and cannot necessarily be applied to other municipalities though this practicum argues that key concepts can have validity elsewhere.

Focus group participants were exclusively members (patrons) of the seniors' centres within the three selected town centres. A participant's satisfaction with a particular town centre and available amenities may change from one day to the next depending on recent interactions within the town centre, or on personal, external or environmental (e.g., weather, seasons) concerns. This may have affected participant responses. Results of this study may also be limited due to the research concentration within the primarily independent and mobile older adult population of the three Surrey seniors' centres, and the predominant socio-economic status of the participants (ethnicity, economic status) within each subject town centre.

1.8 Organization

The first chapter provides a background and introduction to the practicum and the questions being raised. Ethics, significance of the study, and assumptions and limitations are explained. Chapter Two provides a context for the City of Surrey and its town centres, including relevant policies and initiatives within the city as well as census data for the three study areas. The third chapter is a literature review with sections on the diversity within the older adult population, healthy and active aging, and examples and precedents of age-friendly features within the built environment. Chapter Four discusses

the research methods employed, with subsections on the neighbourhood analysis, interviews and focus groups.

Chapter Five analyses the findings from the neighbourhood analysis, interviews and focus groups. Participants from each area had differing perspectives about how their town centre is built for older residents. The positive and negative aspects of different design characteristics identified in Chapter Five inform the recommendations provided in Chapter Six. Chapter Six suggests how certain weaknesses and constraints can be addressed and provides recommendations for preserving and enhancing features that residents have identified as valuable assets in their communities based on the results of the analysis. Chapter Six also provides conclusions and directions for further study.

2.0 THE CITY OF SURREY AND ITS TOWN CENTRES

Located within the Metro Vancouver Regional District (hereafter referred to as Metro Vancouver), Surrey is the second largest municipality of British Columbia and is Vancouver's largest suburb. Oxford Dictionaries defines a suburb as an outlying district of a city by Oxford Dictionaries (Oxford Dictionaries, 2010).

Metro Vancouver established a Livable Region Strategic Plan (LRSP) in 1996, with the goal of “[building] this region around a Metropolitan Core and a network of town centres located at strategic locations across the region” (Metro Vancouver 2010). There are a total of twenty-one municipalities that make up this regional district, with the City of Vancouver as the metropolitan core. The LRSP identifies regional town centres and municipal town centres with regional town centres having a larger catchment area than the municipal town centres. The basis of the LRSP is for the region to build out complete communities, which

provide business and community facilities, together with opportunities for medium and higher-density residential development in both ground-oriented housing and apartments. They would contain a mixture of municipal-serving businesses and local services, be transit and pedestrian-oriented, and generally be linked by bus connections to the regional transportation system (Metro Vancouver 2010).

The City of Surrey is located approximately 35 minutes (by car or rapid transit) from Vancouver's downtown core, and immediately north of the Canada/USA border. It is centrally located and is well-serviced by major highways, rail lines and river ports (City

of Surrey, 2010). A context map of Surrey and its relation to Metro Vancouver is provided in Figure 1 below.

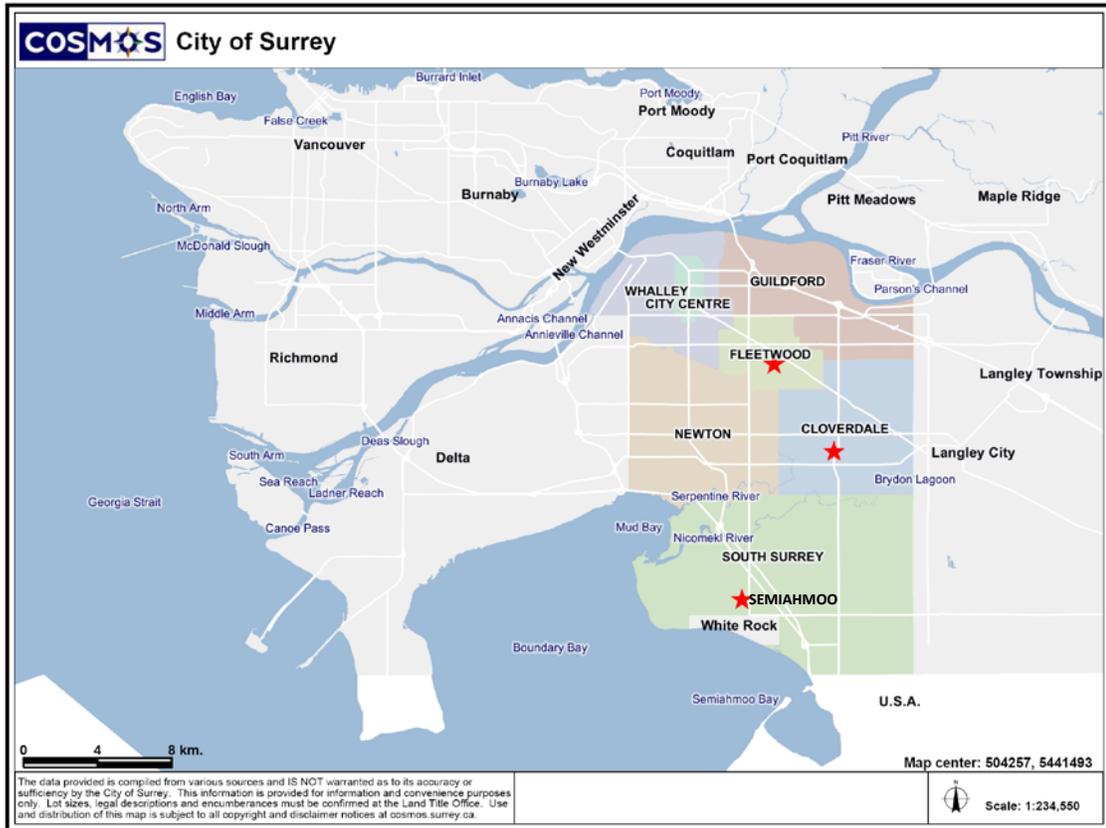
Although it was first incorporated in 1879, Surrey did not become a city until 1993. It has a rich history relating to river, rail, and agricultural development, and the city developed in a nodal fashion that formed six town centres: Whalley/City Centre, Guildford, Fleetwood, Newton, Cloverdale, and South Surrey/Semiahmoo, each with its own unique character. In its Official Community Plan, the City of Surrey describes the terms “towns” and “town centres” as follows:

A town consists of a number of neighbourhoods served by a Town Centre. It has a broad range of housing choices and community facilities ... to create a self-contained and complete town. It may also have major institutions such as educational or health facilities and employment areas. ... A Town Centre is the economic and cultural focus for a town.
(City of Surrey, 2009 November)

The City has developed a number of other by-laws and policy documents with the intent of concentrating growth within these town centre areas, and creating “complete communities,” which are described in greater detail below.

Figure 1: Surrey's location within Metro Vancouver.

Credit: Map generated using City of Surrey Mapping Online System (COSMOS) GIS.
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Surrey is a rapidly growing municipality, with approximately 1,000 new residents moving into the city each month. Its relatively low housing prices attract young families and new immigrants from around the world. As such, Surrey has a relatively youthful population, with the median age being 37 years old (as compared to BC's median age of 39.8 years) (Statistics Canada, 2006). Twenty percent of the population is under the age of 15, while only 11% of the population is over the age of 65 (City of Surrey 2010).

That being said, Surrey's population is aging, as is the general trend across British Columbia and the rest of Canada. As described on the City of Surrey's website:

Between 1991 and 2006 there has been a gradual, but steady, decline in the proportion of the population under 30 years of age. While there has been a decline in the share of the population that these groups comprise, the actual number of children and young adults has grown as the population overall has grown.

The decline in the population under 30 years has been accompanied by a steady rise in the senior's [sic.] population and the population aged 30 to 64 years. The population 30 years and over has risen from 54.7% of the total in 1991 to 59.6% in 2006 (City of Surrey 2010, p.2).

Although Surrey's population is relatively youthful, as noted above, it is also getting older. Therefore studying the age-friendliness of its town centres is relevant and timely.

The significance of the research is elaborated upon in the section below.

2.1 Policy Documents, By-laws, and Initiatives

There are a number of City of Surrey policy documents, plans and initiatives that are shaping the development pattern of the city. Furthermore, there are a number of non-City of Surrey initiatives taking place concurrently. The section below describes the key documents and current initiatives within Surrey. In some cases, in the documents and initiatives listed below, there are specific references to older adults. However, in many cases, there are no age-specific references. Rather, there are broader policies and objectives that can benefit the city as a whole.

2.1.1 City of Surrey Initiatives

The **Surrey Sustainability Charter**, introduced in 2008, is a commitment by the City to approach all future initiatives, programs and plans in a sustainable manner, by giving equal consideration to socio-cultural, environmental and economic concerns. An excerpt from the Charter describes it as a document that “provides [the City] with a framework to best develop and manage Surrey’s human and physical resources to create a strong, sustainable city” (City of Surrey, n.d. p.3).

One section of the Sustainability Charter is devoted to key goals to be achieved over time. Goals relating to age-friendliness include items such as creating affordable and appropriate housing choices, institutionalizing the principles of universal design, building compact, complete and transit-friendly communities, providing affordable cultural and recreational services for all ages.

The British Columbia *Municipal Act* requires that all municipalities in British Columbia adopt an **Official Community Plan (OCP)**, the purpose of which is to guide land use and development over the next 5-20 year period; it is to be reviewed every 5 years.

Surrey City Council noted that its intention is “to achieve orderly growth for complete sustainable communities with sensitivity to the environment. This growth includes residential growth as well as a growing business base for Surrey” (City of Surrey 2009, p. 7).

Key policies contained within the OCP that contribute to age-friendly communities include strengthening development in a nodal pattern, focusing growth within compact urban areas, supporting compact complete communities, providing a range in type, tenure and cost of housing, designing safe attractive people-friendly environments, improving and balancing travel alternatives for people, enhancing safety through crime prevention (CPTED), and providing adequate and well-located parks and cultural facilities.

The Transportation Strategic Plan is

the City's long range planning document that sets out the vision, objectives, proposals and priorities for transportation in Surrey in the future. It also shows how transport, in its widest sense, has a part to play in key policy areas such as the environment, land use, economy, safety and health (City of Surrey 2008, p.7).

Six key principles to the plan are:

1. Effective and Efficient Network Management
2. More Travel Choice
3. Safer, Healthier Communities
4. Successful Local Economies
5. Protection of Our Built and Natural Environment
6. Transportation Integration

As a result of the Transportation Strategic Plan (approved by Council in 2008), a Walking Plan and a Cycling Plan are currently under development and are expected to be completed in December 2010.

Surrey's **Town Centre Plans** are comprehensive planning and design documents that provide land development and design policies to guide future development within each town centre. Currently, Cloverdale and Fleetwood are the only town centres with Council-approved plans. However, Semiahmoo, Newton and City Centre currently have their own town centre plans under development. Guildford is the only town centre without a plan in place or under development. The town centre plans establish land use and density patterns, vehicular and pedestrian circulation concepts and open space systems. The urban design components of the plans are intended to reinforce the unique character of each town centre.

The goal of the **Parks, Recreation and Culture 10-Year Master Plan** is to identify “demands, needs and issues regarding the delivery of parks, recreation and cultural services”, and takes into account anticipated changes in population demographics along with behavioural trends in order to determine key priorities (City of Surrey 2008, p.13). It identified that there is a significant need for a new multi-purpose, multi-generational recreation centre serving the Cloverdale area. It also identified a trend that stand-alone seniors centres are losing membership, while seniors’ centres in multi-generational facilities are gaining in popularity because the younger group of seniors are more likely to remain within mainstream facilities, rather than join seniors’ only centres. As such, a current stand-alone seniors centre will be relocated to the proposed Cloverdale Recreation Centre, slated to open in 2011.

The **TownShift Design Competition** was an ideas competition to generate debate about how to address key issues in five of the six town centres (Whalley/City Centre was not included): “TownShift was created to solicit sustainable design ideas for Surrey’s other growing town centres, in a way that allows them to be independent, provide local services, and reduce our dependence on driving - while also keeping these town centres connected to the rest of Surrey” (TownShift 2010).

The themes for each of the five town centres were:

- Cloverdale: Round up – Building Affordability
- Fleetwood: Marker – Shaping Gateway Identity
- Guildford: Cornered – Place Making at Malls’ Edge
- Newton: New Town – Connecting Density to Transit
- Semiahmoo: Up – Forming Plaza Through Residential Towers

The next steps will involve assessing the submissions that were received with the intent of possibly implementing them in development plans for each of the five town centres. Although not directly related to benefiting seniors, the TownShift Design Competition has the potential for inspiring people locally and from abroad to create a distinct sense of place for each of the town centres, which in turn benefits everyone, including seniors.

The **Plan for the Social Well-Being of Surrey Residents** (Social Plan) was adopted by Council in February 2006 to provide strategic direction for the City’s actions on social issues in Surrey. It identifies five social issue areas as priorities for the City of Surrey:

- Children and Youth

- Community Development and Diversity
- Crime and Public Safety
- Housing and Homelessness
- Substance Abuse and Addictions (City of Surrey 2006, p.3)

The Social Plan was intended to be action oriented and, through an extensive community consultation process, contains approximately 65 recommended actions to address the 30 priority issue elements (City of Surrey 2006).

Although the housing, safety and diversity components of the Social Plan may benefit seniors, it can be seen that issues specific to seniors are not among this list. However, city staff responsible for administering the social plan report back to Council with their progress contained in annual reports. In the 2007/2008 annual report, they identified that although addressing seniors' issues was not part of the Social Plan, "the well-being of seniors is an increasingly prominent concern" (City of Surrey 2008, p.37). As such,

Social Planning is establishing relationships with community developers at Fraser Health Authority and community-based organisations to help identify priority issues for seniors in Surrey. A process is underway amongst interested community members to develop a collaborative approach to planning and capacity building for seniors, in the form of a Community Planning Table (City of Surrey 2008, p.37).

2.1.2 Non- City Initiatives

The section below describes some of the non-City of Surrey initiatives currently shaping elderly people's experience of the city.

Come Share is a non-profit society that has been providing on-gong support for seniors over the last 30 years. It provides older adults with the support and programs they may

need in order to maintain their independence in the community. Some programs it provides include:

- Caregiver support programs
- Meal programs
- Resource directories
- Adult day centres
- Information and referral
- Pins and Patches Craft/Sewing Group
- Computer Classes

There are two centres serving the Surrey residents, one in South Surrey and one in Newton (Come Share Society, 2010).

Surrey Seniors Community Planning Table “is a group of seniors, non-profit groups, agencies, and others who are working together to make Surrey a great place to be a senior” (City of Surrey 2010, p. 36). Through consultation, the respondents identified five priorities:

1. Transportation and Accessibility
2. Seniors Helping Seniors (help with tasks)
3. Safety
4. Intergenerational and Intercultural relationships
5. Health

Five action groups have been formed, one for each priority. The action groups are led by seniors and include agencies or groups who are involved in the issue. The action groups will decide how they would like to create solutions in their issue area (City of Surrey 2010).

The **Community Action for Seniors' Independence** (CASI) project is a partnership between the Ministry of Healthy Living and Sport, and United Way of the Lower Mainland. It is working with stakeholders in five B.C. communities, including Surrey's Newton area, to create a coordinated and community-driven approach to help seniors live longer in their own homes. This program is in response to seniors expressing their desire to age in place for as long as possible, but are looking for assistance with daily activities such as home maintenance or grocery shopping. This initiative is stemming from the provincial government's commitment to "explore innovative and sustainable models to provide non-medical home support services" by "engaging community members and local organizations, including non-profit, volunteer, faith and multi-cultural groups, health authorities, corporate sponsors and businesses, in discussions on innovative service delivery models for those areas" (British Columbia Ministry of Healthy Living and Sport, 2009).

2.2 Study Areas

The study areas were selected based on the researcher's personal knowledge of the areas, the willingness of the senior centres' staff to participate in the research, and the presence

of readily-available information about each area (such as the existence of town-centre plans, and web-based information about the seniors centres).

The study areas were defined by reviewing thematic maps and driving through the vicinity of the site. The maps consulted included the respective Town Centre Plan boundaries for each town centre, the location of the seniors' centre and other key land uses. The inclusion of a variety of land uses was one of the goals in defining the boundaries as well.

The study areas range in size from 1.5 square kilometres to 1.8 square kilometres and have a similar assortment of land uses. Each of the study areas has a central commercial area, with a range of shops and services. They each have bus service, a community centre or a regional civic facility, a library, parks, and a mix of housing types ranging from single family homes to townhouses and apartments. Each also has a public or private elementary or secondary school either within or on the boundary of the study area.

Figure 2: Location of Study Areas within Surrey
 Credit: Base map from COSMOS GIS; mark-up by Stephanie Long
 Permission obtained from the City of Surrey on November 8, 2010

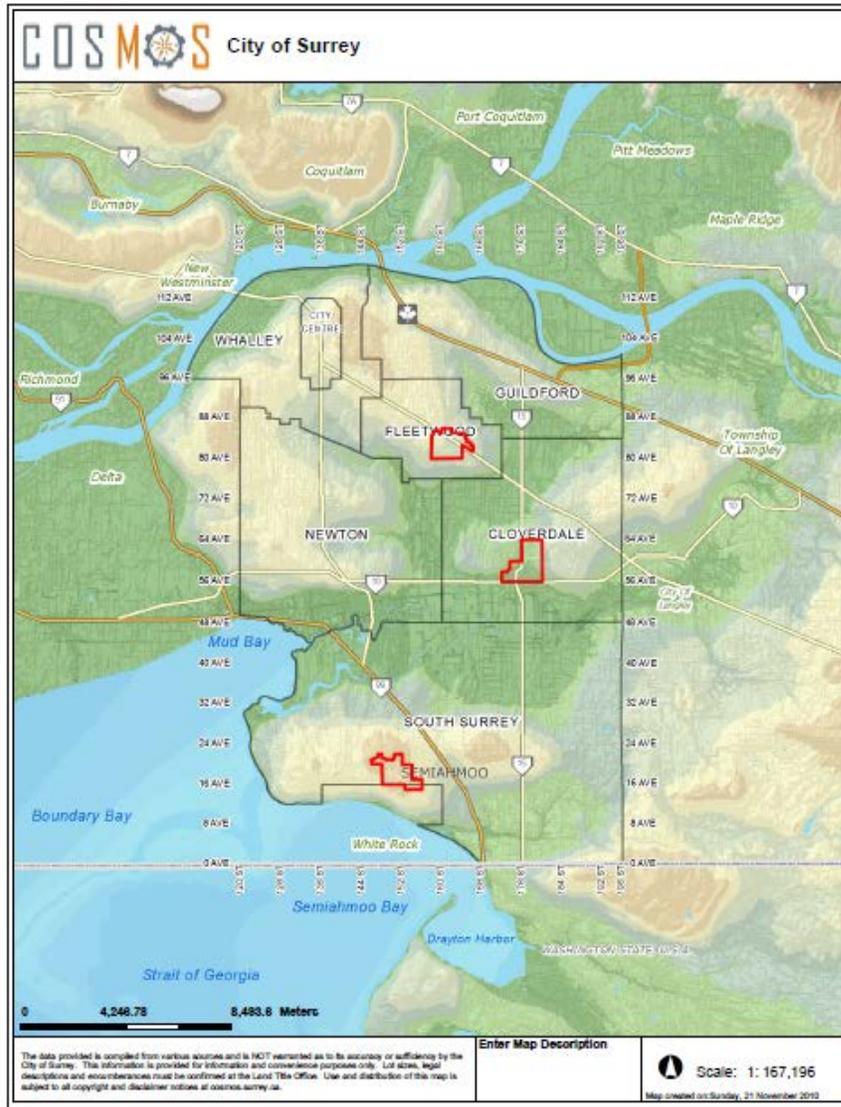
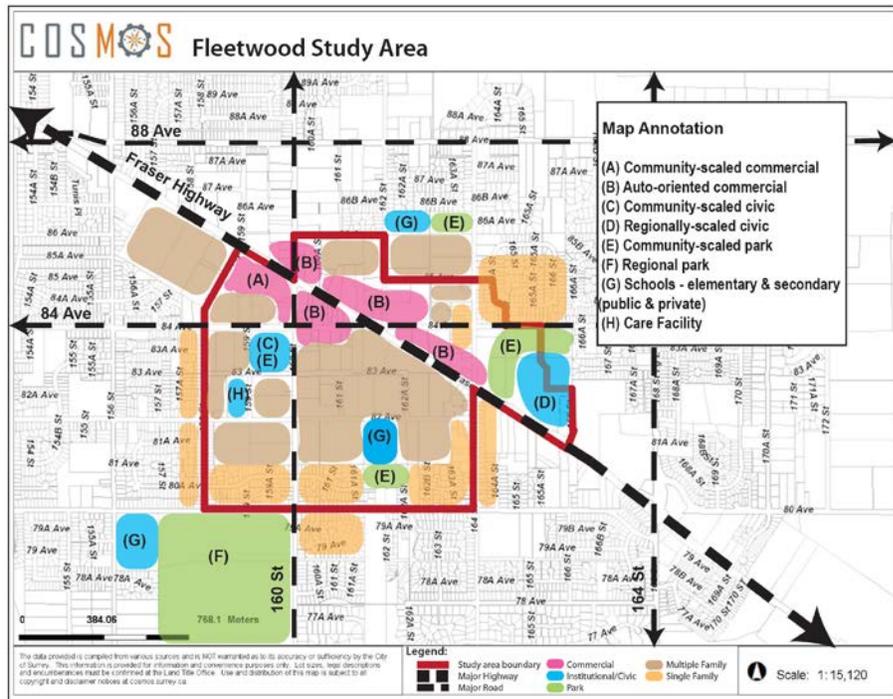


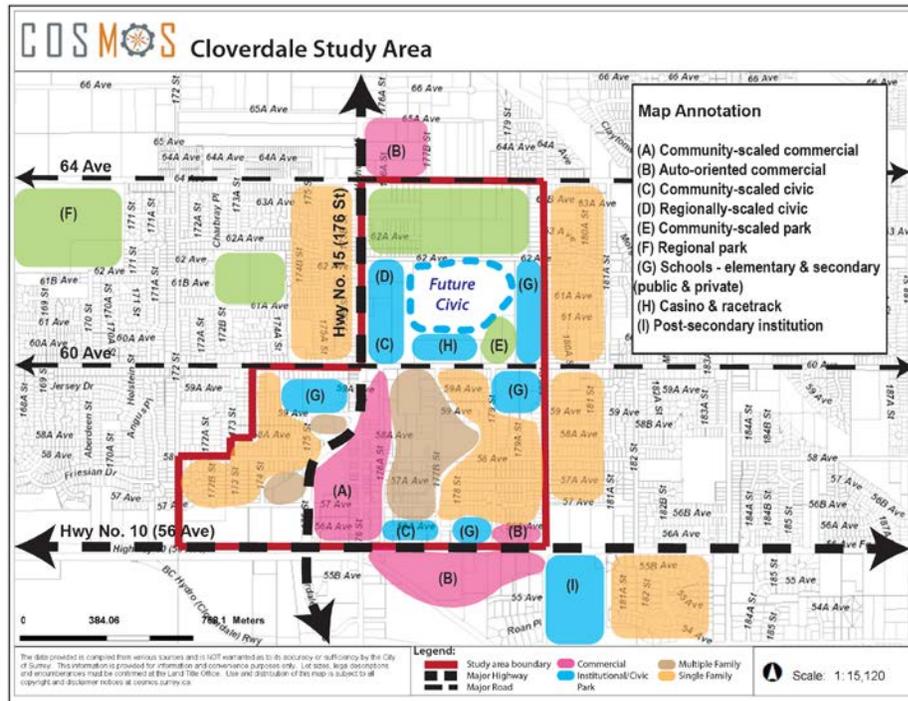
Figure 3: Fleetwood study area and generalized land uses
 Credit: Base map from COSMOS GIS; mark-up by Stephanie Long
 Permission obtained from the City of Surrey on November 8, 2010



The Fleetwood study area (Figure 3 above) is 1.5 square kilometres in size, and is comprised of 34 intersections and 46 street segments, where street segments are defined as a public road between intersections, where a road crosses another road. In Fleetwood, there is a major regional road, Fraser Highway, which runs diagonally through the town centre, that defines the north and south sides of the town centre. On the south side of Fraser Highway, most of the land is fully developed, whereas on the north side of Fraser Highway much is underdeveloped as compared to the land uses proposed in the Town Centre Plan. As such, the south side of Fraser Highway offers a different experience from that of the north side. Although not as busy as Fraser Highway, 84th Avenue and

160th Street are key roads that connect Fleetwood with the rest of Surrey and Metro Vancouver. Land uses along Fraser Highway are predominantly highway-oriented uses (identified as “B” on the map above), such as auto sales, light impact industrial uses, and drive-through restaurants. Most other uses serving the local area, such as medical services, grocers, pharmacies, banks, and restaurants, are predominantly located within three shopping plazas along Fraser Highway (“A” on the map above). Within the Fleetwood study area there is a community-scaled multi-generational community centre, seniors centre, fitness centre, and library, all at one central location (C). There is also a regionally-scaled recreation and athletic centre, which is in a less central location (D). There is one regionally-scaled park, Fleetwood Park (F), some smaller ‘pocket parks’ (E), care facilities (H), assisted living residences, and a range of other housing forms from single-family dwellings to townhouses and apartments.

