



# Applying an Equity Lens to the City of Vancouver's Climate Emergency Response Plan



## MPPGA Global Policy Project Final Report

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# I. List of Acronyms

Aging Gracefully across Environments using technology to support Wellness, Engagement and Long Life	AGEWELL
Behavioral Research Ethics Board	BREB
British Columbia Automobile Association	BCAA
City of Vancouver	CoV
Climate Emergency Response	CER
Council of Advisors	COA
Criteria and Alternatives Matrix	CAM
Energy Savings Performance Agreement	ESPA
Family of Service	FOS
Fund to Reduce Overall Cost of Energy	FROCE
Greenest City Action Plan	GCAP
Greenhouse Gas	GHG
Home Adaptation for Seniors Independence	HASI
Home Energy Loan Program	HELP
International Association for Public Participation	IAP2
Intergovernmental Panel on Climate Change	IPCC
Low Carbon Cities Canada	LC3
Master of Public Policy and Global Affairs	MPPGA
National Advisory Council on Aging	NACA
National Seniors Council	NSC
Renewable City Action Plan	RCAP
School of Public Policy and Global Affairs	SPPGA
Seniors Home Adaptation and Repair Program	SHARP
Seniors Rental Housing	SRH
Shelter Aid for Elderly Renters	SAFER
Social Planning and Research Council	SPARC
Société de Transport de Montréal	STM
Toronto Atmospheric Fund	TAF
Toronto Transit Commission	TTC
Transportation Demand Management	TDM
Transportation Master Plan	TMP
University of British Columbia	UBC
University Endowment Lands	UEL

## II. Key Terminology

### Equity

What is equity in the context of climate actions? Whereas equality means to treat everyone the same, equity recognizes that peoples' needs vary and that special measures need to be taken to accommodate those differences. Going beyond actions to remedy inequality or mitigate climate change, effective and sustainable actions to address inequity need to help empower specific groups through systemic changes in economic or social relationships.<sup>1</sup>

### Climate Justice

Rather than purely environmental or physical, climate justice frames global warming as an ethical and political issue. It recognizes that the impacts of climate change will not be borne fairly between people and communities and thus actions to address the climate crisis must also make progress towards equity and the protection and realisation of human rights.<sup>2</sup>

### Seniors

Legally, there is no set age at which a person is considered a senior in Canada. Senior discounts typically start as early as 55 whereas many government benefit programs require a person to be at least 60 in order to qualify. In Vancouver, and for the purposes of this report, residents aged 65+ are considered seniors.<sup>3</sup>

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1 *Employment Equity Act*, Statutes of Canada 1995, c.44.

2 "Climate Justice and Energy," Friends of the Earth International.

3 Social Policy and Projects Division, "Seniors in Vancouver," City of Vancouver, October 2010: 3.





# Executive Summary

# 1. Executive Summary

In 2019, the City of Vancouver took the bold step to join climate-conscious municipalities around the world in declaring a climate emergency. The Climate Emergency Response Plan is the City's next generation of ambitious carbon-cutting policies. In creating the next generation of such policies, the City has focused heavily on the areas of transportation and buildings. Over 95 percent of Vancouver's carbon pollution is the result of burning gas and diesel in private, public, and commercial vehicles, as well as using natural gas for the heating of both buildings and hot water. Redefining how Vancouverites move and build/renovate are top priorities for addressing the climate emergency.

Recognizing that not only the climate crisis, but also many of its solutions, impact those who are already the most vulnerable in society, the City of Vancouver is seeking to update its Climate Emergency Response Plan with considerations of these deep inequalities. Vancouver's department of Planning, Urban Design, and Sustainability has launched a Climate and Equity Working Group to debate, discuss and explore ways to both integrate equity considerations into their ambitious climate change response and build a response that aligns with the needs and priorities of these vulnerable populations.

What is equity in the context of climate actions? Whereas equality means to treat everyone the same, equity recognizes that peoples' needs vary and that special measures need to be taken to accommodate those differences. Going beyond actions to remedy inequality or mitigate climate change, effective and sustainable actions to address inequity need to help empower specific groups through systemic changes in economic or social relationships.

In Vancouver seniors account for six percent of the total population, but this is expected to increase to 23 percent by 2036.<sup>4</sup> Based on Low-Income Measure After Tax (LIM-AT), 21 percent of seniors were considered low-income in 2015.<sup>5</sup> Waitlists for social housing in B.C. have doubled in the past 10 years and across the region, seniors make up the largest portion of social housing waitlists at 37 percent.<sup>6</sup> With low-income seniors occupying such significant percentages across various measures of vulnerability in Vancouver, there is substantial need and opportunity to ensure this population is being considered in planning strategies.

Poverty among seniors is often the result of an accumulation of disadvantages over their lifetime including race, gender, language-barriers, and structural issues. As we age the

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4 Social Policy and Projects Division, "Vancouver City Social Indicators Profile," City of Vancouver, 2019: 22.

5 Ibid.

6 Metro Vancouver Housing 10-Year Plan," Metro Vancouver, 2019: 15



vulnerabilities to unintended policy impacts grows—often due to the worsening of health and cognitive abilities and the reduction in community or family support over time. It can be said that low-income seniors are the most vulnerable people in the whole society, so the UBC Team chose to take on low-income seniors as the research population. To this end, our research applied an equity lens to the City of Vancouver’s Climate Emergency Response Plan to understand and demonstrate how low-income Vancouver seniors are particularly vulnerable to the impacts of generalized ambitious municipal climate policies.

## 1.1. Key Findings

Methods employed to collect the necessary data included global jurisdictional scans, stakeholder interviews and electronically distributed questionnaires. While low-income seniors in Vancouver were the targeted sample population for the study, the research team also had the opportunity to speak with experts and municipal government representatives with direct knowledge of best practices developed in other forward-thinking municipalities. Through engagement in these interviews a number of key insights emerged into how the City of Vancouver could better integrate senior equity into their future climate actions.

**Senior engagement:** Active engagement in all forms of policymaking is one of the easiest methods the city can take to design with senior equity in mind. Early engagement of Seniors is proactive, meaning that the city needs to be the one to inform/approach/consult them. Themes from across jurisdictional scans and interviewees emerged, including the need to engage seniors early and often in policy development, opportunities to design innovative education practices for policy communication, and considering non-standard barriers to program adoption.

**Helping seniors adopt climate initiatives through collaborative approaches:** From consulting low-income seniors in Vancouver we were able to identify themes they raised as their greatest barriers to implementing energy efficient home retrofits and upgrades. Collaboration between the City and third parties was key to the successful implementation of these senior equity-based policies. Low-income seniors who participated in our online questionnaire identified that while they would like to conduct home renovations to improve energy efficiency by 2025 or replace natural gas heating and hot water systems with an electric heat pump system by 2030, lacking the personal financial resources and not having the knowledge or technical guidance to conduct the renovations are the greatest barriers impacting their ability to perform these retrofits.

**Designing with intention:** In formulating their climate action plans, numerous cities have also considered the impacts these new policy decisions would have on vulnerable groups

such as seniors. The following section examines instances of 'best practices' worldwide, where various jurisdictions have already introduced implementations and services that would better accommodate seniors in a more sustainable society. Themes for these design approaches include integrating accommodations and accessibility services, ensuring pedestrian safety, and opportunities to build more comfortable, complete communities.

## **1.2. Conclusions and Recommendations**

We assigned four different criteria to assess the different policy alternatives that were identified in our research and findings. The following criteria were used to determine which alternatives we ultimately recommended: significant emission reduction, addresses senior equity, co-benefits, feasibility. The following recommendations performed the best against these criteria. More specifically, they minimize potential disproportionate impacts low-income seniors may face in light of ambitious climate policies while simultaneously supporting the goals of the Climate Emergency Response. The following four recommendations were identified based on our research and findings with supporting actions for how to achieve progress on these initiatives:

### **Recommendation I: Introduce initiatives that will diversify and strengthen platforms in communicating policy to seniors.**

- Action 1: Form a new division focused on facilitating and implementing an equity lens when the city is implementing and monitoring new policies.
- Action 2: Adopt an independent strategy for policies that accommodate seniors, which works in conjunction with Vancouver's Climate Emergency Plan.

### **Recommendation II: Support financing home retrofits for seniors through supporting third-party collaborations.**

- Action 1: Use non-debt agreements to refine financing systems for energy efficient renovations.

### **Recommendation III: Engage with diverse stakeholders to expand transportation options for low-income seniors.**

- Action 1: Coordinate with TransLink to make public transportation free for low-income seniors.
- Action 2: Partnership with third parties to support community car sharing.



#### **Recommendation IV: Support public and active transportation initiatives by designing spaces with seniors in mind.**

- Action 1: Creation of safer and more welcoming public spaces.
- Action 2: Re-evaluate the efficiency of inter-city transit routes in Vancouver.

Consistently, across all research conducted, the most immediate and foundational way in which the City can ensure that policy is designed with senior equity in mind is to integrate engagement with seniors at all stages of the design process. Local governments have successfully developed innovative engagement projects in the transportation and housing policy space. Exploring the insights derived from interviews with stakeholders and community advocates can illuminate opportunities tailored to the current needs of Vancouver's low-income seniors.

We have indicated that when seniors are considered within a climate action plan, policymakers encounter several common barriers and challenges. Their preference for more traditional mediums will require consultations and surveys to be available in formats other than digital versions. Many seniors will also find adopting new transportation initiatives difficult due to mobility issues and limited financial capabilities to invest in a green-energy vehicle. But most importantly, many seniors are reluctant to change, and may require more gradual changes in their lifestyle to adapt.

Our research has also shown that governments in other jurisdictions have collaborated with third-party actors to address equity concerns, where examples include seeking partnerships to conduct energy-efficient upgrades and providing low-cost alternatives to sustainable transportation. Additionally while Vancouver has already provided effective accommodations to make active transportation and public transit spaces safer for seniors, the City still has room to improve by looking at other cities worldwide for inspiration.





# Introduction and Background



## 2. Introduction and Background

Recalling the warnings of the United Nations Intergovernmental Panel on Climate Change (IPCC), we must take the hard steps towards cutting global carbon emissions in half by 2030 if we want to keep our world's warming to as close to the 1.5°C threshold as possible.<sup>7</sup> With the planet already having warmed by 1°C, and projections based on our current carbon emissions skyrocketing that warm up to as high as 4°C by the end of the century, dramatic action must be taken if we want to avoid the catastrophic impacts this would have on all natural systems on Earth.<sup>8</sup> Spikes in heat-related deaths, longer fire seasons, falling air quality, and rising sea levels pose ever-growing risks to even those lucky enough to reside in some of the world's wealthiest, greenest municipalities.<sup>9</sup>

The City of Vancouver has a long history of climate initiatives. In 2019, the City took the bold action to join other climate-conscious municipalities around the world in declaring a climate emergency. Through this and other related initiatives, Vancouver has already achieved noteworthy success in the fight against climate change.<sup>10</sup> Building upon the success of the Greenest City Action Plan—under which the annual levels of carbon pollution in Vancouver were cut by 12 percent (despite a growing population)—the City is now working to broaden towards a whole-of-society engagement towards carbon reduction.

The Climate Emergency Response Plan is the City's next generation of ambitious carbon-cutting policies. This policy analysis applies an equity lens to the City of Vancouver's Climate Emergency Response plan to understand how low-income Vancouver seniors are particularly vulnerable to ambitious municipal climate policies and what policy instruments can mitigate potentially disproportionate impacts on this equity-seeking group. Other research objectives were to understand what best practices from other jurisdictions can inform policy alternatives for achieving low-income senior equity within Vancouver's ambitious climate policies, and how can achieving equity for low-income seniors advance the goals of ambitious municipal climate policy targets.

What is equity in the context of climate actions? Whereas equality means to treat everyone the same, equity recognizes that peoples' needs vary and that special measures need to be taken to accommodate those differences. Going beyond actions to remedy inequality or mitigate climate change, effective and sustainable actions to address inequity need to help

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7 Valérie Masson-Delmotte et al., eds, "Global Warming of 1.5°C," IPCC, 2018.

8 Ibid.

9 "Climate Emergency Action Plan," City of Vancouver

10 Ibid.



empower specific groups through systemic changes in economic or social relationships.<sup>11</sup> Poverty among seniors is often the result of an accumulation of disadvantages over their lifetime including race, gender, language-barriers, and structural issues. As we age the vulnerabilities to unintended policy impacts grows—often due to the worsening of health and cognitive abilities and the reduction in community or family support over time. It can be said that the low-income seniors are the most vulnerable people in the whole society, so we have chosen to take on low-income seniors as the research population.<sup>12</sup> While there is no universal standard for when one is considered to be a “senior” in Canada, for the purposes of this report residents over age 65 are considered seniors.<sup>13</sup>

From this the UBC Team devised the following problem statement from which to conduct our research:

**“Ambitious carbon-reducing actions in the City of Vancouver’s Climate Emergency Response Plan risk generating unequal burdens, either directly or indirectly, to low-income seniors.”**

To this end, the following report will proceed with a breakdown of our research findings, including testimonials, questionnaire data gathered from Vancouver seniors, and scans of Canadian and international jurisdictional best practices, before concluding with our team’s recommendations.

