



Managing Mobility.

Transportation in an Aging Society

At a Glance

- Canadian seniors need access to affordable and appropriate transportation options to maintain their health and overall quality of life.
- As Canada's largely car-dependent population ages, meeting seniors' mobility needs, while minimizing safety risks, will become more challenging.
- Diversity among seniors in terms of age, physical and mental health, living arrangements, income, and other factors is reflected in transportation needs and patterns of use, and has implications for policies and initiatives.
- Meeting the transportation needs of seniors, while managing safety and other risks, will require policies and strategies that address the challenges of driving cessation, improve and expand transportation options, and seek to transform the built environment.

Executive Summary

Canadian seniors need access to affordable and appropriate transportation options to meet their travel needs and to support their health and quality of life. Yet a growing number of seniors face transportation challenges. Across Canada, the primary mode of transportation for adults at most ages is driving. While most seniors who drive are safe to do so, many stop due to deteriorating mental and/or physical capacity.¹ And those looking for transportation alternatives find that they are often scarce, inaccessible, inconvenient, and, for some, unaffordable.

This briefing discusses some key challenges and opportunities for improving transportation policy for seniors. It examines how seniors currently meet their transportation needs and preferences, changes in transportation strategies and behaviours as seniors age, and the nature and extent of unmet transportation needs. The briefing also considers how differences in demographics affect transportation needs, behaviours, and gaps, and discusses implications for policies and strategies.

Mobility in an Aging Society

Canada's population is aging rapidly, creating larger and more pressing transportation challenges and risks. In 2015, Canada was home to nearly 5.8 million people over 65—or 16 per cent of the country's total

1 Turcotte, "Profile of Seniors' Transportation Habits."

Some seniors continue to drive even as their physical and mental capacities deteriorate.

population. By 2025, more than one in five Canadians (20.7 per cent) will be 65 or older, and by 2040 nearly one in four (24.4 per cent) will be in the senior cohort.²

Although age alone is not a direct indicator of health and ability, seniors are more likely to report limitations in mental and physical ability than younger adults.³ This affects the nature of transportation-related risks and has implications for how seniors' mobility needs and preferences are met. When individuals, at any age, have mobility options that allow them to achieve a range of benefits, they are better able to sustain their health and quality of life and make contributions to their families and communities. Unfortunately, too few seniors have access to affordable and appropriate transportation options.

Driving, Risk, and Alternatives

Driving is the primary mode of transportation for a large majority of Canadian adults, including seniors. Among seniors aged 65 to 74, 68 per cent reported driving their own vehicle as their main form of transportation. At age 85 or older, 31 per cent relied on driving as their main mode of transportation. Less than 8 per cent of seniors relied on public transit as their main mode of transportation, while less than 5 per cent walked or cycled. Use of taxis or accessible transit was a low 1.2 per cent in the 65-to-74 age cohort, although it climbed to 2.6 per cent among those aged 75 to 84 and 7.4 per cent among those 85 and older.⁴

Given the high dependence on cars, some seniors continue to drive even as their physical and mental capacities deteriorate. Among seniors with significant vision impairments, 9 per cent reported driving in the previous month and 7 per cent reported driving as their main form of

2 Calculations based on Statistics Canada, CANSIM table 051-0001.

3 Canadian Institute for Health Information, *Health Care in Canada 2011*, 17–19.

4 *Ibid.*, 11.

transport.⁵ More than one in five seniors who had been diagnosed with Alzheimer's disease or dementia drove in the previous month and 17 per cent reported driving as their main form of transport.⁶

In a study of seniors in British Columbia, those with dementia were more than twice as likely than a sample of the general senior population to have been involved in a collision during the trial period.⁷ Continuing to drive with mild visual or cognitive limitations does not always increase risk, but driving with significant impairment is a problem. The challenge is to ensure that those seniors who should no longer drive have access to a range of affordable and appropriate alternatives to meet their transportation needs.

Implications for Policy, Strategy, and Research

Transportation policies and strategies for an aging society must strike a balance between maximizing benefits, minimizing risks, and respecting the rights and dignity of seniors and other citizens. What steps might be considered to improve transportation for Canada's growing population of seniors?

1. Improve driver cessation policies and practices.
2. Expand and enhance transportation services.
3. Enhance mobility and reduce risk by improving the built environment.

Addressing the challenges will not be easy, and the longer we wait, the larger and more complex they will become. At a minimum, we should give more prominence to the needs and abilities of seniors as we assess and discuss transportation and other policies. In doing so, we focus attention not only on how to sustain and improve the health and well-being of Canada's seniors, but also on the future health and well-being of all Canadians.

5 Ibid.

6 Ibid.

7 Cooper and others, "Vehicle Crash Involvement and Cognitive Deficit in Older Drivers," 9.

Canada needs to ensure a full continuum of transportation services is available to meet the needs of seniors.

Managing Mobility: Transportation Policy in an Aging Society

Canadian seniors need access to affordable and appropriate transportation options to meet their travel needs and to support their health and quality of life. Yet a growing number of seniors face transportation challenges. Across Canada, the primary mode of transportation for most adults at almost all ages is driving. While most seniors who drive are safe to do so, many stop due to deteriorating mental and/or physical capacity.⁸ In the face of gaps in the availability and appropriateness of alternative modes of transport, more seniors are experiencing difficulty travelling to medical appointments, grocery shopping, and participating in a range of social, physical, and other activities.

With one-fifth of the population expected to be 65 or older within the next decade, Canada needs to ensure that a full continuum of transportation services is available to meet the needs of seniors. In identifying and implementing policies and strategies, however, we should be attentive to three core principles. Appropriate policies and strategies should aim to:

1. **Meet the transportation needs and preferences of seniors** to support their health, well-being, and ability to contribute to their communities.
2. **Minimize risks** associated with seniors' mobility—including safety risks related to driving, walking, and other modes of transportation—and escalating costs associated with regulating driving and providing alternate modes of transport.
3. **Respect the rights and dignity of seniors** and other citizens, including the right of fully capable individuals to choose their modes of transport regardless of age, and ensure that shifts in responsibility for meeting transportation needs do not overburden those who provide assistance.

To identify and assess workable solutions, we need to answer some key questions: How do seniors currently meet their transportation needs and preferences? How do their transportation strategies and behaviours change as they age? What is the nature and extent of seniors' unmet

8 Turcotte, "Profile of Seniors' Transportation Habits."

transportation needs and what explains the gaps? How do age, health, gender, geography, living arrangements, and other factors affect transportation needs, behaviours, and gaps? What are the implications of these needs, behaviours, gaps, and other issues for policies and strategies aimed at meeting seniors' changing transportation needs?

Future Care for Canadian Seniors Research Series

The Conference Board of Canada's Canadian Alliance for Sustainable Health Care (CASHC) provides Canadian business leaders and policy-makers with forward-looking, quantitative analysis of the sustainability of the Canadian health care system. CASHC's research series Future Care for Canadian Seniors follows the Conference Board's economic analysis of the home and community care sector in Canada, the services and investments needed to meet these needs, and the pressure points that exist in the continuing care sector.

The series began with a primer, *Future Care for Canadian Seniors—Why It Matters*, that synthesized the challenges and opportunities in the Canadian continuing care sector. The primer reiterated many of the challenges and opportunities in the sector identified by key organizations. Many reports, including government strategy and planning documents, have identified the need to build on what is known and develop capacity plans for the sector. The second report in the series, *Future Care for Canadian Seniors: A Status Quo Forecast*, provided projected estimates that can be used to inform government capacity planning, and also provided a foundation for scenario exploration, strategic planning, and, ultimately, the development of solutions to address the future care needs of Canadian seniors.

This briefing takes a broad look at the changing mobility and transportation needs of seniors, and the infrastructure required to support those needs. Recognizing that Canadian seniors are a heterogeneous group, the briefing considers how mobility challenges and opportunities differ by age, gender, health, location, living arrangements, preferences, and other characteristics. It summarizes what is known about current and future mobility patterns

Ensuring that transportation systems support the mobility needs of seniors is a growing imperative.

among older Canadians, explores issues and challenges related to improving mobility and transportation, and discusses the implications of these issues for individuals, organizations, and policy-makers.

Aging in Canada: Trends and Implications for Mobility

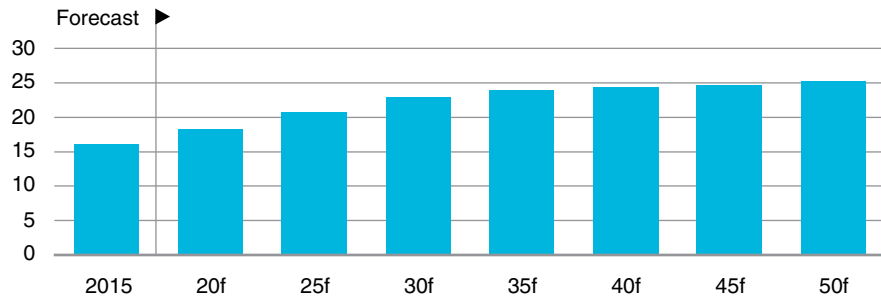
Canada's population is aging rapidly, creating larger and more pressing transportation challenges and risks. In 2011, more than 14 per cent of the population (nearly 5 million Canadians) were aged 65 or older. By 2015—only four years later—Canada's senior population climbed to 16 per cent (nearly 5.8 million).⁹ Looking ahead, more than one in five Canadians will be 65 or older by 2025, and nearly one in four will be in the senior cohort by 2040. (See Chart 1.)

Canada's senior population will also see large increases in the number of individuals among the oldest age cohorts, including those aged 80 or older. (See Chart 2.) For example, in 2015 more than 1.5 million seniors were aged 80 or older—including nearly 280,000 seniors aged 90 or older. By 2040, Canada will be home to nearly 11 million seniors—including more than 3 million aged 80 to 89 and more than 750,000 aged 90 or older. In that case, policies and initiatives that address the transportation needs of seniors need to consider not only how to meet those needs generally, but especially those of a rapidly growing cohort of Canada's eldest seniors whose needs tend to be different than younger seniors, as we discuss later.