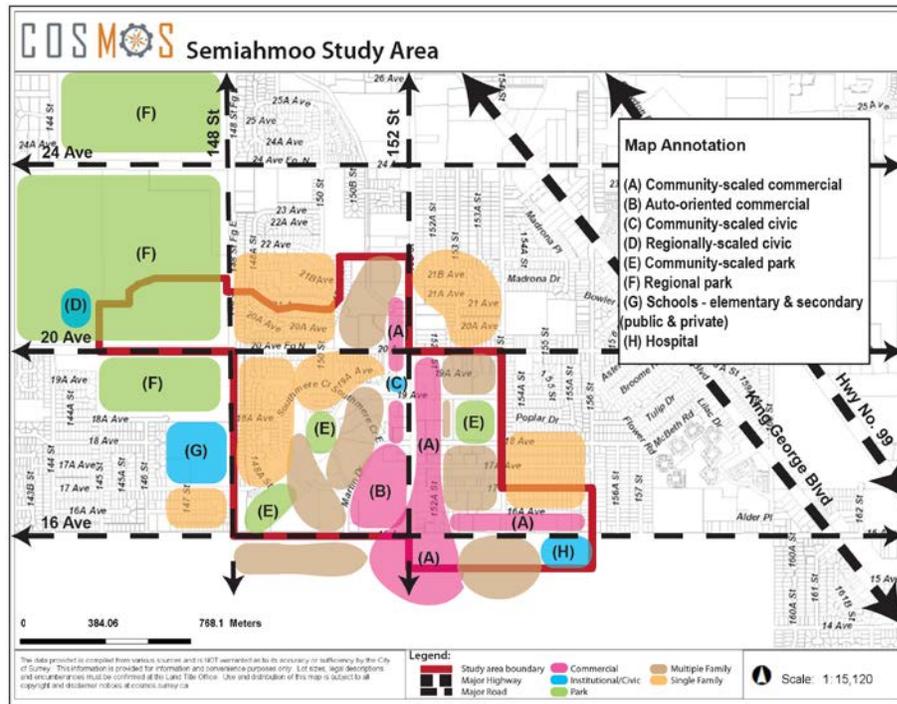
Figure 4: Cloverdale study area and generalized land uses
 Credit: Base map from COSMOS GIS; mark-up by Stephanie Long
 Permission obtained from the City of Surrey on November 8, 2010



The Cloverdale study area (Figure 4 above) is 1.8 square kilometres in size, and is comprised of 81 street segments and 60 intersections. There are two Provincial Highways that run through Cloverdale Town Centre, Highway #10, and Highway #15 (Pacific Highway). Although not as busy as these two highways, two main roads (64th Avenue and 60th Avenue) also connect Cloverdale Town Centre with other key employment areas and the rest of Surrey. Cloverdale has a distinct historic rodeo and rail theme, was the original location of Surrey City Hall until 1963, and is home to the annual Cloverdale Rodeo and Fair, the second largest rodeo event in Canada (The Cloverdale Rodeo and Exhibition Association 2010). The historic commercial node of Cloverdale

Town Centre is located to the northeast of where Highway #15 and Highway #10 intersect, which is home to retail, office, personal service, restaurants and entertainment uses (located at “A” on the map above). However, areas outside of this historic node are being developed with large-format grocery stores, pharmacies and auto-oriented uses, which are out-competing or drawing businesses away from the original commercial town centre (B). Certain civic facilities including a library, the Surrey Archives and the Surrey Museum are located within the historic commercial core along Highway #10 (C). There are also a number of civic facilities located north of 60th Avenue, such as the seniors’ centre, an ice arena, a curling club, a community hall (C), and a regionally-scaled horse race track and casino (H). The new Cloverdale Recreation Centre is currently under construction and slated to open in 2011 (D). This centre which will provide Cloverdale with facilities it is currently lacking such as gymnasiums, multi-purpose rooms, and a fitness facility. The Cloverdale Senior’s Centre, currently an age-specific facility, will soon be housed in the new recreation facility, which is designed to be multi-generational. A drawback this new facility is that the location is still further north from the commercial centre, at 62th Avenue, which will perpetuate the problem of civic activities being drawn to areas outside of the commercial core. While Cloverdale has both public and private elementary and secondary schools (G) located within the study area, it also has a post secondary institution, Kwantlen Polytechnic University (F).

Figure 5: Semiahmoo study area and generalized land uses
 Credit: Base map from COSMOS GIS; mark-up by Stephanie Long
 Permission obtained from the City of Surrey on November 8, 2010



The Semiahmoo study area (Figure 5) is 1.6 square kilometres in size, and is comprised of 79 street segments and 57 intersections. It is unique from Fleetwood and Cloverdale because it does not have provincial or regional highways dissecting the town centre. It does have major local roads, 16th Avenue and 152th Street, which connect Semiahmoo to major highways, and to the rest of Surrey and Metro Vancouver. The seniors' centre and recreation facility (D) are not within the defined town centre boundaries, but are close enough that they were included in defining the study area. The recreational facilities are regional in scale, multi-purpose, and multi-generational (D). The surrounding sports field is known locally as 'Softball City' for its numerous baseball diamonds and major

tournaments. Within the commercial core, there is a wide array of uses, including a public library, major grocery store, smaller shops and services, medical facilities, entertainment, pharmacies and restaurants (A). The Semiahmoo study area is also unique because it is located in the Surrey/White Rock municipal border and includes a regional hospital (H). The central commercial area on the Surrey side of the border also extends south into White Rock. As such, the defined study area extends about one block into White Rock.

2.3 Census Data

Census data for each town centre was collected based on Census Tracts defined by Statistics Canada. As such, the boundaries of the Statistics Canada data do not necessarily line up with the boundaries of the study area (as shown in Figure 6, Figure 7 and Figure 8 below), but it does provide a reasonable assessment of the characteristics of people living within and near to the study areas.

Analysing the geographic, demographic, social and economic characteristics of each study area is important because it provides a “context to understand the local age-friendly issues and challenges” (WHO 2006, p.9), and allows for comparison between the three study areas. All of the data contained within this sub-section were derived from Statistics Canada’s 2006 Census of Population census tract tables (Statistics Canada 2007).

Figure 6: Fleetwood study area and census tracts
 Credit: Base map from COSMOS GIS; mark-up by Stephanie Long
 Permission obtained from the City of Surrey on November 8, 2010

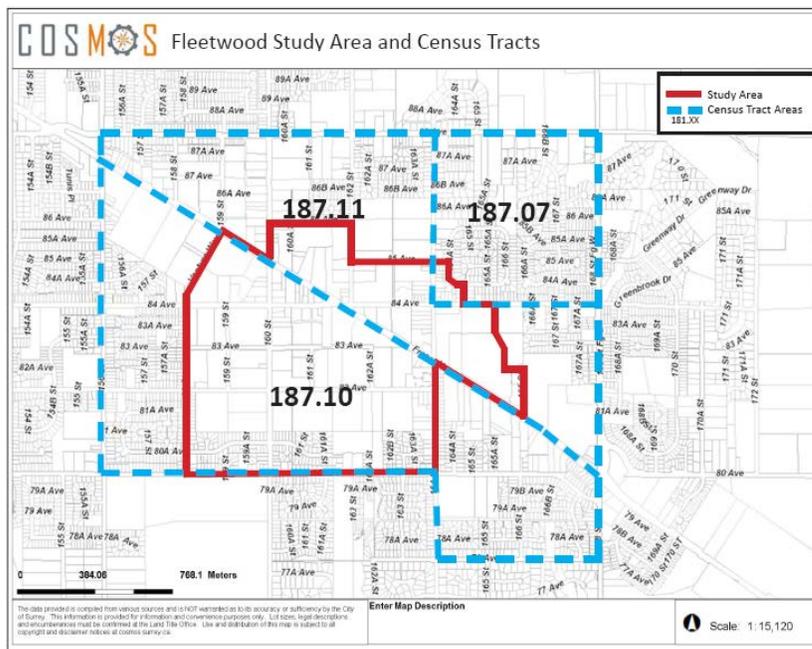


Figure 7: Cloverdale study area and census tracts
 Credit: Base map from COSMOS GIS; mark-up by Stephanie Long
 Permission obtained from the City of Surrey on November 8, 2010

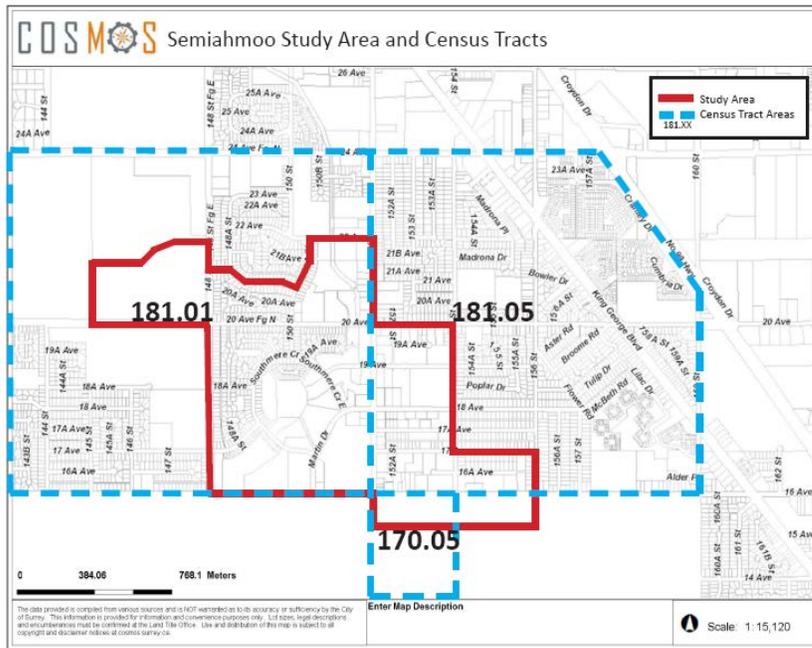
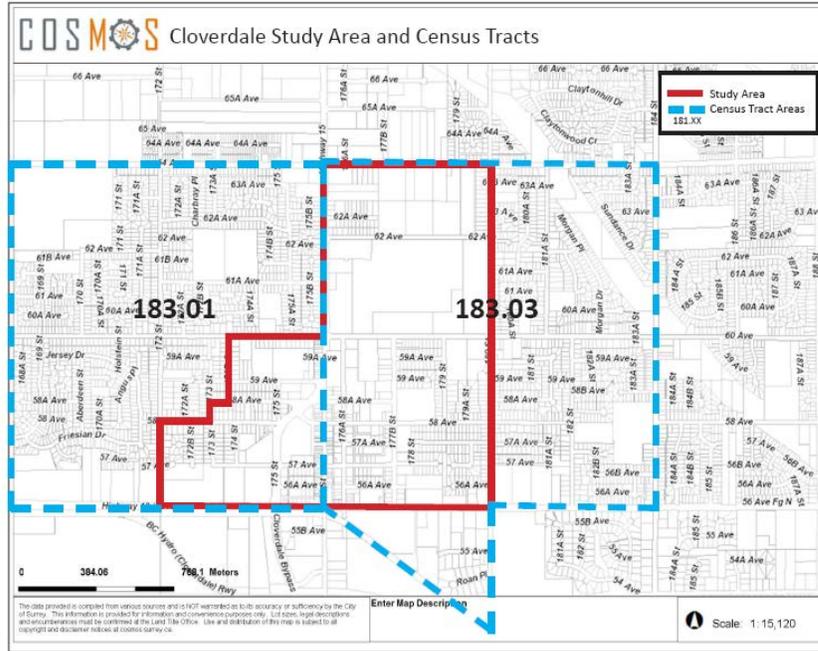


Figure 8: Semiahmoo study area and census tracts
 Credit: Base map from COSMOS GIS; mark-up by Stephanie Long
 Permission obtained from the City of Surrey on November 8, 2010



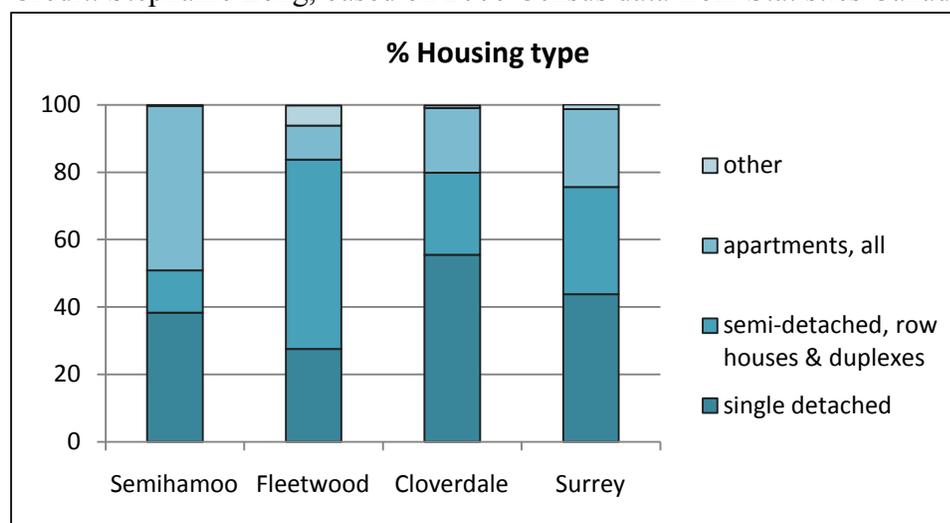
Data from the 2006 Census reveals that the socio-economic characteristics of each of the three study areas are unique. The residents within the Semiahmoo study area are older (median age of 52), representing 31% of the population, much higher than that of Surrey as a whole (11%). Fleetwood and Cloverdale more closely represent Surrey as a whole, with a median age of 35 and 37, respectively, accounting for 13% and 11% of the population, respectively.

Table 1: Population age over 65

| | Semiahmoo | Fleetwood | Cloverdale | Surrey |
|---------------------|-----------|-----------|------------|--------|
| % older people 65 + | 31% | 13% | 11% | 11% |
| % older people 75+ | 20% | 6% | 6% | 5% |
| median age | 52 | 35 | 37 | 37 |

The housing types in Fleetwood and Semiahmoo are predominantly multiple-family residential, the majority of which are townhouses in Fleetwood and apartments in Semiahmoo (Figure 9). Cloverdale, conversely, is predominantly comprised of single-family dwellings. Across all three study areas, the housing tenure is predominantly home ownership, in the range of 75% - 89% home ownership versus 11% - 25% rental. In Semiahmoo and Cloverdale, the housing age is older than that of Surrey and Fleetwood as a whole, but in all three areas the housing is relatively similar in price and generally in good repair.

Figure 9: Percent Housing Type
 Credit: Stephanie Long, based on 2006 Census data from Statistics Canada



Economically speaking, the population in each of the three town centres have about the same level of income, in the \$20,000-\$30,000 range for individual income, and in the \$60,000 - \$70,000 range for family income (Figure 10). It is interesting to note that the educational attainment for those aged 65 and older in Cloverdale and Semiahmoo is

higher than that of Surrey as a whole. Fleetwood has the lowest education levels out of the three study areas, and lower than that of Surrey for those aged 65 and older (Figure 11).

Figure 10: Median Income

Credit: Stephanie Long, based on 2006 Census data from Statistics Canada

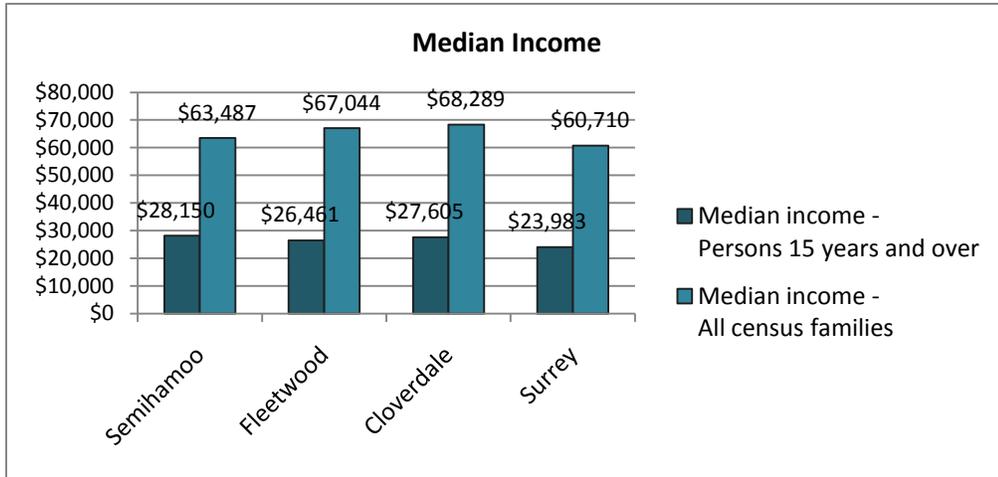
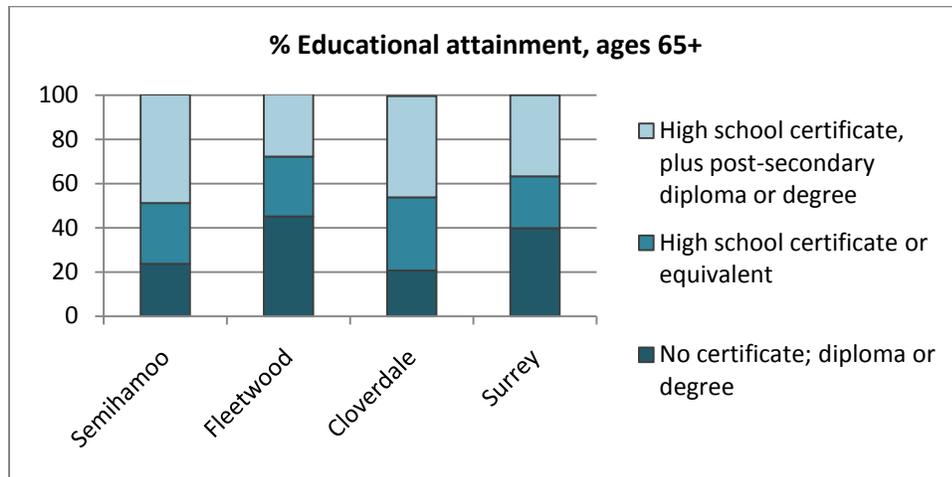


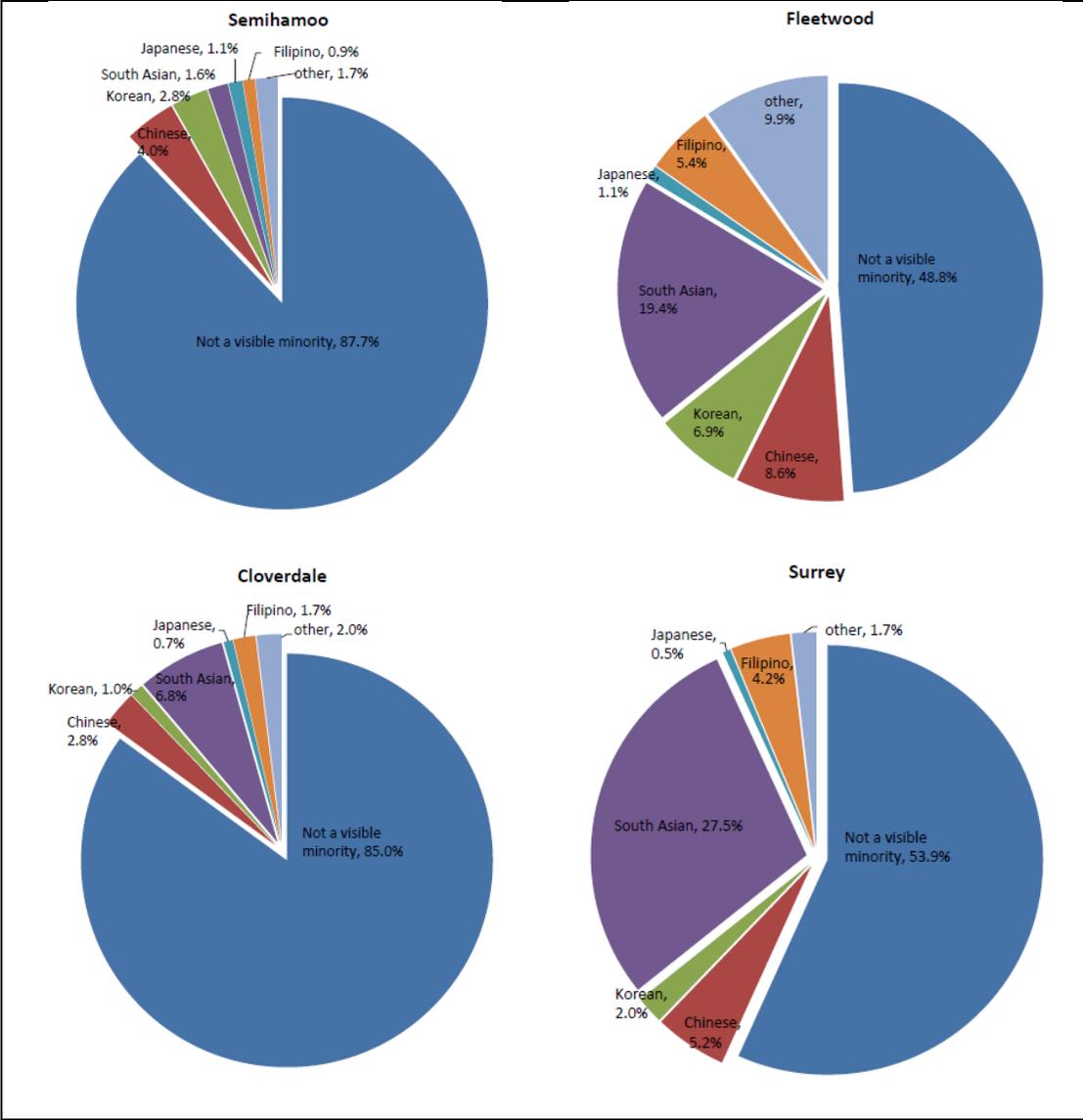
Figure 11: Percent Educational Attainment for those aged 65 and Older

Credit: Stephanie Long, based on 2006 Census data from Statistics Canada



Fleetwood's ethnic make-up is relatively more diverse than that of Cloverdale and Semiahmoo (Figure 12). While Cloverdale and Semiahmoo are predominantly Caucasian (only 15% and 12% visible minority, respectively), Fleetwood is comprised of predominantly visible minorities (51% visible minority), with the South Asian population making up the largest group at 19%, followed by Chinese (9%) and Korean (7%). Surrey also has a large visible minority population, making up 46% of the population, and South Asian people accounting for 27% of the total population.

Figure 12: Ethnicity characteristics in each town centre and in Surrey
 Credit: Stephanie Long, based on 2006 Census data from Statistics Canada



2.4 Conclusion

Analysing the geographic, demographic, social, and economic characteristics – along with the relevant policies, by-laws and initiatives – of Surrey and the three study areas is

important because it provides a “context to understand the local age-friendly issues and challenges” (WHO 2006, p.9), and allows for comparison between the three study areas. The broader analysis of Surrey provides a socio-economic context for the future discussions with the key informants and the focus group participants and improved the researcher’s understanding and sensitivity of the topics discussed. This chapter painted a picture of what exists within the three study areas that may not be captured by the age-friendly checklist. The findings from this chapter can also aid in identifying possible opportunities and constraints for future design interventions to make Surrey’s town centres more ageing-friendly, which is explored in more detail in Chapter Six, Conclusion.

3.0 LITERATURE REVIEW

3.1 Introduction

Canada's population is aging rapidly, and those aged 65 and older will soon account for one quarter of all Canadians (Statistics Canada 2006). However, a number of journal articles (e.g. Miller Harris Ferguson 2006a, Kochera & Bright 2005, Clarke & George 2005) have commented that many cities and neighbourhoods do not adequately address the needs of older adults. Conventional neighbourhood design makes it difficult for this group to live independently well into their older years. As people age, many begin to suffer from chronic conditions and their lifestyles may change in terms of how they spend their time and money. These changes may affect older people's demands on the urban environment, and, depending on how neighbourhoods and cities are designed, the urban environment may not adequately address the needs of Canada's aging population.

This chapter, first, describes how a people's mental, physical and social needs change as they age, and second, how built form can present opportunities and challenges when taking into account the needs of older people.

3.2 Canada's aging population

Canada's population is aging rapidly, as demographic studies have shown. Older people today are healthier and living longer, pushing the median age from 39 in 2005 to a projected median age of 43 to 46 in 2031 (National Advisory on Aging 1999). Part of this is attributed to the large Baby Boom generation that is approaching retirement. Next

year, in 2011, the first of the Baby Boomers will turn 65 and as more of this large cohort begins to retire, their changing needs will begin to have impacts on Canada's communities.

Longer life spans are attributed to a higher quality of life experienced by the present population as a whole. Baby Boomers today have access to superior healthcare, are better educated, and are better off economically than their parents' generation (Clark 2006). Because of improved health and longevity, 65 is no longer an age at which a person is considered to be "old". As such, different classifications of old age have emerged. While they are formal terms, the literature has made reference to the "young-old" and the "old-old" (Agrich 2006). The "young-old" are those who have recently retired, are healthy and active and are enjoying their leisure time with more active recreation. The "old-old," on the other hand, are typified by older adults with an increased prevalence in chronic conditions, reduced mobility, and are more passive in their recreation activities. The emergence of these informal terms reflects that Canadians today are aging differently than they did two to three generations earlier.

Research has indicated that while today's older adults are both better educated and more financially secure than the same cohort over the past few generations (Clark 2006), many in this demographic group continue to live on a fixed income, limiting their financial freedom, housing choice, and ability to gain access to leisure and support services. As many retirees have paid off the mortgage on their homes and own them outright, some find themselves to be "house-rich but cash-poor" (Canadian Broadcasting Corporation,

April 11, 2000). Government-established financial programs are available to supplement fixed incomes and this can allow older people to maintain a degree of financial stability in later life (Canada Revenue Agency 2006).

The ability to live independently, the availability of transportation options and housing choice, and the loss of physical and mental function in older people are some considerations planners must contemplate when planning for an aging society. These topics will be explored in greater detail in the sections below.

3.2.1 Autonomy and Independent Living

Psychologically, older people do not want to feel as though they are losing autonomy as they age. Autonomy is defined as “the state in which a person is, or feels, capable of effecting independent action and pursuing goals by using his or her own resources” (Smith and Sylvestre 2001, p.396). According to Smith and Sylvestre, the autonomy of older adults is dependent on several variables: the number of chronic conditions reported, age, walking ability, living arrangements, education, and household income (Smith and Sylvestre 2001, p.397). Dunkley, Helling et al. (2004), and Fobker and Grotz (2006) also believe that the location of shops and services in relation to the home and the accessibility of these amenities also contribute to a person’s level of autonomy.

Because North American culture, in particular, places great importance on personal autonomy, studies have found that older people are reluctant to seek help from their friends and family when they need it. Robison and Moen (2000), for example, found that

there is a general trend away from expecting to count on one's children for care and toward expecting to age in place, which reflects the underlying desire for independence and avoidance of "becoming a burden." This finding points to the growing need to plan for alternate housing and community-based long-term care arrangements that will enable disabled older people to maintain their sense of independence (Robison and Moen 2000, p. 523).

Independence both within and outside the home can contribute to a person's sense of satisfaction with their quality of life. A person's degree of independence can be measured by their ability to perform activities of daily living (ADL) and instrumental activities of daily living (IADL) (Gourley 2002).

While ADL refers to activities that are related to personal care such as bathing, dressing, eating, and getting in or out of bed, IADL refers to activities related to independent living, including cooking, cleaning, driving (or other forms of independent transportation such as walking and public transit), shopping, managing finances, and using the telephone (National Centre for Health Statistics 2006a, National Centre for Health Statistics 2006b, Family Practice Notebook.com 2006a, Family Practice Notebook.com 2006b). IADL includes "skills beyond basic self care that evaluate how individuals function within their homes, workplaces, and social environments" (Gourley 2002).