Over 95 percent of Vancouver’s carbon pollution is the result of burning gas and diesel in private, public, and commercial vehicles, as well as using natural gas for the heating of both buildings and hot water. Therefore, reducing emissions from transportation, and building construction and renovation are the two top priorities for the City to address the climate emergency. For this report the City of Vancouver’s Planning, Urban Design and Sustainability Department requested that the research focus on the transportation and buildings and renovation initiatives outlined in the Climate Emergency Response Plan.

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11 *Employment Equity Act.*

12 *Ibid.*

13 “Climate Justice and Energy,” Friends of the Earth International.

## 2.1. The City of Vancouver's Climate Emergency Response Plan

The City of Vancouver has a long history of climate initiatives. The first report called “Clouds of Change” was released on October 16th 1990 and it has been followed by dozens of initiatives and policies afterwards. The City of Vancouver's Climate Emergency Response Plan is its latest initiative.<sup>14</sup> It was approved by Council on April 29, 2019. The Plan amplifies and builds on past progress to reduce carbon pollution, improve energy efficiency, and transition to renewable energy. The Plan classifies its actions into six different “buckets” where five of those six are related to either transportation, housing, or both. As previously mentioned, these two sectors also account for approximately 95 percent of Vancouver's carbon emissions, which makes it ideal to focus on the “how we move” and “how we renovate” aspects of the policy. The City is currently developing the Climate Emergency Response Action Plan, the detailed actions for the next five years.

### 2.1.1. How We Move

In the City's Climate Emergency Response Plan, how people and goods are transported around the City has been identified as one of the most significant systems to address when tackling Vancouver's carbon footprint. Serving as a nexus for several urban planning and sustainability challenges, how the City addresses resident's transportation needs will have diverse consequences on air quality levels, congestion, efficiency, and community health and wellness.

As walking, cycling, and public transit provide the dual benefits of being both lower carbon emitters and more efficient modes of transportations, creating a city that facilitates the ability for residents to embrace these modes of sustainable transportation is key to carbon-cutting success.

Facilitating this shift is larger than just a change in infrastructure. This transformation requires identifying ways in which to redesign our communities in ways that facilitate safer, healthier, and greener practices for Vancouverites daily activities.

Building on and accelerating the ambitious strategic vision of Transport 2040, the following targets have been identified by the City of Vancouver as goals to target as the City redesigns “How We Move”.

**Target 1: By 2030, 90 percent of people live within an easy walk and roll of their daily needs.** To achieve this target, the City must work to understand how to support

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14 “Climate Emergency Action Plan:” 11–20.

empowering as many people as possible to make their daily trips by walking or rolling. This requires City planners to understand both what amenities Vancouverites include as a part of their daily needs, and how to improve the enjoyability and safety of these trips.

**Target 2: By 2030, two-thirds of trips in Vancouver will be by active transportation and transit.** To be successful with this transition, Vancouverites of all ages and abilities—across all income levels and community needs—must be supported with inclusive incentives. This will require strategic transitions of a portion of Vancouver’s current vehicle travel and parking lane space to grow the space available for public transit, walking/rolling, and cycling trips.

**Target 3: By 2030, 50 percent of the kilometers driven on Vancouver’s roads will be by zero-emissions vehicles.** In achieving this target, affordable transitions to zero-emissions vehicle travel have to consider travel beyond private vehicle trips. This target expands the City’s ambitious carbon reduction targets to include freight/heavy-duty purposes, the increase in trips from the growth in online shopping deliveries, and ride-hailing services.

### 2.1.2. How We Build

Reducing emissions from buildings is another top priority in Vancouver’s Climate Emergency Response. Nearly 60 percent of Vancouver’s carbon pollution comes from burning natural gases for heat and hot water in buildings. Emissions are also produced when manufacturing construction materials such as cement and steel.<sup>15</sup>

Therefore, the focus of reducing carbon emissions from buildings is to first replace natural gas with environmentally friendly or renewable energy to heat homes and provide hot water, and secondly, use better building materials and construction techniques to reduce the waste of energy.

To reduce emissions from buildings and renovations, the City of Vancouver has highlighted two main targets in the Climate Emergency Action Plan.

- **Target 1: By 2025, all new and replacement heating and hot water systems will be zero emissions.** The City is trying to achieve this goal by providing easier access to and encouraging residents to upgrade the energy system in the home. The City will apply the Zero Emission Building Plan to new construction to avoid future retrofit. The City will develop a Zero Emissions Retrofit Strategy to support home upgrades. Vancouver is providing a \$2,000 or \$6,000 top-up to renovation rebates through CleanBC Better Homes and Home Renovation Rebate Program for residents who upgrade the fossil fuel

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15      Ibid.



(oil, natural gas, or propane) heating system to an electric air-source heat pump. The offer respects the first come first serve principle, the eligible residents need to apply online through the CleanBC website. It is noteworthy that apartments are not eligible for rebates.<sup>16</sup>

- **Target 2: By 2030, the embodied emissions from new buildings and construction projects will be reduced by 40 percent compared to a 2018 baseline.** The City is prompting the use of low carbon and recycled materials in new buildings by setting rules, removing barriers, and supporting people with the sustainable mindset to build green communities.

## 2.2. Demographic Description

According to BC Stats Population Projection, the total population of Vancouver in 2020 is 707,962. The senior population has been growing and will continue to grow. Currently there are 114,181 seniors in Vancouver, accounting for 16.1 percent of the total population. In 2010, 80,736 people were 65 or older, accounting for 12.8 percent of the total population at that time. From 2010 to 2020, the proportion of the senior population increased by 3.3 percent. It is estimated that by 2036, seniors will account for 22 percent of the total population, meaning that by then more than one-fifth of the population will be seniors.<sup>17</sup>

By neighbourhood, Renfrew-Collingwood, West End, and Downtown have the largest number of seniors, with 7,936, 6,986, and 6,761 seniors, respectively. But Arbutus, Oakridge and Strachcona have the highest proportions of the senior population at 22.8 percent, 22.3 percent and 22.1 percent, respectively.<sup>18</sup>

The Census in 2016 shows that immigrant residents accounted for 42.5 percent of the total population in Vancouver. Immigrants aged 65 or over made up 23.6 percent of Vancouver's total immigrant population, while 3.7 percent of recent immigrants were 65 years old and over. China was the largest country of origin of total and recent immigrant populations in 2016, accounting for 25.4 percent of the total immigrant population and 25 percent of the recent immigrant population.<sup>19</sup> Meanwhile, 27.7 percent of the total population stated that they spoke a non-official language most at home.<sup>20</sup> For a detailed breakdown of senior

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16 "Vancouver Heat Pump Top-Up," CleanBC, 2019.

17 "BC Population Projections," BC Stats.

18 "Census Profile, 2016 Census: Vancouver [Census metropolitan area], British Columbia and British Columbia [Province]," Statistics Canada, 2017.

19 "Immigrant Demographics Vancouver, BC," NewtoBC, 2018: 8.

20 "Census Profile, 2016 Census: Vancouver [Census metropolitan area], British Columbia and British Columbia [Province]."

## A word on the approach to our demographic

It is important to recognize and understand the physical, sensory and perceptual, and cognitive changes associated with aging and the diversity amongst older adults regarding their experience of these changes. Multiple extrinsic and intrinsic factors have been found to contribute to the effects of aging on a person's physical and cognitive abilities. For example, extrinsic factors include factors such as exercise, nutrition, physical injuries, whereas intrinsic factors include the individual's genetic makeup and susceptibility to diseases. Due to the diversity in expression and onset of these changes, the research team has elected to use a "Universal design" approach to our research and analysis. By taking this approach, we are designing our recommendations with consideration towards the oldest and most impacted members of the senior populations. This allows for the incidental capture of all of the potential age-related changes that may impact an individual over the course of their lifetime—expanding the breadth of peoples who are assisted by these improved accessibility and engagement measures.<sup>23</sup>

populations in the communities of Vancouver, refer to the map on the next page.<sup>21</sup>

Based on Low-Income Measure After Tax (LIM-AT), 21 percent of seniors were considered low-income in 2015. Moreover, in 2016, 29 percent of the seniors in Vancouver lived alone. Although the ratio is the same as in 2006, the population of seniors living alone has actually increased due to the increase in population.<sup>22</sup>

Overall, the growing population, the diverse cultural background, and the relatively large proportion of low-income population of seniors in Vancouver remind the City that considering the needs of seniors when formulating policies is critical to ensuring equitable and successful climate policies. For an additional note on how we approach our demographic, refer to the callout box on the side.<sup>23</sup>

## 2.3. Stakeholder Analysis

The City of Vancouver's mission is to "create a great city of communities that cares about [its] people, [its] environment, and [its] opportunities to live, work, and prosper."<sup>24</sup> Vancouver's governing body is City Council. The current mayor, Kennedy Stewart, sits on council and is accompanied by ten elected councillors to each serve a four-year term. The Vancouver Charter governs the City and grants Vancouver greater powers than other B.C. municipalities. Vancouver's council powers include the ability to pass by-laws,

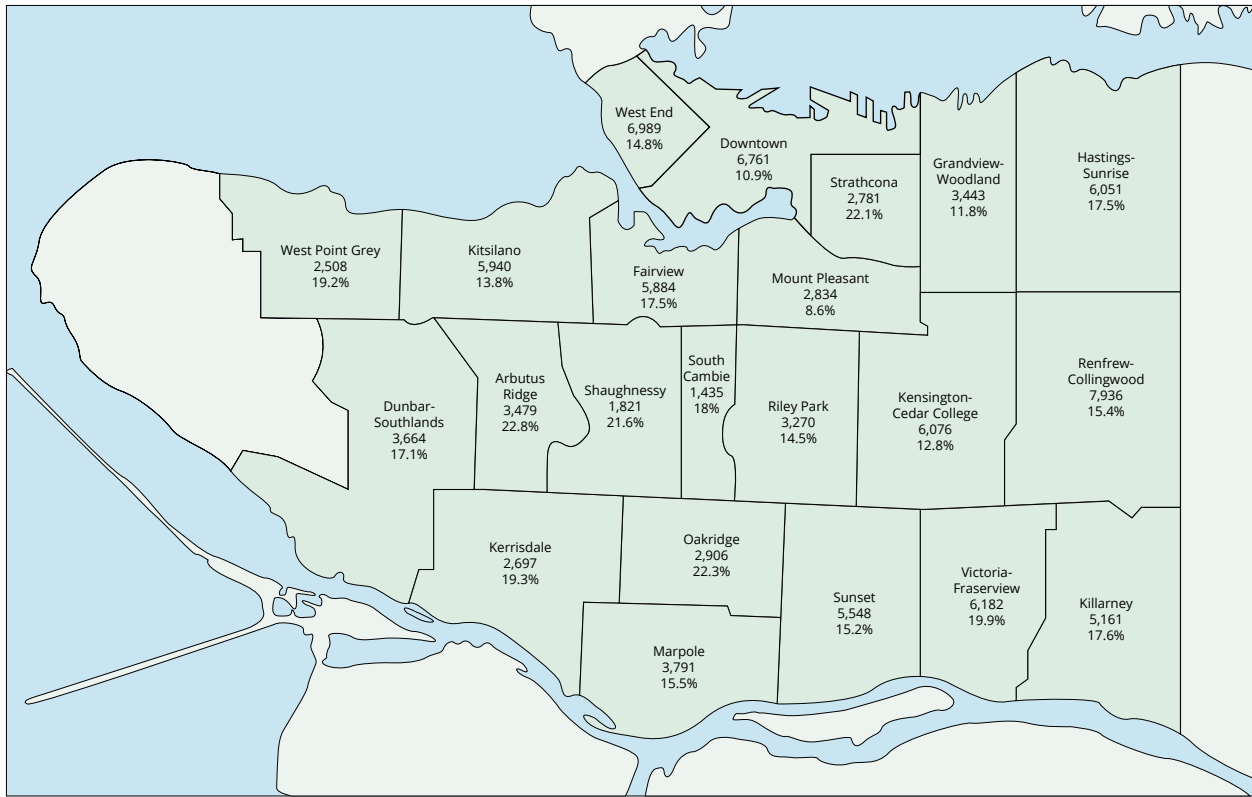
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21 Ibid.

22 Social Policy and Projects Division, "Vancouver City Social Indicators Profile," City of Vancouver, 2019: 22.

23 **Callout Box Source:** Lili Liu and Robert Lederer, "Aging and Ergonomics," in *Ergonomics for Rehabilitation Professionals*, ed. Shrawan Kumar (Taylor & Francis Group, 2009): 105-106.

24 "Mission and Values," City of Vancouver, 2020.



**Figure 2.1: Vancouver Senior demographic breakdown by each neighbourhood**

buy and sell property, collect taxes, give grants, approve expenditures, and take on debts.

### Transportation Governance in Vancouver

Transportation is a complex, multi-tiered subject, with issues often sprawling beyond the borders of any municipal jurisdiction and occupying space on the desks of numerous overlapping actors. While being only one member of this intricate network of partners, the City of Vancouver (the ‘City’) maintains several active tools and mechanisms through which they can influence changes in transportation.