When seniors are no longer able or allowed to drive, their health, social participation, and overall quality of life often deteriorates. Thus, ensuring that transportation systems can support the mobility needs of seniors is a growing imperative.

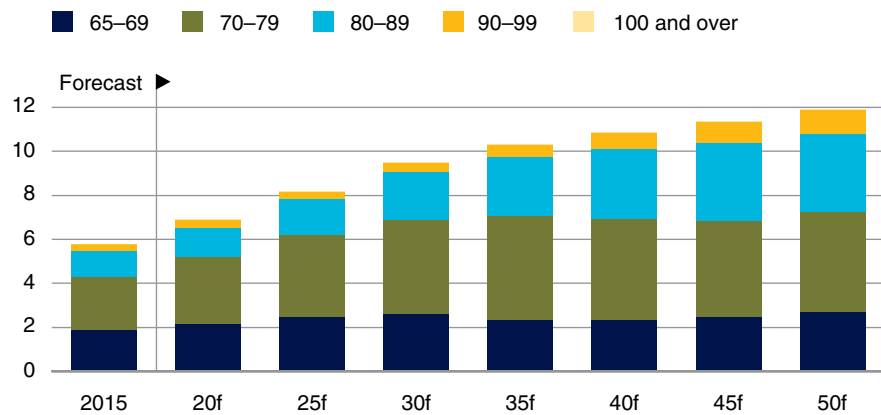
9 Calculations based on Statistics Canada, CANSIM table 051-0001.

Chart 1
Projected Canadian Population Over 65
(per cent)



f = forecast
Sources: The Conference Board of Canada; Statistics Canada.

Chart 2
Canadian Population Projections by Age Cohort
(millions)



f = forecast
Sources: The Conference Board of Canada; Statistics Canada.

The Importance of Mobility for Seniors

Mobility is important for many reasons. It allows people to reach other people, places, and services that provide benefits that they want or need to access—including medical appointments, grocery stores, pharmacies,

physical and social activities, and family events and visits.¹⁰ Mobility also has benefits regardless of destination, such as exercise and physical activity (in the case of walking and cycling) and psychological benefits, including a sense of autonomy—that is, the sense that one can go somewhere at any given time even if one chooses not to.¹¹

When individuals, at any age, have mobility options that allow them to achieve a range of benefits, they are better able to sustain their health and quality of life, and make contributions to their families and communities. The World Health Organization reports that “effective transportation systems are crucial for minimizing social isolation, maintaining connections with the community, increasing access to health promotion and social programs, and improving access to medical services for the elderly.”¹² Other research found that “seniors who have access to one or more viable modes of transportation report higher levels of satisfaction with their quality of life and exhibit lower levels of social isolation.”¹³

Effects of Limited Mobility on Seniors

When mobility decreases—due to declining health, reduced capacity, lower income, higher costs, or other reasons—individuals’ health and overall quality of life often suffer as well. For example:

- Canadian seniors who reported driving as their main form of transportation were more likely to participate in social activities (73 per cent) than seniors whose main mode was walking (66 per cent), public transit (61 per cent), as a passenger in a car (without a licence)

10 Metz, “Mobility of Older People and Their Quality of Life,” 150.

11 Ibid.

12 Cited in Cvitkovich and Wister, “The Importance of Transportation,” 810.

13 Ibid., 810–11.

(53 per cent), and accessible transit or taxis (46 per cent).¹⁴ Given the importance of social activity to health and well-being, the difference in participation by mode of transportation is concerning.¹⁵

- A longitudinal study of driving cessation in the United States found that individuals who stopped driving “exhibited substantial increases in depressive symptoms” and that driving cessation was “among the strongest predictors of increased depressive symptoms ... even when adjusting for sociodemographic and health-related factors.”¹⁶ Some seniors associate driving cessation with a “loss of self-esteem” and regard it as a fate “worse than death.”¹⁷
- Analysis of results from the Health and Retirement Survey in the United States found that “productive engagement (paid work, formal volunteering, and informal volunteering) was negatively affected when older adults stopped driving.”¹⁸ This has implications not only for seniors’ well-being, but the well-being of the communities in which they live and participate.
- A survey of British seniors showed that self-reported quality of life was lower among seniors without access to a vehicle than those with access. While 55 per cent of seniors with vehicle access rated their quality of life as “very good” or “so good it could not be better,” fewer seniors without vehicle access rated their quality of life that high (41 per cent).¹⁹ The same study found that those with vehicle access were more likely to participate in social activities, which reinforced perceptions of higher quality of life.

14 Turcotte, “Profile of Seniors’ Transportation Habits,” 14.

15 Cvitkovich and Wister, “The Importance of Transportation,” 810–11.

16 Marottoli and others, “Driving Cessation and Increased Depressive Symptoms.”

17 Marshall, “The CIHR Team in Driving in Older Persons (Candrive II) Research Program,” 17; Rapoport, “Dementia and Driving,” 25.

18 Curl and others, “Giving Up the Keys,” 423.

19 Banister and Bowling, “Quality of Life for the Elderly,” 109.

Without reliable alternatives to driving, seniors' ability to meet their transportation needs declines.

Another study found that seniors who relied on public transit or other non-car modes of transport were concerned about safety at night (65 per cent) and had difficulties carrying heavy loads (59 per cent). Seniors also reported a number of barriers that resulted in reduced travel, and thus lower well-being.²⁰

In short, without reliable and appropriate alternatives to driving, seniors' ability to meet their transportation needs declines and they are more likely to experience negative effects on their health and quality of life.

Transportation Patterns of Seniors

According to data from the 2009 Canadian Community Health Survey, cars were the main form of transportation for Canadian seniors living in private dwellings.²¹ The survey did not include seniors living in residences or institutions whose mobility patterns and options were different.²² Of the nearly 5 million seniors in Canada in 2011, most (93 per cent) lived in private dwellings, while 7 per cent lived in special care facilities, including nursing homes, chronic care and long-term care hospitals, and residences for senior citizens.²³ While only 1 per cent of seniors aged 65 to 69 lived in special care facilities in 2011, nearly 30 per cent of seniors aged 85 and older did.²⁴ Thus, while the Canadian Community Health Survey sample captures the transportation experiences of most seniors, there are many whose experiences are not considered in the survey (but which we discuss later).

20 Gilhooly and others, *Transport and Ageing*, 18.

21 Scott and others, "New Insights Into Senior Travel Behavior," 153.

22 The Canadian Community Health Survey—Healthy Aging (CCHS) collected data between December 2008 and November 2009 and involved interviews with 30,865 individuals aged 45 or older—including 16,369 aged 65 and over—living in private dwellings in the 10 provinces. Turcotte, "Profile of Seniors' Transportation Habits," 4.

23 Statistics Canada, *Living Arrangements of Seniors*, 6.

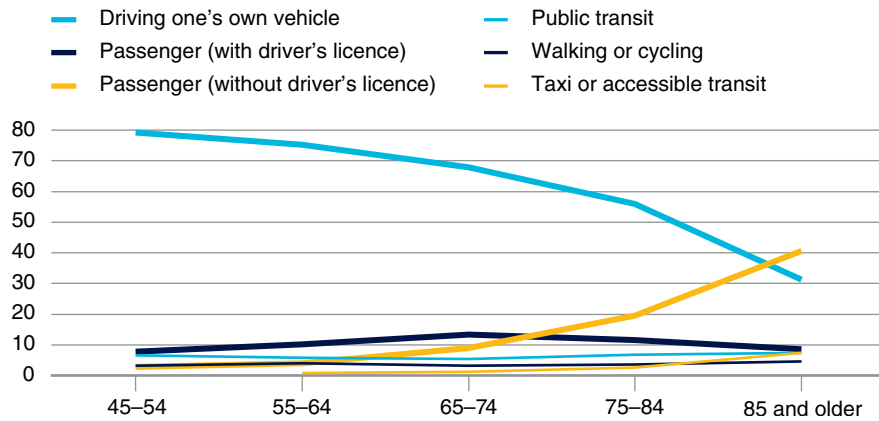
24 Ibid.

Among surveyed seniors aged 65 to 74, 68 per cent reported driving one's own vehicle as their main form of transportation. (See Chart 3.) This is somewhat less than the proportion of adults aged 45 to 54 (79 per cent) and 55 to 64 (75 per cent) who reported cars as their main mode. The difference with the older cohort is almost entirely due to fewer women driving—a legacy of dated gender roles that are less prominent among younger seniors. While 73 per cent of women aged 45 to 54 mainly drove to get around, this falls to 53 per cent among women aged 65 to 74. By contrast, 85 per cent of men aged 45 to 54 and 84 per cent of men aged 65 to 74 were likely to drive. Among seniors aged 85 and older, 31 per cent continued to drive as their main form of transportation, although there was a large gender gap. Fifty-six per cent of men aged 85 and older reported driving as their primary mode versus only 18 per cent of women.

Almost all of the decline in driving from the younger to older cohorts is matched by an increase in people reporting being passengers (without a driver's licence) as their main form of transportation. This means that even as driving decreases with age, a large majority of Canadians continue to rely on private cars (as drivers or passengers)—including 90 per cent of those aged 65 to 74, 87 per cent of those aged 75 to 84, and 80 per cent of those over 85. As such, transportation policy in an aging society must balance the benefits and risks of seniors driving with managing issues with driving cessation.

Depending on age, between 5.5 and 7.5 per cent of seniors who lived in private dwellings relied on public transit as their main mode of transportation, while only 3 to 5 per cent walked or cycled. There is no significant increase in the proportion of seniors whose main mode was public transit, walking, or cycling as they age, although the proportion of total trips made using public transit does increase with age. (See Chart 4.) Use of taxis or accessible transit as one's main form of transportation is low (1.2 per cent) in the 65 to 74 age cohort, but climbs to 2.6 per cent among the 75 to 84 cohort and 7.4 per cent among those aged 85 and older. The increase in taxi and accessible transit use appears to come from those who would have relied on driving at younger ages.

Chart 3
Main Form of Transportation
 (per cent)



Note: Data on taxi and accessible transit use by those aged 45-54 have been excluded because they were deemed unreliable.

Sources: The Conference Board of Canada; Turcotte, "Profile of Seniors' Transportation Habits."