In the context of urban planning, monitoring IADL is of interest because in many cases it relates to activities that take place outside the home, such as running errands, shopping, seeing the doctor, going to the bank, and the ability to get to these destinations independently. The urban environment, therefore, can facilitate or hinder older adults'

ability to complete these tasks. Effective urban planning, that is, planning for an permitting the appropriate development of buildings and land uses, plays a big role in designing cities that can aid in people aging well.

When designing cities for an aging population, locating appropriate shops and services near residential environments will aid older people in maintaining their ability to perform IADL. Shops and services that are essential to performing IADL include grocery stores, pharmacies, banks, and services that offer transportation such as public transit, handi-transit, and taxis (Smith and Sylvestre 2001). Activities that are essential to functioning in their home, workplace and social environments would include having access to medical clinics, recreation facilities, and places of worship (American Association of Retired Persons 2005, National Advisory Council on Aging 1999, Miller and Harris, Personal Communication, June 20, 2006)

The location and scale of shops and services in relation to the home and the accessibility of these amenities are an important consideration when designing urban environments for older people (Dunkley, Helling et al. 2004, Fobker and Grotz 2006). Having adequate access to each of the above listed amenities will aid older adults in maintaining their autonomy, sustaining a high quality of life, and reduce the likelihood of social isolation.

3.2.2 Transportation Options

Mobility is a key component of maintaining a high quality of life among older adults.

The ability to remain mobile within the community allows older people to have access to

grocery stores, pharmacies, banks, recreation facilities, and friends and relatives. It reduces the incidence of social isolation and adequate community mobility allows people to remain independent for longer (i.e. not requiring the aid of family, friends or services to maintain their quality of life) (Miller, Harris, Ferguson 2006). This section discusses certain challenges and solutions relating to older adults' transportation and mobility.

Many older adults are living in suburban environments today, and this has much to do with their housing choices made many years prior. Because many are living in areas that offer few transportation options, they are more reluctant to give up their automobile because of the freedom and convenience associated with driving (Smith and Sylvestre 2001). Bruff and Evans (1999) have expressed concern about the safety of older drivers. Although voluntary withdrawal from driving is common and those aged 65 and older are in as many accidents as those ages 16-24, driving accidents involving older adults are more likely to result in fatality (Bruff and Evans 1999). From an urban planning perspective, and because everyone ages differently, safe, convenient and reliable transportation options coupled with home-based services (e.g. grocery delivery) can aid in accommodating all transportation and lifestyle needs (Bruff and Evans 1999, p.43).

When older people stop driving, their lifestyles may have to change significantly, requiring, for instance, increased use of public transit, a move, or changes in shopping, leisure and vacation habits (National Advisory on Aging 1999, p. 46). In the United States, the American Association of Retired Persons (AARP) asked people aged 50 and over what mode of transportation they would be most inclined to use if they did not have

access to a car. Their preference was clearly by getting rides with family and friends rather than using public transportation. Hendrickson and Mann's (2005) survey found that older people find public transportation to be an intimidating option, because the schedules are confusing, the fixed routes are difficult to get to, transit stops are not always sheltered or clearly marked, busses are often crowded and may not be accessible, and there is fear of injury (Hendrickson and Mann 2005).

Some communities offer a handi-transit or dial-a-ride service that provides point-to-point service for people with disabilities. Older adults can qualify for this service if they have a physical or cognitive disability, and it may be an attractive alternative to a typical public transit system (National Advisory Council on Aging 1999). Another point-to-point transportation option is taxi service. Taxis are typically available on demand, which is convenient, but can become costly (National Advisory Council on Aging 1999).

Due to chronic conditions that set in as people age, their ability to drive decreases as do their levels of physical activity. However, older adults become more reliant on walking as a mode of transportation but walking trip distances and the number of trips are significantly reduced as compared to those when driving (Fobker and Grotz 2006).

Pedestrian safety is an important consideration when planning for an aging population because, although pedestrians have a low probability in being involved in an accident, they are more likely to be killed or seriously injured when they are involved in such an accident (Mitchell 2006). Tactile and visual cues on sidewalks can help to indicate that the pedestrian is approaching an intersection or other obstacles (Tomic 2003).

In suburban areas, arterial roads are wide, multi-lane and can be difficult to cross.

Because people suffering chronic conditions may not be as agile as others, extending the timing of traffic signals can allow them to cross safely (Bruff and Evans 1999, p.22).

Areas of refuge at mid-points of crosswalks can allow someone with mobility problems cross intersections half-way during a walk-signal, and wait at the area of refuge until a second walk-signal so that they can cross the whole intersection safely, and not feeling like they need to rush or that they might get trapped in the middle of the intersection (Miller, Harris and Ferguson 2004).

In winter cities, care should be taken to ensure that sidewalks are clear of ice and snow in the winter so that older people are not trapped in their homes and so they are not put at risk of injury should they choose to leave their home. In the spring and summer months, winter cities should quickly attend to cracks and holes in the sidewalks so that there is an even surface that does not present obstacles for older adults and those with disabilities (Gallagher and Scott 1996).

3.2.3 Residential Mobility and Housing Preferences

Because people are living longer, healthier lives, they are living in their homes for longer as well. Many anticipate that they will continue living in their current place of residence, indicating a preference for aging in place. “Aging in place” means that a person can remain in their current place of residence comfortably and have access to the necessary services as their needs change with age (British Columbia Association for Community

Living 2006, Seniorresource.com 2006). A similar yet separate notion is that of “aging in community” which is where an older adult may move to a new dwelling but remains within the same neighbourhood or town as their family home. Moving within the same community allows the older adult to remain part of their established social network, and allows them to retain the same health professionals such as doctors and pharmacists (Northwestern Ontario District Health Council 2004, p.20).

People, particularly those who have lived in the same community for several years, develop a sense of attachment to their neighbourhoods. A 2005 study by the AARP found that most people expressed desire to stay in their current community for the subsequent five years, and most of those would prefer to stay in their same house (AARP 2005). A study in Madrid found similar results, and also found that only those who had sentiments of dissatisfaction with where they lived expressed a desire to move from their current community (Perez, Fernandez-Mayoralas et al. 2001). While many prefer to stay in their current place of residence, very few make adjustments to their homes to prepare for changing needs as they age (Perez, Fernandez-Mayoralas et al. 2001). When home modifications are not sufficient for satisfying changing needs, many older people feel it is necessary to move. The goal of planning for aging within one’s community would be to ensure that even if older people feel it is necessary to move from their current dwelling, options should be available for them to remain in the same neighbourhood.

The Canada Housing and Mortgage Corporation (CMHC) offers some opportunities to make living within the community easier through some of its funding programs. For

example, it offers grants and forgivable loans to homeowners who wish to alter their homes to better accommodate growing old. Where municipal regulations allow it, the Residential Rehabilitation Assistance Program – Secondary/Garden Suite program provides funding for homeowners to convert a portion of their home into a secondary suite for low income older adults and people with disabilities (Canada Mortgage and Housing Corporation 2006b).

It is not always possible for older adults to live in the same house through to the final years of their life. When those aged 65 and over choose to move, they tend to select smaller dwellings that are easier to navigate and maintain such as an apartment or a single level house. There are a variety of factors that determine why older people move, but all age groups (65-75, over 75, and over 85) share the same primary reasons. These include family reasons (e.g. children moving out, the death of a spouse, or moving closer to extended family), the desire for a better quality neighbourhood or a better quality dwelling, health reasons, or the need for a smaller dwelling (Lewis 2006). By making such a move, a person may be able to maintain their independence for longer.

Occasionally seniors choose to move to retirement communities or age-segregated housing units: places that offer added amenities near their home as well as a social circle within close proximity. Some older adults require the assistance of informal caregivers such as family and friends or may elect to engage in home care support service (Buys, Miller, and Barnett 2006). Others may move in with adult children if they have this kind of family support network available to them. When chronic conditions become severe

such that older adults require continued care, they may choose to live in an assisted living facility or may require end-of-life care (Buys, Miller, and Barnett 2006).

Ideally, the goal of age-friendly cities is to have older adults live in security, enjoy good health and continue to participate fully in society (WHO 2006). In recent years, social policies have limited institutionalization of older adults and have facilitated the development of home-care services ((National Advisory Council on Aging 1999). There have also been fewer admissions of people with less serious problems into institutions, “resulting in the admission of individuals who on average require a higher, more intensive level of care than the earlier clientele” (National Advisory Council on Aging 1999, p.44).

In their 2004 article “Mobility Under Attack – Are Older Canadians Ready to Live Without Their Cars?” Miller, Harris, and Ferguson deduce the following about where older adults live:

More than two thirds of all the single-family dwellings in Canada have been built since the Second World War. Since we know that there are some 1.34 million senior households currently living in single-family dwellings, and that more than three quarters of seniors live in some kind of urban setting, it is safe to say that a significant proportion of older Canadian are living in ultra-low-density suburban enclaves built in the modern era, where the nearest convenience store is beyond easy reach (Miller, Harris, Ferguson, 2004 p.4).

Rosenberg and Everitt’s (2001) position complements Miller, Harris and Ferguson’s argument about where older people live by suggesting that most older people prefer to live independently in a chosen community and in their own home (Rosenberg and Everitt,

2001). Older people are more inclined to age in place even though their communities may not offer them the supportive services and mobility options they need (Rosenberg and Everitt, 2001). When older adults do move, they tend to seek apartment-style housing near a better mix of services because they prefer to make use of these services without relying on the help of others to get them to their desired destination. These moves are more likely to arise when their current living situation has poor transportation options (e.g. walking, cycling, transit) (Rosenberg and Everitt, 2001, p.149).

3.2.4 Age-Integrated and Age-Segregated Environments

Older adults are as diverse as any other age cohort and lifestyle preferences are affected by a number of factors. While it may seem simple enough to group older adults based on age alone, the aging population has varying wants and needs based on gender, income, education, marital status and ethnic background. These variables influence this age cohort's values and desires when it comes to selecting a place to live and achieving an overall high quality of life (Rosenberg and Everitt 2001, p. 146).

Age-integrated environments are those where older adults live within the larger community, integrated with residents of all ages. In Canada, approximately 93% of older adults live in these settings (Turcotte and Schellenberg, 2007 p.138). Older adults can live within the community with varying levels of care. Oftentimes, community-dwelling older adults live independently with very little care at all, or they may receive formal care from in-home providers or informal care from family members and friends.

As such, Rosenberg and Everitt suggest three approaches to providing housing for older adults:

a. Institutionalization and purpose built housing:

This form of housing includes nursing homes, homes for the aged, residential care homes, and personal care homes. Purpose built housing accommodates a small part of the elderly population, most of whom have serious health problems (Rosenberg and Everitt 2001, p. 143). According to the 2001 Canadian Census, this group accounts for 7% of the 65 and older population, and 32% for those aged 85 and over (Turcotte and Schellenberg, 2007 p.138).

b. Aging in place:

This concept refers to remaining in one's own home or moving to in a different home but remaining in the same community for as long as it is comfortable and convenient. "Aging in place is seen as a solution for the increase in demand for expensive facilities for the elderly" (Rosenberg and Everitt 2001, p. 144). Aging in place as a policy and can be advanced by improving the support for older adults who remain within their own homes, from both formal (e.g. service providers) and informal sources (e.g. family and friends) (Rosenberg and Everitt 2001).

There are two notions of aging in place. Traditionally, aging in place is the ability to live in one's own home for as long as possible. The ability to live in one's home can be extended by making modifications to the home, or by receiving assistance within the

home such as home maintenance services and general health care services. The second notion of aging in place is “aging in community” where the residents may not live within the same home, but move into different types of housing within the same neighbourhood as they age (Northwestern Ontario District Health Council 2004).

c. Housing alternatives and maximisation of choice:

This approach recognises that the elderly are a heterogeneous population with a variety of challenges which demand a multiplicity of solutions. In this approach, it is recognised that there is no one solution to the housing questions addressed by the elderly and that no one housing model is appropriate (Rosenberg and Everitt 2001, pp.143-144).

The third approach presented by Rosenberg and Everitt is a cautious yet holistic approach to addressing the housing needs of the older population.

Older adults generally prefer to age in place because of the social networks they have established over the years, and because of familiarity and comfort with their existing neighbourhood. However, sometimes moving away from their long-time home is necessary because day-to-day needs can no longer be met. To this group, the neighbourhood is no longer liveable. As described by Kochera and Bright (2005), “livable communities have affordable and appropriate housing, supportive community features and services, and adequate mobility options. Together, these elements facilitate personal independence and the engagement of residents in civic and social life” (Kochera

and Bright 2005, p.32). When a neighbourhood is no longer livable, older adults may feel it is necessary to move. However, as Lawler notes:

Many consider older people to be the most stable forces in a community. Therefore, when an older person must move out of a community in search of more adequate and affordable services, in addition to the loss of independence that the individual suffers, the community also suffers (Lawler 2001 *in* Kochera and Bright 2005, p.32).

As they age, older adults may begin to investigate alternative living arrangements that still allow them to live in within their chosen or familiar community. They may elect to move for a number of reasons, such as their homes are too large, costly or difficult to maintain, or they may wish to locate closer to family, work, or facilities and services, or for health reasons (CMHC 2006a, p.4).

Where municipal zoning permits it, residents can retrofit their homes in order to accommodate an accessory dwelling unit. These are fully contained suites that have their own entrance, kitchen, bathroom and living areas separate from the rest of the house. Accessory dwelling units “can enable seniors to continue to live in their homes for as long as possible, and to tap into their homes to better meet their changing housing, economic and support needs” (CMHC 2006d, p.1).

While age-integrated living offers a number of living arrangements to choose from, these options may not satisfy the needs of an older adult. Some age-segregated living arrangements may be able to better satisfy those needs. Age-segregated environments can take on a variety of shapes and sizes, and range in the degree of support services that

are offered to the older adult. Age-segregated environments can more simply be broken down into three broad groups: independent living, assisted living, and care facility.

Examples of independent living facilities are apartment buildings, townhouse complexes, or otherwise gated communities that only allow residents that meet a minimum age criteria, such as 55-plus communities. For older adults who prefer a higher degree of support services within their community, there are assisted living facilities that offer a range on levels of care. These services assist in activities of daily living (ADL) and instrumental activities of daily living (IADL). As CMHC describes:

Supportive housing is the type of housing that helps people in their daily living through the provision of a physical environment that is safe, secure, enabling and home-like and through the provision of support services such as meals, housekeeping, and social and recreational activities. It is also the type of housing that allows people to maximize their independence, privacy, decision-making and involvement, dignity and choices and preferences (Canada Mortgage and Housing Corporation 2000, p.9).

In British Columbia, assisted living residences and community care facilities are defined and regulated by the Community Care and Assisted Living Act (CCAL Act). Both types of facilities provide services to their residents such as:

- activities of daily living;
- central storage, distribution, administration or monitoring of medication;
- monitoring of food intake or therapeutic diets;
- maintenance or management of cash resources or property;
- psychosocial rehabilitation or intensive physical rehabilitation; and

- structured behavioral program

These types of services are defined as prescribed services by the CCAL Act. The distinguishing factor between assisted living residences and community care facilities is the number and types of services provided. Assisted living residences provide 1-2 prescribed services, whereas community care facilities provide three or more such services, and depending on which category the facility falls under will also determine the level of funding opportunities available and the types of regulations and standards they must follow (British Columbia Ministry of Health, Office of Assisted Living Registrar, 2007).

For some older adults, an age-segregated living arrangement may be the most appropriate or appealing option, making the provision of purpose-built housing an important concept in planning for age-friendly neighbourhoods.

There are benefits and drawbacks to both living within the community and to living in residential care. Rosenberg and Everitt identified certain researchers who “believe that full integration of the elderly population within their communities is the best way to insure the maximum life satisfaction of the elderly population over the longest period of time” (Rosenberg and Everitt, 2001 p.119). Rosenberg and Everitt also identified researchers “who believe that the elderly population wants and seeks a built environment which specifically caters for their particular needs” (Rosenberg and Everitt, 2001 p.119).

Some argue that apartment complexes offering residential care to older adults can create isolation of this group (Rosenberg and Everitt 2001). Yet, some groups of older adults prefer this type of living situation because of the increased social networking opportunities, the ease of which services are available, and the sense of security these facilities offer (Golant 1985 *in* Rosenberg and Everitt 2001 p.143-145).

Rosenberg and Everitt also identified that there is a tension between the equity and the efficiency of providing services. For example, home-care services are typically made available for older adults living within the community. However, “age-segregated buildings and communities provide more efficient places for the delivery of home-care services than do residential areas which house people from all age groups” (Rosenberg and Everitt 2001, p.148).

A study in Australia by Buys, Miller, and Barnett (2006) found that community-dwelling older adults experienced higher levels of family interaction than those living in age-segregated settings. The family members of those living within the community were more likely to provide informal care, whereas those living in age-segregated settings were more likely to rely on paid help. Interestingly, those living in retirement villages were not significantly less satisfied in the level of family interaction than those living in the community. This may partly be attributed to the type of family interaction experienced (e.g. the purpose of the visit is to do chores and provide care versus socializing) and partly by living with peers and having built-in social opportunities within the housing facility (Buys, Miller, and Barnett 2006 p. 44)

3.2.5 Physical and Mental Health

As people age they become more susceptible to chronic diseases such as cancer, diabetes, dementia, osteoporosis, heart disease/stroke, arthritis, and incontinence (National Advisory Council on Aging 1999). These diseases, and medications to treat these diseases, can affect an older person's sensory system such as hearing, vision, mobility, and sense of balance (MacKnight 2006). Mobility can be further impaired by lack of physical activity, or deconditioning where muscle memory is lost and difficult to regain. Deconditioning is particularly common when a someone sustains a fall and is unable to maintain physical activity during their recovery period, which impairs the person's ability to make a full recovery (MacKnight 2006).

Falls and injuries among the elderly, many of which are preventable, can be attributed to both personal factors (such as diminished muscle strength, impaired vision, poor balance and chronic conditions) and environmental factors (such as poor stair design, cracked or icy sidewalks, and poor street lighting), and can be reduced through personal and community initiatives. Due to the high health-care costs associated with such falls and injuries and their preventable nature, it is in the local and senior levels of governments' best interest to reduce the harm. The National Advisory Council on Aging (1999) notes that government policy makers and communities should be encouraged to "adopt a broader vision of injury prevention that encompasses both personal and collective responsibility (e.g. sidewalk and public transportation design)" (p.25).

As older people's physical health begins to decline, they become less mobile and begin to spend less and less time in the community and interacting with friends and family outside of their homes. A startling figure is that approximately 20% of individuals aged 50 and over report that they "frequently feel isolated from other people" (American Association of Retired Persons 2005 p.17). Two contributing factors to this phenomenon are loneliness and social isolation. Loneliness is "the set of feelings a person experiences when his or her intimate and social needs are not adequately met" (Hughes 2006). Social isolation on the other hand is "generally used to denote an absence of social interaction, contacts and relationships with family, neighbours, and society at large" (Kahana 2006). While social isolation is generally a physical phenomenon, loneliness is psychological: the lonely are not necessarily alone, and those that are socially isolated may not feel lonely. There is a higher likelihood of elderly people experiencing social isolation today because, earlier in life, they have better mobility and moved to suburban locations. As their mobility decreases, they leave their homes less frequently, and are less likely to have social interactions outside of their homes because of the long distances to amenities (Kahana 2006, Ernst and McCann 2005). Furthermore, having fewer children, the death of a spouse, and deteriorating health can all be contributors to both loneliness and social isolation (National Advisory Council on Aging 1999; Gierveld and Havens 2004). As such, loneliness and social isolation increases with age, but not as a result of age alone.

One potential way to overcome social isolation and loneliness is by taking part in recreation and leisure activities. Older adults today participate in a wider variety of activities and are more likely to enjoy activities such as attending art galleries, plays,

taking continuing education courses, or participating in active recreation such as travel and exercise (National Advisory Council on Aging 1999). With increased time available post-retirement, older adults are more able to contribute volunteer hours, travel, and become active in recreation activities (American Association of Retired Persons 2005). Because these leisure activities offer opportunities for people to interact with one another, they can mitigate loneliness and social isolation. However, the AARP found that older adults find it more difficult to participate in such activities as their mobility decreases (American Association of Retired Persons 2005), which is why ample access to leisure activities is important for age-friendly cities.

3.3 Planning for an Aging Suburban Population

This section of the literature review discusses the built form of conventional suburbs and how conventional suburban design affects older people in their day-to-day activities. It describes conventional suburbs and addresses the benefits and constraints of aging in place. Furthermore, this report explores how conventional suburbs can positively or negatively influence healthy, active aging.

Post-war suburban neighbourhoods were created for young middle-class families, with little consideration for multi-modal transportation, or providing a varied housing stock to suit diverse populations with multiple needs (Randall and Baetz 2001, Howe 1990, Lucy and Phillips 2003). Often these neighbourhoods lack community facilities, jobs or public transportation options because of the segregation of land uses, low densities, and dominance of the automobile (Hayden 2000). Today, household demographics have

changed from what they were in the post-war years; these young families have aged into “empty-nesters” whose children now have homes of their own. Older adults are particularly suffering from inadequate housing options. Housing from the immediate post-war period still makes up a significant proportion of the housing stock in today’s metropolitan areas, and zoning regulations have prevented them, in many cases, from adjusting to meet the changing needs of today’s households (Howe 1990).

However, many older residents would prefer to continue to live in their existing neighbourhoods rather than move to another where they could find more suitable housing, but also where they would be losing social ties with their neighbours (Chapman and Howe, 2001). This brings forward the argument for flexible housing and flexible neighbourhoods. When housing and neighbourhoods can properly accommodate the changing needs of their residents there is increased resident stability (Kochera and Bright 2005). Zoning that permits multiple uses in a home will have residents reinvest in their homes by making improvements to them and will help mitigate suburban decline (Chapman and Howe 2001). There are examples of new communities being built that are designed with a variety of housing types and mixed-use developments, yet few examples in the literature of retrofitting existing suburbs, thus creating a need for non-profit groups to get involved in the physical reconstruction of the suburbs (Hayden 2000).

Altering the built form of existing urban and suburban areas for an aging population is not a simple task. There are zoning limitations and resistance towards change from residents in these neighbourhoods. Many zoning by-laws were created in the 1940s and

1950s, and have not changed to reflect the needs of the population (Bennett 1999, Howe 1990). They limit parcels of land to one type of use, and are difficult to change to accommodate multiple uses. Current residents in suburban neighbourhoods, even if they would like to age in place, are fearful of increased densities within their neighbourhood. They dislike the notion of infill and increased density because they feel that along with density come traffic congestion, increased noise, and crime (Lucy and Phillips 2003).

3.3.1 Approaches to Good Urban Design

In his book, *Image of the City*, Kevin Lynch wrote about the importance of legibility of cities. His book focussed on the mental images citizens may have of their city, and recognised the fear and anxiety that someone may experience should they become lost (Lynch 1960, p.4): "A distinctive and legible environment not only offers security but also heightens the potential depth and intensity of human experience" (Lynch 1960, p.5). As such, Lynch provides planners with tools to define the structure of a city by way of categorizing urban features into five key categories of elements: paths, edges, districts, nodes and landmarks. Lynch, expressed concern about the legibility and navigability of cities: "When reshaping cities it should be possible to give them a form which facilitates these organizing efforts rather than frustrates them" (Lynch 1960, p.90), and in doing so the legibility of cities is improved.

While Lynch focused on the legibility of cities, Jane Jacobs' approach was to focus on the importance of urban characteristics that contribute to the city's greatest potential for diversity: mixed uses, short blocks, buildings of varying age and conditions, and a

sufficient concentration of people (Jacobs 1961, pp.150-151). Jacobs was one of the first critics of modernist planning in the 20th century, and planners since that time have subsequently also highlighted the importance of the urban characteristics identified by Jacobs, including in literature on the topic of aging.

As an example, Clarke and George refer to these characteristics as the “3 D’s”: density, diversity and design (Clarke and George 2005, p.1933). They explain that density refers to compact neighbourhoods measured through either population density or housing unit density. Land-use diversity refers to the mixing of commercial and residential uses which promotes more walking and cycling trips within neighbourhoods. Design specifically refers to pedestrian-oriented designs that “encourage more non-automobile travel including the continuity of sidewalks, the accessibility of public transit stops, the frequency of 4-way crossing signals, and the availability of pedestrian amenities” (p.1933).

Harris also echoes the importance of some of Jacobs’ urban characteristics by identifying the following five design principles that he claims are fundamental in creating an accessible neighbourhood:

- Promote compact, walkable neighbourhoods;
- Encourage mixed-use zones;
- Provide a range of housing options;
- Concentrate new growth into existing areas; and

- Link new development to public transit and other transportation options
(Harris 2004).

Although the authors noted in this section are able to describe key urban features that can aid in increasing the legibility, vibrancy and/or accessibility of urban environments, the impact of urban design on healthy, active aging has yet to be explored. The section below will explore this further.

3.3.2 How Conventional Suburbs Influence Healthy, Active Aging

Some of the literature surrounding healthy active aging has focused on the impact of the urban environment has on aging. This literature has described that the built form not only influences older adults' ability to physically navigate the urban environment, such as through universal design (Miller Harris and Ferguson 2006, Clarke and George 2005, Gallagher and Scott 1996) but also influences older adults cognitively, for example, for people with dementia (Mitchell, Burton and Raman 2004).

As discussed earlier, North American suburbs were built to facilitate the movement of automobiles, which resulted in sprawl, typified by low density design, segregated land uses, poor pedestrian connectivity, inadequate public transit service, and heavy reliance on the automobile (Morris 2005, p. 17). Despite how well these environments served their needs and aspirations at a younger age, older adults will likely find that these same places are less-accessible and less-navigable, particularly when driving is no longer an option (Miller, Harris, and Ferguson 2006a, p.9). The problem is further compounded by

retailers and service providers changing their service delivery systems to become more “centralized”. For example, banks that are shifting many of their services to the internet or the phone, and are closing local branches in favour of opening larger regional branches. Other examples include pharmacies, grocery stores, department stores, places of worship, recreation centres, and entertainment uses (e.g. cinemas) that are also getting larger and are being located far apart from one another and, often, not within neighbourhoods. Post offices are beginning co-locate with other retailers such as convenience stores or pharmacies (Miller, Harris, Ferguson 2004, p.6). The trend towards such centralized services creates a situation where there is poor connectivity between services, making public transit a poor transportation option, and creating a heavier reliance on the automobile (Miller, Harris, Ferguson, 2004, p.6). Particularly when people are not able to drive, or do not have access to a car, there is a negative impact on their ability to reach services.