While things like transit provision, ports, and broader infrastructure planning fall under various regional, provincial, or federal jurisdictions, the City retains primary control over local infrastructure and land use—controlling much of the built environment that supports the transportation system.

The City’s role in transportation includes:<sup>25</sup>

25 Vancouver City Council, “Transportation 2040,” City of Vancouver, 2012: 5–6.



- Building, designing and maintaining all City-owned rights-of-way and public infrastructure. This includes streets, sidewalks, and other public spaces.
- Guiding the development of private property through land use and urban design policies/guidelines
- Managing how City streets are accessed and used through a combination of municipal rules, regulations, and policies.
- Advocating and partnering with external groups to achieve mutual goals at the regional level. This is done through various avenues such as bilateral consultations, City-led working groups, and active participation at the Mayor’s Council on Regional Transportation.
- Empowering Vancouver citizens through education and opportunities to make more sustainable transportation choices.
- Being a Leader by providing a positive model of local governance that can be modelled around the world.

## **Building Governance in Vancouver**

The city council has absolute decision-making power in building legislation and regulations. B.C. Building Codes do not apply to the City of Vancouver. The Vancouver Building By-law 2019 is based on the British Columbia Building Code 2018 and includes the unique to Vancouver By-law provisions regulating the design and construction of buildings in the City of Vancouver.<sup>26</sup> It is worth noting that the University Endowment Lands (UEL) located in the west of the City of Vancouver, is administered directly by the Government of B.C. instead of by the City.<sup>27</sup>

The City’s role in buildings includes:<sup>28</sup>

- Work with the public to reduce the waste generated through constructing and renovating
- Review permit applications, and enforce regulations in a fair and consistent manner
- Work hard to decrease the length and complexity of the permit process by introducing online services and more efficient processes
- Enforce procedures to protect historic buildings and our urban forest during development and renovations

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26 “City of Vancouver By-Laws,” British Columbia Codes.

27 “About,” University Endowment Lands, 2020.

28 “Building and Renovating,” City of Vancouver.



# Research Findings



### 3. Research Findings

The research explored three key areas of interest. First, it was critical to establish a better sense of how low-income seniors are particularly vulnerable to experiencing inequitable burdens under ambitious carbon-cutting programs. Second, best practices developed across other Canadian and international jurisdictions were identified to inspire our innovative solutions to alleviate these burdens. And, finally, through acknowledging that when one helps the most vulnerable we can help all of society, we investigated how achieving greater equity for low-income seniors can assist in the broader achievement of Vancouver's ambitious climate targets. Each of these areas of interest was explored under its research question throughout the fieldwork and jurisdictional scans completed by the research team.

Methods employed to collect the necessary data included global jurisdictional scans, stakeholder interviews and electronically distributed questionnaires. While low-income seniors in Vancouver were the targeted sample population for the study, the research team also had the opportunity to speak with experts and municipal government representatives with direct knowledge of best practices developed in other forward-thinking municipalities. These interviews provided many insights and were especially illuminating regarding the development of whole-of-government approaches to equity integration and alternative financing models to support some of the report's recommendations. Together these interviews and questionnaire responses supported the recommendations and overall research into the three areas of interest.

As a university research team working with the City of Vancouver, we were immediately aware of several barriers to full engagement with our study demographic. Institutionally, the University of British Columbia's Behavioural Research Ethics Board (BREB) necessarily constrained engagement with low-income seniors through rigorous UBC guidelines that intend to protect research populations from exploitation. In addition, the constraints imposed on our team by the Ethics Board were compounded by two population characteristics of low-income seniors—namely—a deficit of trust and an immense desire for privacy. With none of our research team members coming from the target demographic, we relied heavily on the assistance of intermediaries (advocacy groups, seniors centres, other seniors, etc.) to aid with connecting us to the community. In addition, the senior demographic—due to issues of generational standards, safety concerns, and general vulnerability due to the power differential—are naturally very private when it comes to sharing data regarding their financial state and living situation.



## 3.1. Senior Engagement

Active engagement in all forms of policymaking is one of the easiest methods the city can take to design with senior equity in mind. The following section provides an overview of the recent action plans and initiatives developed by the City in the transportation and housing space for seniors.

### Profile of Current Actions in the City of Vancouver

The City of Vancouver has a history of direct involvement in policy making for seniors. In 2013, with a vision to create a safe, inclusive and engaging City for seniors, the City of Vancouver introduced the Age-Friendly Action Plan 2013–2015.<sup>29</sup> The plan was a series of 60 and more actions that the City would take to improve facilities and services for seniors, those who are more vulnerable and need additional support. The process of developing the plan involved 400 participants, out of which 51 percent were in the age bracket of 65–80, seven percent were over the age of 81 and 24 percent were in the age bracket of 55–64.<sup>30</sup> Opportunities identified for the city included enhancing mobility, making information about supports and services for seniors accessible and building community capacity. The City also identified its vital role in advocating on behalf of older adults in Vancouver and facilitating partnerships with other levels of government and community stakeholders. The focus was established on housing, medical and social supports, mobility and basic needs. In terms of the physically built environment, the plan implemented a range of affordable and supportive housing options to meet diverse needs of seniors and identified key locations for bus shelters for seniors, in partnership with the Planning Staff.

**The city also identified its vital role in advocating on behalf of older adults in Vancouver and facilitating partnerships with other levels of government and community stakeholders.**

Moving forward, the City currently plays a vital role in seniors support, outreach and networking throughout Vancouver.<sup>31</sup> Since most of the senior centres are important resources for Vancouver seniors, a number of them are supported either through grants or by providing buildings or operating space. Some of the services provided

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29 “The Age-Friendly Action Plan 2013-2015,” The City of Vancouver, 2013.

30 Ibid., 5.

31 “Seniors support, outreach and networking,” City of Vancouver.

are peer counselling, English, Chinese and indigenous speaking drop-in programs, and outreach for isolated or homebound seniors. Yet, despite the quality of these existing engagement programs, questionnaire respondents and interviewees alike helped identify areas where the City can continue to grow and deepen its engagement.

The following section provides an overview of how local governments have successfully developed innovative engagement projects in the transportation and housing policy space. It explores the insights derived from interviews with stakeholders and community advocates about where the City could expand new engagement opportunities tailored to the current needs of Vancouver's low-income seniors.

### **3.1.1. Engaging seniors early and often in planning and policy**

At both the national and provincial levels, Canada has a network of programs, working groups, networks, and policies to learn from when it comes to senior consultation and engagement.

#### **A. Senior Equity and Advisory Committees in Canada**

Nationally, Canada has several mechanisms in place for incorporating senior equity in planning and development. At the federal level there is the National Seniors Council (NSC) which provides advice to federal departments on issues concerning senior citizens. Currently the NSC is implementing

### **Growth of Information Ecosystem through Publicly-funded network development: AGE-WELL**

AGE-WELL (Aging Gracefully across Environments using Technology to Support Wellness, Engagement and Long Life) is a network of more than 250 researchers from 42 universities and research centres across Canada dedicated to the creation of technologies and services that benefit older adults and caregivers. Their aim is to help Canadian seniors maintain their independence, health, and quality of life through the development of a community of researchers, seniors, caregivers, partners, and policy leaders that "accelerates the delivery technologies and services that increase their safety and security, support their independent living, and enhance their social participation."

Launched in 2015 through the federally-funded Networks of Centres of Excellence (NCE), AGE-WELL addresses a wide range of complex aging and design issues through "receptor-driven transdisciplinary research, training programs, partnerships, knowledge mobilization and the commercial development of technologies". With close to 400 industry, government and non-profit partners having joined AGE-WELL, their researchers often consult local municipalities on senior engagement and advise governments on how to design inclusive, senior-friendly cities.<sup>35</sup>

a three-year work plan (2018–2021) which focuses on four key priorities determined by the Minister of Seniors and the Minister of Health: identify measures to reduce crimes and harms against seniors; consider federal and provincial strategies for including senior consideration if a national seniors strategy were to be developed; use existing age-friendly or healthy aging perspectives to provide advice on better senior focused initiatives; and identify measures for counteracting ageism.<sup>32</sup>

In 2009 the NSC submitted a report to the Minister of Human Resources and Skills Development, the Minister of Health, and the Minister of State (Seniors) on the problems and barriers faced by low-income seniors. Roundtables were held to enable the NSC to better understand the experiences of low-income seniors and the challenges they face. Notably, the report highlighted housing as a key issue of importance and makes specific recommendations for how the Government can create safe, affordable and appropriate housing for seniors, how to fund and promote awareness of home adaptation initiatives and supporting living programs, and examine the implementation of home maintenance programs to supplement low-income seniors with assistance.<sup>33</sup>

The National Advisory Council on Aging (NACA) also frequently offers advice to the Minister of Health. The NACA serves to stimulate public conversation on aging, provide recommendations for remedial action on behalf of seniors, and maintain cross-functional relationships with various levels of governments, associations, institutions and groups involved in representing seniors.<sup>34</sup> Through the development of an ecosystem of engagement, best practices, and community experience, policy lessons can be transmitted across networks allowing the City to both learn from and teach others. Another similar organization is AGE-WELL, a research network dedicated to innovating technologies for seniors. See the callout boxes on the previous page for more information.<sup>35</sup>

At the provincial level, the Council of Advisors (COA) at the Office of the Seniors Advocate monitors issues in British Columbia and makes recommendations to the government to improve services for seniors while addressing systemic issues.<sup>36</sup> Similarly, the City of Vancouver has a Senior's Advisory Committee to advise the Council on how to enhance access and inclusion for seniors. This direct involvement of the city in policy making for seniors is a vital part of its seniors support, outreach and networking initiatives. Comparable initiatives across Canada include Alberta's Seniors and Continuing Care Advisory Council, Winnipeg's Age-Friendly and Seniors Advisory Committee, the Seniors

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32 "National Seniors Council work priorities," Government of Canada, 2019.

33 "Report of the National Seniors Council on Low Income Among Seniors," Government of Canada, 2009.

34 "National Advisory Council on Aging (Canada)," Ontario Human Rights Commission.

35 "About", AGE-WELL NEC, 2020.

36 Seniors Advocate BC.



Council of Nova Scotia, Newfoundland's Provincial Advisory Council on Aging and Seniors, Ontario's Ministry for Seniors and Accessibility, and Prince Edward Island's Seniors' Secretariat.

## B. Engagement practices specific to seniors

Best practices scans at an international level showed efforts to address and deliver senior equity in community engagement initiatives. One such example found is in Sydney where the engagement efforts of a community engagement group received very convincing feedback from its participants. What the City of Sydney has been doing is emphasizing inclusivity. First, it identifies all the diverse communities in the city (Aboriginal communities, tenants in social housing, youth and older population, people with disabilities, etc.). Then, the city approaches these groups with centralized resources and a vision forward. Sydney officials subsequently undertake engagement across five tiers, each depicting increasing influence that the public can have on an outcome based on the International Association for Public Participation's IAP2 spectrum of public participation.<sup>37</sup> Upon completion of any community engagement process, the City of Sydney collects information on the success and effectiveness of the engagement and provides feedback to participants on the results of their contributions. Reports on the process are provided to the public via an online platform categorized by project. In the end, 80 percent believed their contribution made a difference, while 96 percent reported expectations were met and would participate in the future.<sup>38</sup>

By taking the time to reflect on the community engagement process, the City of Sydney can better understand what works and what needs to be reworked for the next project.

In short, some key considerations that the City of Sydney applies are:

- **Representativeness:** making sure that the engagement groups adequately represent the citizens, especially the communities targeted by the policy. This is done in multiple ways. One is by creating advisory panels and groups that consist of people representing certain characteristics of the population. Another method is by random-selection surveys to make sure that each person has equal chance of their voices being heard. The last one is by forming citizen juries that recruit participants targeted to reflect the diverse demographics of the community.<sup>39</sup>
- **Various Engagement Methods:** the City of Sydney provides many engagement mediums for the citizens. These include an online survey, websites, mobile app, and a

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37 International Association for Public Participation, "Spectrum of Public Participation," 2007.

38 "Inclusive Climate Action in Practice," C40: 38-44.

39 "Our approach to engaging the community," City of Sydney: 1-4

neighbourhood pop-up.

- **Engagement Guidelines:** telling people step-by-step how to utilize the engagement media.
- **Centralized Pool:** Community Consultation is a department launched by the City of Sydney that provides a centralized resource for community engagements across Sydney.