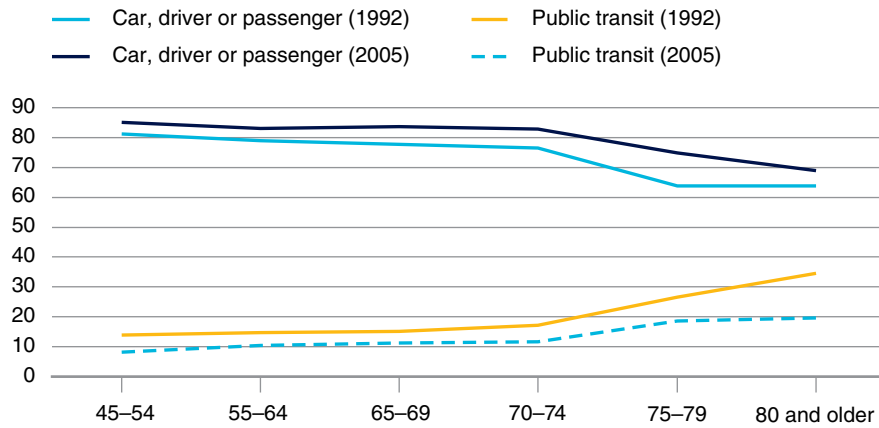
Not only are seniors largely car-dependent, they have become more car-dependent than previous generations. (See Chart 4.) While cars accounted for between 64 and 77 per cent of trips made by seniors in 1992 (depending on age), this climbed to between 69 and 84 per cent by 2005. The greater proportion of trips made by car in the later cohort is largely matched by a lower proportion of trips made by public transit. In 1992, between 15 and 35 per cent of seniors' trips were made by public transit. By 2005, only 11 to 20 per cent of seniors' trips were made by public transit.

Although few seniors rely on public transit, walking, or cycling as their main form of transport, there appears to be a willingness to use alternate modes on occasion. When asked whether they had used another form of transportation at least once in the previous month, large minorities of seniors reported walking, bicycling, and using public transit. (See Chart 5.) Between 23 and 37 per cent of women (depending on age) and 29 to 34 per cent of men reported walking or cycling at least once in the previous month. Moreover, 18 to 21 per cent of women and 14 to 17 per

Chart 4

Main Form of Transportation, 1992 vs. 2005

(per cent)



Sources: The Conference Board of Canada; Scott and others, "New Insights Into Senior Travel Behavior."

cent of men used public transit at least once. And between 1 and 8 per cent of seniors used accessible transit at least once in the month prior to the survey.

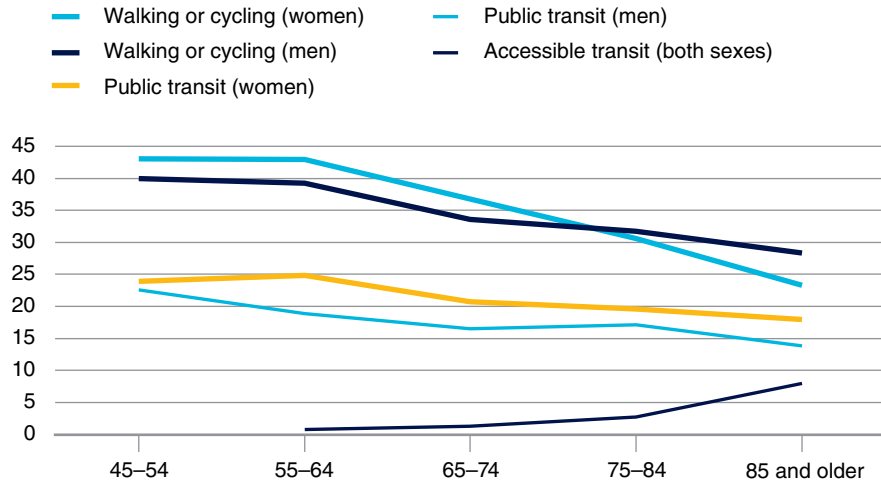
Public transit, walking, and cycling are not always options for the full range of seniors' needs. For example, while some seniors walk or cycle regularly, these modes may be less viable for travel to distant medical appointments or for carrying many bags from grocery stores. And while many seniors might consider using public transit, it is not an option in many rural and other communities. Still, the fact that alternate modes are considered and used occasionally opens up possibilities for transportation policy. Given that the likelihood of using alternate modes of transportation is affected by information, familiarity, and previous use (as well as physical and cognitive ability), knowing how many seniors have used alternate modes provides a sense of policy opportunities and limits.²⁵

25 Davey, "Older People and Transport"; Gilhooly and others, *Transport and Ageing*, 17-18; WHO, *Global Age-Friendly Cities*, 20-29.

Chart 5

Alternate Modes of Transportation Used at Least Once in the Previous Month, 2009

(per cent)



Note: Data on taxi and accessible transit use by those aged 45-54 have been excluded because they were deemed unreliable.

Sources: The Conference Board of Canada; Turcotte, "Profile of Seniors' Transportation Habits."

Seniors in Special Care Facilities

More than 352,000 seniors lived in special care facilities as of 2011.²⁶ Of those, more than 200,000 living in long-term care homes, alternate level of care, or complex continuing care facilities were recipients of continuing care supports,²⁷ while many more had unmet care needs.²⁸

26 Special care facilities include nursing homes, chronic care or long-term care hospitals, and residences for senior citizens. Statistics Canada, *Living Arrangements of Seniors*, 6-7.

27 Continuing care supports are "forms of assistance provided to seniors who can no longer live independently, as well as the assistance provided to those who can," including "health supports, personal and social supports, accommodation supports, voluntary donations and services, and caregiving." Hermus, Stonebridge, and Edenhoffer, *Future Care for Canadian Seniors*, 3.

28 Hermus, Stonebridge, and Edenhoffer, *Future Care for Canadian Seniors*, 13, 17.

The Conference Board projects that by 2046, nearly 470,000 seniors in special care facilities will be receiving continuing care supports, while many more are likely to have unmet care needs.²⁹

Information about the transportation patterns of seniors living in specialized care facilities is limited. The information that is available paints a different picture of needs and behaviour than seniors living in private dwellings. A survey of seniors in four retirement villages in Ontario (n = 407) found that only 20 per cent were “current drivers,” while 67 per cent were “former drivers,” and 11 per cent “never drove.”³⁰ To meet their transportation needs, residents classified as “former drivers” used many options, including rides from others (90 per cent), taxis (73 per cent), retirement village shuttle (52 per cent), paratransit services (41 per cent), and public buses (18 per cent).³¹ In short, seniors in special care facilities are much less likely to drive than seniors living in private dwellings, and more likely to use a range of transportation options to meet their travel needs.

Mobility and Declining Health

Although age alone is not a direct indicator of an individuals’ health and abilities, seniors—especially older cohorts—are more likely to report limitations in mental and physical ability than younger adults.³² This affects the nature of transportation-related risks and has implications for how seniors’ mobility needs and preferences are met.

Given their high dependence on cars, some seniors continue to drive even as their physical and mental capacities deteriorate. Among seniors living in private dwellings with significant vision impairments, 9 per cent reported driving in the previous month and 7 per cent reported driving

29 Ibid., 3.

30 Myers, “Mobility in Later Life,” 67.

31 Ibid., 69.

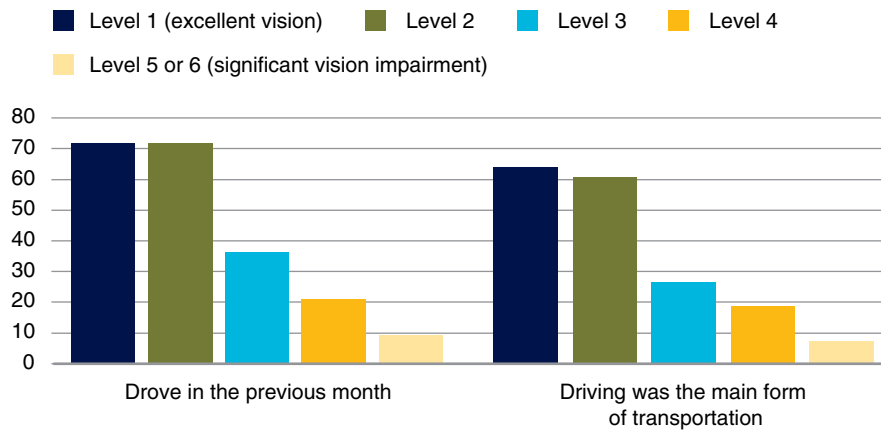
32 Canadian Institute for Health Information, *Health Care in Canada 2011*, 17–19.

Driving with significant impairment is a problem.

as their main form of transport.³³ (See Chart 6.) Among seniors with significant self-reported cognitive impairments, 27 per cent drove in the previous month and 20 per cent reported driving as their main form of transport.³⁴ (See Chart 7.) Continuing to drive with mild visual or cognitive limitations does not always increase risk, but driving with significant impairment is a problem.

Chart 6
Driving Habits of Seniors (aged 65 and older) by Self-Reported Vision Health

(per cent)



Note: Definitions for the levels of vision are: Level 1: "Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street without glasses or contact lenses." Level 2: "Able to see well enough to read ordinary newsprint and recognize a friend on the other side of the street, but with glasses or contact lenses." Level 3: "Able to read ordinary newsprint with or without glasses but unable to recognize a friend on the other side of the street, even with glasses." Level 4: "Able to recognize a friend on the other side of the street with or without glasses but unable to read ordinary newsprint, even with glasses." Level 5: "Unable to read ordinary newsprint and unable to recognize a friend on the other side of the street, even with glasses." Level 6: "Unable to see at all." M. Turcotte, "Profile of Seniors' Transportation Habits," 4-5.
 Sources: The Conference Board of Canada; Turcotte, "Profile of Seniors' Transportation Habits."