Kochera and Bright offer policy suggestions that can support more livable communities. They suggest that “programs that promote a variety of affordable housing options (including home repair) enable individuals to remain in the communities to which they have long-term attachments” (Kochera and Bright 2005, pp. 35-36). They continue by suggesting that “zoning, industry standards, and other incentives for good home design enhance quality of life by enabling individuals to enjoy the full use of their residence as they age” (Kochera and Bright 2005, pp. 35-36). As an example of incentives, the CMHC offers the Home Adaptations for Seniors’ Independence (HASI) program (Canada Mortgage and Housing Corporation 2009a). This program offers financial

assistance for minor home adaptations that will help low-income older adults perform daily activities in their home independently and safely. Some municipalities in BC have begun to permit secondary suites as an outright permitted use, provided that they meet basic minimum code requirements and CMHC offers financial incentives for low-income property owners to make these conversions through the Residential Rehabilitation Assistance Program (RRAP) (Canada Mortgage and Housing Corporation 2009b).

Physical activity can prevent or reduce many of the negative effects aging has on functional ability and health, which ultimately helps older people maintain their independence. Walking is a convenient, low-impact, safe and free activity that older adults can do to start exercising more, and an urban environment with high land use diversity can encourage older adults to walk more (Morris and Hardman 1997, p.306). When everyday opportunities for physical activities such as walking are not readily available, an older adults' physical function begins to decline. With declining physical function, older adults begin to experience greater difficulty in navigating the urban environment. Clarke and George (2005) found that older adults require greater assistance with IADLs when living in an environment with limited land use mixtures. Conversely, "older adults report greater independence in IADL when they live in environments with more land use diversity" (2005, p.1933). Clarke and George (2005) argue that "disability can be diminished... if the physical and mental demands of a given task are reduced" (p.9).

Furthermore, the availability of urban areas with tree-lined streets and parks has been found to improve the longevity of older adults, according to a 2002 study of 3,144 older adults in Tokyo. After controlling for the effects of age, sex, marital status, and socioeconomic status, the study found the probability of survival over a five-year period increased “in accordance with the space for taking a stroll near the residence, parks and tree lined streets near the residence, and their preference to continue to live in their current community” (Takano, Nakamura and Watanabe 2002, p.913).

As a result of their study, Takano, Nakamura and Watanabe found sufficient predicative value of such green spaces that they recommend that “greenery filled public areas that are nearby and easy to walk in should be further emphasised in urban planning for the development and re-development of densely populated areas ... so as to promote the health of senior citizens” (Takano, Nakamura and Watanabe 2002, p.913). Not only do Takano, Nakamura and Watanabe emphasize the presence of these green spaces as being important, but they also stress that the walkability of these spaces is also of great importance.

Land use diversity is an important feature of a built environment that can encourage walking. A mix of land uses that includes residential, commercial, recreation and personal services in close proximity to one another encourages walking and multi-purpose trips. However, adequate pedestrian infrastructure connecting these uses is of high importance. A study from the University of Victoria (Gallagher and Scott 1996) suggests ways to improve the safety and navigability of the pedestrian environment. This

report stresses that most places where older adults would trip or fall in public places are sidewalks, crosswalks, curbs, roads and unpaved walkways. To reduce the incidences of falls, recommendations include:

- the reduction of the number of distractions (e.g. sudden loud noises, blind corners, too many signs and symbols);
- the use of slip-resistant surfaces and durable construction materials to prevent premature cracking and buckling;
- the provision of curb-cuts;
- the use of textured surfaces to provide tactile cues to the visually impaired; and
- grouping several utility boxes together to make them more noticeable collectively than individually (Gallagher and Scott 1996).

Eliminating hazards that cause missteps and falls allows seniors and persons with disabilities to move about their communities without fear of having an accident, thereby promoting a healthy and independent lifestyle (Gallagher and Scott 1996 p.62).

Land use diversity and the safety of the pedestrian infrastructure help older adults in their physical ability to navigate the urban environment. However, older adults' cognitive ability to navigate the urban environment is equally important.

As older adults' cognitive functions decline with age, their neighbourhoods can become confusing places to navigate. The fear of getting lost can prevent older adults from leaving their homes, and when they do leave, it can feel like they are venturing into the unknown (Mitchell, Burton and Raman 2004, p.89). Mitchell, Burton and Raman (2004)

pioneered a study on the legibility of urban environments for adults with and without dementia. Through this study, the researchers were able to discover the types of features within urban environments that help or hinder way-finding. Older adults were most likely to lose their way at road crossings, places of excessive visual stimuli or information, and when they experienced a loss of concentration (Mitchell, Burton and Raman 2004, p.93). Features that aided in way-finding included near and distant landmarks, signs, and environmental cues. The participants of the study preferred short, narrow and gently winding streets (such as a deformed grid pattern), varied architecture (e.g. varying roof lines, colours and contrasts, shapes and features, and materials), simple signage (e.g. not cluttered, provides essential information only, with dark lettering on a light background), and landmarks (e.g. historic buildings, clock towers, places of activity like a playground, significant trees, and public art) (Mitchell, Burton and Raman 2004, pp. 95-98). A combination of these features makes for pleasant walks, and maintains participants' interest as they navigate their way to their destination.

The findings of this study suggest that “people with dementia rely increasingly on the legibility of their local neighbourhoods, especially at road crossings and junctions as their ability to concentrate, to be aware of their surroundings, and to follow routes, maps, and directions decreases” (Mitchell, Burton and Raman, p.95). The inclusion of intelligible features when designing urban spaces benefits those with dementia or other cognitive impairments. Interestingly, Mitchell, Burton and Raman's recommendations reflect those of good urban design: “By focusing on designing urban areas that are explicitly easy to

understand, navigate and access, the findings are relevant to all members of society” (Mitchell, Burton and Raman 2004, p.89).

3.3.3 Other Planning Principles that can Influence Age-Friendly Design

Planners have considered a number of techniques that can improve the age-friendliness of urban and suburban areas. Techniques include increasing pedestrian connectivity, developing policies for increased density by concentrating growth, facilitating mixed-use, and permitting accessory apartments within existing single family dwellings. These techniques would generally be directed towards government agencies and non-profit organizations rather than developers, because the economic benefits are not immediate (Hayden 2000).

Friedman (2002) provides a contemporary approach to altering the design of conventionally planned neighbourhoods. He argues that the evolution of older suburbs must maintain the character of the neighbourhoods while necessary changes are made to the suburban form in a healthy and positive manner. He recognises the limited number of housing types, the need of maintenance or provision of community centres, and the limitations that current zoning and by-laws govern the suburban form (Friedman 2002). He proposes six phases to the planning process of retrofitting these suburbs. These phases are: becoming familiar with the existing zoning and bylaws; understanding the community needs; conceiving a vision; proposing a concept; simulating a site plan; and creating a design code (Freidman 2002). He illustrates this procedure though a case study in Montreal, QC, where lot sizes, housing massing, and other variables were

analysed, and a proposed plan of introducing “granny suites” over rear garages was recommended. Neighbourhoods should be treated on a case-by-case basis, and recommendations will vary accordingly (Freidman et. al. 1998).

Luka and Trottier (2002) found that a successful method for increasing density would be for zoning to allow densification to happen incrementally and at specific urban nodes, while maintaining the spacious nature of suburbs that is valued by residents (2002).

Richmond, BC provides an example where residential development is beginning to encroach on the agricultural uses. The City chose to reconsider its policy for growth by concentrating new development in the commercial centres, and limiting development on the fringe. Since 1989, strip malls have been turned into vibrant multi-use centres, while encroachment on the agricultural land has been avoided (Clark, 2000). In addition to this, part of Richmond’s densification strategy was to encourage landowners outside of the urban centre to split their land into two smaller parcels, doubling the density in these areas. To avoid conflict with neighbours of these landowners, the planning department conducts a household opinion survey and holds a series of public meetings. Once the land has been approved for splitting, the land cannot be further subdivided for 5 years, in order to maintain a sense of stability within the neighbourhood, yet allows for a gradual density increase over time (Clark 2000).

Long, winding roads and cul-de-sacs are characteristic of conventional suburban subdivisions, which offer poor pedestrian connectivity. The lack in directness of routes between residences and common destinations (such as schools, shops and services)

discourages people from walking, and encourages them to drive, even though the physical distances are not particularly far. Residents may have greater desire to walk if the directness of the route is reduced (Randall and Baetz 2001). Randall and Baetz (2001) devised a GIS application that allowed them to identify parcels of land that could be converted into pleasant, well-lit and safe pedestrian paths in a conventional suburban neighbourhood. By straightening pathways through parks and open spaces, and by adding sidewalks and shortcuts, the directness of a pedestrian route will improve.

In Hamilton, Ontario, the Urban Braille System was developed to create a barrier-free design of sidewalks and public spaces. The system allows older adults and those with disabilities to navigate the urban environment as easily and conveniently as the rest of the population through effective design of sidewalks and ramps, curbs, road crossings, and street signage (Tomic 2003).

The standardized usage of textured surfaces, symbols, curbs, ramps, street name signage, and crosswalk visual and audio timers together create a legible, barrier-free environment provided that they are adequately maintained. However,

to make public spaces truly accessible, the City of Hamilton introduces the following performance standards:

- Sidewalks and other urban spaces should be planned and designed in harmony with the local climate, that is, a four-season design that takes into account dramatic annual weather variations and uses strategies such as direct and reflected sun, shade control, wind control, wind screens, protection against weather elements and construction of sun pits.
- A design must ensure that public spaces are safe and inviting both day and night (diurnal variation, “nightscaping”)

- Sidewalks and other surfaces in public places must ensure freedom of movement for those who are inform or permanently or temporarily physically challenged, and senior citizens (Tomic 2003, p.41).

Some of the benefits of adapting communities to more sustainable forms are that they foster a better sense of community and reduce social isolation. While pure physical form of neighbourhoods cannot dictate residents' behaviours towards their neighbours, physical solutions by themselves will not solve social and economic problems, but neither can economic vitality, community stability, and environmental health be sustained without a coherent and supportive physical framework (Congress of New Urbanism 2001). Brown and Cropper confirm this statement, where researchers have found that while supportive acts of neighbouring are not significantly different in Smart Growth neighbourhoods than in conventional suburban neighbourhoods, there is more opportunity for bumping into one's neighbour, and increased social ties, thus contributing to a sense of better well-being and promotes longevity (Brown and Cropper 2001).

Overall, conventional suburban design is a development pattern that cannot be sustained, and policies or guidelines can be set in place to encourage infill development and retrofit existing suburbs into more sustainable forms. Benefits of encouraging a positive and healthy change in these neighbourhoods are that an improved physical form of suburban areas can foster a stronger sense of community and the ability to get to know one's neighbour, and that residents have shown inclination towards more sustainably designed communities. The above-listed factors demonstrate that redeveloping older,

conventionally-designed neighbourhoods may be a viable option for making North American cities a better place to live.

Post-war suburbs are facing a number of challenges regarding sustainability, liveability, and even decline due to the lack of amenities and low-density composition. Flexible zoning that would allow multiple uses on a parcel of land and permit an increase in density would be a beneficial technique for making older inner-ring suburbs more age-friendly and perhaps the ability to live out the rest of their lives in the same neighbourhood. Strategies such as allowing splitting large lots, and retrofitting homes for accessory apartments would be beneficial for these neighbourhoods, and planners agree (Friedman 2002, Hayden 2002).

Kochera and Bright's (2005, pp.35-36) research suggests that communities are not always designed to "provide the elements that people need to remain active and socially connected throughout the lifespan" (Kochera and Bright 2005, p.35). The characteristics of an environment may be seen to encourage or constrain independent living of an older adult. Similarly, it will enhance or limit patterns of social integration. Thus, "homes, neighbourhoods, and mobility options all play a key role in how residents invest themselves in the community around them" (Kochera and Bright 2005, p.35).

3.4 Conclusion

Conventional neighbourhood design makes it difficult for older adults to live independently well into their older years. As people age, many begin to suffer from

chronic conditions and their lifestyles may change in terms of how they spend their time and money. These changes may affect older people's demands on the urban environment, and, depending on how neighbourhoods and cities are designed, the urban environment may not adequately address the needs of Canada's aging population.

According to Smith and Sylvestre, the autonomy of older adults is dependent on several variables: the number of chronic conditions reported, age, walking ability, living arrangements, education, and household income (Smith and Sylvestre 2001, p.397).

Dunkley, Helling et al. (2004), and Fobker and Grotz (2006) also believe that the location of shops and services in relation to the home and the accessibility of these amenities also contribute to a person's level of autonomy. Having adequate access to each of the above listed amenities will aid older adults in maintaining their autonomy, sustaining a high quality of life, and reduce the likelihood of social isolation (Dunkley, Helling et al. 2004, Fobker and Grotz 2006).

Due to chronic conditions that set in as people age, their ability to drive decreases as do their levels of physical activity. However, older adults become more reliant on walking as a mode of transportation but walking trip distances and the number of trips are significantly reduced as compared to those when driving (Fobker and Grotz 2006).

Pedestrian safety is an important consideration when planning for an aging population because, although pedestrians have a low probability in being involved in an accident, they are more likely to be killed or seriously injured when they are involved in such an

accident (Mitchell 2006). Tactile and visual cues on sidewalks can help to indicate that the pedestrian is approaching an intersection or other obstacles (Tomic 2003).

Because walking is a convenient, low-impact, safe and free activity that older adults can do to start exercising more, an urban environment with high land use diversity can encourage older adults to walk more (Morris and Hardman 1997, p.306). When everyday opportunities for physical activities such as walking are not readily available an older adults' physical function begins to decline, thus increasing the difficulty in navigating the urban environment. However, "older adults report greater independence when they live in environments with more land use diversity" (2005, p.1933) and Clarke and George (2005) argue that "disability can be diminished... if the physical and mental demands of a given task are reduced" (p.9).

Although chronic conditions begin to set in as people age, generally Canada's older adult population is living longer and healthier than earlier generations (National Advisory on Aging 1999). Because people are living longer, healthier lives, they are living in their homes for longer as well. Many anticipate that they will continue living in their current place of residence, indicating a preference for aging in place (British Columbia Association for Community Living 2006, Seniorresource.com 2006). However, it is not always possible for older adults to live in the same house through to the final years of their life. When those aged 65 and over choose to move, they tend to select smaller dwellings that are easier to navigate and maintain such as an apartment or a single level house. By making such a move, a person may be able to maintain their independence for

longer. Often, when the older adult makes this kind of move, they express desire to move within the same community. Moving within the same community allows the older adult to remain part of their established social network, and allows them to retain the same health professionals such as doctors and pharmacists. (Northwestern Ontario District Health Council 2004, p.20)

Planners can apply over-arching planning principles when planning for age-friendly cities. Kevin Lynch and Jane Jacobs wrote about ways to ameliorate people's experiences in urban areas by improving legibility and navigability (Lynch 1960) as well as diversity through mixed uses, short blocks, buildings of varying age and conditions, and a sufficient concentration of people (Jacobs 1961, pp.150-151). As Lynch describes: "When reshaping cities it should be possible to give them a form which facilitates these organizing efforts rather than frustrates them" (Lynch 1960, p.90), and in doing so the legibility of cities is improved.

Land use diversity and the safety of the pedestrian infrastructure help older adults in their physical ability to navigate the urban environment. However, older adults' cognitive ability to navigate the urban environment is equally important. As older adults' cognitive functions decline with age, their neighbourhoods can become confusing places to navigate. The fear of getting lost can prevent older adults from leaving their homes, and when they do leave, it can feel like they are venturing into the unknown (Mitchell, Burton and Raman 2004, p.89).

“By focusing on designing urban areas that are explicitly easy to understand, navigate and access, the findings are relevant to all members of society” (Mitchell, Burton and Raman 2004, p.89).

Planners have considered a number of techniques that can improve the age-friendliness of urban and suburban areas, including increasing pedestrian connectivity, developing policies for increased density by concentrating growth, facilitating mixed-use, and permitting accessory apartments within existing single family dwellings (Hayden 2000).

When an community is designed with appropriate housing, mobility options, and a wide range of supportive services, the environment is more conducive to having its residents be more socially interactive and connected to the people around them, which in turn makes the community more vibrant, more supportive, and more enriching for the individual residents (Kochera and Bright 2005, p.32). Conversely, a community lacking in these elements become a more hostile environment for its older residents (Harris, Miller, Ferguson 2006a, p.9).

4.0 RESEARCH METHODS

The goal of this study is to identify how built form affects older people's ability to navigate the urban environment. Three town centres in Surrey were identified and analyzed first on how friendly they are currently for an elderly population by reviewing relevant policy documents and conducting a neighbourhood policy analysis, and second on where opportunities exist for making the neighbourhood more age-friendly by conducting key informant interviews, an age-friendly checklist audit, and focus groups.

Key informants and service providers participated in 30-minute one-on-one interviews. The age-friendly checklist audit evaluated three town centres in Surrey based on the characteristics of their built form. From each of the selected town centres, community members aged 65 and older were invited to participate in one focus group. The methodology is described in detail in the sections below.

4.1 Key Informant Interviews

While the primary study subjects of this research practicum are adults aged over 65 and providers of services to older adults, other key informants were also consulted. The key informants interviewed for this research can be categorized into two groups: service providers and other professionals. Each of the three service providers interviewed work with older people on a regular basis, and, in this case, were managers of each town centre's seniors' programming:

- Community Service Coordinator, Cloverdale Seniors Centre
- Community Services Assistant, South Surrey Recreation Centre

- Fleetwood Manager, Fleetwood Community Centre

The key informants consulted have specific knowledge about urban design, gerontology, universal design, and/or other relevant subjects. They were identified as having knowledge about specific policies or legislation that may have influenced how particular neighbourhoods were designed and/or developed. There were five key informants who participated in the research and they include:

- Social Planner
- City Architect
- Transportation Engineer
- Fraser Health Community Developer, Seniors First Health Clinic (BC Ministry of Health Services)
- Seniors' Planning Table Facilitator

The benefits of interviewing these subjects are that they provide an alternative perspective to the age-friendliness of the built form, and that they round-out the arguments presented in the research practicum. Interview questions for the key informants can be viewed in Appendix I, along with their informed consent form (Appendix II).

There are three styles of interviews: structured, semi-structured, and unstructured.

Structured interviews have a pre-defined set of questions that the interviewer does not stray from during the course of the interview. An unstructured interview is one where the

interviewer has an idea of the topic of concern, but allows the conversation to go where it may and are typically informal. A semi-structured interview lies between the structured and unstructured interviews, where there is a pre-defined set of questions the interviewer would like to ask, but the order and wording may change based on what the interviewer feels is most appropriate (Robson 2003).

The type of interview used for this study is most similar to a semi-structured interview, with pre-determined questions that were modified and adapted as the interviews progressed. The researcher also made use of probes to encourage the key informant to share more detailed information.

Interviewing face-to-face is beneficial because the researcher can find out “in depth how people define a concrete situation, what they consider important about it, what effect they intended their actions to have in the situation, and how they feel about it” (Zeisel 1981, p. 137). Other advantages to face-to-face interviews is that the interviewer can benefit from non-verbal cues provided by the key informant, which can enhance or even change the meaning of the verbal response (Robson 2003, p. 273). Interviews are disadvantageous because they can be time-consuming, and the lack of standardization of the semi-structured interview can lead to uncertainty about the reliability of the data gathered. Nevertheless, interviews “have the potential of providing rich and highly illuminating material” (Robson 2003, p. 273).

The key informants were selected based on the researcher's knowledge of the key informants' place of business and job descriptions. On a few occasions, the key informants were selected based on the recommendation of the other key informants already interviewed. The interviews were held at the key informant's place of business, and each key informant was remunerated with a \$10 gift certificate for a local coffee shop or book store.

4.2 Age-Friendly Checklist

In order to assess the age-friendliness of Surrey's town centres an age-friendly checklist was developed. The checklist evaluates streetscapes, public transit, and land uses based on age-friendly principles.

The checklist was developed by the researcher after reviewing similar checklists (Chang and Poapst 2009, Gallagher and Scott 1996, World Health Organization 2007). Many components of the pre-existing checklists consulted were replicated for the researcher's checklist, with certain items omitted, adjusted, or new items added. The researcher identified seven areas of interest: 1) sidewalks and crosswalks, 2) traffic pattern, 3) transportation options, 4) street trees and landscaping, 5) parks and open space, 6) "place making" features such as signs and public art, and 7) shops, services and other features.

Any topics captured by the pre-existing checklists that were outside of these seven areas were omitted from the researcher's checklist (e.g. the qualities of health services, the housing, social inclusion, and employment). Any items captured by the pre-existing

checklists that were not immediately observable and easily recorded from the street were also eliminated from the researcher's checklist or adjusted to make them easier to record (e.g. interior features of drug stores and grocery stores, the behaviours of drivers, the level of communication of community services). Finally, items that the researcher felt were missing from the pre-existing checklists were added to the researcher's checklist (e.g. made a list of land uses that could be observed such as schools, grocery stores, housing type, drug stores and places of worship). A copy of the researcher's age-friendly checklist is available in Appendix III.

The checklist was designed so that the coding scheme is straightforward and easy to use, as it embodied many of the characteristic recommended by Robson:

- ***Focused:*** Looking only at carefully selected aspect of what is going on
- ***Objective:*** Requiring little inference from the observer
- ***Non-context dependent:*** The observer's task is more difficult if the category to be used in coding an event depends on the context in which it occurs.
- ***Explicitly defined:*** A detailed definition of each category
- ***Exhaustive:*** Covering all possibilities so that it is always possible to make a coding (it may be necessary to have a large residual or "dump" category)
- ***Mutually exclusive:*** A single category for each thing coded
- ***Easy to record:*** Just ticking a box rather than requiring a recall of which of a large number of categories to use (Robson 1993 p.332).

In order to stimulate the conversation with the focus group participants, and to provide them with graphic examples of elements of the built form that may or may not be age-friendly, the researcher walked around the study areas and completed an age-friendly checklist. The purpose of the checklist was to evaluate the age-friendliness of each town centre, collect photographs, and document key design features that facilitate or hinder the ability to easily navigate the urban environment as an older adult. The checklist was

modified in the field to better capture the observable age-friendly features. One checklist was completed per segment (or up to three continuous street segments) in the study area, where a segment is defined as a public road between intersections, where a road crosses another road. The photographs and observations made by completing the checklist were then used to provide graphic examples and stimulate conversation in the focus group methodology described below. One photo-booklet was prepared for each town centre.

This type of checklist is a form of structured observational methodology which can complement information obtained by other techniques and is an appropriate technique for gathering information about what is happening in the “real world” (Robson 2003, p.310). Structured observations have a way of quantifying qualitative information as they use a coding scheme, and the checklist, as a type of coding scheme, is able to capture whether an item is present or absent in a systematic and consistent manner (Robson 2003, p.326). This methodology can be time-consuming and the reliability of the data is as good as the observer’s ability to use the coding scheme. Problems can arise in observer consistency and in “observer drift”, that is, “the way in which the observer uses the [coding scheme]” (Robson 2003, pp. 340-343). In the case of this research practicum, the researcher was the only observer, which ensured that there was consistency in the way each question was interpreted and in the way each checklist was filled out. A danger in this methodology with only one observer is that the checklist was not tested and re-tested amongst multiple observers for accuracy. As such, there may be cause for concern that although the observer may have been consistent, that same observer may have been inaccurate.

Another benefit to using a checklist is that it can monitor key age-friendly indicators over time (WHO 2010, p.11). Furthermore, members of the community can be trained to use the checklist, which will allow them to monitor these indicators for their own purposes. The checklist results could then be an appropriate tool to engage the appropriate stakeholders to promote change (Gallagher and Scott 1996, p.17).

4.3 Focus Groups

A series of focus groups is the third method employed in this research practicum. This method is best for identifying a range of perspectives that community-dwelling older adults have on the topic, and to find out whether they generally hold similar opinions about their neighbourhood.

Focus groups are a useful tool in gathering a range of perspectives in a time-effective manner because multiple participants are being in a sense interviewed at the same time (Zeisel 1981, p.149). The focus group can be advantageous when studying an established group, but make it difficult to gain perspective of individual views. Group dynamics can make it difficult to hear everybody's opinion when there are individuals dominating the conversation (Robson, 1993, p. 284). The researcher tried to ensure that all participants had an opportunity to contribute, for example, by setting some ground rules at the beginning of each session, by asking (diplomatically) the more enthusiastic participants to give others the opportunity to speak and by calling on the quieter participants for their thoughts.

One focus group session was held for each of the three town centres selected in this research practicum. These groups were comprised of community-dwelling residents of the respective neighbourhoods (i.e. living in the independently in the community and not institutionalized) aged 65 or older and did not have special characteristics that make them especially vulnerable. This being said, the researcher considered extra measures such as ensuring the facilities are accessible and providing any written information in large, legible font.

The participants were recruited through contacts developed at each of the three subject town centre's seniors' centre and staff at these centres were asked to help recruit subjects. At each of the sessions, participants were provided with a photo-booklet that they could take home (described below), a light snack and beverages, and at the end of the session they were remunerated with their choice of a small gift or gift card valuing approximately \$5.

There were 4-7 participants per focus group session and there was one session per town centre. Each participant was asked to fill out a participant profile form to aid in documenting the composition of each focus group. The participant profile form covers items such as gender, age, living arrangements (who they live with), educational attainment, and how long the participant has lived in their current residence and neighbourhood (Appendix IV). Informed consent of each participant was also required (Appendices V). The subjects aged 65 or older were community-dwelling seniors, living

independently, and did not have cognitive disabilities that impaired their ability to give informed consent.

The focus groups were approximately 1.5 hours in length with a 15 minute break. The locations chosen for each focus group were within the neighbourhood in question, at their respective seniors' centres, which are centrally located, are on at least one public transportation route, and are accessible facilities. Prior to the focus group sessions, the participants were provided with a general description of the purpose of the study, and were asked to think critically about their neighbourhoods so that they may be prepared for discussion at their respective session. The photo-booklets were handed out to each participant at the beginning of each session, where photos were used to stimulate the conversation and provide the participants with graphic examples of age-friendly features.

The questions asked in the focus group can be reviewed in Appendix VI. The photo-booklets, one for each town centre, were used to stimulate discussion and are available in Appendices VII, VIII, and IX. According to Zeisel, the photo-booklets are considered to be a form of situational probe, which can encourage specificity from the participants, and which can encourage the participants to “look retrospectively at the situation they are commenting on – to put themselves back in time and re-experience the setting” (Zeisel 1981, pp. 150).