**96 percent of the participants reported that their expectations were met and would participate again on future engagement while 80 percent believed that their contribution would make a difference.**

Another good example of engagement practices at the domestic level aimed to target the ‘underserved’ population in Canada was done by Canadian Partnership Against Cancer in 2019. They held 13 deliberative-style small group dialogues in partnership with community-based organizations that serve ‘underserved’ or vulnerable populations: seniors, new immigrants, persons living on low incomes, 2SLGBTQ+ community, racialized peoples, minority language communities, and those living in remote or northern communities. These dialogues were held in a safe space and the process design and all materials were developed in collaboration with community partners to ensure they were accessible so that it would foster inclusive participation from disadvantaged persons.<sup>40</sup>

This inclusive underserved engagement approach includes:<sup>41</sup>

- **Key informant interviews:** A series of key informant interviews with experts and frontline practitioners in diverse and inclusive engagement to identify best practices in P2 with vulnerable populations on complex policy issues.
- **Partnership development:** Identification of potential partners that would be able to help reaching and engaging the target audiences.
- **Process design co-creation:** Development of a flexible process design for a 2.5-hour community dialogue that would allow each partner and participant audience to focus on the stories, concerns and ideas most important to them.
- **Participant “Conversation Guide” co-design:** Development of an interactive

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40 “Canadian Strategy for Cancer Control,” Canadian Partnership Against Cancer, 2019: 14.

41 Ibid.

“Conversation Guide” tool that helped participants learn more about the issue written in highly accessible language (the Guide was developed with help from partners).

- **Partner-led community outreach:** Participant recruitment led by the partners.
- **Dialogue facilitation:** Facilitation of a series of thirteen (13) community dialogues across Canada, in culturally and geographically diverse locations.
- **Reporting back:** Report back to participants, through partners, on how their participation had influenced the new cancer control strategy.

Employing best practices as well as new approaches to engagement with policy problems could lead to innovative solutions for longstanding issues. What an interactive and engaging process looks like if one is focused on seniors' viewpoints could look different from a mainstream engagement approach. This was explored during an interview with Dagmar Timmer from the environmental think-and-do tank One Earth. She suggested that policymakers can use different modes for engaging with seniors, including in person, telephone, or by hosting where seniors usually are located, such as community centres or senior homes. Online surveys or in-person workshops may be inaccessible or inconvenient for seniors. Additionally, since they belong to a vulnerable demographic, seniors may prefer more privacy and convenience than other age demographics.

In addition, when identifying ways that seniors might take climate action, City consultants can consider unique opportunities and challenges. For example, seniors may already hold skills that are helpful in this transition, such as repair skills, which can be shared with others. With other skills or capacities, seniors may find it challenging to learn something new, especially if they are facing reduced physical and mental capabilities. Certain habits or traditions could be tied to ceremonial or symbolic roles seniors might have within their family or community, leading to push-back if not acknowledged. An example could be a special meat-based meal when presented with advice to explore more plant-based options.

Furthermore, in an interview with Tanya Paz, a local transportation consultant, the team's attention was brought to the fact that seniors may be overconfident in their ability to get around safely on public transit and as such pose a high risk of injury to themselves--for example, situations where due to limited amount of time, seniors stand up from their seated positions before vehicles have actually reached their stop. Potential solutions include public campaigns to remind seniors to be aware of their own safety, and new policies for transit operators allowing greater time to exit. Additionally, she also looked to privately owned and operated vehicles, expressed her concern with the reduced driving abilities of seniors, who place both themselves and the public in danger.

Early engagement of seniors is proactive, meaning that the city needs to be the one

to inform, approach and consult them. In the UBC Team's online questionnaire, when asked how respondents heard about The City of Vancouver's sustainability initiatives the most common response was that any knowledge of the initiatives were learned from the questionnaire itself. No respondents indicated they learned of the current climate initiatives through the City of Vancouver's website or staff. This highlights that engaging senior communities will be key to building capacity and disseminating knowledge of the City's climate initiatives. An effective senior engagement strategy discussed was to employ a peer approach to empower seniors to participate. Fellow seniors should be encouraged to volunteer and help bridge the gap between the city and the seniors, since seniors are more likely to speak to fellow seniors who have had relatable experiences. This approach would also help to promote a sense of representativeness by having senior volunteers in a team responsible to talk to seniors. A more comprehensive approach would be to incorporate language proficiency as seniors would be more eager to talk with those who speak to them in a familiar language. Moreover, senior volunteers/peers should be offered incentives to participate such as stipends and meals.

### C. General engagement practices

Looking at general engagement practices at the domestic level, in 2016, an Engagement and Equity Report was drafted by TransformTO to support Torontonians to help achieve emission reduction goals.<sup>42</sup> The report identifies a need to engage individuals which belong to groups that are typically disempowered due to their ethnic background, socioeconomic status, age, ability, or gender. After the successful TalkTransformation, online engagement and outreach, some of the key initiatives taken under the second phase of engagement included developing an ethnic media strategy with key messages in various languages, conducting outreach in places where there is less community participation, using infographics to communicate information about GHG emissions to both the public and blending technical knowledge and community expertise. A more comprehensive breakdown can be found in the callout box on the next page.

**No respondents indicated in the UBC Team's questionnaire that they learned of the current climate initiatives through the City of Vancouver's website or staff.**

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42 Maria C. Martelo, "Engagement + Equity TransformTO," City of Toronto, 2016: 4.



## What makes the second phase of TransformTO a ‘Best Practice’?

Firstly, impressive initiatives were implemented such as LiveGreen Toronto’s Community Animators strategy. LiveGreen equipped marginalized groups with the necessary skills to understand GHG emissions, while allowing the City to build networks within communities offering less participation. Specific districts in Toronto were assigned animators to disseminate information based on geographic needs.

Secondly, TransformTO constructed a ‘free-learning’ area inspired by the initiative called ‘Roaming Table’ as part of the Detroit Works Plan. A series of engagement methods were designed to disrupt everyday lives of people such as outside parks, stores and banks, to reach out to untapped audiences for their input.

Thirdly, TransformTO facilitated other public engagement strategies such as community learning and dialogue which includes Participatory Emissions Budgeting to evaluate carbon reduction actions by creating realistic situations, story mapping, online games, arts as a mode of engagement and arts installations.

Aside from its Engagement Strategy, Toronto currently has a team known as the People, Equity and Human Rights Division that have developed internal programming to facilitate cross-department understanding of equity and how individual staff members can apply the equity lens to their outputs.<sup>43</sup> This internal, whole-of-government, capacity-building approach has been highlighted as one of the city’s more successful equity initiatives. Both the Engagement Strategy and equity department are potential inspirations for Vancouver in forming policies that would assist vulnerable seniors.

The City of Vancouver should make an effort in consulting with seniors, which includes early identification of reasons that may discourage behavioural changes. This allows for early design corrections or post-implementation education programs to help seniors transition into new programs and patterns and ensure a comprehensive representation.

### 3.1.2. Innovative education models for inclusive policy communication

Strategic communication is vital for smooth diffusion of policy and program adoption. Some effective local Canadian examples include the Burnaby Senior Citizens’ Resource Guide leads by example as it is the only complete senior’s guide in the Lower Mainland that includes information about programs, benefits, agencies and services available to seniors.<sup>44</sup> In 2018 Burnaby Public Library’s Home Library & Accessible Service

delivered information about programs, benefits, agencies and services available to seniors and others in group homes and in their own homes, providing personalized reading

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43 Omo Akintan, “People, Equity, and Human Rights,” City of Toronto, April 23, 2019.

44 “Services for Seniors,” City of Burnaby.

recommendations and technology help.<sup>45</sup> Edmonton follows closely in similar initiatives by providing websites which offer complete information about private Alternative Transportation Services.<sup>46</sup>

On an international level, the UBC Team found that the City of Barcelona has a program called “Energy Advice Point”<sup>47</sup> which provides a specialist office where the public receives information and assistance for exercising their energy rights. This program further aims to educate the public on topics such as energy consumption, energy efficiency and energy bills through a set of tools and best practices. The end goal of the program is to enable the citizens to understand more about energy so that they can make a more sustainable decision in the future.

Boston follows closely by focusing on ensuring facility operators from Boston and surrounding municipalities are equipped to make city-owned buildings perform at their highest level. The City is going to work with its contractor to expand outreach to minority contractors and increase compliance with the Boston Resident Jobs Policy. An additional municipal Building Operator Certification (BOC) training is also planned in the future to address the same.<sup>48</sup>

Overall, policies that focus on better engagement strategy and increase community’s understanding about the climate emergency issues should assist the City of Vancouver in indirectly reducing the disproportionate impact of climate on low-income seniors. Understanding what the low-income seniors need and how to communicate that to the land and buildings developers is important in achieving the equitable climate actions.

### **3.1.3. Considering non-standard barriers to engagement**

One of the most prominent challenges to consultation and engagement is the language barrier. Most seniors whose native language is not English are afraid to speak up and would prefer speaking with someone relatable. Language barriers prevent them from fully understanding government policies, making it difficult to express their views or participate in related projects. Such barriers are not just a critical factor to improving engagement with municipal research, but in improving overall system accessibility. An interview with a coordinator from a nonprofit organization raised that 41 percent of seniors in Vancouver are immigrants. Among the Chinese immigrant demographic that do not speak English, seniors have been found to often compensate for the language gap through the use of

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45 Ibid.

46 “DATS Alternative Transportation Services Contact List,” City of Edmonton.

47 “Inclusive Climate Action in Practice,” 34.

48 “Climate Action Plan,” City of Boston, 2019, 42.

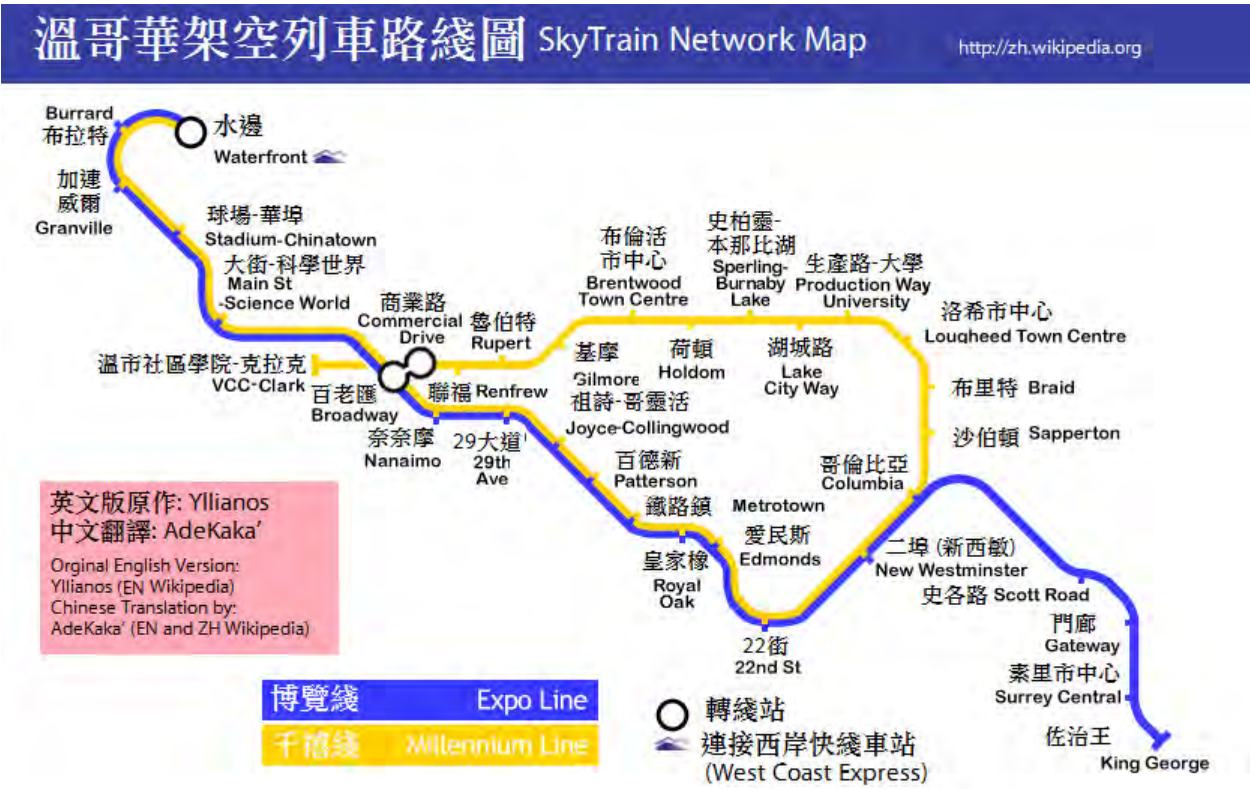


Figure 3.1: A Skytrain map in Chinese

unofficial applications in Chinese on their devices to search for and use public transit. An example can be found above.<sup>49</sup>

### 3.2. Helping Seniors Adopt Climate Initiatives Through Collaborative Approaches

The following section provides an overview of some of the themes low-income seniors in Vancouver identified as their greatest barriers to implementing initiatives in the Climate Emergency Response Plan and provides examples of how collaborative approaches between the City and third parties may help reduce these barriers while creating co-benefits. The UBC Team researched existing strategies within Vancouver and other jurisdictions that targeted these themes specifically in implementing initiatives to conduct energy efficient retrofits and adopt cooperative transportation among low-income senior communities.

49 "Vancouver Skytrain Current Map Chi," Wikimedia Commons, July 5, 2015.



### 3.2.1. Collaborative Approaches to Address Gaps in Retrofit Policies

From consulting low-income seniors in Vancouver the research team was able to identify themes they raised as their greatest barriers to implementing energy efficient home retrofits and upgrades. Collaboration between the City and third parties was key to the successful implementation of these senior-equity based policies.