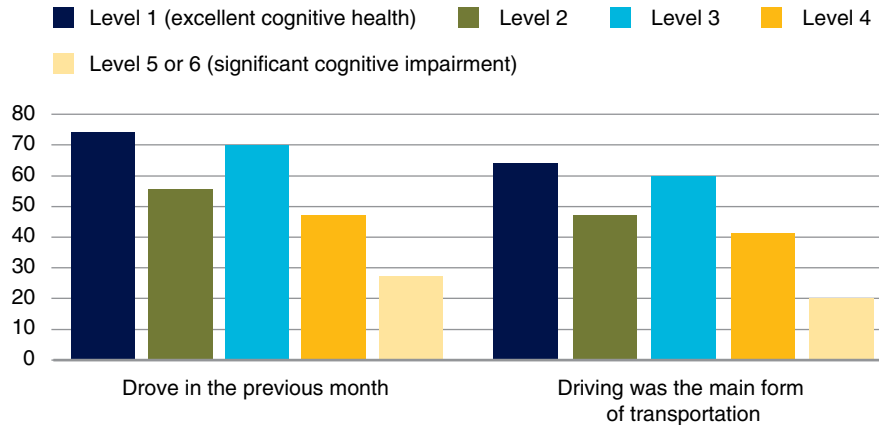
33 Turcotte, "Profile of Seniors' Transportation Habits," 11.

34 Ibid.

Chart 7

Driving Habits of Seniors (aged 65 and older) by Self-Reported Cognitive Health

(per cent)



Note: Definitions for the levels of cognition are: Level 1: "Able to remember most things, think clearly and solve day-to-day problems." Level 2: "Able to remember most things, but has a little difficulty when trying to think and solve day-to-day problems." Level 3: "Somewhat forgetful, but able to think clearly and solve day-to-day problems." Level 4: "Somewhat forgetful, and has a little difficulty when trying to think or solve day-to-day problems." Level 5: "Very forgetful, and has great difficulty when trying to think or solve day-to-day problems." Level 6: "Unable to remember anything at all, and unable to think or solve day-to-day problems." M. Turcotte, "Profile of Seniors' Transportation Habits," 4–5.

Sources: The Conference Board of Canada; Turcotte, "Profile of Seniors' Transportation Habits."

Data from the Canadian Community Health Survey reveal that 21 per cent of seniors who have been diagnosed with Alzheimer's disease or dementia drove in the previous month and 17 per cent reported driving as their main form of transport.³⁵ In a study of seniors in British Columbia, those with dementia were more than twice as likely as a sample of the general senior population to have been involved in a collision during the trial period.³⁶ Moreover, the study found that "over 80 per cent of the dementia group who experienced a crash event (and

35 Ibid.

36 Cooper and others, "Vehicle Crash Involvement and Cognitive Deficit in Older Drivers," 9.

who were almost all judged at fault) continued driving for up to 3 years following the event, and during this time over one-third of these had at least one more accident.”³⁷

Part of seniors’ higher driving risk is due to their unique driving behaviour. Senior drivers are more likely than others to drive on streets (rather than freeways) where collision risks are higher for all drivers, and they are more likely than others to report their collisions.³⁸ But even as seniors’ health and driving behaviour are associated with increased risk, many seniors stop or reduce their driving, thereby moderating the impact of the potential risk overall. Indeed, as the data presented above suggest, seniors’ driving prevalence declines sharply among those age cohorts who are more likely to report limitations on their physical and mental ability.³⁹ But the risk remains and could grow. With more people entering the senior cohort, and with many of them likely to continue to drive even as dementia and other cognitive impairments set in, we are likely to see greater risks on the road unless action is taken.

Those seniors who live and age in environments that are built primarily for cars may feel they have little choice but to continue to drive even as their health declines. Facing a lack of appropriate alternatives, occasional pressing needs (e.g., medical emergencies), and inadequate screening and intervention for driving cessation, many seniors continue to drive either by choice or circumstance. Policy-makers and other stakeholders will need to alter the choice parameters where possible and encourage modes of transport that minimize risks and maximize benefits for seniors and the public in general.

37 Ibid.

38 Hauer, “In Defence of Older Drivers,” E305.

39 On driving prevalence by age cohort, see Turcotte, “Profile of Seniors’ Transportation Habits.” On self-reported limitations on physical and mental ability, see Canadian Institute for Health Information, *Health Care in Canada 2011*, 17–19.

Seniors may have greater difficulty meeting their transportation needs.

Unmet Travel Needs

The purpose of travel changes as people age. For example, while younger adults may travel more for work and getting children to activities, older adults may travel more for medical appointments and social and other activities. Adults of all ages, though especially seniors, may have greater difficulty meeting their transportation needs. As Canadians age and their health and abilities decline, increasing numbers can no longer drive, walk, or easily access public transit. Combined with inadequate or inaccessible alternatives, many reduce their travel.

Some studies distinguish between seniors' "serious" transport needs—such as travel for health emergencies, medical appointments, and shopping for food—and "discretionary" transport needs or preferences—such as travel for social outings, visiting friends, and "spontaneous trips."⁴⁰ In general, seniors have greater difficulty meeting their discretionary travel needs than their serious travel needs. The distinction captures the sense that efforts to meet certain transport needs are more pressing than efforts to meet all transport needs. But it is important to remember that unfulfilled discretionary transport needs and preferences also have negative consequences for seniors' health and well-being—which suggests that the distinction should be treated with caution.

Participation in social activities is lower among seniors whose main mode of transport is accessible transit or taxis (46 per cent), as a passenger in a car (53 per cent), or public transit (61 per cent) than seniors who drive (73 per cent).⁴¹ If we assume seniors have roughly equal desire to participate, then we can infer that those who do not drive likely have unmet discretionary travel needs. In fact, 10 per cent of women aged 75 to 84 and 24 per cent of women aged 85 or older cited transportation problems—the second most cited reason after health problems—as a reason for not participating in social or recreational activities "as much as they would have liked."⁴²

40 Davey, "Older People and Transport", 58, 62.

41 Turcotte, "Profile of Seniors' Transportation Habits," 14.

42 Ibid.

A small study of seniors in Vancouver (n = 174) found that more than half of those who can neither drive nor take buses had unmet transportation needs, versus only 7 per cent of seniors who can drive or take transit without difficulty.⁴³ Living arrangements were a key factor in determining whether transportation needs were met. Nearly 85 per cent of seniors living with others had their transportation needs met, while 58 per cent of those living alone had their needs met.⁴⁴

A large survey of seniors living in retirement facilities in Alberta (n = 1,471) found that nearly 90 per cent of seniors were “sometimes” or “always” able to get transportation to or from medical appointments—a result consistent with the greater likelihood of needs being met when seniors live with others.⁴⁵ However, it is concerning that health-related transportation needs are met less than 100 per cent of the time for seniors in such facilities.

A 2014 survey of Canadian adults who either received or knew someone close to them who received some form of community care services found that 24 per cent used transportation services. Of those, 56 per cent were satisfied with transportation services, while 11 per cent were not satisfied. Of the 709 respondents who used any home or community care services, 11 per cent reported unmet transportation needs.⁴⁶

Most (though not all) seniors who lack access to cars usually find transport for their serious needs—such as travel for emergency health care, medical appointments, and grocery shopping. But many experience substantial deterioration in their discretionary travel. Indeed, “people who depend on others for transportation have a greater tendency

43 Cvitkovich and Wister, “The Importance of Transportation,” 814, 817.

44 Ibid., 817.

45 Health Quality Council of Alberta, *Supportive Living Resident Experience Survey Report*, 274.

46 The Conference Board of Canada commissioned EKOS Research Associates to conduct a survey asking Canadians questions about their experiences with and perceptions of home, community, and nursing home/residential long-term care. Within the survey population of 4,127 adults of all ages, 709 respondents said they or someone close to them had received home and community care services in the previous 12 months. See Dowdall, *Feeling at Home*.

to be reluctant to ask for assistance in getting to leisure activities compared with activities perceived as more essential.⁴⁷ As noted in the section above on the effects of limited mobility, unmet discretionary transportation needs can have substantial negative effects on health and well-being, and thus raise concerns about the validity and utility of the serious versus discretionary distinction for policy.⁴⁸ If seniors' health and well-being are to be sustained, transportation options and policies to address their unmet transportation needs—whether “serious” or “discretionary”—should be identified and implemented.

Meeting Seniors' Transportation Needs: Key Issues and Challenges

Transportation is clearly important to seniors' health and well-being. Effectively meeting the transportation needs of an aging population will require solutions to a number of challenges. This section introduces key issues and challenges, while the section after draws out the implications for policies, programs, strategies, and research.

Making Driving Safer

Given that driving (either as a driver or a passenger) is the main mode of transportation for most Canadian seniors, two sets of policy issues emerge: road safety for seniors who continue to drive, and issues related to driving cessation (including screening, easing transitions, and ensuring alternate modes of transportation are available).

According to the Canadian Community Health Survey, more than 80 per cent of seniors who drove in the month prior to being surveyed did so with less-than-perfect vision and more than 27 per cent drove with moderate-to-serious cognitive limitations.⁴⁹ In most cases, the safety risk posed by driving with mildly impaired vision or cognitive functioning

47 Turcotte, “Profile of Seniors' Transportation Habits,” 14.

48 Davey, “Older People and Transport,” 58, 62.

49 Turcotte, “Profile of Seniors' Transportation Habits,” 11.

A key concern is identifying and managing the incremental increase in risk associated with aging drivers.

is small.⁵⁰ While allowing those with mild limitations to continue driving may be preferable to requiring them to stop (given that negative consequences for health and well-being often result from driving cessation), finding alternatives, especially for those with substantial limitations, is important in this context.

As such, a central concern is identifying and managing the incremental increase in risk associated with aging drivers—especially those with health issues and disabilities. Addressing the risk, as well as making driving easier for people of all ages, could include changes in “road design, signage, vehicle modification, and changes in driving habits.”⁵¹ The task for researchers and policy-makers is to determine which specific modifications are the most appropriate and cost-effective to keep seniors driving as long as possible given the reality of car dependence.

Managing Driving Restrictions and Cessation

Finding ways to fairly and accurately identify those who should cease driving without imposing restrictions on those who are fine to continue driving is an important challenge. If screening and cessation practices are too strong, many seniors who are safe to drive may be forced to stop and subsequently suffer negative effects on health and well-being. If screening and cessation practices are too weak, some seniors who should stop driving may continue to do so, creating risks for themselves and others. Achieving the right balance is both difficult and necessary.