The responses were recorded by tape-recorder but were not transcribed in their entirety. Interesting quotes were transcribed to supplement the analysis. The focus groups were

assessed based on the context of their neighbourhood and analysed based on overall similarities in their responses on certain topics.

4.4 Analysis and Application

Each of the methodologies were indexed and coded in as described below.

As mentioned above, the key informant interviews were not transcribed. However, as there were 7 pre-defined questions, the recordings were indexed based on the question asked. The recordings were listened to on multiple occasions and responses of particular interest were transcribed.

The age-friendly checklist was comprised of two parts: the checklist itself, and the photographs taken. The checklist was completed based on a set of pre-determined criteria, as described above and illustrated in Appendix III. Each checklist item was coded alpha-numerically (e.g. 1a, 1b, 1c) and categorically (e.g. sidewalks, crosswalks, benches, busses, and services and amenities), and recorded in a tabular spreadsheet format. Each town centre generated its own table. The tables were then imported into a relational database management system (Microsoft Access), and analysed based on categorical summations, averages, and percentages.

The second component of the age-friendly checklist was the photographs. The photographs were sorted based on location (i.e. which town centre they came from), and

by category (similar categories as the checklist). No further analysis was done on the photographs.

The focus groups were also comprised of two parts: the focus group discussion itself and a participant profile form. The participant profile was completed based on a set of pre-determined questions, as illustrated in Appendix IV. The questions asked in the forms were coded alpha-numerically (e.g. 1a, 1b, 1c), recorded in a tabular spreadsheet format and analysed based on categorical summations, averages, and percentages.

Similar to the key informant interviews, the focus groups were not transcribed. However, as there were 7 pages of topics for discussion, the recordings were indexed based on the topics discussed. These topics, again, were similar to the categories established in the checklist. The recordings were listened to on multiple occasions and responses of particular interest were transcribed.

The information gathered in the key informant interviews, age friendly checklist, and focus groups are further analysed in Chapter Five.

5.0 RESULTS

In order to gain an understanding of the age-friendliness of Surrey's town centres, the following section of this practicum merges the results from the key informant interviews, the age-friendly checklist, and the focus groups in order to gain a real-world perspective of the topics highlighted in the literature review. The analysis of these three research methods together paints a picture of how older adults in Surrey may interact with the built environment, and aids in identifying possible opportunities and constraints for future design interventions to make Surrey's town centres more ageing-friendly.

The key informant interviews were primarily held to inform the researcher of what opinions are held on topics relating to age-friendliness within the governmental and non-governmental organizations within Surrey. The key informants provided an alternative perspective to the age-friendliness of the built environment, and aid in rounding-out the arguments presented in the research practicum. The information gathered from the key informant interviews provided the researcher with areas of interest to observe while developing and completing the age-friendly checklist.

The age-friendly checklist was used as an audit tool to record and report on observable age-friendly features within each town centre. The age-friendly checklist also provided the researcher with parameters for which observable features merit being photographed. The photographs taken while completing the age-friendly checklist were then presented to the focus group participants in the form of a booklet, each specific to their respective town centres. The booklets were used to stimulate the conversation with the focus group

participants. Finally, the focus group sessions were held to identify a range of perspectives that community-dwelling older adults have on the topic of age-friendliness, to find out whether they generally hold similar opinions about their neighbourhood, and to find out if their views are consistent with the literature.

The sections below provide an analysis of the three research methodologies described above.

5.1 Key informant perceptions of age-friendliness

The key informants interviewed had varying amounts of knowledge about older adults in Surrey. Some of the key informants identified themselves as having very basic knowledge, while others were more informed. Each key informant brought their own unique perspective as to how to address planning issues for older adults. The questions asked in the interviews are available in Appendix I. It is interesting to note that the key informants highlighted many of the same topics as areas of concern or success. Many identified that the size, rapid growth and socio-cultural diversity of Surrey creates a number of challenges. As one respondent described:

Surrey is like a child [growing up]. You went to bed one night with Surrey as a child and woke up the next morning and it was an adult. Surrey has grown so fast, that there is no way a planning department anywhere that can keep up with it. So what we have is a lot of buildings that are not very accessible (Key Informant, Seniors' Planning Table Facilitator).

Amongst the key informants some of the common topics mentioned were transportation, accessibility, activity levels, outreach and marketing, friendliness of staff, universal design of streets and buildings, and safety (both real and perceived). They felt that

priority areas for improvement included the need for better transit (including door-to-door service), more compact and complete communities, better affordability for housing and services, increased opportunities for assistance at home, improvement in community outreach (i.e. communication targeting isolated and vulnerable older adults), opportunities for walking, and universal design of buildings.

Their responses are consistent with the relevant literature, especially Clarke and George's discussion on the "3D's": density, diversity, and design (2005), and Harris' emphasis on the following five design principles for an accessible neighbourhood:

- Promote compact, walkable neighbourhoods
- Encourage mixed-use zones
- Provide a range of housing options
- Concentrate new growth into existing areas
- Link new development to public transit and other transportation options (Harris 2004, pp. 10-11).

Many of the key informants had high regard for the Parks, Recreation and Culture facilities and services offered by the City for older adults. They also mentioned other positive services and initiatives for older adults in Surrey, including the multi-purpose greenway system (i.e. cross-city walking/cycling trails), a new initiative for making street identification signs with larger font, and successful meal programs available through non-profit organizations. Concerns the key informants had in common included the loss of funding for non-profits, health organizations and other initiatives such as meal programs due to the recent economic downturn. That being said, one key informant commented that the supply of social housing for seniors has kept up with the demand:

In terms of supported housing, assisted living and care facilities, what I've heard anecdotally is that pretty much our supply has kept up with the

demand, ... because [it's] unlike other housing programs. ... Since 1993, ... the provincial government sort of stopped being in the business of social housing and so the ... projects coming on stream is [sic] for seniors and for the homeless and those at risk of homelessness and nothing else. So the special needs seniors' housing seems to be keeping pace (Key Informant, Social Planner).

Certainly, some of the key informants had their own unique perspectives. One respondent suggested that perhaps there was not a shortage in transit service, but perhaps older adults are unaware of how to use those that exist. This key informant's perspective echoes that of Hendrickson and Mann, who comment that public transit can be intimidating because the schedules are confusing, the fixed routes are difficult to reach, the transit stops are not always sheltered or clearly marked, the busses are often crowded, the busses are not necessarily accessible, and there is fear of injury (Hendrickson and Mann 2005).

Another respondent recognised that affordability of Surrey Parks, Recreation and Culture services is a concern and that although there are programs available for those with low income to qualify for discounted rates, the older adults are not inclined to make use of the discount programs, which the key informant attributed to individuals' sense of pride.

Although recognising that older adults prefer to age in place, one key informant suggested that older adults can age better when living in supportive housing, but that these housing services are not affordable, costing in the range of \$5,000-\$10,000 per month . Another unique perspective from one key informant was that although they recognised the importance of effective marketing and outreach to encourage older adults

to participate in the community and avoid being “shut-in”, the key informant also felt that some older adults are “quite happy to be left alone” and can entertain themselves.

A summary of the key informant responses is available in Table 2 below.

Table 2: Summary of Responses from the Key Informants

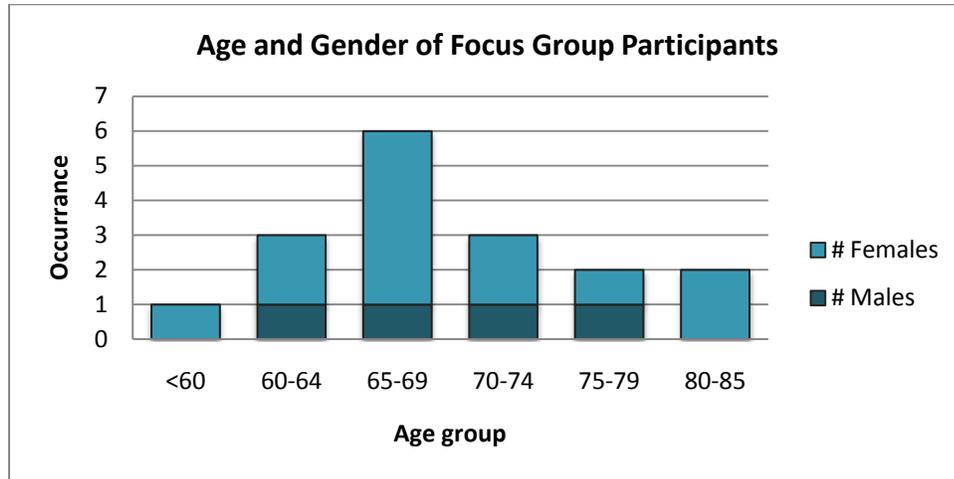
| Topic | Common perspectives | Unique perspectives (not identified by other key informants) |
|---------------------------------|---|--|
| Transportation | <ul style="list-style-type: none"> • The City has a good multi-purpose greenway system (i.e. cross-city walking/cycling trails), • The city recently increased the font size of street signs, • A need for better public transit (including door-to-door service), • There’s a need for more opportunities for walking. | <ul style="list-style-type: none"> • There is not a shortage in transit service, but perhaps older adults are unaware of how to use the transportation services that exist. |
| Housing & built form | <ul style="list-style-type: none"> • Older adults prefer to age in place, • The size, rapid growth and socio-cultural diversity of Surrey creates a number of challenges, • A need for more compact and complete communities, • A need for better affordability for housing and services, • A need for improved universal design of buildings. | <ul style="list-style-type: none"> • The supply of social housing for seniors has kept up with the demand, • Older adults can age better when living in supportive housing, • Supportive housing services are not affordable, costing in the range of \$5,000-\$10,000 per month. |
| Economics | <ul style="list-style-type: none"> • Concerns about the loss of funding for non-profits, health organizations and other initiatives such as meal programs. | <ul style="list-style-type: none"> • Although discounted rates may be available for low-income older adults, personal pride may inhibit people from taking advantage. |
| Social inclusion | <ul style="list-style-type: none"> • There are successful meal programs available through non-profit organizations, • There’s a need for increased assistance at home, • There’s a need for improved community outreach (i.e. targeting isolated and vulnerable older adults). | <ul style="list-style-type: none"> • Although there’s importance in effective marketing and outreach to encourage older adults to participate in the community, some older adults are “quite happy to be left alone” and can entertain themselves. |
| Healthy lifestyle | <ul style="list-style-type: none"> • A valued asset in the city is the Parks, Recreation and Culture facilities and programming, • There are successful meal programs available through non-profit organizations that exist. | <ul style="list-style-type: none"> • Affordability of Surrey Parks, Recreation and Culture services is a concern. |

5.2 Participant Characteristics

Many of the focus group participants live within the study area, but not all. Some live outside the immediate study area, but nearby; others live in another area of the City but come to one of the town centres because of the programs and services offered. Whether the participants live within the study area or not, they are all familiar with the services and amenities offered within their respective town centre. The following is a summary of the characteristics of the focus group participants.

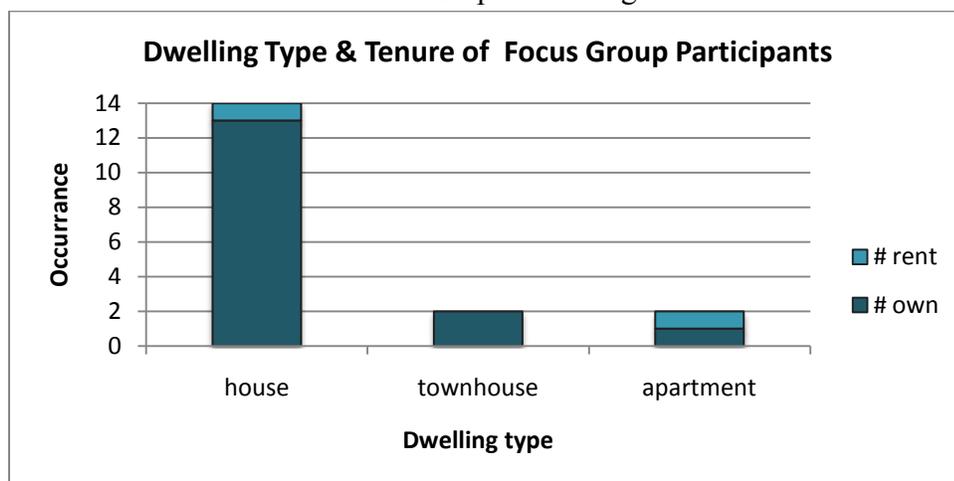
In total, there were 17 participants. There were four participants in Semiahmoo, six in Fleetwood, and seven in Cloverdale. The ages of the participants ranged from 55 years to 83 years, four of which were aged 75 or older. Four of the participants were under the age of 65, which is outside of the ages under consideration. However these participants use the seniors' centres regularly and may identify themselves as being a senior although they are under the age of 65. There was at least one male in attendance at each focus group session for a total of 4 men out of the 17 participants (Figure 13). As a whole, men were under-represented as part of this study. All but one participant was retired, with the employed participant working full-time. Most participants had either completed some college/university (11) or secondary school (5 participants), with only one participant having completed up to Grade 11.

Figure 13: Age and Gender of Focus Group Participants
 Credit: Stephanie Long



Most of the participants own their own homes, with only two renting. The majority of participants also live in single-family detached houses (13 participants); only two participants live in apartments and two in townhouses, as shown in Figure 14 below.

Figure 14: Dwelling type and tenure
 Credit: Stephanie Long



Eight of the focus group participants live with a common-law partner or spouse, six live on their own, and three with other relatives. The participants in general were fairly stable in terms of residential mobility, as shown in the table below:

Table 3: Residential Mobility of Focus Group Participants

| | Less than 5 years | 6-20 years | 21 years or more | Did not respond |
|-------------------------------|-------------------|------------|------------------|-----------------|
| Live in current dwelling | 2 | 8 | 6 | 1 |
| Live in current neighbourhood | 1 | 9 | 7 | 0 |

Only two participants expressed that they anticipate moving in the next five years, citing that they would prefer a smaller home, or that if they do move, they would like to live in the same neighbourhood. Most do not anticipate moving in the next five years, however, some responded that health reasons might prompt them to move in the future. One respondent mentioned that they could not afford to move. Others did not want to move because of how much they liked their neighbourhood due to the people, the atmosphere, the variety of services and amenities, or the walkability of the environment.

Interestingly, the responses from the participant profile forms relating to residential mobility were more or less consistent with the literature: older people are more inclined to age in place even though their communities may not offer them the supportive services and mobility options they need (Rosenberg and Everitt, 2001).

5.3 Cross-comparison of age-friendly checklist and focus group responses

In order to stimulate the conversation with the focus group participants, and to provide them with graphic examples of elements of the built environment that may or may not be age-friendly, the researcher walked around the study areas and completed an age-friendly checklist.

The age-friendly checklist evaluated each town centre based on seven areas of focus, and these same seven topics were later discussed at each of the focus group sessions. The seven topics of focus were 1) sidewalks and crosswalks, 2) traffic pattern, 3) transportation options, 4) street trees and landscaping, 5) parks and open space, 6) “place making” features such as signs and public art, and 7) shops, services and other features. An evaluation of the checklist results and focus group responses is provided below.

Many of the focus group participants had similar views when it came to certain features within the built environment. They also had differing views on certain topics discussed below, which can be attributed to the unique circumstances of each town centre, but the differences also support Rosenberg and Everitt’s notion that older adults are a diverse and heterogeneous group. Variables such as gender, income, education, marital status and ethnicity can influence this age cohort’s wide array of values and desires when it comes to selecting a place to live and achieving an overall high quality of life (Rosenberg and Everitt 2001, p. 146)

5.3.1 Sidewalks and crosswalks

The presence and quality of sidewalks and crosswalks can provide useful information about the age-friendliness of a neighbourhood. The literature review found that falls and injuries among the elderly, many of which are preventable, can be attributed to environmental factors such as poor stair design, cracked or icy sidewalks, and poor street lighting. The continuity of sidewalks, the frequency of four-way crossing signals, and the availability of pedestrian amenities are all positive aspects of pedestrian-oriented design (Clarke and George 2005, p.1933).

The results from the checklist identified that sidewalks are available along most streets, usually on both sides of the road. Locations where there are no sidewalks are in areas of older developments or are underdeveloped. Crosswalks are almost exclusively at intersections, with very few crossings mid-block. Busier intersections had signal-operated and audible crossings to allow for safe crossing.

The checklist results for sidewalk characteristics are provided below in Table 4.

Table 4: Age-Friendly Checklist Results, Sidewalk Quality

| Checklist item | Checklist sub-item | Cloverdale | Semiahmoo | Fleetwood |
|---|--|------------|-----------|-----------|
| Sidewalks are on both sides of the street | % segments with sidewalks on both sides of the street | 52% | 85% | 70% |
| | % segments with sidewalks are on one side of the street | 28% | 11% | 30% |
| | % segments with no sidewalks | 21% | 4% | 0% |
| Sidewalks are continuous on both sides of the street | % Not continuous | 17% | 19% | 44% |
| | %Continuous | 62% | 78% | 56% |
| | % Not applicable, no sidewalks | 21% | 4% | 0% |
| Sidewalks are maintained free of large cracks and holes | % Sidewalks free of large cracks & holes | 72% | 74% | 93% |
| | % Sidewalks have large cracks & holes | 7% | 22% | 7% |
| | % Not applicable, no sidewalks | 21% | 4% | 0% |
| Sidewalk is at least four feet (1.2m) in width | % Sidewalks 4ft in width or wider | 76% | 93% | 100% |
| | % Sidewalks less than 4ft in width | 7% | 4% | 0% |
| | % Not applicable, no sidewalks | 17% | 4% | 0% |
| There is litter / rubbish along the street | % segments with no litter | 3% | 26% | 26% |
| | % segments with some litter | 97% | 74% | 74% |
| There is graffiti / vandalism along the street | % segments with no graffiti | 28% | 22% | 44% |
| | % segments with some graffiti | 72% | 78% | 56% |
| Sidewalks are clear of obstructions | % with permanent obstructions* | 31% | 59% | 15% |
| | % with temporary obstructions ** | 3% | 0% | 33% |
| | % with both temporary & permanent objects | 7% | 7% | 4% |
| | % of sidewalks clear of obstructions | 38% | 30% | 48% |
| | % Not applicable, no sidewalks | 21% | 4% | 0% |
| | * permanent objects: bike racks, poles, planters, shrubs/trees, bus benches, mail boxes ** temporary objects: A-frame signs, garbage cans, doors opening, construction debris | | | |
| There are other pedestrians along the street | % with a lot | 3% | 15% | 4% |
| | % with some | 79% | 78% | 78% |
| | % with none | 17% | 7% | 19% |
| There are visible neighbourhood safety programs along the street | % no | 86% | 70% | 93% |
| | % yes | 14% | 30% | 7% |
| There is a limited number of blank walls & tall fences | % with a lot | 3% | 4% | 4% |
| | % with some | 34% | 56% | 48% |
| | % with none | 62% | 41% | 48% |

The focus group participants commented that they encounter difficulties when trying to cross the street. They expressed desire for more signalized crosswalks, more frequent crossings (the blocks are too long), and a need for better visibility when crossing.

They put a crosswalk across from the care facility and you should stand there all day and not get across. The cars don't stop. Any crosswalk that they put in should be a lit crosswalk [i.e. you push the button and the light flashes] (Fleetwood participant).

In certain areas where sidewalks end abruptly, the participants mentioned that they are uncomfortable walking on the road (Figure 15). The exception to this was that the participants from Semiahmoo, who noted that there were very few sidewalks in the neighbourhood of Ocean Park (just outside of Semiahmoo Town Centre), and they preferred to “keep it that way”, that is, maintain the rural feel of this neighbourhood.

Figure 15: Scooter-user on the road



While completing the checklist, the researcher observed that most sidewalks were well-maintained, and free of cracks and holes. However, in areas of mature landscaping, checklist observations found that tree roots cause sidewalks to buckle and the focus groups expressed frustration with uneven surfaces such as these (Figure 16 and Figure 17).

Some of the trees are lifting the sidewalks, and the city is shaving down the bumps, but it still not be safe enough for seniors (Fleetwood participant).

Metal grates on sidewalks can create slippery surfaces when wet, and the researcher observed that one pedestrian with a walker deliberately avoided walking over these metal grates (Figure 18).

The roads may look flat and even, but trust me they're not. They are very difficult to get around. I mean they look great, but they need a paved surface instead of the stone (Semiahmoo participant).

Entrances to pathways between residential areas occasionally had staggered metal fences (Figure 19), which are designed to slow down cyclists, but the focus groups mentioned they are difficult to navigate for those with walkers or scooters.

Sometimes my friend gets hung up in these metal gates to pass through (Fleetwood participant).

A senior with a walker or scooter can't get through the openings [at the trail head/start/end]. I think they're done that way to discourage bikers, but they discourage everybody (Semiahmoo participant).

Figure 16: Tree roots causing cracks in the sidewalk



Figure 17: Uneven pavement limits usable sidewalk area



Figure 18: Utility access and paving stones create uneven sidewalk surfaces



Figure 19: Walkway entrance difficult to navigate with a walker or scooter



Where sidewalks existed, there were also curb cuts at intersections. Two challenges were identified when evaluating curb-cuts at intersections. First, there were often poles located within the curb let-down area, which would pose a challenge for someone with a walker or wheelchair. Second, the curb cuts occasionally directed pedestrians diagonally into the intersection (and into the path of vehicles), rather than perpendicularly into the crosswalk area (Figure 20 and Figure 21).

Figure 20:
Utility pole within curb let-down area



Figure 21:
Curb let-down pointing diagonally into intersection



Gallagher and Scott found that most places where older adults would trip or fall in public places are sidewalks, crosswalks, curbs, roads and unpaved walkways.

Eliminating hazards that cause missteps and falls allows seniors and persons with disabilities to move about their communities without fear of having an accident, thereby promoting a healthy and independent lifestyle (Gallagher and Scott 1996, p.62).

The standardized usage of textured surfaces, symbols, curbs, ramps, street name signage, and crosswalk visual and audio timers together create a legible, barrier-free environment provided that they are adequately maintained (Tomic 2003).

That being said, in all three town centres many sidewalks had landscaped boulevards (grass with some trees), or had sidewalks wider than four feet in width. However, lamp posts, hydro poles and street trees were inconsistently located within the sidewalk area or within the boulevard. An exception to this observation is in Cloverdale, where the built environment is older than other areas of the city, and the quality of sidewalk infrastructure is worse. When walking along major routes, adequate separation from vehicles was appreciated. One participant cited that walking along Highway #10 was “horrendous”, but that for a section in front of the Museum and Archives there was a landscaped boulevard and small stone wall that created a more pleasant walking experience (Figure 22).

Because I am a walker and I walk, I can speak about my experience. Walking along Highway 10 is a horrendous experience because you have traffic, sidewalk, and then grass or garden. In places where there is the street, then grass, then a sidewalk it makes such a difference. It is much more pleasant to the person who is walking there (Cloverdale participant).

If you are walking along this road and it's raining, I am drenched underneath my umbrella because of the spray from the cars (Cloverdale participant).

There should be more crossings across Highway 10. What we need is another light there. ...A bridge over top could work, but with stairs or a ramp it's too steep for people with walkers (Cloverdale participant).

While blank walls were infrequent, tall fences were often found in single family areas where the back yard or side yard face a street (e.g. on corner lots). These fences would occasionally be in disrepair or have graffiti on them (Figure 23). Very few sidewalks were without some pieces of litter or rubbish, but otherwise were generally very clean. The same can be said for the presence of graffiti and vandalism. In general, graffiti and litter was more prevalent the closer the site was to a high school or gas station.

Figure 22: Stone wall and boulevard separating pedestrians and vehicular traffic



Figure 23: Tall Fence in disrepair and with graffiti



Signs for neighbourhood safety programs were visible along certain streets, primarily in single family neighbourhoods or at the entrances to townhouse complexes. Other pedestrians were mostly seen in the commercial areas, at around 3 pm (when schools let out), or near civic facilities such as libraries and parks. It was less common to see pedestrians in residential-only neighbourhoods.

We have a lot of pedestrians here a lot of people walk. We have a great block watch system here (Fleetwood Participant).

Although the checklist and photographs captured information about graffiti, vandalism, and neighbourhood safety programs, the focus group participants had very little to say about it. However, what the focus group participants did mention that they value knowing their neighbours, which supports the literature that New Urbanist and Smart Growth design provide more opportunity for bumping into neighbours, and increased social ties, thus contributing to a sense of better well-being that promotes longevity (Brown and Cropper 2001, Congress of New Urbanism 2001).

To make public spaces truly accessible, a design must ensure that public spaces are safe and inviting both day and night (diurnal variation, “nightscaping”) (Tomic 2003, p.41). The checklist was completed during daylight hours, and so the quality of the light given off by street lights at night was not assessed. However, it was found that on the streets where street lights exist, they were evenly spaced and most often found on both sides of the road.

The lighting in this area is sufficient. They don’t light the park because they really don’t want people in there after dark (Fleetwood Participant).

Table 5: Age-Friendly Checklist Results, Streetlights

| Checklist item | Checklist sub-item | Cloverdale | Semiahmoo | Fleetwood |
|---|--------------------|------------|-----------|-----------|
| Street lights are continuous along the block | % no | 21% | 4% | 22% |
| | % yes | 79% | 96% | 78% |
| Streetlight spacing is even | % no | 45% | 7% | 56% |
| | % yes | 55% | 93% | 44% |
| Streetlights are along one/both sides of the street | % one side | 34% | 22% | 56% |
| | % both sides | 59% | 78% | 44% |
| | % none | 7% | 0% | 0% |

In suburban areas, arterial roads are wide, multi-lane and can be difficult to cross. Because people suffering chronic conditions may not be as agile as others, extending the timing of traffic signals can allow them to cross more safely (Bruff and Evans 1999, p.22). Areas of refuge at mid-points of crosswalks can allow someone with mobility problems cross intersections half-way during a walk-signal, and wait at the area of refuge until a second walk-signal so that they can cross the whole intersection safely, and not feeling like they need to rush or that they might get trapped in the middle of the intersection (Miller, Harris and Ferguson 2004).