#### A. Identifying Barriers for Low-Income Seniors to Conduct Energy Retrofits

Low-income seniors who participated in our online questionnaire identified that while they would like to conduct home renovations to improve energy efficiency by 2025 or replace natural gas heating and hot water systems with an electric heat pump system by 2030, lacking the personal financial resources and not having the knowledge or technical guidance to conduct the renovations are the greatest barriers impacting their ability to perform these retrofits. It was noted, for example, that not knowing the cost-benefit breakdown of these initiatives, that is the replacement cost versus the financial benefit, was a barrier for low-income seniors to conduct home renovations to improve energy efficiency. An example of an existing initiative is the HASI program, with more information on the callout box on the right.<sup>50</sup>

In interviewing a board member on the Wilson Center Seniors Advisory Association it was also raised that seniors identify as being particularly vulnerable to being taken advantage of by contractors. She explained that having a low budget for home services means low-income seniors often turn to word of mouth recommendations of “friend of a friend” contractors to perform home repairs or maintenance. However, these contractors typically demand cash only payment and don’t provide credentials for their expertise and work. The interviewee expressed concern that

#### A Broader Canadian View of Home Renovation Aid Policies

There are various policy mechanisms in Canada to help senior homeowners conduct repairs. One national strategy is the Canada Mortgage and Housing Corporation’s Home Adaptation for Seniors Independence (HASI) program, which provides support for low-income seniors to pay for minor home modifications. These home modifications address the unique mobility constraints and safety concerns experienced by an aging population, including handrails and grab bars. Alberta’s Seniors Home Adaptation and Repair Program (SHARP) offers low-income home equity loans to help seniors finance renovations and home repairs, intending to enable seniors to maintain independence and stay in their homes. New Brunswick’s Minor Home Repairs Grant is available for low-income residents over 65 years old to offset renovation or repair costs.<sup>50</sup>

50 “Home Adaptations for Seniors’ Independence (HASI),” Canada Mortgage and Housing Corporation.

exposure to these types of unvetted contractors leaves people in her community open to being taken advantage of, either for being too generous or lacking the information needed to properly assess a contractor's quote for the home repairs. She said this also applies to seniors needing help with care, such as home cleaning and bathing and that people should not have to pay under the table to unvetted providers to get services that should be accessible to everyone in a safe and reliable manner. It was raised by MOSAIC in a recent 411 Seniors Town Hall that immigrant seniors and those with language barriers are even more vulnerable and most likely to suffer elder abuse.

Kambo Energy Group has been operating for 10 years, where they support hard to reach communities such as immigrants, newcomers, refugees, seniors, and Indigenous people transition to a low carbon economy. Their goal is to bring greater equity to the transition to a low carbon economy by ensuring communities who have been overlooked by public policy can access and take advantage of programming and education. In an interview with Kambo Energy Group it was emphasized that the City of Vancouver's climate initiatives, especially ones that encourage people to adopt a specific technology like a heat pump can not always be cost-justified for low or middle income households. The interviewees cautioned that if Vancouver's current retrofit strategy is a blanket implementation it may be inaccessible for low-income families and seniors with limited financial tools for such retrofits. Similarly, when we spoke with a Vancouver energy systems consultant he noted that particularly for low income tenants, the City's goal to replace all heating and hot water systems to zero emissions systems by 2025 might lead some landlords or property managers to either postpone replacing poorly functioning water heaters and/or use the added cost of water heating to push for higher rents.

In summary, these barriers are experienced by all renters in general. However, low-income seniors, as mentioned previously, are more prone to these barriers. The lack of financial capacity and knowledge, as well as the language barrier issue combined, would pose a challenging barrier for them to adopt the new technologies and retrofit their houses. However, the City can foster collaborative partnerships to help low-income seniors conduct home energy-efficient upgrades. Not only do these approaches help reduce financial barriers for low-income seniors, but they have also extended program benefits like improving project efficiency and addressing concerns identified by low-income seniors for the need to vet contractors and build their knowledge and technical guidance when it comes to conducting energy efficient renovations.

## **B. Addressing Barriers for Adoption**

While low-income seniors may benefit the most from energy efficient retrofits they are

also the least likely to have the capacity to conduct these retrofits on their own. A 2020 study featured in the *Journal of the American Planning Association* shows how low-income households disproportionately bear the burden of poor-quality and energy-inefficient housing.<sup>51</sup> Those in low socio-economic situations are commonly subject to substandard housing and poorly insulated older homes, for example. The Toronto Atmospheric Fund (TAF) acknowledges that these conditions not only affect a buildings' carbon footprint, but impacts the cost of energy bills, thermal comfort, and respiratory and cardiovascular and mental health of residents. Seniors living in these socio-economic conditions are particularly vulnerable to correlating mental health, respiratory and cardiovascular health implications. Further, the American Planning Association study also highlights that energy efficiency investments have been proven to impact household cost burdens and overall housing affordability, further impacting vulnerable communities. Low-income groups are less resilient to increases in energy costs and with a large portion of their income allocated to their energy bill, these households may experience energy poverty and benefit greatly from energy efficiency upgrades.<sup>52</sup>

It was noted both in an interview with a board member on a local community senior advisory committee and when speaking to a private Vancouver developer that having a resource that seniors can use to help them gain or assess energy retrofit quotes would be a helpful way to reduce the possibility of seniors being taken advantage of by unvetted contractors. This could be run through an NGO in collaboration with the City as a service centre to help connect seniors to contractors, assess quotes, and provide more information in knowledge and technical guidance. It also helps address the need to ensure contractors are educated on specific retrofits like heat pump replacements.

In British Columbia, there are programs to help with senior housing affordability, such as Seniors First BC which is delivered by the Province to provide health and housing programs for seniors. This program addresses advanced planning issues and property tax relief or assistance with home modifications. B.C. also has the Low-Income Grant Supplement for Seniors which helps seniors supplement their homeowner grant in the case it's been reduced or eliminated due to high property value assessments. BC Housing's Shelter Aid for Elderly Renters (SAFER) program provides monthly cash payments to more than 17,000 senior households to help make renting more affordable for those aged 60+ with low to moderate incomes. The Metro Vancouver Housing 10-Year Plan notes that further partnerships with community organizations could broaden and heighten existing programs to assist with senior living. The report also outlines that waitlists for social housing in B.C.

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51 Constantine E. Kontokosta, Vincent J. Reina, and Bartosz Bonczak, "Energy Cost Burdens for Low-Income and Minority Households," *Journal of the American Planning Association* 86, no. 1, January 2020.

52 "Inequalities in Climate Change: The Impacts of Policy on People," Toronto Atmospheric Fund, 2019: 8.



have doubled in the past 10 years and across the region, seniors make up the largest portion of social housing waitlists at 37 percent.<sup>53</sup>

The TAF has successfully worked with social housing providers to help finance and implement retrofits. TAF led a national consultation to consider how to strengthen the ability of Canadian cities to scale-up urban climate solutions. From this consultation came the Low Carbon Cities Canada (LC3) partnership aimed to help cities (Vancouver included) reach carbon emission reduction goals while simultaneously addressing the need to build affordable retrofit capacity while improving disproportionate living conditions low-income residents experience. This in turn benefits public health and increased mobility options among others. Partners include seven local centres and the Federation of Canadian Municipalities.

## **Waitlists for social housing in B.C. have doubled in the past 10 years and across the region, seniors make up the largest portion of social housing at 37 percent.**

Prevalence of low-income seniors based on the low-income cut-offs in Toronto is more than double the national percentage.<sup>54</sup> To reach the City of Toronto's plan to cut carbon emissions 80 percent by 2050, the TAF identified that every year 31,000 units in the greater Toronto area will need to be retrofitted with energy-efficient upgrades. TAF recognized the need to partner with Toronto Community Housing from 2015 to 2018 to undertake retrofits in seven buildings at three project sites to increase the initiative's success. The RJ Smith Apartments site consists of three buildings, including one eleven-story community seniors' building. The suites posed numerous energy challenges like dated, over-sized, inefficient boilers and ventilation systems. The goal of the project was to collaborate with Toronto's Community Housing to help the initiative reach its target to reduce emissions by 30 percent, while helping seniors living in community housing reduce their utility costs by 20 percent and improve indoor environmental quality.

In a webinar held on March 11, 2020, TAF emphasized that a multidisciplinary and collaborative approach to project management and delivery was a key factor for success and adaptability for scaling up retrofit programs. Collaborative private partnerships, for example, helped with administrative tasks like proposal requests and reduced administrative burdens for TAF. Approaching the project from an integrated holistic

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53 "Metro Vancouver Housing 10-Year Plan," Metro Vancouver, 2019: 15.

54 "Census Profile, 2016 Census: "Toronto, City [Census subdivision], Ontario and Canada [Country]"

approach also helped sustain flexible programs that minimized barriers to participation, maximize outcomes, and led to cost savings.

Taking collaborative approaches to finance the retrofits was also pivotal to the project's success. With a project budget of \$5,000 per unit, TAF was challenged to be creative with its designs and financing approaches. The project was financed through TAF's proprietary Energy Savings Performance Agreement (ESPA™).<sup>55</sup> This non-debt agreement allows energy savings to be used to cover the retrofit capital costs, thus helping finance energy efficiency retrofits without drawing on building owners' capital or reserves.<sup>56</sup> Rather than being a loan, ESPA™ is a service performance agreement and utilizes how the savings generated by retrofits can pay for the investment over time. A variety of other financing options exist for energy efficiency retrofits in Toronto, including the City of Toronto's Hi-RIS program<sup>57</sup> for multi-unit residential buildings and Home Energy Loan Program (HELP) for homeowners.<sup>58</sup> Interestingly, in 2012 when the City of Vancouver launched its own HELP program it was unsuccessful and the project never met its expected target of applications from homeowners. This suggests that while the concept was a good one, there remained barriers to adoption and the City may be able to learn from this program or reform it to directly target low-income seniors. For example, after conducting an "energy audit" by federally licensed auditors, homeowners then selected a contractor from a list of pre-approved selections and applied for up to \$10,000 in financing from the City's partner Vancity Credit Union. The senior policy analyst for the group responsible for marketing the program said people suggested the 4.5 percent interest rate on the loans was too high and that the maximum loan amount was not worth extending over a 10-year period. In the March 11, 2020 webinar TAF was asked if the HELP program could be used for scaling-up energy retrofit initiatives. TAF acknowledged that low-cost capital alone is not enough to scale-up or increase adoption of retrofits because people need more hand holding than just access to capital up front.

### C. International Approaches

The City of Canberra's "ACT Climate Change Strategy 2019-2025" is another example of how governments can foster partnerships with energy retailers to provide affordable technology upgrades for low-income homes. Working with energy retailers, the Government is supporting consumers wanting to switch their appliances from gas to electric. Tailored programs to support the transition away from natural gas for residential

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55 "ESPA Brochure," The Toronto Atmospheric Fund.

56 "Energy Efficient Retrofits," The Toronto Atmospheric Fund.

57 "High-Rise Retrofit Improvement Support Program (Hi-RIS)," City of Toronto.

58 "Home Energy Loan Program," City of Toronto.

and commercial buildings will be developed to supplement this action. The City is also amending regulations and removing the requirement that all new suburbs be connected to gas. This incentivizes developers to build all-electric, zero-emissions suburbs if they choose.

Similarly, the Belgian city of Ghent launched its Climate Plan 2014 - 2019 with targeted packages to help low-income and vulnerable communities adopt energy-efficient upgrades. Addressing disparities of climate justice, Ghent acknowledged that while affordable energy

## A Senior Perspective

One senior interviewee noted to the UBC Team that they feel there is a lack of programs to help seniors who have mobility problems complete their daily errands and needs. While third parties offer private services to deliver groceries, for example, the additional fee for this service is too high for seniors to afford. This suggests that while seniors are interested in these programs, collaboration between various actors may be needed to allow low-income seniors to participate in them more actively.

bills are most impactful for low-income families, these communities are also the ones who are less able to afford renovations. To help low-income communities finance and execute energy-efficient refurbishments to their homes, the City partnered with the non-profit association REGent to provide low-cost loans through the Fund to Reduce the Overall Cost of Energy (FROCE).<sup>59</sup> The rolling fund is a pre-financing investment that generated highly-cost-effective leverage to stimulate energy refurbishments. Vulnerable families could borrow at zero percent to help finance energy-efficient investments. The City of Ghent also has a complementary action that provides a housing quality premium to vulnerable families. The City compensates 50 percent of costs to low-income families in comparison to 30 percent for other families. This premium offers financial support

for a combination of different works, including improving installation, heating, renovating plumbing and moisture control. The zero percent loan is provided because, even though the refurbishment measures can be quickly earned back through these premiums and obtained energy savings, the sum for the refurbishments must be paid in advance.