The effectiveness of screening and cessation measures varies according to the nature of the conditions addressed and who is involved. Screening for visual impairments, for example, is generally easier than screening for cognitive conditions such as dementia. Ideally, individuals recognize their own limitations and make good judgments about stopping or continuing to drive. But because that is not always the case, driving cessation strategies must involve other actors and organizations.

50 Ibid.

51 Ibid., 12.

Screening and reporting responsibilities often rest with physicians. Most provinces and territories have laws that require physicians to report drivers under their care who have conditions that may make them unfit to drive.⁵² In some provinces and territories, optometrists/ophthalmologists and other health professionals also have mandatory reporting responsibilities.⁵³ Yet, as some note, fulfilling this responsibility may be hampered by “little guidance for clinicians; lack of empirically based standards; screening measures [that] are not effective for identifying drivers at the individual level; [and] guidelines focus[ed] on simple diagnostic versus functional approaches to evaluation.”⁵⁴

Detecting conditions such as dementia is especially difficult for physicians, “and even more so is detection of driving impairment in dementia.”⁵⁵ Indeed, some research shows that physician screening has limited effectiveness, while many physicians worry that the responsibility itself “has a negative effect on their relationship with the patient.”⁵⁶ If health care professionals are to play a screening role, they will need better tools and guidance. Moreover, we should consider whether the health and safety benefits of health care professionals playing this role outweigh any health and safety risks that emerge as a result of damaged relationships with patients.

Government screening and cessation programs are also critical, but face numerous issues. All provinces and territories impose various restrictions on the licences and driving of individuals whose medical reviews reveal limitations. This includes daytime-only driving (12 jurisdictions), distance or radius restrictions (11), speed limits and road-type restrictions (9), passenger requirements (4), and other measures.⁵⁷ Yet, seniors regard some of the conditions as unfair—such as limits on driving more than

52 Marshall, “The CIHR Team in Driving in Older Persons (Candrive II) Research Program,” 17–19.

53 Myers, “Mobility in Later Life,” 32.

54 Marshall, “The CIHR Team in Driving in Older Persons (Candrive II) Research Program,” 21.

55 Ibid.

56 Kelly, Nielson, and Snoddon, “Aging Population and Driver Licensing,” 35.

57 Myers, “Mobility in Later Life,” 35.

20 kilometres from home.⁵⁸ Some health professionals and government staff have questioned whether existing tests are accurate and effective, and whether there is sufficient capacity to conduct tests and monitor compliance.⁵⁹ And wait times and costs for assessments may be prohibitive. Wait times for assessments average 12 weeks and fees for drivers range from \$40 to \$985.⁶⁰

Those seniors (and other adults) who stop driving need alternate means of transportation if they are to continue to be active and healthy members of their communities. In addition to issues about the mere existence of alternatives, seniors transitioning from driving require information and guidance about how to use some of the other modes. Thus, managing driving cessation is only partly a matter of getting unsafe drivers off the road. It is also a matter of ensuring that people are prepared to use and benefit from other modes of transportation, and that those other modes are appropriate and adapted to their needs. We examine challenges related to the alternatives below.

Aging in Place and Communities Built for Cars

In the background of many transportation challenges is a tension between preferences for aging in place (or aging at home) and the fact that the neighbourhoods where most seniors live were built for cars. For those seniors who can no longer drive or who no longer have access to a vehicle, aging in place can quickly turn from being autonomy-supporting to autonomy-limiting.

Symptoms of the tension can be seen in seniors' transportation needs and behaviours. The Canadian Community Health Survey found that many seniors who lived in private dwellings required assistance with transportation. Among all seniors, 14 per cent of women and 5 per cent

58 Ibid., 36.

59 Marshall, "The CIHR Team in Driving in Older Persons (Candrive II) Research Program"; Myers, "Mobility in Later Life"; Purdy and Elzohairy, "Ontario's 80 and Over Senior Driver License Renewal and Medical Review Programs."

60 Myers, "Mobility in Later Life," 46.

Services are not always designed with seniors in mind.

of men “need[ed] assistance to get to places out of walking distance.”⁶¹ For seniors aged 85 to 89, the need for assistance climbed to 37 per cent for women and nearly 16 per cent for men. And among seniors aged 90 and older who lived in private dwellings, 54 per cent of women and 28 per cent of men required assistance.⁶²

Similarly, Cvitkovich and Wister found that living arrangements play an important role in determining whether seniors’ transportation needs are met. Seniors living with others (whether at home, in residences, or in institutions) were more likely to report that their transportation needs are met than seniors living alone.⁶³ Over the long term, when sufficient transportation is not available, “there is increased likelihood that the vulnerable individual will eventually become housebound and in danger of requiring institutionalization.”⁶⁴ A study in the United States found that seniors who never drove or who stopped over the course of the study faced a higher risk of relocating to a long-term care facility.⁶⁵ If aging in place is to remain a viable option, more ambitious strategies to address the transportation dependence of seniors living at home, and especially alone, will be needed.

Appropriate Alternatives

There are many alternative modes of transportation, including walking, cycling, public transit, specialized or accessible transit, taxis, rides organized by community organizations, and rides from friends and family. Yet, not all seniors have the ability to use all modes, and services are not always designed with seniors in mind. Seniors with limited mobility may not be able to cycle or use public transit safely unless changes are made to make these modes more accessible and safe. Moreover, not all

61 Turcotte, “Profile of Seniors’ Transportation Habits,” 15.

62 Ibid.

63 Cvitkovich and Wister, “The Importance of Transportation,” 817.

64 Ibid., 826.

65 Freeman and others, “Driving Status and Risk of Entry Into Long-Term Care in Older Adults.”

communities have the resources to provide all options. Recognizing and addressing these and other issues associated with alternate options is essential to meeting seniors' transportation needs.

Family and Friends

While seniors' transportation needs are often met through rides offered by family and friends, this option presents its own set of challenges. Among seniors living in private dwellings, rides from others were the second most important transportation option after driving one's own car. They were the main form of transportation for 9 per cent of seniors aged 65 to 74, nearly 20 per cent of seniors aged 75 to 84, and more than 40 per cent of seniors aged 85 and over.⁶⁶ Senior women were especially dependent, with 52 per cent over 85 years of age dependent on rides from others as their main form of transportation (versus less than 20 per cent of men).⁶⁷

Although rides from friends and family offer a low-cost, somewhat flexible option, it leaves seniors dependent on others, prompting them to make fewer transportation requests and endure more unmet needs. Research on seniors' transportation patterns in Scotland found that many seniors showed "considerable reluctance to ask adult children for a lift," "reluctance to ask a spouse," and an unwillingness to ask friends for rides "unless some kind of reciprocal relationship was involved."⁶⁸ A study of B.C. seniors found that those with "unmet transportation needs were more likely to depend solely on family ... whereas participants with fulfilled transportation needs were more likely to include friends or neighbours" in their circle of ride options.⁶⁹ Compounding seniors' reluctance to request rides—especially for leisure activities—is the fact that as they age their "social networks tend to shrink," leaving them with fewer people to ask.⁷⁰

66 Turcotte, "Profile of Seniors' Transportation Habits," 13.

67 Ibid.

68 Gilhooly and others, *Transport and Ageing*, 7, 20.

69 Cvitkovich and Wister, "The Importance of Transportation," 809–10.

70 Turcotte, "Profile of Seniors' Transportation Habits," 14.

Despite the challenges, rides from others are likely to remain an important mode of transport for seniors. In that case, transportation policy will need to grapple with the fact that seniors will have unmet transportation needs unless it can provide alternatives and/or increase the likelihood that seniors will ask for, and friends and family will provide, regular transportation.

Walking and Cycling

Walking and cycling have many health and social benefits for seniors, but are not feasible options for many travel needs. Few seniors (between 3 and 5 per cent, depending on age) walked or cycled as a primary mode of transport. Moreover, only 35 per cent of seniors aged 65 to 74 were occasional walkers or cyclists (i.e., at least once in the month prior to being surveyed). Occasional walking or cycling declines to 25 per cent among seniors aged 85 and older.⁷¹

Reasons for such low levels of walking and cycling include reduced physical capacity among many seniors and concerns about safety and falls.⁷² A study of pedestrian fatalities from 2004 to 2008, for example, found that 35 per cent of all pedestrian fatalities were individuals aged 65 or older, while 63 per cent of pedestrians killed at intersections were aged 65 or older.⁷³

Additionally, seniors are less likely to walk or cycle in small cities, towns, and rural areas (24 to 31 per cent) than in large, dense urban environments (40 to 50 per cent).⁷⁴ Even in dense urban areas, whether seniors view walking or cycling as good options depends on whether streets, buildings, and other spaces are designed with safety and accessibility in mind.⁷⁵ The built environment—including distance

71 Ibid., 13.

72 Myers, "Mobility in Later Life," 5, 9, 10.

73 Transport Canada cited in Myers, "Mobility in Later Life," 9.

74 Ibid.

75 Scott and others, "New Insights Into Senior Travel Behavior," 144–5; Parker, "City Streets for All."

Transit service in many communities is poor or non-existent.

between destinations and safety and accessibility measures for pedestrians—may play as large a role in walking and cycling patterns as seniors' age and health.

Public Transit

Public transit has the potential to provide transportation for seniors who no longer drive and whose needs exceed what walking can provide, but it does not currently meet that potential. Less than 8 per cent of seniors cited public transit as their main mode of transport, while less than 20 per cent indicated that they had used public transit at least once in the month prior to being surveyed.⁷⁶ Accessibility is a challenge. Many seniors consider alternatives like public transit only when they can no longer drive. But the reasons many no longer drive—i.e., declining health and ability—are also a barrier to using public transit, especially when transit systems lack accommodations, such as ramps and kneeling buses.⁷⁷

Availability is also an issue. Geography and the built environment, as well as political decisions about funding and level of service, shape seniors' opportunities to use public transit. Seniors living in large, dense urban areas—where public transit systems are more viable—were more likely to cite public transit as a main mode of transport (7 to 16 per cent) than seniors outside such areas (4.4 per cent).⁷⁸ Seniors in urban areas were also more likely to use public transit occasionally (25 to 36 per cent) than seniors outside such areas (4 to 16 per cent).⁷⁹ Public transit coverage in Ontario illustrates this challenge. Ontario has 444 municipalities, but only 96 public transit systems.⁸⁰ While some systems serve more than one municipality, service in many communities is poor or non-existent.