One of the checklist items asked if islands/medians were available in the middle of the street to aid in crossing. Very few medians existed in the study areas, and the one that did exist were designed more to deter pedestrians from crossing the street, rather than give them a place to cross half-way safely. The exception to this was along 152th Street in Semiahmoo, where there was a median that was designed to aid pedestrians crossing (Figure 24). However, the focus group participants did not recognise this crosswalk for its safe refuge area. Rather, they identified it as being a very dangerous location for pedestrians as an acquaintance of theirs was badly injured after being struck by a car at this location. They identified that this particular crosswalk was located too close to a busy intersection where drivers are making many decisions and processing a lot of information in a short amount of time (i.e. the accumulation of many driveways, left turns, and signage create confusion for drivers).

This crosswalk should be farther from the intersection. [As a driver,] you can't see. People are getting too quickly through the light, and need to

quickly move over to get into the shopping mall and done have enough time to see the pedestrians (Semiahmoo participant).

Figure 24: Crosswalk with boulevard providing pedestrian refuge



5.3.2 *Traffic pattern*

In the study areas where major highways existed, they were very noisy, and created unpleasant walking environments. The major local roads were not as noisy, and traffic was not heavy but vehicles travelled very quickly, which made crossing the street where there were no four-way stops very difficult. One participant expressed “I have to keep my eyes wide open when walking,” because vehicles are not often aware of pedestrians and so she must walk defensively. Other participants described their experiences as captured below:

- Whenever I cross the street, the approach I take is every vehicle is trying to run over me. And that works well.
 - It’s not a negative attitude, it’s a positive attitude
 - It’s realistic
- (Dialogue between Cloverdale participants).

Because most of the seniors live in the centre and the shops and grocers are across the major roads, when seniors have a walker, they cannot get across before the lights change (Cloverdale participant).

Table 6: Age-Friendly Checklist Results, Traffic Flow and Quality of Street Crossings

| Checklist item | Checklist sub-item | Cloverdale | Semiahmoo | Fleetwood |
|-------------------------------|---|------------|------------|------------|
| Traffic flow, Heavy | Number of segments with heavy traffic flow | 7 | 6 | 3 |
| | % of segments with heavy traffic flow | 24% | 22% | 11% |
| | % of heavy traffic segments with a curb-cut at each intersection | 86% | 100% | 100% |
| | % of heavy traffic segments with crossing aids for pedestrians and cyclists to cross | 71% | 100% | 100% |
| | % of heavy traffic segments where traffic can be seen clearly at crosswalks or traffic light | 57% | 100% | 100% |
| | % of heavy traffic segments with an island in the middle of the road to cross the street | 14% | 33% | 33% |
| | % of heavy traffic segments with traffic calming devices to reduce volume or speed | 14% | 0% | 0% |
| Traffic flow, Moderate | Number of segments with moderate traffic flow | 10 | 14 | 15 |
| | % of segments with moderate traffic flow | 34% | 52% | 56% |
| | % of moderate traffic segments with a curb-cut at each intersection? | 100% | 93% | 93% |
| | % of moderate traffic segments with crossing aids for pedestrians and cyclists to cross | 90% | 93% | 100% |
| | % of moderate traffic segments where can be seen clearly at crosswalks or, traffic light | 90% | 100% | 100% |
| | % of moderate traffic segments with an island in the middle of the road to cross the street | 0% | 21% | 0% |
| | % of moderate traffic segments with traffic calming devices to reduce volume or speed | 40% | 29% | 60% |
| Traffic flow, Light | Number of segments with light traffic flow | 12 | 7 | 9 |
| | % of segments with light traffic flow | 41% | 26% | 33% |
| | % of light traffic segments with curb-cuts at each intersection? | 33% | 86% | 78% |
| | % of light traffic segments with crossing aids for pedestrians and cyclists to cross | 83% | 71% | 78% |
| | % of light traffic segments where traffic can be seen clearly at crosswalks or, traffic light | 92% | 86% | 100% |
| | % of light traffic segments with an island in the middle of the road to cross the street | 0% | 14% | 0% |
| | % of light traffic segments with traffic calming devices to reduce volume or speed | 8% | 43% | 33% |

Most streets allowed parking on one or both sides, however, busier streets were more unlikely to allow street parking. Street-calming measures were used on certain streets, primarily within school zones or park zones. Horizontal deflection (chicanes, traffic circles) was used on certain streets, in combination with parking pockets, and in some cases, a combination of vertical (speed humps) and horizontal deflection was used (Figure 25). There were mixed feelings about traffic calming devices. Speed bumps and curb bulb-outs were generally welcomed, but traffic circles gave rise for concern. The participants found that large vehicles sometimes drove over the traffic circles, and furthermore, the traffic circles caused confusion for pedestrians trying to cross the intersection, because it is difficult to determine the safest location to cross (Figure 26).

Over here [in Canada] they are such a rarity [the traffic circles] that people don't know what to do (Fleetwood participant).

[At an intersection with a traffic circle,] as a pedestrian, it's hard to decide where to in this traffic pattern you're supposed to cross (Semiahmoo participant).

Table 7: Age-Friendly Checklist Results, Traffic Pattern Qualities

| Checklist item | Checklist sub-item | Cloverdale | Semiahmoo | Fleetwood |
|---|---|------------|-----------|-----------|
| There is a buffer between the sidewalk and the street (e.g. boulevard) | % with no buffer | 24% | 44% | 48% |
| | % with a buffer on one side of the street | 38% | 41% | 30% |
| | % with a buffer on both sides of the street | 17% | 11% | 22% |
| | % Not applicable, no sidewalks | 21% | 4% | 0% |
| There is parking on one or both sides of the street | % with no on-street parking | 28% | 26% | 15% |
| | % with parking on one side of the street | 72% | 30% | 37% |
| | % with parking on both sides of the street | 0% | 44% | 48% |
| There is a lot of traffic noise | % not noisy | 34% | 26% | 48% |
| | % somewhat noisy | 45% | 56% | 41% |
| | % very noisy | 21% | 19% | 11% |

Figure 25: Raised crosswalk and chicanes as traffic-calming devices



Figure 26: Traffic circle as horizontal traffic-calming device



For the participants that drive, they found that central medians on main streets made it very difficult to access shops on the left side of the road. They expressed frustration about needing to take a circuitous route in order to be able to access a service on the opposite side of the median from the direction of travel. Although the checklist did not capture information about driving conditions, what the focus group participants said is consistent with the literature.

Medians have been put in the middle of the road, and so now I have to drive around the block before I can turn into my bank. A lot of times I

quit going there because it's not convenient enough (Semiahmoo participant).

Because many older adults live in areas that offer few transportation options, they are more dependent on automobiles because of the freedom and convenience associated with driving (Smith and Sylvestre 2001). Bruff and Evans have expressed concern about the safety of older drivers, particularly because driving accidents involving older adults are more likely to result in fatality (Bruff and Evans 1999). Other transportation options are explored below.

5.3.3 Transportation options

From an urban planning perspective, and because everyone ages differently, safe, convenient and reliable transportation options coupled with home-based services (e.g. grocery delivery) can aid in accommodating all transportation and lifestyle needs (Bruff and Evans 1999, p.43). Hendrickson and Mann's survey found that older people find public transportation to be an intimidating option, because the schedules are confusing, the fixed routes are difficult to get to, the transit stops are not always sheltered or clearly marked, the busses are often crowded, the busses are not necessarily accessible, and there is fear of injury (Hendrickson and Mann 2005).

Both Cloverdale and Fleetwood had four regular bus routes serving the study area.

Cloverdale also has a community shuttle service (i.e., smaller public bus serving the local area) (Figure 27 and Figure 28). Semiahmoo, on the other hand, had six regular bus routes and five community shuttles.

Figure 27:
Community shuttle



Figure 28:
Cross-city bus service



Table 8: Age-Friendly Checklist Findings, Bus Service

| Checklist item | Cloverdale | Semiahmoo | Fleetwood |
|--|------------|-----------|-----------|
| % segments where bus service is NOT available | 69% | 44% | 85% |
| % segments where bus service IS available | 31% | 56% | 15% |
| Where bus service is available, % where the bus stop is well lit | 10% | 48% | 4% |
| Where bus service is available, % where a bench is present | 10% | 41% | 15% |
| Where bus service is available, % where a bus shelter is present and in working order? | 3% | 19% | 4% |

Most of the regular bus routes are cross-city routes and connect to major transit exchanges, SkyTrain stations, or other major employment/commercial areas, but tend not to be direct. The frequency of service ranges from every 10 minutes to every 30 minutes during peak hours, to every 60 minutes or no service during non-peak hours. Some routes run from 5am to 2am, while others end service at 8pm. While most of the stops have a bench present, very few of the stops have a shelter. All buses, however, are bike-rack equipped and wheelchair accessible.

If it's pouring down rain, I think each bus stop should have shelter. But many of the bus stops where there were shelters have been taken away because of vandalism (Cloverdale participant).

In response to Translink no longer posting bus schedules at certain stops in favour of riders using cell phone technology, the participants expressed desire to have those schedules back.

- What I would like to see where they put the signage up for the bus, if there was some indication of when the bus came, the schedule.
- And the numbers of which busses will come (dialogue between Cloverdale participants).

The participants in all groups agreed that bus service in each of the areas was infrequent and not direct. One participant expressed: "sometimes walking is faster". The exception to this was in Semiahmoo, where the participants felt that service was good if trying to get to Vancouver.

Transit is really quite good [in Semiahmoo]. Sometimes they are not direct. To get here, first I have to go all the way down to the beach, and then here (Semiahmoo participant).

My husband works in Vancouver and he just walks a block to the bus stop and it takes him right to Vancouver (Semiahmoo participant).

Handi-transit or dial-a-ride services provide point-to-point service for people with disabilities. Older adults can qualify for this service if they have a physical or cognitive disability, and it may be an attractive alternative to a typical public transit system (National Advisory Council on Aging 1999). HandyDART is one such service in Metro Vancouver, but the participants found it to be especially inconvenient because the service needed to be booked four to seven days in advance.

HandyDART has changed. It is not as accessible for seniors. The wait, the pre-booking times have been extended, you are now looking at booking 4-5 days down the road. And if you find that your doctor's appointment has been changed from 2 o'clock to 3 o'clock, too bad (Semiahmoo participant).

I think HandyDART is really good. They made it easy when I needed to get to the hospital (Fleetwood participant).

Another point-to-point transportation option is taxi service. Taxis are typically available on demand, which is convenient, but can become costly (National Advisory Council on Aging 1999). As such, the participants felt that there was a need for better door-to-door shuttle services throughout the region.

When we get our new [Cloverdale recreation] centre, and everyone lives in Cloverdale downtown, a long ways away from 62 Avenue, and not everyone has their own car to get there, we really really need a shuttle that can go around and pick everyone up and take them there. Otherwise the seniors are going to be lost; things will die out in that recreational centre if they don't take people there (Cloverdale participant).

We need a service to take people to shopping centres (Cloverdale participant).

Although not collected as information on the checklist, a number of the busier roads also had dedicated bike lanes and signage indicating bike routes. It was not possible to determine whether these bike routes were well-utilized because although very few cyclists were seen, this may be due to the winter weather typical in January, when the checklists were completed (Figure 29). Bike lanes were available along some streets in the town centres, but these were considered "laughable" by the focus group participants,

because of the danger of sharing a road with other vehicles and debris collecting along the side of the road.

Those [bike] lanes are just a laugh. It's a good place to get killed (Fleetwood participant).

Figure 29: Bike lane and associated signage



5.3.4 Street trees

Tree-lined streets and parks have been found to improve the longevity of older adults, according to Takano, Nakamura and Watanabe's study. They found the probability of survival over a five-year period increased "in accordance with the space for taking a stroll near the residence, parks and tree lined streets near the residence, and their preference to continue to live in their current community" (Takano, Nakamura and Watanabe 2002, p.913).

Furthermore, Mitchell, Burton and Raman 's study found that older adults prefer short, narrow and gently winding streets, varied architecture, interesting landmarks, and significant trees as some features that make for pleasant walks, and maintains

participants' interest as they navigate their way to their destination (Mitchell, Burton and Raman 2004, pp 95-98).

In each of the three study areas, the checklist observations found that street trees ranged in size from quite small (Figure 30) to quite mature (Figure 31). In very few areas, did the canopy extend fully over the road right-of-way. The older the development, the more mature the street trees. However, in this scenario, the trees were more unevenly spaced and did not often extend the full length of the block. The trees with the smaller canopies appear to be planted as properties are redeveloped. They offer very little in the way of shade for the time-being, but given their spacing, would provide adequate shade as they mature.

Figure 30: Small-sized street trees provide little canopy or shade



Figure 31: Mature street trees provide more canopy and shade



Table 9: Age-Friendly Checklist Findings, Street Trees

| | Cloverdale | Semiahmoo | Fleetwood |
|---|-------------------|------------------|------------------|
| % segments with no street trees | 21% | 0% | 7% |
| % segments with street trees | 79% | 100% | 93% |
| Of segments with street trees, % with even spacing | 26% | 67% | 44% |
| Of segments with street trees, % with large tree canopies | 52% | 26% | 28% |
| Of segments with street trees, % with medium tree canopies | 30% | 56% | 28% |
| Of segments with street trees, % with small tree canopies | 17% | 19% | 44% |
| Of segments with street trees, % that are continuous long the block? | 17% | 63% | 40% |
| Of segments with street trees, % that are on both sides of the street | 65% | 59% | 56% |
| Of segments with street trees, % that are only on one side of the street | 35% | 41% | 44% |
| Of segments with street trees, % that appear to be on public property | 48% | 67% | 88% |
| % segments with shade (e.g., trees, building awnings) | 24% | 85% | 44% |

In the three study areas, tall, dense hedges along the sidewalks were common. In some cases, the hedges were overgrown and crowding the sidewalk, making it difficult for two people to pass (Figure 32). Visibility at intersections was generally reasonable throughout all three study areas. In locations where there were impediments to intersection visibility, they were primarily due to cars parked too close to the intersection or overgrown landscaping.

In some instances, the sidewalks were designed in such a way to allow the trees to continue growing beside the sidewalk. However, this often led to narrower sidewalk widths or uneven surfaces (Figure 34).

- That tree is beautiful and they salvaged it.
- However look at the sidewalk. How would you do that with a stroller, or a walker, or a wheelchair?

(Dialogue between two Cloverdale participants)

Two common concerns amongst the focus group participants were that poor species size selection in landscaping along road medians restrict visibility and landscaping can get overgrown which would crowd the sidewalks (Figure 33). They felt that the City should enforce the maintenance of landscaping along sidewalks.

People who own the trees and the hedging should be made to cut them back. Quite often you have to go on to the boulevard to get around, or you have to walk one behind the other (Fleetwood participant).

On the other hand, the participants expressed that for older adults living in single family homes maintaining landscaping, fencing and other yard work becomes difficult to the point that either older adults require assistance with maintenance or it does not get done.

Fences are either in good condition or they are all falling down. On the other hand, it says it's either low income or a senior lives there. It's a common problem where seniors that they can't keep the grounds up and it's costly to hire someone to do the work (Cloverdale participant).

I think this reflects the age of people in Cloverdale. People want to stay in their homes, but what I find is what used to get done, now isn't, because we are not able to keep it up (Cloverdale participant).

Figure 32: Dense hedge crowding the sidewalk



Figure 33: A well-maintained hedge setback from the sidewalk



Figure 34: Sidewalk designed around mature tree



Participants from the Semiahmoo study area also suggested that Surrey's Tree Protection By-law for protecting trees was too restrictive, because they would like remove down trees that tended to lose limbs, are hazardous, and cause liability concerns.

I think we should be able to cut down trees because the loose limbs fall on the wires. [It would be good] if you could deal with the trees, but the city regulates that you can't cut them. The leaves clog up the drains and water backs up into our house (Semiahmoo participant).

5.3.5 Parks and Open Space

One potential way to overcome social isolation and loneliness is by participating in recreation and leisure activities. Parks and open space can provide opportunities for active recreation and exercise (National Advisory Council on Aging 1999). Physical activity can prevent or reduce many of the negative effects aging has on functional ability and health, which ultimately helps older people maintain their independence. An urban environment with high land use diversity can encourage older adults to walk, which is a

convenient, low-impact, safe and free activity available to everyone (Morris and Hardman 1997 p.306).

As tree-lined streets and parks have been found to improve the longevity of older adults, Takano, Nakamura and Watanabe recommend that

greenery filled public areas that are nearby and easy to walk in should be further emphasised in urban planning for the development and re-development of densely populated areas ... so as to promote the health of senior citizens (Takano, Nakamura and Watanabe 2002, p.913).

The focus group participants expressed how they valued the parks and open spaces within their town centres.

We have great trails here, for cycling, walking (Semiahmoo participant).

I like to go to the parks to sit and watch the birds. It's nice to have a place to sit and tranquil out (Semiahmoo participant).

Unfortunately, the Cloverdale participants expressed that there was not enough green space to spend leisure time, and not enough shade within the commercial areas. The walking trail at the Millennium Amphitheatre did not lead to anywhere interesting and could be better utilized if it completed a loop. The researcher got the sense that the Cloverdale participants were disappointed with this park space.

- The Cloverdale amphitheatre is lost in the bushes. It's a completely useless space.
 - I agree.
 - It goes from nowhere to nowhere. The Canadian geese have taken over and I won't allow any grandchildren of mine play in there.
 - It needs more shade and there are not enough benches
- (Dialogue between Cloverdale participants).

Large regional parks within the study areas offer a variety of active and passive recreation opportunities. Benches and picnic tables were frequently provided within the park areas, but benches did not always provide armrests (Figure 35). The smaller pocket parks were more likely to be for passive use only, and would be less likely to contain benches for resting (Figure 36).

Figure 35: Active Park



Figure 36: Passive park



Some common complaints about parks spaces were that there was insufficient parking, insufficient seating, and the trees are in the wrong location.

There is enough parking, but not near where I need it (Cloverdale participant).

They don't put the trees where you sit, where you rest, where you park. They put the trees in open spaces because they don't want the trees to interfere with the pipes or the other things (Cloverdale participant).

One participant liked to go to the outdoor pool with her grandchildren, but there were no benches nearby to sit on. This participant expressed that it was awkward to sit on the grass. In areas where there may be seating available, many lacked paved paths leading up to them, which made the seating inaccessible for those with walkers or scooters. Other benches provided no back support.

There should be more seating. It's really awkward especially if you're a grandparent and you have to sit on the grass. Once I'm down, I'm there for the duration (Cloverdale participant).

One participant compared Fleetwood Park with the senior-friendly park at the Fleetwood Recreation Centre, by saying that Fleetwood Park was primarily oriented for youth whereas the senior-friendly park was oriented for everyone. The senior-friendly park is located next to the Fleetwood community centre and has features such as exercise equipment for seniors, a 300m walking loop with distance markers, a shorter walking loop with hand rails, sunny and shady seating opportunities, and spaces to socialize (City of Surrey, March 2009).

All ages were seen enjoying the senior-friendly park, from children to older adults, and even outdoor boot camp classes (Figure 37). An often-cited quote aptly describes what this Fleetwood participant noticed: "Design for the young and you exclude the old; design for the old and you include the young" (Bernard Isaacs *in* Miller Harris and Ferguson 2007, p.20).

There was some disagreement about whether community gardens were an appropriate use in public parks. Some participants felt that they create a sense of community and offer an opportunity for those living in apartments to garden. Others felt that they attract rodents and litter.

Another area of disagreement was whether trails in natural areas should be standardized for accessibility, like at the "Sunnyside trail for the blind". Some felt that the trails

should be paved at a certain width, while others liked the variety of trail path materials, saying that it creates interest (Figure 38).

- There doesn't seem to be any consistency in planning the paths and trails. There should be a consistency so they have a standard width so you at least know what you're getting into
 - I disagree. Trails can be all sorts of types depending on what type they are and where they go to
- (Dialogue between two Semiahmoo participants)

Figure 37: Exercise equipment in senior-friendly park



Figure 38: Park pathway



5.3.6 'Place making': Signage and Public Art

Elements such as landmarks, signs, and other environmental cues can foster a sense of place in urban areas. Mitchell, Burton and Raman found that varied architecture, simple signage (limited numbers of signs, and signs with dark lettering on a light background is preferred), and landmarks such as historic buildings, clock towers, playgrounds, significant trees, and public art maintains interest and make for pleasant walks (Mitchell, Burton and Raman 2004, pp 95-98).

Forms of public art and signage were found in each town centre which contribute to the unique character of the area. In Cloverdale, a number of statues reminiscent of the rich rail-themed history are located along the major commercial corridor (Figure 39). In Cloverdale a gateway marker leading to the Cloverdale Fairgrounds was not understood and deemed an eyesore (Figure 40). “It’s not a clever arch”, one participant stated. Although some Cloverdale participants appreciated a recent revitalization within the town core, which included new lamp standards, historical markers and statues (Figure 41), one participant expressed disappointment that the revitalization occurred along one street only, and that other streets appeared to be neglected.

Figure 39:
Public art
recognising heritage



Figure 40:
Gateway marker
with rodeo theme



Figure 41:
Heritage marker and
unique lamp standard



In Semiahmoo and Fleetwood, these types of statues were less prominent. In Semiahmoo, there was a recent aboriginal installation in a prominent location near the recreation centre, which appeared to be well-received by the focus group participants (Figure 43). In Fleetwood, the participants expressed desire for additional “place making experiences”, so that Fleetwood could have its own identity. One Fleetwood participant referred to the recent TownShift competition and was looking forward to see how the city

might implement some of the ideas presented for gateway markers. Another referred to a recent statue installation outside of the recreation centre and was excited to tell the group about the history of the person depicted by the statue: Lance Corporal Arthur Thomas Fleetwood, a local war hero after whom the area was named.

In all three study areas, however, there were heritage markers, street banners, and/or other signage that let the people know these areas are unique (Figure 42, Figure 43 and Figure 44). The participants found that signage, whether lamp-post banners or directional signage pointing to civic facilities, generally cluttered the sidewalks and cause confusion when driving.

If you go between 176 and 176A, there are 14 signs. If you were blind, you would never get through there. They put signs wherever they want. If you were wheelchair bound, it would be a little bit awkward (Cloverdale participant).

Figure 42:
Signage located near
assisted-living facility



Figure 43:
Public art recognising culture
in Semiahmoo



Figure 44:
Directional signage to
civic facilities



5.3.7 Shops, services and other features

As mentioned in Section 5.2 above, each study area offered an array of shops and services in a range of sizes and service areas. Each study area had a central commercial node comprised of retail services, medical offices, pharmacies, post office (often within pharmacies), dry-cleaner/laundromat, restaurants, grocers or markets, health and beauty services (e.g. salon, spa), banks, and libraries. In Semiahmoo and especially in Cloverdale, the participants expressed concern about the potential loss of town centre businesses to the relatively new large-format complexes nearby. In Cloverdale the loss of these businesses was already apparent, and an affordable grocer within the town centre was lacking, particularly since the Safeway in the commercial core closed.

We have these little communities like White Rock and Semiahmoo and Ocean Park. With the new development on 24th and 164th [the Wal-Mart, Future Shop, Home depot], I'm thinking it's going to do in these little places, because I can't see a lot of these businesses being able to compete (Semiahmoo participant).

- I really loved that Safeway store [before it closed], it was large enough to have what you need, but it was small enough that you didn't have to walk ten miles to find things.
- I find that the prices for groceries are too high and it's not fair that seniors can't drive so they walk to the grocer and get us something that we can all afford. We need something on this side of Highway 10 (Dialogue between Cloverdale participants).

It is very hard to attract merchants that know they can make a living here. The developments on Highway 10 and on 64th Avenue have sucked dry Cloverdale. I think there should be apartments above the shops so that people can live there and work downstairs. It's a very Dutch thing with a baker here, a grocery store there, a shoe-maker there. But you think of Surrey and they don't have that (Cloverdale participant).

However, the Cloverdale participants appreciated the post-secondary institution (Figure 45) nearby because they felt it gave a “boost” to the town centre from the activity generated by the student and staff.

- Kwantlen is a wonderful place.
- It's a boost to Cloverdale in supporting businesses
(Dialogue between Cloverdale participants).

Table 10: Age-Friendly Checklist Results, Non-Residential Facilities

| Non-residential facilities present | Cloverdale | Semiahmoo | Fleetwood |
|---|--|------------------|------------------|
| School – elementary | 3 | 1 | 5 |
| School – secondary | 1 | 1 | 1 |
| School – post secondary | 1 | 0 | 0 |
| Grocery store, market, corner store | 5 | 3 | 2 |
| Drug store | 6 | 6 | 3 |
| Medical office | 4 | 7 | 2 |
| Restaurant, café, pub | 7 | 6 | 6 |
| Bank | 5 | 7 | 1 |
| Post Office | 1 | 0 | 0 |
| Dry-cleaner, Laundromat, tailor | 3 | 4 | 0 |
| Park – Active | 2 | 9 | 7 |
| Park – Passive | 2 | 8 | 5 |
| Community centre | 2 | 3 | 6 |
| Cultural facility (e.g. art gallery, museum, theatre) | 1 | 1 | 3 |
| Library | 2 | 3 | 4 |
| Community police station | 2 | 0 | 0 |
| Residential – single family/duplex | 16 | 15 | 9 |
| Residential – town house/apartment | 8 | 18 | 11 |
| Public art | 0 | 1 | 0 |
| Church or other place of worship | 5 | 1 | 4 |
| Care facility | 3 | 0 | 3 |
| Spa & beauty services | 1 | 4 | 0 |
| Other non-residential facilities | Industrial uses, Automotive services, Veterinary clinic, Antiques store, Accountants, Day care, Bowling alley, Florist, Casino & racecourse, Highway-oriented commercial, Dance studio, Health store, Arena, Law office, Retirement community, Computer repair, Movie theatre, Fitness centre, Video rental, Shopping mall, Physiotherapy/massage, Private clubs, Non-profit organizations | | |
| Total count, excluding residential | 56 | 65 | 52 |
| Average count per segment, excluding residential | 2.1 | 2.2 | 1.9 |

Figure 45: Kwantlen Polytechnic University



Figure 46: Market with fresh produce



For example, Miller, Harris, and Ferguson have commented that retailers and service providers changing their service delivery systems to become more “centralized”. The trend towards such centralized services creates a situation where there is poor connectivity between services, making public transit a poor transportation option, and creating a heavier reliance on the automobile (Miller, Harris, Ferguson, 2004, p.6). However, when people are not able to drive, there is a negative impact on their ability to have access to these services.

Things are getting further out and further out from Cloverdale, for elderly people to get to (Cloverdale participant).

There are not enough things that are appealing to seniors. It’s difficult for us to get around and go for walks and people watch (Cloverdale participant).

Everything I need is here. My eye doctor, my dentist (Fleetwood participant).