These combined premiums and loans are expected to help 15 percent of Ghent's households that experience energy poverty. In 2015, 13,000 Ghent citizens drafted a personal energy efficiency plan using "Check je huis" where 1,544 applied for an energy grant for their home refurbishment and 117 have asked for an energy loan.<sup>60</sup> Through engaging with stakeholders the City can foster strategies to address the unique needs of low-income seniors and support them in adopting initiatives of the Climate Emergency

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59 "Ghent Climate Plan 2014–2019," Gent Klimaatstad: 22.

60 "Social energy measures in Ghent," Cities Territories Governance.



Response Plan.

### 3.2.2. Opportunities for Partnership in Transport

In a region composed of 21 other municipalities, regional-level transportation and planning agencies, and diverse other stakeholders, the City of Vancouver has long-acknowledged the strategic partnerships for success that are required to implement ambitious carbon-cutting policy. However, in speaking with local seniors and transportation actors, we found that creating more collaborative relationships with third parties also successfully reduces barriers for seniors participating in transportation-related climate initiatives.

Significantly increasing active and public transportation is one strategy in the Climate Emergency Response Plan to achieve greenhouse gas emissions reductions. TransLink has already begun consultations and research on its long-term, sustainable transportation strategies. TransLink has recently initiated the second phase of their Transport 2050 review, to develop sustainable, long-term regional transportation programming that integrates a holistic equity lens to its work. It will be useful for the City to continue with its long tradition of productive collaboration with TransLink and others in areas like sustainable transportation and equity to reduce the duplication of efforts and increase the cohesion of strategies to achieve mutual goals.

Examples of such strategies can be found in other jurisdictions in Canada. In 2017, the City of Calgary offered a unique \$5.05 monthly bus pass for the city's poorest as a stage in a sliding scale model of transit pricing. This sliding scale has three price bands. For 2020 the prices are \$5.45, \$38.15 and \$54.50 per month dependent on how much a customer earns.<sup>61</sup> The City of Calgary is furthermore working with low-income seniors, seniors service providers and seniors advocacy groups to offer a yearly pass for low-income seniors. Internationally, the French city of Strasbourg currently has a system of fares in which people buy single-trip paper tickets, but will also be able to refill them again in later trips, using the same ticket, for a discounted price.<sup>62</sup> Public transit in Tallinn, Estonia is also free for citizens via the country's e-governance capabilities.<sup>63</sup> In B.C. low-income seniors ages 60+ are eligible for the BC Seniors Bus pass to get a reduced-cost bus pass. However, when we asked low-income seniors if making public transit free for them would impact their ability to use these services they confirmed this would significantly reduce barriers for transportation use. They identified at \$1.85 each way, it is too expensive for seniors to use public transportation to attend community events and other social activities. This is

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61 Annalise Klingbeil, "Calgary's unique \$5.05 monthly bus pass for city's poorest now available," *Calgary Herald*, March 30, 2017.

62 "Tickets," Compagnie des Transports Strasbourgeois, 2019.

63 "Climate change: Mitigation & Adaptation," City of Tallinn: 6.

because their budget may only afford them the use of public transportation once or twice a week, for which they need to use for grocery shopping, doctor appointments, or other needs.

Partnerships can also help low-income seniors with their commuting needs while supporting climate strategies to reduce the number of cars on the road. From interviewing seniors we learned that they would like to do more “volunteer driving” in their communities. This is when one community member helps others with their errands. However, a disincentive for senior volunteer driving and car-pooling is that it costs more in insurance. ICBC has a policy that if someone’s vehicle is driven less than 5,000 kilometres a year, they receive a 10 percent discount on their Basic, Extended Third Party Liability and Collision insurance premiums. For many low-income seniors, this 10% is the reason they can afford their insurance premiums and so they can’t afford to volunteer drive.<sup>64</sup>

In our interview with Timmer, she noted how successfully community car-sharing has been adopted in Vancouver’s West End and encouraged the team to explore any gains for the relatively high senior population there. In researching the car-sharing cooperative Modo, we found that they have fostered successful collaborations with non-profit organizations and seniors homes to launch innovative strategies to help Vancouver’s seniors get around the city. For example, Modo partnered with Kiwanis North Shore Housing Society, a residence for seniors needing below-market accommodation. This collaboration allows the residents to share Modo vehicles for errands like doctor visits and grocery shopping. Making this transition to car sharing from owning and operating a personal vehicle potentially saves these seniors thousands of dollars a year. This collaboration allows seniors to maintain their independence, meet their mobility needs, and save them money. The West End Seniors’ Network also works with Modo to address low-income senior vulnerability and mobility issues. In their volunteer-based Driving Accompaniment Programs, they offer seniors free rides to complete their errands by covering the costs of the expenses under the Seniors’ Network Modo vehicle co-op account. Cooperative car sharing is more feasible for many seniors to use than bikes and other active transportation while addressing concerns of potential cost barriers. It supports city initiatives to reduce vehicles on the road or parking stalls in the city, as well as reducing greenhouse gas emissions.

### **3.3. Designing with Intention**

In formulating their climate action plans, numerous cities have also considered the impacts

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64 “Statement from ICBC president and CEO on the BCUC’s decision,” ICBC, September 28, 2018.

these new policy decisions would have on vulnerable groups such as seniors. The following section examines instances of ‘best practices’ worldwide, where various jurisdictions have already introduced implementations and services that would better accommodate seniors in a more sustainable society.

### **3.3.1. Accommodations and Services for Accessibility**

While some cities have made public transit more affordable, other cities have prioritized accessibility implementations that not only allows seniors to navigate better on transit, but also considers numerous disabilities.

Domestically, Victoria’s Transit Future Plan,<sup>65</sup> offers park and ride opportunities to cater to senior accessibility, invests in on-street amenities such as street furniture at stations and stops, and introduces visual and audible stop announcements and customer information readily available in a format that is accessible. Similarly, the City of Montréal’s STM (Société de transport de Montréal) is aiming to engage in optimization of stops near hospitals and service centres, analyze public transit mobility among people with functional limitations, which including seniors, and optimizing communication channels with the City concerning requests for universal accessibility.<sup>66</sup>

Vancouver has one of the most efficient public transportation systems and has even in North America, where it also received an award from the American Public Transportation Association (APTA).<sup>67</sup> Additionally, according to a 2017 index on mobility from the design consulting firm Arcadis, Vancouver has scored high in safety and accessibility, sustainability, and reliability.<sup>68</sup> While bus and metro systems in Vancouver have fully-accommodated people with disabilities, adopting some of the features that previously-mentioned above could add a better experience for low-income seniors, encouraging better participation rate in using public transit.

### **3.3.2. Pedestrian Safety**

As most climate action plans encourage all commuters to adopt active transportation as their main form of transit, many cities have already implemented features focused on increasing senior safety. A report from the Council on Aging of Ottawa in 2016 showed that seniors were more prone to pedestrian deaths, as almost 43 percent of deaths were aged 56 or over. They are also more susceptible to severe injuries, as they spend an average of

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65 “Transit Future Plan,” BC Transit, May 2011: 61.

66 “Municipal Action Plan for Seniors,” Ville de Montréal, 2018: 18.

67 TransLink Media Relations, “TransLink awarded Transit System of the Year,” TransLink, July 23, 2019.

68 “Sustainable Cities Mobility Index 2017: North America Edition,” Arcadis, 2017: 18.

16 days in hospital, compared to the average of seven for other age groups when they are injured in pedestrian-related accidents. Another issue that is less relevant in Vancouver but equally important is that seniors face further mobility issues in icy weather, where many fear falling due to slippery conditions.<sup>69</sup>

## Vancouverism is a well-known phenomenon among urban planners.

Toronto has also made an extended effort of introducing a Senior Strategy, which is independent of its TransformTO climate action plan.<sup>70</sup> Its strategy also includes the addition of Senior Safety Zones on its streets, where planned initiatives have included implementing enhanced pavement markings and signage to raise awareness of older adult populations, as well as conducting road safety reviews to identify short- and long-term improvements to further bolster pedestrian safety for seniors.<sup>71</sup>

Internationally, New York City has introduced a plan to reconstruct sidewalks so that they are maximized for pedestrians. This reconstruction would include features such as curb extensions to provide more safety and for more spaces to build benches and rest stops. Other sidewalk extensions will be built in lieu of parallel parking spots to create “Street Seats,” larger areas where pedestrians can sit, and also “Bus Bulbs,” new bus stops that provide more space. A visual can be found on the next page.<sup>72</sup>

In its efforts to address equity, Boston has introduced Neighbourhood Slow Street programs optimized for children, older adults, and people with disabilities, which are similar to the Senior Safety Zones rolled-out in Toronto. In Boston, the addition of Slow Street zones are prioritized based on need, such as in neighbourhoods where there is the

### A Senior Perspective

One senior interviewee stated that proximity is very important as it allows greater convenience in accessing grocery stores and other essential services. They also preferred to walk on larger sidewalks for increased safety, since many people ride their scooters on the sidewalk. Approaches similar to Superblocks in Barcelona would improve both conditions, as it opens up space for urban development changes, and provides other opportunities for essential services to be closer to residential areas.

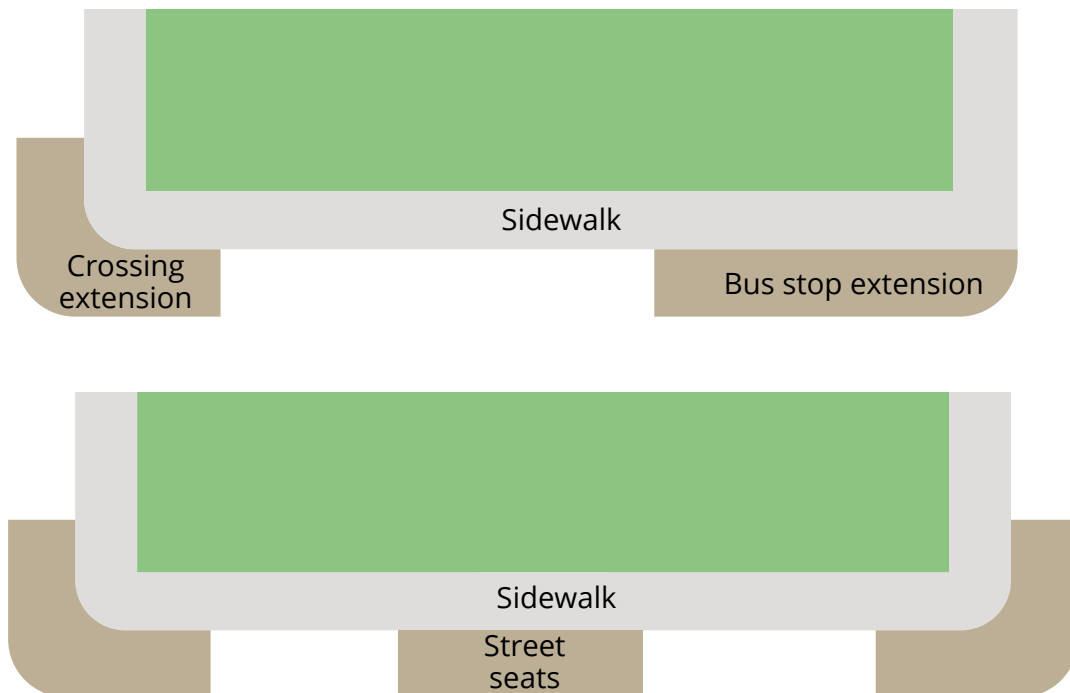
69 “An Age-Friendly Walkability Report Safe Streets for Seniors and Other Valuable People in Ottawa,” The Council on Aging of Ottawa, 2016: 2.

70 “Toronto Seniors Strategy 2.0,” City of Toronto, 2018: 4.

71 “Senior Safety Zones – Vision Zero,” City of Toronto.

72 “One NYC 2050: Efficient Mobility,” City of New York: 25.





**Figure 3.2: New York is planning to install a series of sidewalk extensions that would replace many parallel-parking spots.**

largest number of children and seniors, in areas near schools, libraries, and parks, and in junctions where accidents happen frequently. New networks of sidewalks in neighbourhoods that are most in need of repair will also be given priority for upgrades.<sup>73</sup>

### **3.3.3. Providing Better Experiences in a Sustainable Neighbourhood**

Other cities have also taken the initiative to improve the aesthetics and layouts of neighbourhoods, or explore other opportunities that would improve the experience of commuters. Understanding that effective climate action will mean more active transportation, especially in foot traffic, many cities have made plans to make walking spaces more comfortable and visually appealing. This is also important for seniors as better-accommodated spaces will not only encourage them to walk more when possible, but also make the transition from driving to active transportation smoother. As mentioned in the previous section, seniors often face psychological barriers when transitioning from a habitual activity, and a more aesthetically-pleasing environment will also help.