76 Turcotte, "Profile of Seniors' Transportation Habits," 13.

77 Ibid., 12.

78 Ibid., 13.

79 Ibid.

80 Lee and Breston, "Community Transportation Pilot Grant Program," 20.

Seniors point to other barriers even when public transit is available and accessible. Seniors surveyed in Scotland, for example, reported concerns about “personal security in evening and at night” (80 per cent), “public transit running late” (68 per cent), “having to wait” (68 per cent), “difficulties carrying heavy loads” (66 per cent), “behaviour of some passengers” (64 per cent), “difficulties travelling where I want to” (50 per cent), and “difficulties travelling when I want to” (48 per cent).⁸¹

Accessible Transit and Specialized Services

Some public transit barriers cited by seniors can be overcome with accessible transport, paratransit, or other specialized public transit services. Unlike conventional public transit vehicles, which run on fixed routes and schedules and often lack accessible features (such as ramps for wheelchairs or walkers), paratransit services offer more flexibility and are more appropriate for seniors with mobility challenges. Yet, availability and use of accessible transit in Canada is low.

The Canadian Community Health Survey shows that accessible transit and taxis were the main mode of transport for less than 3 per cent of seniors between 65 and 84 years of age. Among seniors aged 85 and older, 7 per cent reported accessible transit and taxis as their main mode of transport. Even occasional use of accessible transit was low among seniors. Less than 3 per cent of seniors up to age 84 reported having used accessible transit at least once in the month prior to being surveyed, while 8 per cent of seniors aged 85 and older did so. Turcotte suggests that accessible transit (and taxis) are likely seen by seniors as “options of last resort” given the challenges associated with booking and using them.

Availability is one barrier to greater use of accessible transit. Less than 25 per cent of Ontario’s 444 municipalities, for example, have access to specialized transit services.⁸² In general, specialized transit services are less likely to be found in smaller, rural communities than large urban

81 Gilhooly and others, *Transport and Ageing*, 18.

82 Lee and Breston, “Community Transportation Pilot Grant Program,” 20.

settings. In the Canadian Community Health Survey, among seniors in a census metropolitan area (CMA) or census agglomeration (CA) who needed help with mobility, only 5 per cent cited low availability as a reason for not using accessible transit. By contrast, 49 per cent of seniors who needed help with mobility, but did not live in a CMA or CA, cited unavailability as a reason for not using accessible transit.⁸³

Having a transit system in a community does not necessarily mean seniors have good access. Whether seniors can use specialized services is also a function of the number of registered users per vehicle in a given system. A study of specialized transport services in Ontario found that only 4 of 73 systems had fewer than 50 registrants per vehicle, while 16 systems had 250 or more registrants per vehicle.⁸⁴ Among communities with populations of at least 100,000, Guelph had the highest number of registrants per vehicle at 778. (In fact, Guelph had just two vehicles for 1,556 registrants at the time of the study). With such ratios, it is unlikely that seniors can count on more than one trip per week at best.

Whether such services are affordable is another important question. A survey conducted for the Conference Board found that 64 per cent of those who used, or knew someone close to them who used, community care transportation services regarded them as “affordable,” while 14 per cent regarded them as “unaffordable” (22 per cent regarded them as neither, didn’t know, or offered no response). Of all other community care services considered, respondents ranked transportation services as the most affordable. Fourteen per cent of transportation service users reported spending nothing on such services, while 32 per cent reported spending between \$1 and \$49 per week and 4 per cent reported spending \$50 or more per week. Half either did not know how much was spent or did not respond.⁸⁵ More research is needed on the cost of specialized transportation services for seniors.

83 Turcotte, “Profile of Seniors’ Transportation Habits,” 12.

84 Mercado, Páez, and Newbold, “Transport Policy and the Provision of Mobility Options,” 655, 658.

85 EKOS, *Home and Residential Care Survey*.

The need to book trips early limits the autonomy that could be provided to seniors.

There are also concerns about the fact that many services “prioritize or exclusively provide trips only for employment, education, or medical services.”⁸⁶ Although this is a pragmatic concession to the challenges of low availability, it discounts the importance of seniors’ social trips, which contribute to their overall health and well-being. The need to book trips early—often days in advance—also limits the autonomy that could be provided to seniors with such services.⁸⁷

In light of these challenges, some jurisdictions are looking at ways to improve and integrate services into the suite of transportation options available. For example, the Toronto Transit Commission (TTC) is considering a “Family of Services” strategy that would better integrate accessible Wheel-Trans services with bus, streetcar, and subway options.⁸⁸ By making all options more accessible and preparing more people to use them, the strategy seeks to reduce demand on Wheel-Trans. If successful, an integrated system could give the most challenged commuters priority access to specialized Wheel-Trans services, assist all seniors in meeting more of their transportation needs, and help the TTC manage rising costs in an aging society.⁸⁹

Voluntary Services

To meet gaps in seniors’ transportation options, many organizations, including special care facilities, retirement homes, community centres, volunteer organizations, and businesses, offer free or low-cost services to their clients and other seniors. Given that such services are provided voluntarily or as part of facility services, with little or no cost to users, data on the services provided and their use are scarce. However, a study of seniors in New Zealand found that voluntary and community transport services “did not figure as a major means of transport” for seniors. Only

86 Mercado, Páez, and Newbold, “Transport Policy and the Provision of Mobility Options,” 656.

87 Ibid., 656.

88 Wheel-Trans is a Toronto-area service, managed by the TTC, which “provides door-to-door accessible transit service for persons with disabilities using accessible buses, contracted accessible taxi minivans, and sedan taxis.” TTC, *Wheel-Trans*.

89 Kalinowski, “TTC Wants to Integrate Wheel-Trans Into Rest of Transit”; TTC, *Wheel-Trans*.

1 per cent of respondents cited community transport as their main form of transportation, 37 per cent had used it only rarely, and 62 per cent had never used such services at all.⁹⁰

Although such services have benefits—including low cost for users and governments, and more flexibility than fixed-route public transit—scarcity and barriers to their use limit their potential in a broader system of transportation options for seniors. Challenges for users include “long advance booking times, restricted choice of destinations, [and] limited operating hours.”⁹¹ Moreover, given that many services operate outside formal oversight and regulatory frameworks, users may be unaware of the accessibility, fitness, and insurance status of vehicles when booking or using.

On the Horizon: Automated Vehicles

Automated vehicles (AVs)—more popularly known as driverless cars—have some potential to address the mobility needs of seniors. AV suppliers point to a number of possible benefits, including fewer physical and mental demands on “drivers,” increased safety, and improved mobility in communities built primarily for cars. As recent work by the Conference Board shows, AVs “could play a significant role in preventing 1,600 of the current 2,000 annual road fatalities” in Canada.⁹² Although the reduced fatalities would apply to all age groups, seniors would share in the safety benefits of AVs as drivers, passengers, and pedestrians.

However, there are many issues that require further consideration. AVs alone cannot address the fact that many seniors with physical and mental limitations have difficulty simply getting in and out of vehicles. Others lack the confidence to use AV technology independently and may require personal assistance. There are also questions about whether enabling and encouraging the use of private

90 Davey, “Older People and Transport,” 56.

91 Metz, “Transport Policy for an Ageing Society,” 378.

92 Gill and others, *Automated Vehicles*, ii.

vehicles—rather than public transit and other options—is consistent with policy aims to reduce congestion, promote environmental sustainability, and ensure equitable access to transportation regardless of income and wealth.

While the potential benefits provide strong reason to consider AVs as part of a comprehensive approach to addressing seniors' transportation needs, further research and analysis are needed. The Conference Board of Canada's Centre for Transportation and Infrastructure (CTI) is examining these and other issues related to AVs in research and a forthcoming conference.⁹³

Implications for Policy, Strategy, and Research

Transportation policies and strategies for an aging society must strike a balance between maximizing benefits, minimizing risks, and respecting the rights and dignity of seniors and other citizens. Achieving balance in the face of many variables (e.g., modes of transportation, living arrangements, needs, and behaviours) and constraints (e.g., geography, the built environment, and costs) will require policies and strategies that are multi-faceted and involve many actors. Policies and strategies should aim to support a rich ecosystem of transportation options for seniors, provided by a range of actors.

Additionally, given that transportation options and behaviours are affected by many conditions and decisions not directly related to transportation, it will be important to involve both transportation-focused and non-transportation-focused organizations and stakeholders (including health professionals, urban planners, businesses, and others). As such, emphasis should be placed on good communication and coordination, as well as assessing and discussing non-transportation policies from the perspective of seniors' transportation needs and issues.

93 Information on CTI's research can be found at www.conferenceboard.ca/networks/cti/research.aspx; and information about the AV conference can be found at www.conferenceboard.ca/conf/16-0133/default.aspx.

Policies and strategies to better manage driver cessation are critical.

In all cases, improving transportation for seniors depends on more and better research about needs, patterns of use, and effectiveness of policies and initiatives. Data about seniors' transportation needs and use, for example, are dated and incomplete. The links between aging, health, and transportation needs and use are not entirely clear. And more evidence on the effectiveness of specific initiatives is needed to design better policies and strategies. Still, given what is known, what steps might be considered to improve transportation for Canada's growing population of seniors?

Improve Driver Cessation Policies and Practices

Policies and strategies to better manage driver cessation are critical. If poorly managed, we could see high-risk seniors continuing to drive, while those who do stop might find themselves with significant unmet transportation needs and, as a result, declining health and quality of life. Individuals, families, health professionals, governments, and law enforcement organizations all have roles to play, but need better information and guidance.

More effective driving cessation policies and practices will require clearer standards about what constitutes fitness to drive, as well as guidance for all stakeholders about how to assess fitness and take steps to transition individuals from driving to other modes of transportation. For individuals and families, educational material and public campaigns that point out the signs and risks of driving incapacity would help, as well as ideas about how to manage transitions. For health professionals, clearer and more accurate assessment standards are needed, as well as clarity about their role in managing driver cessation among their patients. In both cases, additional research on best evidence and practices would help.