A community RCMP office was also located within the central commercial node in Cloverdale and in Semiahmoo (Figure 47), but not in Fleetwood (the Fleetwood RCMP office was formerly located in the community centre). When prompted about community RCMP offices, the participants in Cloverdale and Semiahmoo were uncertain of their purpose. These offices appeared to be underutilized and had infrequent hours, although the RCMP presence was appreciated.

The service is not very good. They have poor hours and they can't do anything [to help people] (Semiahmoo participant).

It's almost a joke. Their attitude is a joke. They send you to the main detachment (Cloverdale participant).

I think it is a good service. I go there to report any complaints and disturbances within the community (Cloverdale participant).

Maybe a better presence would help cut back crime. You know, if you see them [the RCMP] walking down the street from time to time (Fleetwood participant).

Fleetwood's participants explained that the RCMP office used to be inside the community centre, but it has since moved. Although the RCMP presence was only moderately missed by the participants, they also expressed that when it was there, the services were minimal. One participant explained that the RCMP office is now being used by the computer club and the internet wiring in that room is really good.

Figure 47: RCMP office co-located with Semiahmoo Public Library



Cultural facilities such as a theatre or museum were also located within the central commercial nodes of Cloverdale and Semiahmoo, but again, none in Fleetwood.

- The museum is wonderful.
- Yes, an interesting place
(dialogue between Cloverdale participants).

[The Clova Theatre is a] unique family-owned business. They do a lot to interest the different people that come there and have some of the better pricing in town (Cloverdale participant).

The Cloverdale and Fleetwood community centres were located again in the central core, however, the Sports and Leisure Complex in Fleetwood and the South Surrey Recreation Centre in Semiahmoo draw clients from across the region and were located at the edge of the study area. In each of the focus groups, the participants expressed that they liked the variety of uses available within their town centre. They felt that they could get to all the shops and services they need, and particularly enjoyed the recreation centres, the libraries, and the theatres.

Single-family dwellings, regional parks, and larger institutional uses such as high schools were more likely to be located at the edge of the study area, while elementary schools, multiple family dwellings, pocket parks, and community-scaled institutional uses such as places of worship and elementary schools were more likely to be scattered throughout the study area. Cloverdale is the only town centre studied with a post-secondary institution, also located at the edge of the study area. Care facilities were observed within the study area and were most likely to be located in areas near multiple family dwellings.

Water fountains, public washrooms and pay phones were not frequently observed and it is assumed that these amenities are most likely found within civic facilities such as libraries and community centres. When prompted about pay phones, one participant mentioned that these were “a dying breed” and that “they’ve been ripping them out for years”, because of the transition to cell phones. Others mentioned that pay phones rarely worked, and if they did work, they were unhygienic (Figure 48).

Figure 48: Public pay phone



Table 11: Age-Friendly Checklist Results, Other Features

| Checklist item | Checklist sub-item | Cloverdale | Semiahmoo | Fleetwood |
|--|---|------------|-----------|---------------|
| There is a mail box along the street | % yes | 10% | 22% | 30% |
| | % no | 90% | 78% | 70% |
| There is a water fountain along the street | % yes | 0% | 7% | 4% |
| | % no | 100% | 93% | 96% |
| There is a public washroom along the street | % yes | 17% | 7% | 15% |
| | % no | 83% | 93% | 85% |
| Payphone exists along the segment | % yes | 7% | 11% | 4% |
| | % no | 93% | 89% | 96% |
| | of yes, % with phone receiver between waist and shoulder height | 100% | 100% | not evaluated |
| | of yes, % with seat provided | 0% | 0% | not evaluated |
| | of yes, % that would be easy to use if you had a walker or a cane | 100% | 67% | not evaluated |

Benches were not common either, and the most common benches observed were at bus stops, and did not have arm rests. The exception to this was found within the White Rock portion of the Semiahmoo study area, where benches were often located at intersections, had arm rests and were securely fastened to the ground. Where benches and shelters were available, the participants had positive feedback, however they expressed that not all bus stops had benches and shelters, and that more were needed, but that they should not be located too close to the street.

I think they could use a lot more seating around [town]. What they need is if you're tired and you want to sit down there's no place to sit (Cloverdale participant).

Table 12: Age-Friendly Checklist Results, Benches

| Checklist item | Cloverdale | Semiahmoo | Fleetwood |
|---|------------|-----------|-----------|
| % Segments with no benches present | 69% | 48% | 70% |
| % Segments with one or more benches present | 31% | 52% | 30% |
| Total number of benches | 15 | 22 | 8 |
| Of benches, % which were secure to the ground | 100% | 86% | 100% |
| Of benches, % which are easy to rise from sitting position | 100% | 91% | 100% |
| Of benches, % that were bus benches | 40% | 50% | 43% |
| Of benches, % with two arm rests and that support body weight | 13% | 50% | 29% |

5.3.8 What Focus Group Participants Like Best About Their Town Centre

People, particularly those that have lived in the same community for several years, develop a sense of attachment to their neighbourhoods. A 2005 study by the American Association of Retired Persons found that most people expressed desire to stay in their current community for the subsequent five years (AARP 2005). A study in Madrid found similar results, and also found that only those who had sentiments of dissatisfaction with where they lived expressed a desire to move from their current community (Perez, Fernandez-Mayoralas et al. 2001).

Overwhelmingly, the participants from each of the focus groups expressed that they really enjoy their respective town centre. The participants that lived within the town centre expressed that they did not wish to move, but if they did, they would like to stay within the same town centre. Some participants that did not live in the town centre would consider moving there. Most participants felt that they can access the shops and services

that they may need on a daily basis. They enjoyed the walkability of the area, the familiarity of the places, and the friendliness of their neighbours. Some expressed concern about increased residential densities because of the increased noise and traffic. They would like some shops and services to be more affordable, but found the recreation centres to be affordable. Below is some sample responses from the participants regarding how they felt about their respective town centres:

Cloverdale participants:

We need more green areas in the downtown area and benches to rest and have a casual gathering with a friend. In the summer, which is not that long, but it gets hot, you should have shady areas because it is not a pleasant walk.

We need more public washrooms.

I like Cloverdale, the downtown area has nice shops, I love the theatre, I love the gift shops, but the shops are not affordable. We have nice places to go for lunch. They really are quite adorable.

I love most things. This is 'little old Cloverdale'.

Senior covers 40 years of age range and each decade has its own needs. I don't think it needs to change a whole lot. From my perspective it has everything I need. And it's all good. It has evolved and it will continue to evolve. Yes it doesn't meet all of everyone's needs but it never will.

People are friendly. What I would improve some of the traffic patterns so that we don't have some of the big trucks coming down the road.

Semiahmoo Participants:

I can walk by myself and feel safe. And I have very lovely neighbours.

I love where I live because it's like a little Europe and I can walk to everything I need, even to dinner. It's so convenient.

I like the neighbours. And without the neighbours it would not be the same. I'm going to have to move which is sad, but I'm going to stay within a mile or two where I am.

Because of this rec. centre, we are here every day, you pay \$18 for the year, it's a very inexpensive way to get activity, meet new people and be social.

Fleetwood Participants:

I don't live in Fleetwood right now, but if I wasn't living where I am, I would be living in Fleetwood. I really enjoy the new [senior-friendly] park.

There are many services within walking distance.

Originally Fleetwood was not very senior friendly, but now there are more facilities available to seniors.

5.4 Discussion

The checklists proved to be useful in collecting data about what existed in each town centre, and while most development standards were similar amongst all three study areas, each town centre had its own unique characteristics.

Table 13 below summarizes the number of street segments and intersections located within each of the study areas. The walkability of a neighbourhood is evaluated on a number of criteria, two of which are the number of street segments and intersections (Tomalty and Haider 2009, p.11). In evaluating the three town centres based on the number of intersections and range and scale of uses, Fleetwood has fewer segments and intersections per square kilometre than Cloverdale or Semiahmoo, implying that Fleetwood is not as walkable of a town centre.

Table 13: Study area, segments and intersections

| | Study Area (sq.km.) | # segments | # intersections | Segments per sq.km. | Intersections per sq.km. |
|-------------------|------------------------|---------------|-----------------|------------------------|-----------------------------|
| Fleetwood | 1.5 | 46 | 34 | 30.7 | 22.7 |
| Semiahmoo | 1.6 | 79 | 57 | 49.4 | 35.6 |
| Cloverdale | 1.8 | 81 | 60 | 45.0 | 33.3 |

*note: because the researcher may have grouped up to three segments on one checklist, a total of 29 checklists were completed for Cloverdale and 27 each for Semiahmoo and Fleetwood.

It should be noted that the researcher was not able to rank the performance of each town centre against one another because the research methodology was not designed to support a ranking system. However, noticeable differences between the three town centres become apparent when reading the tables provided in the sections above. Of the three study areas,

- Cloverdale’s checklist results showed it had the most segments without sidewalks;
- Fleetwood’s checklist results showed the least graffiti;
- Semiahmoo has the most permanent obstructions in the sidewalks, whereas Fleetwood has the most temporary obstructions, which may be attributed to the researcher evaluating most of Fleetwood the day of garbage collection;
- Fleetwood’s checklist results showed the least amount of heavy traffic, where most of the heavy traffic was limited to Fraser Highway;
- Cloverdale had the poorest levels of street lighting, which may be attributed to the older age of development and older road standards at the time of development;

- The most benches observed were in Semiahmoo. In all three study areas, but predominantly in Cloverdale and Fleetwood, the majority of benches observed were bus benches;
- Semiahmoo's checklist findings showed that it had the most segments with bus routes. Fleetwood and Cloverdale were not as well served by public transit; and,
- Cloverdale's checklist finding showed that it had the most number of mature trees, but those trees were often unevenly spaced and appeared to be located on private property. In Semiahmoo, the street trees were more evenly spaced and had a medium canopy cover. In Fleetwood, the trees were the smallest, but were the most regularly spaced, perhaps as a result of the relatively newer development in the area.

The focus groups were able to comment on some of the checklist observations as a result of the photos presented to them in the photo-booklet, however, they also commented on topics that were not necessarily captured by the checklist and/or photos, but somehow triggered as an important topic for discussion based on a prompt from the photos or from another participant. Although some of the discussion in the focus groups was not anticipated by the researcher, the participants' perceptions are valid and note-worthy.

The key informants' perceptions support the literature on the importance of walkable neighbourhoods, adequate transit service, aging in place, autonomy, and prevention of social isolation. Repeatedly, the focus group participants commented about the quality of

the sidewalks, and the lack of safe street-crossing opportunities, and felt this is an area in need of improvement throughout Surrey. They also expressed a desire to have more benches made available along streets and in parks, which can improve the walking experience by providing opportunities to rest.

Overwhelmingly, the researcher heard both the focus groups and the key informants express a need for better transit service. With the exception of certain routes in Semiahmoo, both the key informants and the focus groups described the regular bus service as infrequent and inconvenient, particularly the HandyDART service that must be booked four to seven days in advance. One key informant disagreed that the service was inadequate; rather, this key informant suggested that the older adults simply were not aware of how to effectively access the service. Regardless, the researcher was able to interpret that the frequency and marketing of transit service is in need of improvement.

The completed participant profile forms revealed each participant's residential mobility, their interest in moving, and their self-assessment on health. Their responses on these forms were more-or-less consistent with what was found in the literature, with respect to older adults being stable residents in a neighbourhood, and having a desire to age in place (Kochera and Bright 2005), in particular over the next five years. The profile forms also suggested that the participants might be what the literature referred to as the "young-old", given their ages (primarily under 75 years) and their relative good quality of health (Agrich 2006).

Regarding economics and financial security, the literature review found that most older adults' are living on a limited fixed income with much of their assets locked up in their homes. The key informants were at ease talking about affordable housing options, and noted that many older adults were shy about seeking subsidized recreation opportunities, or did not pursue the subsidies at all. The focus group participants were more subtle with their comments on finances, by simply mentioning that they would like to see an affordable grocer located closer to the town centre core, or by noting discreetly on their participant profile form that they do not anticipate moving in the next 5 years because they cannot afford to do so.

Both the key informants and the focus groups appeared to have clear understanding about how the built environment has impacts on the needs and affects the ability of older adults to enjoy their community. Much of what both groups discussed supported the issues identified in the literature review. Both groups expressed a desire for more mixed-use activities in the commercial core, rather than large-format retailers located at the edge, and expressed a need for additional parks and pathways, particularly in Cloverdale. The participants in Semiahmoo and Cloverdale were concerned about the loss of vitality to their commercial areas as nearby large-format retailers begin to out-compete the town centre cores. The participants in Fleetwood did not appear to have the same concern, yet this may be because much of their commercial uses are primarily auto-oriented.

Although Fleetwood was lacking in certain amenities found in Cloverdale and Semiahmoo (e.g. community-scaled commercial businesses, RCMP office, theatre, short blocks and frequent intersections), the Fleetwood participants had high regard for their

community and enjoyed living there. In fact, the participants of each of the three study areas had favourable things to say and were excited to share their knowledge about the positive features of their community. They especially valued knowing their neighbours and the local businesses owners.

The comments from both the key informants and the focus groups support the findings from the relevant literature. The following chapter will go on to answer the three original research questions set out in this practicum and reflect on areas for further research.

6.0 CONCLUSION

6.1 Discussion

The City of Surrey is the fastest growing municipality in Metro Vancouver, and although it is a relatively youthful city, it is experiencing a growth in older adults ages 65 years and older. Policies, by-laws and other City initiatives have shaped the growth of Surrey, and its town centres. Parks, Recreation and Culture services have had success with their seniors' centres and/or multi-generational facilities with seniors' programming, and non-City organizations have helped provided much-needed services for older adults.

This study examined three distinct town centres in Surrey, and found that each town centre has its own areas of strengths and weaknesses for age-friendly features, but overall many of the same benefits and challenges present themselves in all three. Key informants and focus group participants are all aware of features within the built environment that can help or hinder the age-friendliness of a city.

6.2 Responding to the research questions

In Chapter One, three research questions were identified:

1. How does built form affect the age-friendliness of a neighbourhood?
2. How can an age-friendly checklist be used to evaluate the age-friendliness of a neighbourhood?
3. What modifications can be made to neighbourhoods so that they are more age-friendly?

Each of the questions can be answered by assessing the relevant literature together with the results of the three research methods used here: neighbourhood analysis, key informant interviews, and focus groups.

Question 1: How does built form affect the age-friendliness of a neighbourhood?

The goal of this question was to identify the significant differences amongst varying urban development patterns and how they are experienced by older people. Some of the literature surrounding healthy active aging has focused on the impact of the urban environment has on aging. This literature has argued that built form not only influences older adults' ability to physically navigate the urban environment (e.g. through universal design) but also influences older adults cognitively (e.g. for people with dementia). The comments from the focus groups support the literature when, for example, they comment that traffic circles are confusing to navigate as pedestrians, or that there are not enough benches and shade available.

Older adults often find that these conventionally-designed communities are non-accessible and non-navigable, particularly when driving is no longer an option (Miller, Harris, and Ferguson, 2006a p.9). The problem is further compounded by retailers and service providers changing their service delivery systems to become more "centralized" (Miller, Harris, and Ferguson, 2006a p.9). The phenomenon of community-scaled commercial areas being impacted by large-format retailers was evident in the observations in this practicum project. The checklist observations found large-format

retailers were located outside of the town centre core, particularly in Cloverdale. Furthermore, the focus group participants commented on their own experiences with large-format retailers, where these retailers did not necessarily provide affordable products, they were difficult to get to, and they were out-competing the businesses located within the commercial core.

However, hope is not lost. By incorporating key features in the design of the urban landscape that make it more legible (e.g. incorporating easily recognisable features such as paths, edges, districts, nodes and landmarks) (Lynch 1960) and more easily navigable (e.g. by providing walkable neighbourhoods, mixed uses, housing options, new growth in existing areas, and transportation options) (Harris 2004), older adults have greater opportunities to participate fully in the community.

Both the key informants and the focus group participants were instrumental in identifying the features that were and were not age-friendly. They were able to speak about their knowledge and experiences that allows the researcher to understand which urban elements pose challenges (for example, poor bus service and landscape maintenance) and which elements benefit older adults (for example, the spin-off effects of the nearby university and the accessibility of Parks, Recreation and Culture services). By engaging these groups, their insights provided additional information about the age-friendliness of their neighbourhoods in a way that could not necessarily be captured in the checklist results, which is explained in more detail below.

Question 2: How can an age-friendly checklist be used to evaluate the age-friendliness of a neighbourhood?

A checklist can be used to evaluate the age-friendliness of each town centre, and document key design features that facilitate or hinder the ability to easily navigate the urban environment as an older adult. It can be used to monitor key age-friendly indicators over time (WHO 2010, p.11) and the results could then be an appropriate tool to engage the appropriate stakeholders to promote change (Gallagher and Scott 1996, p.17).

A checklist can be a useful tool for comparing various study areas because of the systematic and consistent way the data is recorded. It can also be a useful tool when wanting to establish a baseline for evaluating how a particular area performs over time. However, the researcher cautions that a checklist should not be used as a stand-alone tool for evaluating the age-friendliness of an area. The checklist tool has inherent limitations in that it provides one-dimensional observations and can be a time-consuming task. This methodology should be coupled with other research methodologies in order to gain a more balanced perspective of age-friendly characteristics. Other tools that may complement a checklist include geographic information systems analysis, telephone surveys, open houses, design charettes, and many others. For example, in the case of this practicum project, the researcher coupled the checklist methodology with key informant interviews and focus groups.

In the case of this study, the age-friendly checklist was used by the researcher to walk through each of the town centres and record observations in a concise and systematic manner. In addition to recording observations using the checklist, the researcher took photographs of features that may help or hinder age-friendliness. The researcher re-presented these photographs to the focus group participants for their own comments and observations.

In analysing the data collected in the age-friendly checklist, comparisons can be made between study areas on key features including 1) sidewalks and crosswalks; 2) traffic pattern; 3) transportation options; 4) parks and open space; 5) street trees and landscaping; 6) “place-making” signage and public art; and 7) shops services and other features. The responses from the focus group participants either validate or dismiss the items observed as to whether they are age-friendly.

Question 3: What modifications can be made to neighbourhoods so that they are more age friendly?

A key component of an age-friendly neighbourhood is the ability of an older person to navigate the urban environment independently and with minimal difficulty. Urban areas can be designed in such a way to meet universal design standards. As identified by both the key informants and the focus group participants, the following list is based on their comments on areas in need of improvement:

- Public transportation opportunities. This captures the need for improved availability and convenience of both regular transit service and HandyDART service;
- An enhanced walking environment, including more shade and benches, evenly-paved surfaces, better continuity of sidewalks, and increased number of safe/signalized road crossings;
- Concentrate mixed-use and community-scaled businesses in the town centre core;
- Access to parks that provide a variety of recreation and leisure opportunities for all ages and abilities (especially in Cloverdale);
- Assistance at home for general maintenance and landscaping needs;
- Affordability of housing, groceries, and access to subsidized services. Although some services may have subsidies for low-income individuals more outreach is needed to encourage such individuals to make use of these services;
- Provide opportunities for knowing your neighbours and local business owners; and,
- Continue to maintain and improve the services and amenities that are working well.

The areas in need of improvement identified above can be implemented by the appropriate authorities such as the municipal government (the City of Surrey Planning, Engineering, and Parks departments), the transportation authority (Translink), not-for-profit organizations, and senior levels of government (provincial and federal ministries).

6.3 Significance of the Study

The study evaluated the age-friendliness of three town centres within Surrey, British Columbia. It employed the principles of an age-friendly checklist to observe and record age-friendly features within an urban environment. The City of Surrey can benefit from this research by incorporating lessons learned into its various policy documents, by expanding some of the principles into the three other town centres and across the city as a whole. Recommendations from this study, although perhaps not directly applicable, can benefit other organizations outside of Surrey such as the regional transportation authority, Translink, the regional health authority, Fraser Health, and non-profit organizations with interests in the health and well-being of older adults.

Applying some of the recommendations in this research may also benefit older adults in other facets of their life, by addressing broader transportations and mobility issues, facilitating civic engagement, and promoting health and safety. Lessons learned in this research may also benefit other marginalized groups such as children, people with cognitive disabilities, people with physical disabilities, and recent immigrants.

6.4 Project Limitations

Prior to suggesting areas recommended for further study, it is important to understand the limitations of this research project. Upon reflection of the completed research methodologies, certain aspects could be improved upon. The participant profile forms

could have included additional questions about modes of transportation and the types of amenities they use, to get a better overall assessment on how the participants interact with the urban environment.

The walk-tour checklist was not necessarily designed for types of data that are easily collected in the field. Questions that posed problems included those about night-time street lighting, and the frequency of bus service. Information about bus service was able to be collected at a later date by searching Translink's, the local transportation authority's, website. Information about street lighting was modified by observing whether the lamp standards were spaced evenly and whether they were located on one or both sides of the road.

Not all questions originally intended to be asked at the focus group sessions were directly discussed. The colour photo-books presented to each participant at the beginning of the session gave rise to some passionate discussion about certain features identified in the photographs. As such, more time was spent with the participants sharing their perspectives on the age-friendly features found in the photographs than answering the original questions that were intended to be asked. This change in focus group format happened to work out for the best because the participants did in fact discuss the important topics in an indirect manner.

Finally, the recruitment methods for the focus group participants did not ensure that there was a proportionate representation of men and women at the table, or that there was an

appropriate mix of ethnic diversity, or that there was a broad enough range in ages. The recruitment method was, in a sense, a sampling of convenience, meaning that the participants were recruited at each of the seniors' centres, and therefore are relatively active and social members of the community.

6.4 Areas for Further Study

Given the limitations of this study, there are a number of recommendations for areas of further study. Firstly, this practicum is limited by the three selected town centres in question. The research could be expanded to the three remaining town centres within Surrey to test whether the results are consistent across all of Surrey's town centres. Although the researcher cautions about the time-consuming nature of the checklist methodology, a modified methodology could be expanded to all areas in Surrey where Neighbourhood Concept Plans have been developed, areas where there are neighbourhood associations, or across the city more broadly.

Second, the study topics were primarily limited to outdoor spaces, transportation options and services and amenities available within a town centre. The World Health Organization identified eight areas of focus when assessing the age-friendliness of an urban area, which include:

- Outdoor spaces and buildings
- Transportation
- Housing
- Social participation

- Respect and social inclusion
- Civic participation and employment
- Communication and information
- Community and health services

A more thorough approach to assessing the age-friendliness of an urban area should have all of the above topics assessed, and ensure that older adults are active participants in assessing these topics.

Thirdly, methodology could be established to develop indicators that contribute to age-friendly community environments and track their progress over time. An example of these types of indicators is described by the Canada Mortgage and Housing Corporation their Research Highlight document entitled “Community Indicators for an Aging Population” (2008).

Finally, rather than have a relatively youthful and able-bodied researcher complete walk-tour checklists, it would be beneficial to have older adults complete an audit themselves. The older adults would have more implicit knowledge of age-friendly features and may be more readily able to identify age-friendly areas of success and areas requiring more attention. At the time of writing this practicum, the Surrey Seniors Community Planning Table was in the process of developing an indicators checklist for age-friendly business throughout the city, with the intent of having their older members complete the checklists in the field.

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Key Informant Interview Questions

Introduction:

Good morning, my name is Stephanie Long. I am a Masters of City Planning Student at the University of Manitoba and I am currently focusing my research on age-friendly neighbourhoods. I wanted to thank you for taking the time to speak with me today. Your input is very important to me, and will be instrumental in assessing the age-friendliness of Surrey.

An age-friendly neighbourhood is one which enables older persons to live in security, maintain their health and independence, and participate fully in society. I would like to discuss different aspects of the community, including the built environment, buildings, roads, and the different services and activities available within the community.

I will be recording our conversation today with a tape recorder so that I do not miss anything you say. I will be writing a report that discusses the positive and negative aspects of three town centres in Surrey, and will be using your input to generate recommendations on areas for improvement. If you like, I can make my report available to you once it is complete. Precautions will be taken to ensure you will not be personally identified in my final report.

1. Please tell me about your knowledge of the older adult population in Surrey.

Probes:

- a. *Number/Proportion*
- b. *Physical activity level*
- c. *Social activity level*

2. What do you feel are obstacles facing older people in Surrey?

Probes:

- a. *Safety (actual and perceived)*
- b. *Places to go*
- c. *Shopping/other services*
- d. *Distance / accessibility of amenities (parks, shops, doctor, friends, etc.)*
- e. *Social activities (affordable, convenient location, many choices)*

3. What services are available in Surrey?

Probes:

- a. *Outside spaces (green space, parks, plazas, places of interest)*
- b. *Safety*
- c. *Places to go*
- d. *Shopping/other services*
- e. *Social activities (affordable, convenient location, many choices)*

4. What policies/initiatives have aided older people in living independently for longer?

Probes:

- a. *Local government*

- b. Senior government*
- c. Non-government organizations*

5. Where do you feel there are areas for improvement?

Probes:

- a. Public Transportation*
- b. Sidewalks*
- c. Mixing uses*
- d. Safety*
- e. Accessibility of services and/or amenities*

6. What are/should be the key priorities in Surrey to benefit older adults in the future?

Probes

- a. Public Transportation*
- b. Sidewalks*
- c. Mixing uses*
- d. Safety*
- e. Accessibility of services and/or amenities*

7. Is there anything else you would like to share?

Thank you very much for your time. Here is my contact information if you would like to get in touch with me for any reason. As stated earlier, I will be writing a report that discusses the positive and negative aspects of three town centres in Surrey, and will be using your input to generate recommendations on areas for improvement. If you like, I can make my report available to you once it is complete.



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INFORMED CONSENT AGREEMENT

Research Project Title: Age-Friendly Neighbourhoods: Urban Design Recommendations for an Aging Population

Researcher: Stephanie Long, Masters of City Planning Candidate

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The purpose of this study is to identify areas where existing neighbourhoods can be modified to become more suitable for an aging population. Three town centres in Surrey will be identified and analyzed first on how friendly they are currently for an elderly population, and second on where opportunities exist for making the area more age-friendly. The methods to be utilized in this research include key informant interviews, a detailed neighbourhood analysis, a series of focus groups, and a walking tour.

You are being asked to participate in a one-on-one interview where the researcher will be asking you about your knowledge of policies and initiatives that aid in creating age-friendly cities. The interview will be approximately 30 minutes in length.

The risk in participating in this research is not more than normal conduct of one's everyday life. You will not be asked to say or do anything that may make you feel uncomfortable. During the discussion group, a digital voice recorder will be used to record your thoughts. This is to ensure none of your contributions are missed. This will be supplemented by note-taking on paper.