The Costa Rican capital of San José has not only begun work to make the city more walkable, but has also planned to make the City resemble a park with more green spaces.<sup>74</sup>

73 City of Boston: 57.

74 Laura Alvarado, "New Project Hopes to Make San José, Costa Rica a Clean, Safe and Green City," *The Costa Rica Star*,

This further encourages active transportation by transforming the aesthetic design of the city and making commutes more pleasant. The Swedish city of Gothenburg has also chosen to focus on expanding active transportation near its parks.<sup>75</sup>

In Barcelona, “superblocks” were designed in collaboration with the Urban Ecology Agency, this policy aims to tackle several neighbourhood issues such as mobility, lack of public space, decrease in biodiversity and lack of social cohesion. The general idea of the policy is to limit the car traffic, create a peaceful and more spacious inner area that is ideal for walking and cycling as well as promote higher social cohesion.<sup>76</sup>

The basic idea behind superblocks is to make urban surface spaces more versatile, where most spaces in the past were only made for vehicle traffic. Not only will superblocks reduce emissions from driving, they make room for further urban development, make neighbourhoods quieter, and will further encourage people to take up active transportation. This project also improves mobility and self-isolation issues that seniors are prone to.<sup>77</sup>

Another aspect of equity is the creation of safe and pleasant transit experiences for all, as well as equal access to opportunities and services. This is especially important for Vancouver, since it is a city that receives high amounts of commuter traffic from nearby cities in Metro Vancouver every day. Many people who commute these long distances are captive riders, meaning that they do not have access to a personal vehicle and their only form of transportation is public transit. According to TransLink’s customer experience survey from 2017, within the age group of 55 or older, 21 percent are captive riders while another 12 percent are high frequency riders.<sup>78</sup>

One area the City can work on is improving the reliability of the Skytrain, a transit system that not only serves the majority of inter-city commuters, but also a system where 63 percent of captive riders regularly take.<sup>79</sup> The Skytrain has frequently been delayed in snowy weather in recent years, and further measures to address this issue, such as structural improvements, would improve the experiences of a large commuter demographic that also contains a large number of seniors. According to a TransLink survey in 2017, only 34 percent of respondents gave the Skytrain a satisfactory regarding the frequency and explanation of delays.<sup>80</sup>

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September 14, 2017.

75 Mona Gable, “Is Gothenburg Europe’s greenest city?” BBC, February 24, 2020.

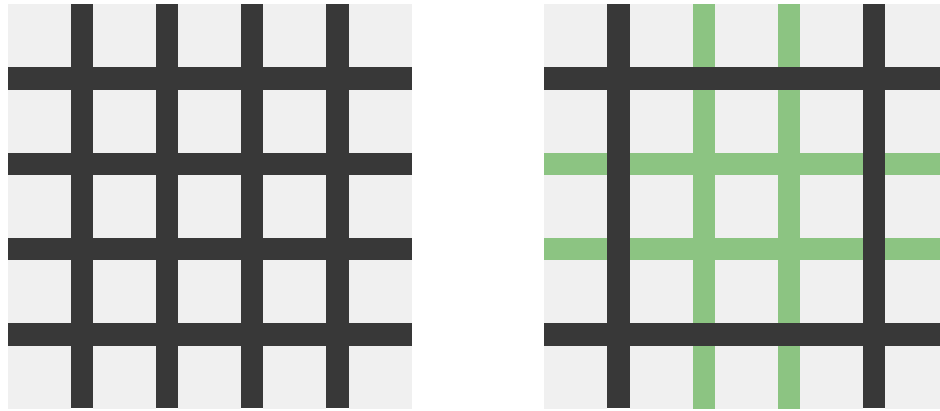
76 Ecology, Urban Planning, Infrastructures and Mobility Area, “Superblocks,” Ajuntament de Barcelona.

77 David Roberts, “Barcelona’s superblocks are a new model for “post-car” urban living,” Vox, August 11, 2019.

78 “Customer Service Performance Quarter 1 2017,” TransLink, 2017: 54.

79 Ibid. 52.

80 Ibid.



**Figure 3.3: A before-after panorama of superblock implementation, where spaces coloured in green represent new spaces created for pedestrians after limiting traffic.**

Other cities globally have made improving inter-city connections a significant part of their sustainable transportation plan. Berlin is also another city that frequently receives commuter traffic from outer cities in Brandenburg. Acknowledging that its own climate action plan will only create greater transit ridership, the city is planning on re-examining its transit systems, most notably the S-Bahn network, to make inter-city transit more efficient.<sup>81</sup> Medellín, the second-largest city in Colombia, built an aerial tram which connected smaller towns to the centre of the city, allowing them better access to the city's opportunities.<sup>82</sup>

Vancouverism is a well-known phenomenon among urban planners. A term to express a good city planning practice with an ethos to create a livable and sustainable city.<sup>83</sup> It means creating a city with many parks, walkable streets, and public spaces, combined with an emphasis on sustainable forms of transit.<sup>84</sup> However, this ideal city living is concentrated mostly in downtown areas where only around 13 percent of its population are seniors.<sup>85</sup> Focusing more on areas outside of downtown by adopting best practices mentioned previously should eliminate this issue.

81 "Urban Transportation Development Plan 2025: Sustainable Mobility," Senatsverwaltung für Stadtentwicklung und Wohnen: 12.

82 Maria Hart, Jillian Du and Caroline Coccoli, "How to Prevent City Climate Action from Becoming "Green Gentrification," World Resources Institute, December 12, 2019.

83 Larry Beasley, Vancouverism (On Point Press, 2019): 38.

84 "Urban planning, sustainable zoning, and development," City of Vancouver.

85 "Census Profile, 2016 Census: Vancouver [Census metropolitan area], British Columbia and British Columbia [Province]."





# Policy Recommendations



## 4. Policy Recommendations

### 4.1. Criteria

The research team assigned four different criteria to assess the different policy alternatives that were identified in the research and findings sections. The following criteria were used to determine which alternatives were ultimately recommended:

#### 1. Significant Emission Reduction

The policy alternative should be in line with what the City of Vancouver is currently aiming. In other words, we are making sure that the policy helps the city meet its ambitious plan to significantly cut carbon emissions in the future and meet the 1.5 degrees target. We measure this by estimating the amount of carbon reduction for each of our alternatives and compare it to targets set by the City of Vancouver (1.5 degrees). This criterion is given the highest priority due to its importance.

#### 2. Addresses Senior Equity

The alternatives also need to apply an equity lens to the targeted group, the low-income seniors. Therefore, reducing the disproportionate impact from the city's climate-related policies should be the primary goal of the alternatives proposed. Increased accessibility, engagement, and climate-related knowledge, as well as the policy's affordability to the low-income seniors, are some good measurements of this criterion.

#### 3. Has Co-Benefits

Co-benefit means the ability of the alternatives to be applied beyond helping low-income seniors in their participation in the city's climate policies. Co-benefit can be measured in two different ways. First, is co-benefit for the low-income seniors which is their increased quality of life. Loneliness mitigation and mental health improvement are some examples of this co-benefit. Second, is co-benefit for the City of Vancouver, defined as the ability of the alternatives to benefit the city beyond this project's goal or benefiting future climate-related policies.

#### 4. Feasibility

This criterion measures the ability of the City of Vancouver to enact and implement the proposed alternative. Political and jurisdictional feasibility are two main considerations for this criterion. The time needed to enact the alternatives and their acceptability to the public, especially low-income seniors, are two good indicators of feasibility.

## 4.2. Recommendations

The following recommendations performed best against the criteria listed above. More specifically, they minimize potential disproportionate impacts low-income seniors may face in light of ambitious climate policies while simultaneously supporting the goals of the Climate Emergency Response. The UBC Team classified the policy recommendations into three groups based on the research and findings:

### Recommendation I

**Introduce initiatives that will diversify and strengthen platforms in communicating policy to seniors.**

**Action 1: Form a new division focused on facilitating and implementing an equity lens when the city is implementing and monitoring new policies.**

This new division, similar to the existing People, Equity and Human Rights Division in Toronto, will promote a cross-departmental understanding of equity and train individual staff members on how to apply an equity lens to their respective projects, such as the Climate Emergency Response Plan. This initiative would not only help seniors, but other equity-seeking groups.

**Action 2: Adopt an independent strategy for policies that accommodate seniors, which works in conjunction with Vancouver's Climate Emergency Plan.**

The new strategy will devote resources in interpreting and implementing recommendations from national and provincial senior advisory groups such as the National Seniors Council and the Office of the Seniors Advocate. This strategy will also focus on notifying seniors resources that are available to them, provide information on the City's climate action plan and the efforts taken to accommodate seniors, and how they will be able to participate in its initiatives as well.

Availability and methods of communication should also be diversified, such as making these resources available in more public spaces such as senior centres, libraries, and public transit stations. They should also be available in traditional media for seniors that struggle with electronic devices. Communication materials should also be made available in various languages to address the language barrier among low-income seniors. Lastly, the results of consultation and engagement should also be made publicly available and easily accessible.

To accommodate mobility restraints, information and materials about programs can be delivered to seniors' residents similar to the system implemented by the Burnaby

Public Library's Home Library and Accessible Service. Moreover, the conventional way of discussing upcoming policies and presentation of those policies must prioritize seniors by utilizing a readable font size, making audio media available and offering braille versions.

## **Recommendation II**

**Support financing home retrofits for seniors through supporting third-party collaborations.**

### **Action 1: Use non-debt agreements to refine financing systems for energy efficient renovations.**

One primary barrier for low-income seniors to perform home upgrades is finance. Another point of concern is that landlords who have to perform upgrades may off-load the burden onto their tenants either by charging higher rents or "renovicting" existing tenants. Thus, financing plays an important part in considering senior equity while accelerating the implementation and adoption of housing retrofits. By making it easier for building operators to access capital for energy efficiency retrofits, such as through non-debt agreements, it allows energy savings to be used to cover the retrofit capital costs, thus helping finance energy efficiency retrofits without drawing on building owners' capital or reserves.

Since it directly tackles one of the biggest issues for low-income seniors in doing the home upgrades, this recommendation performs splendidly in the equity criteria. It is in line with the city's existing emission reduction programs as well, thus scores pretty high as well in the first criterion. The co-benefit might not be as visible and directly felt by the seniors, but the feasibility should be high since it requires a relatively shorter time to implement and the targeted group is expected to welcome this policy with an open arm.

## **Recommendation III**

**Engage with diverse stakeholders to expand transportation options for low-income seniors.**

### **Action 1: Coordinate with TransLink to make public transportation free for low-income seniors.**

Developing a strategy with TransLink to make transportation free for low-income seniors would remove financial barriers for participation and encourage the use of public transit over driving. To ensure privacy, those who qualify for the program can be given a transit pass to use rather than having to show personal identification to drivers. Because

TransLink is also currently conducting research and developing definitions of equity-seeking groups with respect to transit, data-sharing between the City and TransLink will allow for further opportunities to assess the feasibility of new transportation policies.

Expected increases in seniors' participation translate into a high score in the first two criteria. The transit fare is proven to be one of the biggest barriers for seniors thus, the use of bus passes could eliminate the barrier and create a more equitable environment. The feasibility is also expected to be high. Not only does the free pass attract a lot of seniors, TransLink also has full control over its transit fares so it is relatively easy for them to implement the policy. The co-benefits however, are not directly identifiable in this action.

### **Action 2: Partnership with third parties to support community car sharing.**

Cooperative car sharing is more feasible for many seniors to use than bikes and other active transportation while addressing concerns of cost barriers. Working with cooperative vehicle companies like Modo, the City can help expand transport options for senior communities. The City can also work with agencies like ICBC to help amend premium restrictions so seniors may qualify for a discount despite how many kilometers they use for community driving. These actions in turn support initiatives to reduce vehicles on the road or parking stalls needed by incentivizing car-pooling.

This action not only addresses the potential equity issue of the city's climate policy (through increased mobility and affordability) but it also gives more freedom for seniors in connecting with others, thus eliminating self-isolation and improves mental health. In other words, this action performs well on criteria two and three. Assuming that the vehicles are using green energy, this action should also align with the city's climate initiative, hence score high on the first criterion as well. This action, however, requires complex coordination with both car providers and financial institutions. Consequently, while the acceptability is high, it takes time to be fully implemented.

## **Recommendation IV**

### **Support public and active transportation initiatives by designing spaces with seniors in mind.**

#### **Action 1: Creation of safer and more welcoming public spaces.**

While Vancouver has provided numerous accommodations for seniors in public spaces and on public transit stops, there are further implementations that the city should consider. These include improving lighting along commonly travelled pathways, increased sidewalk extensions for larger bus stops and street furniture, and extending covers of bus stops so



that they are closer to actual stop points.

This action works wonderfully in the equity criterion. It solves almost all non-financial issues that the seniors are facing such as accessibility and mobility. It also provides a lot of co-benefits for both seniors (safer neighbourhoods) and the city itself (providing a good base for future policies). This action might be not as direct as the others, thus, this particular alternative scores quite low on the first criterion. That said, this action should also be attractive to seniors, and while there are a lot of different things to improve, this action requires less coordination, thus can be implemented fairly quickly.

### **Action 2: Re-evaluate the efficiency of inter-city transit routes in Vancouver.**

To improve the long-distance commutes of numerous seniors, the City could re-evaluate the efficiency and reliability of the SkyTrain, which is the most popular form of intercity transit. This includes reassessing the infrastructure and technologies that power the SkyTrain to ensure that there will be less delays in the future, and to allow it to run smoother under winter conditions.