Governments must continue to set, evaluate, and revise laws, regulations, and practices related to driver cessation. Ontario provides an instructive case. Based on improved research about assessment techniques and the effectiveness of education and restrictions, the province revised its Senior Driver Renewal Program for drivers aged

80 and older in 1996, conducted an in-depth review in 2004, and revised the program again in 2014.⁹⁴ Ongoing program evaluation and revision helps to minimize both the risk of having unfit drivers on the road and the risk of forcing fit drivers off the road—both of which have negative consequences for health and well-being. A key part of governments' role in managing driver cessation, then, is also to continue to fund and support research into the effectiveness of policies, procedures, and practices in this area.

Expand and Enhance Transportation Services

Although many seniors currently, or will soon, require public and accessible transit, availability and accessibility are limited. As Canada's population ages, public transit agencies and governments will need to look at how they can better align routes and frequency of service to seniors' living arrangements and transportation needs. This will require moving away from an almost exclusive focus on the needs of those who commute for work to better consider the transportation needs of others who live and participate in our communities.

Assessing seniors' need for accessible and specialized services, and identifying ways to improve these services, is urgent. Current user-to-vehicle ratios are prohibitive and will worsen unless action is taken to better accommodate the growing cohort of seniors. Better funding and coordination of such services should be considered. Additionally, transit agencies and governments should ensure that good information about the services and how to use them is available to seniors who have stopped, or will stop, driving.

Voluntary transportation services are an important, though arguably less reliable, part of the transportation mix. For seniors in homes and institutions, shuttles and other services are welcome options. But among seniors in private dwellings, knowledge of voluntary services is low and services are often tied to specific destinations that may not be valuable.

94 Myers, "Mobility in Later Life," 23, 25; Purdy and Elzohairy, "Ontario's 80 and Over Program."

Changing the built environment can improve seniors' access to transportation.

Still, improving awareness and coordination could increase use of these services. Providers can offer information at locations frequented by seniors (such as recreation and community facilities), and providers and governments can work together to better coordinate the services that are available.

Ontario's Community Transportation Pilot Grant Program is an initiative to watch. The program "provides financial assistance to Ontario municipalities to partner with community organizations to leverage and coordinate existing local transportation services, so more service can be provided."⁹⁵ If successful, other jurisdictions should look to emulate the program.

Enhance Mobility and Reduce Risk by Improving the Built Environment

Changing the built environment can improve seniors' access to transportation, as well as safety for all. Pedestrian and cyclist safety, as well as better conditions for senior drivers, can be improved through short-, medium-, and long-term initiatives.

In the short term, new and better signs, traffic signals, and lighting would make it easier to navigate roads and sidewalks and be mindful of the presence and safety of others. More seating and public washrooms on pedestrian routes would also make them more suitable for seniors. In the medium term, changes to the design of intersections, as well as introducing traffic calming measures and cycling infrastructure, can further improve safety and navigation for seniors and others.⁹⁶

Many communities in Canada are built for cars, and moving to alternatives will require significant investment and different thinking by developers, urban planners, and governments. Over the long term, transportation for seniors and others could be improved by building housing and shopping/recreation facilities closer together—thereby

95 Lee and Breston, "Community Transportation Pilot Grant Program," 23.

96 Scott and others, "New Insights Into Senior Travel Behavior," 144–5; Parker, "City Streets for All."

creating more opportunities for walking, cycling, and public transit and less need for private vehicles. Additionally, steps to increase urban density can make public transit more affordable and sustainable for governments and users.

Thinking about policies, as well as urban design and development, through both an “age-friendly city” lens and a “universal design” lens would help. As Mercado and colleagues note, we need a “reorientation of policy perspective to better serve an increasing and diverse elderly market.”⁹⁷ The implicit (or explicit) focus on working, car-owning non-senior adults in urban development over the past few decades must give way to a focus on the needs of a rapidly growing senior population.

Age-Friendly Cities and Universal Design

The World Health Organization defines age-friendly cities as those that offer an “inclusive and accessible urban environment that promotes active ageing.” It encourages governments, businesses, and other stakeholders to examine how to improve “eight domains of city life that might influence the health and quality of life of older people,” including outdoor spaces and buildings; transportation; housing; social participation; respect and social inclusion; civic participation and employment; communication and information; and community support and health services.

Universal design is an architectural and development concept that encourages “building products and environments that are inherently accessible to older people, people without disabilities, and people with disabilities.”

Sources: World Health Organization; Parker.

97 Mercado, Páez, and Newbold, “Transport Policy and the Provision of Mobility Options in an Aging Society,” 659.

Greater attention must be paid to the transportation needs of seniors.

Supporting Seniors

Transportation is essential to the health, social participation, and overall well-being of Canada's seniors. Yet, as this briefing reveals, many face transportation challenges. Managing driver cessation, without taking otherwise capable seniors off the road, and ensuring that accessible, appropriate alternatives are available to meet seniors' needs are growing challenges. If aging-in-place and other living arrangements are to remain viable alternatives to institutionalization, greater attention must be paid to the transportation needs and issues of seniors.

Addressing the challenges will not be easy, and the longer we wait, the larger and more complex they will become. At a minimum, we should give much more prominence to the needs and abilities of seniors as we assess and discuss transportation and other policies. In doing so, we will focus attention not only on how to sustain and improve the health and well-being of Canada's seniors, but also on the future health and well-being of all Canadians.

Tell us how we're doing—rate this publication.

www.conferenceboard.ca/e-Library/abstract.aspx?did=8293

Acknowledgements

This report has been prepared by The Conference Board of Canada, under the direction of Dr. Thy Dinh, Director, Health Economics, and Louis Thériault, Vice-President, Public Policy. The report was researched and written by Dr. Daniel Munro, Associate Director, Public Policy Research.

We thank Dr. Julia Markovich for her advice and guidance. The report was reviewed internally by Sheila Rao and Carole Stonebridge. Thanks also go to external reviewers William Denning and Matthew Routley (Ontario Ministry of Transportation); Laurie Unrau and Teresa Snider (Seniors and Healthy Aging Secretariat, Manitoba Health); and Rebecca Chapman (Council of Canadian Academies).

The report was prepared with financial support from the Conference Board's Canadian Alliance for Sustainable Health Care and Centre for Transportation and Infrastructure.

The findings and conclusions of this briefing are entirely those of The Conference Board of Canada and do not necessarily reflect the views of the investors, advisory committee members, or reviewers. Any errors or omissions in fact or interpretation are the sole responsibility of The Conference Board of Canada.

About the Canadian Alliance for Sustainable Health Care

The Canadian Alliance for Sustainable Health Care (CASHC) was created to provide Canadian business leaders and policy-makers with insightful, forward-looking, quantitative analysis of the sustainability of the Canadian health care system and all of its facets.

The work of the Alliance is to help Canadians better understand the conditions under which Canada's health care system is sustainable—financially and in a broader sense. These conditions include the financial aspects, institutional and private firm-level performance, and the volunteer sector. CASHC publishes evidence-based, accessible, and timely reports on key health and health care systems issues.

Research is arranged under these three major themes:

- Population Health
- The Structure of the Health Care System
- Workplace Health and Wellness

Launched in May 2011, CASHC actively engages private and public sector leaders from the health and health care sectors in developing its research agenda. Some 33 companies and organizations have invested in the initiative, providing invaluable financial, leadership, and expert support.

For more information about CASHC, and to sign up to receive notification of new releases, visit the CASHC website at www.conferenceboard.ca/CASHC.

CASHC Member Organizations

Champion Level

Deloitte & Touche LLP
Ontario Ministry of Health and Long-Term Care

Lead Level

Ministère des Finances (Quebec)
Pfizer Canada Inc.
Provincial Health Services Authority (PHSA) of British Columbia
Sun Life Financial
Workplace Safety and Insurance Board of Ontario

Partner Level

Alberta Health	Loblaw Companies Limited
British Columbia Ministry of Health	Mercer (Canada) Limited
Green Shield Canada	The Co-operators Group Limited
Health Canada	The Great-West Life Assurance Company
Johnson & Johnson Medical Companies/Janssen Inc. Canada	Workers' Compensation of Nova Scotia
LifeLabs Medical Laboratory Services	Xerox Canada Ltd.

Participant Level

AbbVie Corporation	Neighbourhood Pharmacy Association of Canada
Alzheimer Society of Canada	The Arthritis Society
Canadian Association of Retired Persons (CARP)	Trillium Health Partners
Canadian Blood Services	Workplace Safety & Prevention Services
Canadian Dental Association	
Canadian Medical Association	
Canadian Nurses Association	
Centric Health	
Consumer Health Products Canada	
HealthPartners	
Innovative Medicines Canada	
Manitoba Health	

About the Centre for Transportation and Infrastructure

The Centre for Transportation and Infrastructure (CTI) is an independent forum and research centre that explores the social, environmental, and economic aspects of transport. CTI brings an interdisciplinary and intermodal perspective to transportation issues that affect us all, whether as members of the business community, policy-makers, or the Canadian public at large. Inspired by approaches and policy measures in other countries, the CTI focuses its research, analysis, and network development on the Canadian context.

Members of CTI have strategic and policy-oriented interests in transportation and are senior-level representatives, thought leaders, and key stakeholders from private sector organizations, government, and academia. Our membership reflects all modes of transportation and engages with issues affecting the movement of people and goods.

CTI's initiatives cut across four priority areas:

- Innovation and disruption
- Mobility
- Climate change
- The infrastructure gap

For more information, please visit www.conferenceboard.ca/networks/cti.

APPENDIX A

Bibliography

Banister, David, and Ann Bowling. "Quality of Life for the Elderly: The Transport Dimension." *Transport Policy* 11, no. 2 (2004): 105–115.

Canadian Institute for Health Information. *Health Care in Canada 2011: A Focus on Seniors and Aging*. Ottawa: CIHI, 2011. https://secure.cihi.ca/free_products/HCIC_2011_seniors_report_en.pdf (accessed September 1, 2016).