The confidentiality of your name and other personal information will be maintained. Three people will have access to the information collected: The researcher, a volunteer in the discussion group, and the project supervisor. Your information will be kept in a locked file and will be destroyed one year following the completion of the research. In the final report, your identity will not be revealed. The recommendations presented in the final report will be made available to you in both hard copy and digital format.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

If you require further information please contact:

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Richard Milgrom
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Participant's Signature Date

Researcher and/or Delegate's Signature Date

Age-friendly audit

Date: _____
 Time: _____
 Street Name: _____
 Apartment # _____

SIDEWALKS:

1. Sidewalks are on both sides of the street
 a. Sidewalks are continuous on both sides of the street
 Describe: _____

2. Sidewalks are maintained free of large cracks and holes
 Describe: _____

3. There is litter and rubbish along the street
 O None O some O a lot

4. There is graffiti and vandalism along the street
 O None O some O a lot

5. Sidewalks are kept clear of ice and snow during winter months
 O Yes O No

6. Sidewalks are clear of obstructions
 a. Describe permanent objects obstructing the sidewalk
 b. Describe temporary objects obstructing the sidewalk

7. There is a buffer between the sidewalk and the street (e.g. boulevard)
 O Yes O No

8. There is parking on one or both sides of the street
 O Yes O No

9. Sidewalk is at least four feet (1.2m) in width
 O Yes O No

10. There are other pedestrians along the street
 O None O some O a lot

11. There are visible neighbourhood safety programs along the street (e.g., Neighbourhood Watch, Block Parent)
 O Yes O No

12. There is a lot of traffic noise
 O not noisy O somewhat noisy O very noisy

13. There is a limited number of blank walls & tall fences
 O None O some O a lot

STREETLIGHTS

15. Street lights are continuous along the block
 a. Count the number of street lights in the block around the apartment
 b. How many of these street lights work? Evenly spaced

16. Lighting is even. (uneven lighting produces stripes of light and darkness, or pools of light around fixtures and darkness elsewhere)

17. What is the distance between street lights _____ metres

PAY PHONES:

18. Number of pay phones in the block around the apartment

Place one tick for each phone:

a. Phone receiver is between waist and shoulder height
 b. Seat provided
 c. Kept clear of snow and ice
 d. Phone would be easy to if you had a walker or a cane

| | Phone 1 | Phone 2 | Phone 3 |
|--------|---------|---------|---------|
| Yes/no | Yes/no | Yes/no | Yes/no |
| Yes/no | Yes/no | Yes/no | Yes/no |
| Yes/no | Yes/no | Yes/no | Yes/no |

CROSSWALKS / TRAFFIC CROSSINGS

19. Traffic flow in area:
 O Heavy O Moderate O Light

20. There is a curb cut at each intersection (1 each direction?)
 O Yes O No

21. There are crossing aids for pedestrians and bicyclists to cross the street safely (e.g., crosswalks, traffic lights, stop signs)
 O Yes O No

22. The traffic can be seen clearly at crosswalks, traffic lights, or stop signs
 O Yes O No

23. There is an island in the middle of the road to cross the street safely
 O Yes O No

24. There are traffic calming devices to reduce volume or speed (i.e. speed humps, vertical deflection, horizontal deflection)
 O Yes O No

25. Location of Crosswalk:
 Place one tick for each crosswalk:
 a) Crosswalk pavement free of large cracks and holes
 b) Pedestrian crossing lights in working order
 c) Audible beeping at crosswalk while light flashing green
 d) Length of time between manual trigger and pedestrian crossing light changing to green (in seconds)

| | X1 | X2 | X3 |
|--------|--------|--------|--------|
| Yes/no | Yes/no | Yes/no | Yes/no |
| Yes/no | Yes/no | Yes/no | Yes/no |
| Yes/no | Yes/no | Yes/no | Yes/no |

Comments: _____

26. Amount of time for each cycle of crosswalk signal (seconds):

| Crosswalk Location | Walk | Flashing | Stop | # paces across the road |
|--------------------|-------|----------|-------|-------------------------|
| i) _____ | _____ | _____ | _____ | _____ |
| ii) _____ | _____ | _____ | _____ | _____ |
| iii) _____ | _____ | _____ | _____ | _____ |
| iv) _____ | _____ | _____ | _____ | _____ |
| v) _____ | _____ | _____ | _____ | _____ |

| BENCHES | | Bench 1 | Bench 2 | Bench 3 |
|---|--|------------|-------------|------------|
| 27. Check each bench in your neighbourhood: | | | | |
| a) Bench is secure to ground or does not move with force of body weight | | yes/no | yes/no | yes/no |
| b) Easy to rise from sitting position on bench | | yes/no | yes/no | yes/no |
| c) Bench has two arm rests | | yes/no | yes/no | yes/no |
| d) Bench armrests support body weight | | yes/no | yes/no | yes/no |
| e) Bench surface clear of ice and snow during the winter | | yes/no | yes/no | yes/no |
| f) Walking area around bench clear of ice and snow during winter months | | yes/no | yes/no | yes/no |
| BUSES | | | | |
| 28. Bus service is available along the street | | O Yes | O No | |
| 29. Bus stop is well lit | | O Yes | O No | |
| 30. Bus shelter present at the bus stop | | O Yes | O No | |
| a) Is in working order | | O Yes | O No | |
| 31. Bench present at the bus stop | | O Yes | O No | |
| 32. # of bus routes serving this stop | | O < 30 min | O 30-60 min | O > 60 min |
| 33. Frequency of bus service | | O Yes | O No | |
| 34. Bus stop is kept clear of ice and snow during winter | | O Yes | O No | |

| SERVICES & AMENITIES | |
|---|--|
| 35. There are non-residential facilities (e.g., school, grocery store, restaurant, bank etc.) along the street (count the number of each) | |
| a. School – elementary..... | _____ |
| b. School – secondary..... | _____ |
| c. School – post secondary..... | _____ |
| d. Grocery store..... | _____ |
| e. Drug store..... | _____ |
| f. Medical office..... | _____ |
| g. Restaurant/Cafe..... | _____ |
| h. Bank..... | _____ |
| i. Post office..... | _____ |
| j. Dry-cleaner, Laundromat, tailor..... | _____ |
| k. Park – active..... | _____ |
| l. Park – passive..... | _____ |
| m. Community centre..... | _____ |
| n. Cultural facility (art gallery, museum, theatre)..... | _____ |
| o. Library..... | _____ |
| p. Community police station..... | _____ |
| q. Residential – single family/duplex..... | _____ |
| r. Residential – town house/apartment..... | _____ |
| s. Public art..... | _____ |
| 36. Most or all facilities are readily accessible to seniors and are in working order | |
| a. wheelchair ramps | Available <input type="checkbox"/> Yes <input type="checkbox"/> No |
| b. automatic doors | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| c. non-slip surface outside | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| d. non-slip mat/surface inside | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| e. handrails available if door is not at the same level as the street | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| f. seating is available inside/outside the facility | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 37. There are street trees (number) _____ (feet/metres) | |
| a. spacing | O small O medium O large |
| b. canopy size | O Yes O No |
| 38. There is a mail box along the street | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 39. There is a water fountain along the street | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 40. There is a public washroom along the street | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 41. There is shade (e.g., trees, building awnings, or bus shelters) along the walking area | <input type="checkbox"/> Yes <input type="checkbox"/> No |

Handwritten notes:
 37. Continuous 4 N
 Even 4 N
 One side / two sides

Participant Profile Form

Some information is needed about you so that we may describe the overall characteristics of our participants. Please complete this Information Sheet by writing a checkmark beside the answer that describes you, or by filling in the answer. If you have a question, please ask the group leader.

1) Age at last birthday: _____

2) Sex:

- Male
- Female

3) Present Employment Status:

- Retired
- Work Full-time
- Work Part-time

4) Present occupation or, if retired, major pre-retirement occupation: _____

5) Your judgment of your current health:

- Excellent
- Good
- Fair
- Poor

6) Do you have any health problem that limits your ability to do your normal daily activities?

- Yes
- No

7) What is the highest level of schooling you completed?

- Primary School
- Secondary School
- College or University

8) Do you rent, or own the home where you live?

- Rent
- Own

9) Number of years you have lived in your current home? _____

10) What type of housing do you live in?

- House
- Townhouse
- Apartment
- Other: _____

11) Who lives in your home with you? (check all that apply)

- No-one else but me
- Spouse or partner
- Children (Number _____)
- Other relatives (Number _____)
Relationship (e.g., mother, sister) _____
- Non-relatives (Number: _____)
Relationship (e.g. boarder, housekeeper) _____

Total number of people in your household: _____

12)

- a)** City where you live: _____
- b)** Neighbourhood where you live: _____

13)

- a)** Number of years you have lived in your city _____
- b)** Number of years you have lived in your neighbourhood _____

14)

- a)** Do you anticipate moving in the next five years?
 - Yes
 - No
- b)** If Yes, reason for moving _____
- c)** If No, reason for not moving _____



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INFORMED CONSENT AGREEMENT

Research Project Title: Age-Friendly Neighbourhoods: Urban Design Recommendations for an Aging Population

Researcher(s): Stephanie Long, Masters of City Planning Candidate

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The purpose of this study is to identify areas where existing neighbourhoods can be modified to become more suitable for an aging population. Three neighbourhoods in Greater Vancouver will be identified and analyzed first on how friendly they are currently for an elderly population, and second on where opportunities exist for making the neighbourhood more age-friendly. The methods to be utilized in this research include key informant interviews, a detailed neighbourhood analysis, a series of focus groups, and a walking tour.

You are being asked to participate in a discussion group with 6 to 10 other participants. The group will meet once for 1 hour 30 minutes, and the group will be discussing their perceptions of their neighbourhood, and whether their neighbourhood is a suitable place to grow old.



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Prior to the discussion group, you will be asked to fill out a participant profile form (attached). This information will be used to describe the overall characteristics of the group. The risk in participating in this research is not more than normal conduct of one's everyday life. You will not be asked to say or do anything that may make you feel uncomfortable. During the discussion group, a digital voice recorder will be used to record your thoughts. This is to ensure none of your contributions are missed. This will be supplemented by note-taking on paper.

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The recommendations presented in the final report will be made available to the discussion group participants in both hard copy and digital format. As a thank you for your contribution, at the end of today's session you will be offered small package as a token of appreciation.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.



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Participant's Signature Date

Researcher and/or Delegate's Signature Date

2.1 Focus Group Questions – Older Persons

Introduction:

Good morning, my name is Stephanie Long. I am a Masters of City Planning Student at the University of Manitoba and I am currently focusing my research on age-friendly neighbourhoods. I wanted to thank you all for coming today and volunteering your time. Your input is very important to me, and will be instrumental in assessing the age-friendliness of (community name).

An age-friendly neighbourhood is one which enables older persons to live in security, maintain their health and independence, and participate fully in society.

We are going to talk about many different aspects of the community, including the built environment, buildings, roads, and the different services and activities in the community. I want to hear about the positive experiences, or good features of your neighbourhood, that show the ways in which the neighbourhood is now "age-friendly". I also want to learn about the negative experiences or bad features of (neighbourhood name) that show the ways in which it is NOT age-friendly. Finally, I want your suggestions on the ways to improve the "age-friendliness" of your neighbourhood.

I will be recording our conversation today with a tape recorder so that I do not miss anything you say. I will be writing a report that discusses the positive and negative aspects of three different neighbourhoods in Greater Vancouver, and will be using your input to generate recommendations on areas for improvement. If you like, I can make my report available to you once it is complete. Be assured that you will not be personally identified in my final report.

Warm-up questions:

Before we begin, as an ice-breaker, I would like to do a round of introductions. Could each person please introduce yourself, say why you are interested in participating in today's discussion, and add one more interesting detail about yourself.

Discussion:

1. Tell me about your neighbourhood. What do you like best about it?

Probes:

- a. *Outside spaces (green space, parks, plazas, places of interest)*
- b. *People*
- c. *Safety*
- d. *Amount of activity (quiet, busy)*
- e. *Places to go*
- f. *Shopping/other services*
- g. *Distance / accessibility of amenities (parks, shops, doctor, friends, etc.)*
- h. *Social activities (affordable, convenient location, many choices)*

2. What is it like to step outside of your home to get fresh air, run errands, or visit with friends and relatives?

Probes:

- a. *Where do you go? What do you do? (recreation, shopping, visiting, errands)*
 - i. *How often?*
 - ii. *How do you feel when you go out?*
 - iii. *Would you like to go more or less frequently?*
 - iv. *What do you enjoy most about where you go?*
 - v. *How do the outdoor spaces make you feel? (streets, plazas, parks)*
- b. *How do you get there? (car, bus, walk, other)*
 - i. *Positive/negative aspects?*
 - ii. *Satisfaction with the transportation option you use?*
 - iii. *Easy / difficult?*

3. If there is something you could change about your neighbourhood, what would it be?

Probes:

- a. *People*
- b. *Safety*
- c. *Getting around*
- d. *Closeness of amenities*

4. If you could imagine the ideal neighbourhood to live in, what would it look like?

Probes:

- a. *Who lives there (friends/relatives, people the same age)*
- b. *Types of amenities (recreation, shops, services)*
- c. *Ease of navigating the environment / how you get around*
- d. *Outdoor spaces (parks, plazas, places of interest)*
- e. *How does your neighbourhood compare*

Wrap-up Questions

5. Before we finish, are there any other issues or areas we haven't discussed that you want to raise?

Thank you very much for taking the time to give me your perceptions of your neighbourhood.

AGE-FRIENDLY DESIGN FOCUS GROUPS

Semihamoo Town Centre

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| “Place Making” Signage & Public Art | 16 |
| Shops, Services & Other Features | 18 |

Introduction

4

Thank you for agreeing to participate in this Focus Group.

The goal of this study is to:

- Find out how easy or difficult it is for older people to navigate the urban environment
- Learn where opportunities exist for making neighbourhoods more age-friendly

The photographs in this booklet are selected to stimulate conversation about key age-friendly features.

Please take a look at these photographs and think about your experiences you've had in your neighbourhood. In the focus group, I will be asking you to comment on these experiences and tell me what you think can be done to make your neighbourhood a better place to live.

4

Focus Group Questions

5

The following are questions I will be asking in our Focus Group session. Please think about these questions as you read through this booklet:

1. Tell me about your neighbourhood. What do you like best about it?
2. What is it like to step outside of your home to get fresh air, run errands, or visit with friends and relatives?
3. If there is something you could change about your neighbourhood, what would it be?
4. If you could imagine the ideal neighbourhood to live in, what would it look like?
5. Are there any other issues or areas we haven't discussed that you want to raise?

5

Sidewalks & Crosswalks

6

Sidewalks and crosswalks help people in getting around urban areas.

They provide pedestrians a place to walk separate from cars.



6

Sidewalks & Crosswalks

7



Consider:

- Cracks & obstructions
- Lighting
- Graffiti, Vandalism & Litter
- Other pedestrians
- Block watch
- Snow Removal
- Ease of crossing roads
- Cars respecting pedestrians
- Places to sit

7

Traffic pattern

8

The traffic pattern can impact your enjoyment of a neighbourhood.

Traffic patterns can range from being slow-moving and quiet to fast and noisy.

Traffic-calming devices like roundabouts and speed bumps can be used to slow down traffic in busier areas.



8

Traffic pattern

9



Consider:

- Traffic - calming devices
- Noise
- Traffic volume
- Traffic speed
- Buffer from traffic

9

Transportation Options

10

Transportation options include driving, walking, biking, or taking transit.

The number of transportation options available to you, their convenience, and their safety may impact which way you prefer to get around.



10



- Consider:**
- Driving
 - Walking
 - Biking
 - Transit
 - Frequency & hours of service
 - Convenient route



Street Trees & Landscaping

12

Street trees and landscaping can create visual interest as you travel through your neighbourhood.

Sometimes, landscaping can become overgrown, obstruct views, and overcrowd sidewalks.

Some benefits are that they can reduce the noise from traffic, add colour, and have environmental benefits.



12

Street Trees & Landscaping

13



Consider:

- Fences
- Hedges
- Visibility when crossing streets

13

Parks & Open Space

14

Parks and open space give you an opportunity to get fresh air, exercise, or spend time with other people.

They can have playgrounds, picnic tables, sports fields or natural areas.



14

Parks & Open Space

15



Consider:

- Places to exercise
- Places to sit
- Places to people-watch
- Places to gather (socialize)

15

“Place Making” Signage & Public Art

16

“Place making” refers to features that exist in your neighbourhood that make it distinctly different from other neighbourhoods.

Signage such as heritage markers, block watch, and public art help you recognise what makes your neighbourhood unique and can foster a sense of pride.



16

“Place Making” Signage & Public Art

17



Consider:

- Traffic Calming
- Block Watch
- Heritage marker
- Other signage

17

Shops, Services & Other Features

18

There are many other components that make up an urban area, such as community centres, restaurants, shops, medical offices, places of worship, banks, schools, post offices, and police stations.

The location and spacing of these features can affect how people access them. A variety of services can benefit a neighbourhood.



18

Shops, Services & Other Features

19



6



8



9



7



10

Consider:

- Medical offices
- Banks
- Restaurants
- Places of Worship
- Grocery store
- Library
- Community centre
- Convenient locations
- Affordable
- Options / choice
- Payphones
- Mailboxes
- Water fountain
- Public washrooms
- RCMP
- Easy to locate
- Ease of use

19

AGE-FRIENDLY DESIGN FOCUS GROUPS

Cloverdale Town Centre

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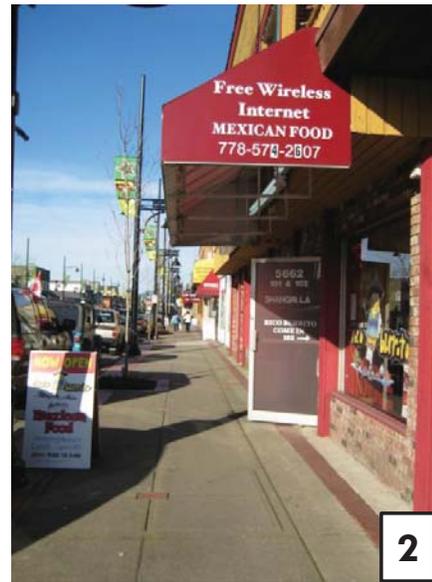
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 - Other pedestrians
 - Block watch
 - Snow Removal
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 - Places to sit



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Street Trees & Landscaping

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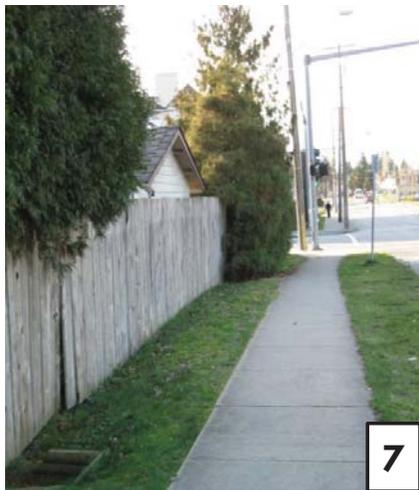
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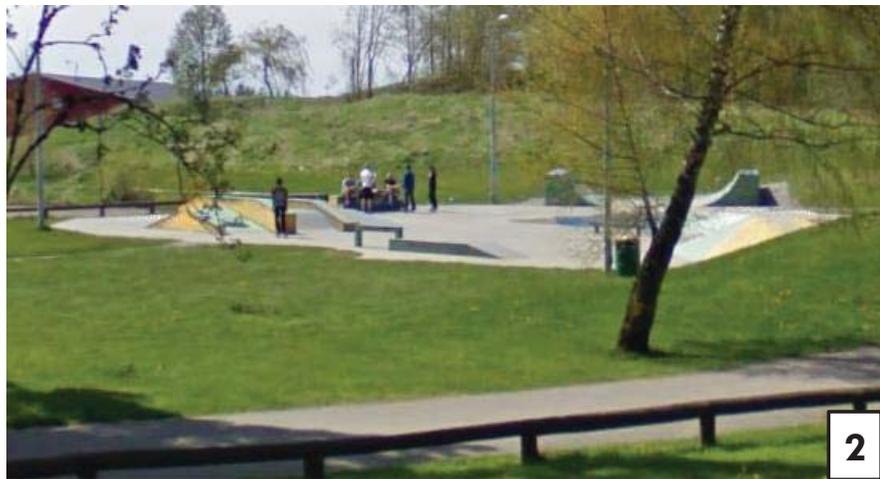
- Fences
- Hedges
- Visibility when crossing streets

Parks & Open Space

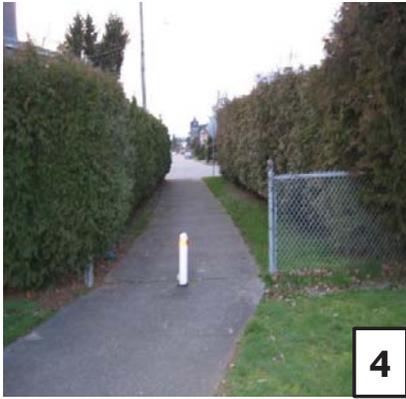
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- Places to sit
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16



5



8



9



6



10



7

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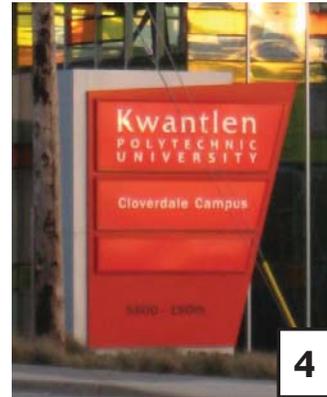
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- Other signage

Shops, Services & Other Features

18

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 - Banks
 - Restaurants
 - Places of Worship
 - Grocery store
 - Library
 - Community centre
 - Convenient locations
 - Affordable
 - Options / choice
 - Payphones
 - Mailboxes
 - Water fountain
 - Public washrooms
 - RCMP
 - Easy to locate
 - Ease of use

AGE-FRIENDLY DESIGN FOCUS GROUPS

Fleetwood Town Centre

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Introduction

4

Thank you for agreeing to participate in this Focus Group.

The goal of this study is to:

- Find out how easy or difficult it is for older people to navigate the urban environment
- Learn where opportunities exist for making neighbourhoods more age-friendly

The photographs in this booklet are selected to stimulate conversation about key age-friendly features.

4

Focus Group Questions

5

The following are questions I will be asking in our Focus Group session. Please think about these questions as you read through this booklet:

1. Tell me about your neighbourhood. What do you like best about it?
2. What is it like to step outside of your home to get fresh air, run errands, or visit with friends and relatives?
3. If there is something you could change about your neighbourhood, what would it be?
4. If you could imagine the ideal neighbourhood to live in, what would it look like?
5. Are there any other issues or areas we haven't discussed that you want to raise?

5

Sidewalks & Crosswalks

6

Sidewalks and crosswalks help people in getting around urban areas.

They provide pedestrians a place to walk separate from cars.



6



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6



7



8

Consider:

- Cracks & obstructions
- Lighting
- Graffiti, Vandalism & Litter
- Other pedestrians
- Block watch
- Snow Removal
- Ease of crossing roads
- Cars respecting pedestrians
- Places to sit

Traffic pattern

8

The traffic pattern can impact your enjoyment of a neighbourhood.

Traffic patterns can range from being slow-moving and quiet to fast and noisy.

Traffic-calming devices like roundabouts and speed bumps can be used to slow down traffic in busier areas.



1



2



3

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Consider:

- Traffic - calming devices
- Noise
- Traffic volume
- Traffic speed
- Buffer from traffic

Transportation Options

10

Transportation options include driving, walking, biking, or taking transit.

The number of transportation options available to you, their convenience, and their safety may impact which way you prefer to get around.



10



- Consider:**
- Driving
 - Walking
 - Biking
 - Transit
 - Frequency & hours of service
 - Convenient route

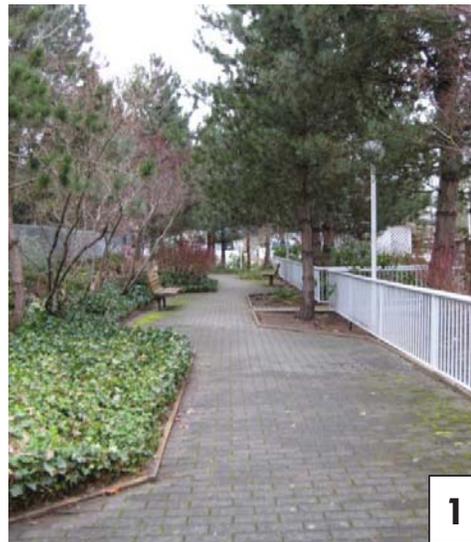
Street Trees & Landscaping

12

Street trees and landscaping can create visual interest as you travel through your neighbourhood.

Sometimes, landscaping can become overgrown, obstruct views, and overcrowd sidewalks.

Some benefits are that they can reduce the noise from traffic, add colour, and have environmental benefits.



12



Consider:

- Fences
- Hedges
- Visibility when crossing streets

Parks & Open Space

14

Parks and open space give you an opportunity to get fresh air, exercise, or spend time with other people.

They can have playgrounds, picnic tables, sports fields or natural areas.



14



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6



7

Consider:

- Places to exercise
- Places to sit
- Places to people-watch
- Places to gather (socialize)

“Place Making” Signage & Public Art

16

“Place making” refers to features that exist in your neighbourhood that make it distinctly different from other neighbourhoods.

Signage such as heritage markers, block watch, and public art help you recognise what makes your neighbourhood unique and can foster a sense of pride.



16



- Consider:**
- Traffic Calming
 - Block Watch
 - Heritage marker
 - Other signage

Shops, Services & Other Features

18

There are many other components that make up an urban area, such as community centres, restaurants, shops, medical offices, places of worship, banks, schools, post offices, and police stations.

The location and spacing of these features can affect how people access them. A variety of services can benefit a neighbourhood.



18



Consider:

- Medical offices
- Banks
- Restaurants
- Places of Worship
- Grocery store
- Library
- Community centre
- Convenient locations
- Affordable
- Options / choice
- Payphones
- Mailboxes
- Water fountain
- Public washrooms
- RCMP
- Easy to locate
- Ease of use



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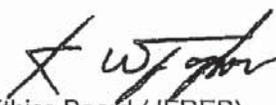
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RENEWAL APPROVAL

March 8, 2010

TO: **Stephanie Long**
Principal Investigator

FROM: **Wayne Taylor, Chair** 
Joint-Faculty Research Ethics Board (JFREB)

Re: **Protocol #J2007:098**
**"Age-Friendly Neighbourhoods: Urban Design
Recommendations for an Aging Population"**

Please be advised that your above-referenced protocol has received approval for renewal by the **Joint-Faculty Research Ethics Board**. This approval is for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.