Cooper, Peter J., Karen Tallman, Holly Tuokko, and B. Lynn Beattie. "Vehicle Crash Involvement and Cognitive Deficit in Older Drivers." *Journal of Safety Research* 24, no. 1 (1993): 9–17.

Curl, Angela L., James D. Stowe, Teresa M. Cooney, and Christine M. Proulx. "Giving Up the Keys: How Driving Cessation Affects Engagement in Later Life." *The Gerontologist* 54, no. 3 (2014): 423–33.

Cvitkovich, Yuri, and Andrew Wister. "The Importance of Transportation and Prioritization of Environmental Needs to Sustain Well-Being Among Older Adults." *Environment and Behaviour* 33, no. 6 (November 2001): 809–29.

Davey, Judith. "Older People and Transport: Coping Without a Car." *Ageing and Society* 27, no. 1 (January 2007): 49–65.

Dowdall, B. *Feeling at Home: A Survey of Canadians on Senior Care*. Ottawa: The Conference Board of Canada, July 2016. www.conferenceboard.ca/e-library/abstract.aspx?did=8057 (accessed September 1, 2016).

Dudley, D. "The Driverless Car Is (Almost) Here." *AARP The Magazine*, December 2014/January 2015. www.aarp.org/home-family/personal-technology/info-2014/google-self-driving-car.html (accessed September 1, 2016).

EKOS. *Home and Residential Care Survey*. 2014.

Freeman, E., S. Grange, B. Muñoz, and S. West. "Driving Status and Risk of Entry Into Long-Term Care in Older Adults." *American Journal of Public Health* 96, no. 7 (July 2006): 1254–59.

Gilhooly, Mary, Kerry Hamilton, Maureen O'Neil, Jane Gow, Nina Webster, Frank Pike, and C. Bainbridge. *Transport and Ageing: Extending Quality of Life for Older People via Public and Private Transport*. Swindon, England: Economic and Social Research Council, 2002.

Gill, Vijay, Brian Flemming, Paul Godsmark, and Barrie Kirk. *Automated Vehicles: The Coming of the Next Disruptive Technology*. Ottawa: The Conference Board of Canada, 2015. www.conferenceboard.ca/e-library/abstract.aspx?did=6744 (accessed September 1, 2016).

Hauer, Ezra. "In Defence of Older Drivers." *CMAJ* 184, no. 6 (April 3, 2012): E305–6.

Health Quality Council of Alberta. *Supportive Living Resident Experience Survey Report*. Calgary: HQCA, January 2015.

Hermus, G., C. Stonebridge, and K. Edenhoffer. *Future Care for Canadian Seniors: A Status Quo Forecast*. Ottawa: The Conference Board of Canada, 2015. www.conferenceboard.ca/e-library/abstract.aspx?did=7374 (accessed September 1, 2016).

Hull, D., and C. Hymowitz. "Google Thinks Self-Driving Cars Will Be Great for Stranded Seniors." *Bloomberg Technology*, March 2, 2016. www.bloomberg.com/news/articles/2016-03-02/google-thinks-self-driving-cars-will-be-great-for-stranded-seniors (accessed September 1, 2016).

Kalinowski, T. "TTC Wants to Integrate Wheel-Trans Into Rest of Transit." *Toronto Star*, February 21, 2016. www.thestar.com/news/gta/2016/02/21/ttc-wants-to-integrate-wheel-trans-into-rest-of-transit.html (accessed September 1, 2016).

Kelly, Mary, Norma Nielson, and Tracy Snoddon. "Aging Population and Driver Licensing: A Policy Perspective." *Canadian Public Policy* 40, no. 1 (March 2014): 31–44.

Lee, Jeannie, and Barbara Breston. "Community Transportation Pilot Grant Program." *Transportation and Healthy Aging: Issues and Ideas for an Aging Society*. Held at Toronto, April 30–May 1, 2015.

Marottoli, R. A., C. F. Mendes de Leon, T. A. Glass, C. S. Williams, L. M. Cooney Jr., L. F. Berkman, and M. E. Tinetti. "Driving Cessation and Increased Depressive Symptoms: Prospective Evidence From the New Haven EPESE." *Journal of the American Geriatrics Society* 45, no. 2 (1997): 202–6.

Marshall, Shawn. "The CIHR Team in Driving in Older Persons (Candrive II) Research Program." *Transportation and Healthy Aging: Issues and Ideas for an Aging Society*. Held at Toronto, April 30–May 1, 2015.

Mercado, Ruben, Antonio Páez, and K. Bruce Newbold. "Transport Policy and the Provision of Mobility Options in an Aging Society: A Case Study of Ontario, Canada." *Journal of Transport Geography* 18, no. 5 (2010): 649–61.

Mercado, R., A. Páez, D. M. Scott, K. B. Newbold, and P. Kanaroglou. "Transport Policy in Aging Societies: An International Comparison and Implications for Canada." *The Open Transportation Journal* 1 (2007): 1–13.

Metz, D. H. "Mobility of Older People and Their Quality of Life." *Transport Policy* 7, no. 2 (2000): 149–52.

Metz, David. "Transport Policy for an Ageing Population." *Transport Reviews* 23, no. 4 (2003): 375–86.

Myers, Anita M. "Mobility in Later Life: Addressing Safety Concerns and the Needs of Older Canadians." *Transportation and Healthy Aging: Issues and Ideas for an Aging Society*. Held at Toronto, April 30–May 1, 2015.

Parker, Elyse. "City Streets for All: Transportation and Healthy Aging in Toronto." *Transportation and Healthy Aging: Issues and Ideas for an Aging Society*. Held at Toronto, April 30–May 1, 2015.

Purdy, Logan, and Yoassry Elzohairy. "Ontario's 80 and Over Senior Driver License Renewal and Medical Review Programs." *Transportation and Healthy Aging: Issues and Ideas for an Aging Society*. Held at Toronto, April 30–May 1, 2015.

Rapoport, Mark. "Dementia and Driving: A Physician's Perspective." *Transportation and Healthy Aging: Issues and Ideas for an Aging Society*. Held at Toronto, April 30–May 1, 2015.

Scott, Darren M., K. Newbold, J. Spinney, R. Mercado, A. Páez, and P. Kanaroglou. "New Insights Into Senior Travel Behavior: The Canadian Experience." *Growth and Change* 40, no. 1 (March 2009): 140–68.

Siren, Anu, and Sonja Haustein. "Baby Boomers' Mobility Patterns and Preferences: What Are the Implications for Future Transport?" *Transport Policy* 29 (2013): 136–44.

Statistics Canada. *Living Arrangements of Seniors*. 2011 Census of Population. Ottawa: Statistics Canada Catalogue no. 98-312-X2011003, 2012. www12.statcan.gc.ca/census-recensement/2011/as-sa/98-312-x/98-312-x2011003_4-eng.pdf (accessed September 1, 2016).

—. CANSIM table 051-0001. *Estimates of Population, by Age Group and Sex for July 1, Canada, Provinces and Territories*. www5.statcan.gc.ca/cansim/a26?lang=eng&id=510001 (accessed September 2, 2016).

Toronto Transit Commission. *Wheel-Trans 10 Year Strategy*. Staff report, Toronto: TTC, 2016. http://ttc.ca/About_the_TTC/Commission_reports_and_information/Commission_meetings/2016/February_25/Reports/W-Trans_10_Year_Strategy_Update_combined.pdf (accessed September 2, 2016).

—. *Wheel-Trans*. www.ttc.ca/WheelTrans/index.jsp (accessed September 2, 2016).

Turcotte, Martin. "Profile of Seniors' Transportation Habits." *Canadian Social Trends* 93, Statistics Canada Catalogue no. 11-008-X (January 2012).

World Health Organisation. *Global Age-Friendly Cities: A Guide*. Geneva: WHO, 2007.

—. WHO *Global Network of Age-Friendly Cities: Brochure*. Geneva: WHO, 2009.

Insights. Understanding. Impact.



e-Library.

Do you want to have access to expert thinking on the issues that really matter to you and your organization?

Our e-Library contains hundreds of Conference Board research studies in the areas of Organizational Performance, Economic Trends and Forecasts, and Public Policy.



The Conference Board
of Canada

Le Conference Board
du Canada

www.e-library.ca



About The Conference Board of Canada

We are:

- The foremost independent, not-for-profit, applied research organization in Canada.
- Objective and non-partisan. We do not lobby for specific interests.
- Funded exclusively through the fees we charge for services to the private and public sectors.
- Experts in running conferences but also at conducting, publishing, and disseminating research; helping people network; developing individual leadership skills; and building organizational capacity.
- Specialists in economic trends, as well as organizational performance and public policy issues.
- Not a government department or agency, although we are often hired to provide services for all levels of government.
- Independent from, but affiliated with, The Conference Board, Inc. of New York, which serves nearly 2,000 companies in 60 nations and has offices in Brussels and Hong Kong.

Insights. Understanding. Impact.

Managing Mobility: Transportation in an Aging Society

Daniel Munro

To cite this briefing: Munro, Daniel. *Managing Mobility: Transportation in an Aging Society*. Ottawa: The Conference Board of Canada, 2016.

©2016 The Conference Board of Canada*

Published in Canada | All rights reserved | Agreement No. 40063028 | *Incorporated as AERIC Inc.

An accessible version of this document for the visually impaired is available upon request.

Accessibility Officer, The Conference Board of Canada

Tel.: 613-526-3280 or 1-866-711-2262 E-mail: accessibility@conferenceboard.ca

®The Conference Board of Canada and the torch logo are registered trademarks of The Conference Board, Inc. Forecasts and research often involve numerous assumptions and data sources, and are subject to inherent risks and uncertainties. This information is not intended as specific investment, accounting, legal, or tax advice. The findings and conclusions of this report do not necessarily reflect the views of the external reviewers, advisors, or investors. Any errors or omissions in fact or interpretation remain the sole responsibility of the Conference Board of Canada.



The Conference Board
of Canada

255 Smyth Road, Ottawa ON

K1H 8M7 Canada

Tel. 613-526-3280

Fax 613-526-4857

Inquiries 1-866-711-2262

conferenceboard.ca



PUBLICATION 8293 | 8294

PRICE: Complimentary