Again, while this action is not directly related to climate action, improving inter-city transit connections satisfies equity, as it creates better commute experiences since many seniors cannot choose the form of transportation that they take.



## **Conclusion and Limitations**

## 5. Conclusion and Limitations

### 5.1. Conclusion

The research has indicated that when seniors are considered within a climate action plan, policymakers encounter several barriers and challenges. Their preference for more traditional mediums will require consultations and surveys to be available in formats other than digital versions. Many seniors will also find adopting new transportation initiatives difficult due to mobility issues and limited financial capabilities to invest in a green-energy vehicle. But mostly importantly, many seniors are reluctant to change, and may require more gradual changes in their lifestyle to adapt.

Consistently, across all research conducted, the most immediate and foundational way in which the City can ensure that policy is designed with senior equity in mind is to integrate engagement with seniors at all stages of the design process. Local governments have successfully developed innovative engagement projects in the transportation and housing policy space and explores the insights derived from interviews with stakeholders and community advocates about where the City could expand new engagement opportunities tailored to the current needs of Vancouver's low-income seniors.

Research has also shown that governments in other jurisdictions have collaborated with third-party actors to address equity concerns, where examples include seeking partnerships to conduct energy-efficient upgrades and providing low-cost alternatives to sustainable transportation. Additionally while Vancouver has already provided effective accommodations to make active transportation and public transit spaces safer for seniors, the City still has room to improve by looking at other cities worldwide for inspiration.

### 5.2. Limitations

Although the research team was fortunate enough to interact with a significant number of the key stakeholders identified, some notable limitations were faced throughout completing this report.

As a university research team working with the City of Vancouver, we were immediately made aware of several barriers to full engagement with our study demographic. However, the constraints imposed on our team by the Ethics Board were compounded by two population characteristics of low-income seniors, namely, a deficit of trust and an immense desire for privacy. With none of our research team members coming from the target demographic, we relied heavily on the assistance of intermediaries such as advocacy

groups, seniors centres, other seniors to aid with connecting us to the community. In addition, the senior demographic—due to issues of generational standards, safety concerns, and general vulnerability due to the power differential—are naturally very private when it comes to sharing data regarding their financial state and living situation. As such, gathering data that identifies a respondent as “low-income” or characterizes the type of home, or number of people in the home, required indirect inquiries if a response was able to be collected at all.

While many of these barriers could have been mitigated through longer term engagement and trust building with our community of study, this avenue proved to be unavailable to us due to the strict time constraint of the study. With only slightly over three months to design the study, collect data, and produce this report, the necessary time commitment that would be required to establish stronger trust relationships with the community and advocates, as well as collect a sufficiently representative number of questionnaire responses was just not available to us. This, combined with the absence of resources to collect data from several of the larger language communities in Vancouver (i.e. translations of the questionnaire in Farsi or Tagalog), impeded the data collection process.

Finally, it is important to note the impact of the outbreak of the COVID-19 virus on the ability of the research team to collect response data in person from our target demographic who are considered to be particularly susceptible to the illness. As the disease was elevated to pandemic status, seniors’ facilities and other sites of significantly sized gatherings restricted access or closed altogether. Consequently, due to the health risk that it posed for our study population, we were largely unable to distribute our questionnaires—or conduct interviews or focus groups—in person.





# Acknowledgments

## 6. Acknowledgments

The research team would like to acknowledge the contributions and support given to us by so many individuals from the University of British Columbia and the City of Vancouver. The organization, mentorship, and connections provided to us by our Faculty Supervisor, Dr George Hoberg, and Learning Coordinator, Corrin Bulmer, were invaluable to our Team's ability to complete such a large project in the time constraints that were faced. Further, this project benefited from the effective communication and coordination with Lisa Brideau, Senior Sustainability Specialist with the City, and the generous inclusion of team member Schyler Edmundson in the City's Equity Working Group discussions.

Finally, the team would like to thank all of the generous participants of the study who gave up their time and valued knowledge to contribute towards this report. All participating organizations and interviewees assisted in the final formulation of this report and our recommendations through the provision of their hard-earned insights that stem from their long and unique histories with advocating for equity-seeking groups. Their contributions to this field are far larger than can be adequately captured in this report, and our team is grateful for the patience and generosity they have extended to us over the duration of this project.





## **Team Members**

## 7. Team Members



### **Schyler Edmundson**

As a Research and Policy Analyst, Schyler explores the intersection between public policy and climate change, focusing on environmental economics, national security and sustainable development. She has applied her knowledge and passion for such topics in recent roles with Environment and Climate Change Canada and as Research Assistant for the SPPGA. Contributing to this project, she conducted a Canadian jurisdictional scan on best practices for achieving equity within ambitious municipal climate policies as they pertain to building and renovation targets.



### **Shivangi Khanna**

Shivangi currently works as a Research Assistant with the Centre for Rural Health Research where she assists with primary research, community outreach and engagement, evidence reviews and knowledge translation. She also has experience with conducting policy and institutional gap analysis. She further wants to understand policy issues around impacts on human rights due to climate change. In this project, she delivered an extensive jurisdictional scan of carbon-cutting policies that ensured senior equity across Canada, stakeholder analysis, methodologies used in the project and facilitate stakeholder engagement activities



### **Alexandra Martin**

During her time with the program, Alexandra has had the opportunity to explore issues of accountability and good governance, expand her technical expertise through client-based coursework, and complete a study abroad term at NUS in Singapore. On this project, Alexandra hopes to further engage with climate action in Canada and understanding of how to integrate equity considerations into the policymaking process. Within this project, she conducted an overview of transport governance for the Metro Vancouver Regional District and their implications for implementing ambitious climate policy.





## **Nikki Wirawan**

Nikki is interested in inequality, decentralization and environmental issues, especially in developing countries, as well as the behavioural foundation of policymaking. On this project, he focused his work on doing an international jurisdictional scan as well as formulating criteria and evaluating alternatives to the city's ambitious climate initiatives, specifically connected to buildings and renovations.



## **Sean Wu**

Sean developed a newfound interest in climate action during his time in the program due to the school's expertise. He also recently returned from a semester abroad at the Hertie School in Berlin, where he gained new perspectives on the societal impacts of climate change. In this project, Sean focused on City transportation policies that burden low-income seniors, and he looks to find meaningful recommendations by conducting international jurisdictional scans.



## **Yi Yang**

With an interest in the green economy, Yi's interests are focused on balancing growth and environmental protection in developing countries. She is looking forward to developing policies in the future to meet cities' or countries' sustainable development goals. In this project, she would like to focus on the methods or incentives that could encourage equity-seeking groups to better participate in Vancouver's Green City Initiatives. Yi conducted the overview of the City of Vancouver's current actions of the ambitious climate initiatives in building and renovation, and the City's building governance in this project.





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# Appendices

## 9. Appendices

### 9.1. Vancouver's Past and Ongoing Climate Change Policies

The City of Vancouver has a long history of climate initiatives. The first report called “Clouds of Change” was released on October 16th 1990. This report has two main purposes, setting up targets and designing a framework for reducing emissions, creating an effective air quality management agency for Lower Fraser Valley as well as several recommendations to support these goals.<sup>86</sup>

Several other climate plans have been introduced since then. The highlights includes:

1. Transportation Plan (1997)
2. The Climate-Friendly City (2005)
3. EcoDensity (2008)
4. Greenest City Action Plan (2011)
5. Transportation 2040 (2012)
6. The Strategic Approach to Neighbourhood Energy (2012)
7. Healthy City Action Plan (2014)
8. The Renewable City Strategy (2015) and Renewable City Action Plan (2017)
9. The Zero Emissions Building Plan (2016)
10. The Electric Vehicle Ecosystem Strategy (2016)
11. The Zero Waste Strategy (2018)
12. The Climate Change Adaptation Strategy (developed in 2012 and updated in 2018)

#### **Greenest City Action Plan (GCAP)<sup>87</sup>**

In July 2011, Vancouver's City Council adopted GCAP, an ambitious plan taken by the City of Vancouver in its effort to become the greenest city in the world by 2020. The plan has the vision to create an internationally-recognized city that meets the needs of future generations while still able to build a strong local economy, vibrant as well as inclusive neighbourhoods in the present. The frameworks are:

- Zero Carbon, attained by green building and green transportation initiatives particularly the use of renewable energy resources

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86 “Clouds of Change,” City of Vancouver, 1990: i-iv.

87 “Greenest City 2020 Action Plan,” City of Vancouver, 2015: 4–6.



- Zero Waste, mostly done by reducing the amount of waste that goes through landfills and incinerators
- Healthy Ecosystems, that includes access to nature, clean water, local food, and clean air.

This GCAP is a solid foundation for the City of Vancouver’s Renewable City Action Plan (RCAP) and Climate Emergency Response (CER).

### **Zero Emission Buildings Plan<sup>88</sup>**

The Zero Emission Buildings Plan is a flexible, phased approach to reduce the carbon pollution that comes from building’s energy consumption. Instead of focusing on building retrofits, this plan focuses more on creating guidelines, bylaws, and energy performance standards.

### **Zero Waste 2040<sup>89</sup>**

It is a long term strategic initiative by the city to create a zero waste community in 2040. The plan includes policies and actions that stimulate and support that goal. The actions include:

- Conserve resources
- Prevent waste of all types, including wasted food at all points between farm and table
- Compost inedible food or convert it into fuel
- Repair and maintain products and materials to extend their lives; and
- Share, reuse, and refurbish products and materials before recycling them

### **Climate Change Adaptation Strategy<sup>90</sup>**

This plan was designed to weather the severe impact of climate change. This includes impacts from the change in rain and snowfall, temperature, nature (including ecosystem and biodiversity), sea level and built environments. There are five core action areas and seventeen Enabling Actions that address adaptation efforts until the next update. The core actions areas are:

- Climate Robust Infrastructure
- Climate Resilient Buildings

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88 “Zero Emission Building Plan,” City of Vancouver, 2016: 3.

89 Vancouver City Council, “Zero Waste 2040 Report,” City of Vancouver, 2016: 2.

90 “Climate Change Adaptation Strategy,” City of Vancouver: 4.



- Healthy and Vigorous Natural Areas and Green Space
- Connected and Prepared Communities; and
- Coastal Preparedness

In January 2019, Vancouver City Council unanimously approved a motion recognizing the climate emergency that the planet faces becoming the first Canadian city to do so. This also acknowledged that Vancouver needs to do more to reduce carbon pollution in response to that emergency and to ramp up the City's actions to align with the 1.5°C target in the Paris Agreement. The City of Vancouver has designed a series of initiatives as responses for climate change. Starting with the "Renewable City Action Plan" that pre-dates the Climate Emergency declaration by Council and flows from Goal 1 of the Greenest City Action Plan. This plan aims to produce 100 percent of Vancouver's energy from renewable sources before 2050, the initiatives then continued with the "Climate Emergency Response" that consists of six big moves to tackle climate change.

### **Renewable City Action Plan<sup>91</sup>**

Renewable City Action Plan (RCAP), adopted in November 2017, was built upon a strong foundation of Vancouver's climate-related policies from the Clouds of Change report in 1990 to the Greenest City Action Plan, adopted in 2011. In 2017, 31 percent of Vancouver's energy use was renewable with the remaining fossil fuel fractions dominated by natural gas for space heaters and hot water tanks as well as gasoline for passenger vehicle use.

The RCAP consists of 77 proposed actions that will be rolled out over the next 10 years (Interim target in 2030). The actions are grouped according to the sources of emissions.

- 27 actions related to improving the energy efficiency and transitioning to renewable energy for buildings. This includes the continuation of zero-emission building plan, incentives for building retrofit and streamlining the renovation process as well as expansion and development of neighbourhood energy utilities.
- 30 actions that make it easier to travel by foot, bike, transit and low carbon vehicles. This group of policies includes the optimization of road networks, improvement of transit services, the building out of public electric charging networks and preferential parking policy.
- Four actions to reduce waste and generate renewable energy from waste that includes the zero waste strategy, upgraded methane gas conversion from landfill to natural gas,

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91 "Renewable City Action Plan," City of Vancouver, 2018: 6–12.

and evaluation of the opportunity to produce biofuels from wood waste and streams.

This RCAP also has an end goal to reduce Vancouver's carbon emissions by at least 80 percent less carbon pollution below 2007 level by 2050.

## Climate Emergency Response<sup>92</sup>

Vancouver's Climate Emergency Response is the newest initiative taken by the City to combat climate change. The report was approved by the council on April 29, 2019. The report amplifies and builds on past progress to reduce carbon pollution, improve energy efficiency, and transition to renewable energy. The responses are classified into "6 Big Moves"

### 1. Walkable Complete Communities

The primary goal for this move is to make sure that by 2030, 90 percent of people live within easy walk or roll of their daily needs. It is estimated that 153,000 tonnes/year (13 percent of the targeted reduction) of carbon pollution could be reduced when the goal is achieved.

### 2. Safe and Convenient Active Transportation and Transit

The target is that in 2030, two-thirds of trips in Vancouver will be by active transportation and transit. By making it safer and more convenient for people to choose active transportation and transit to move around the City, 141,000 tonnes/year of carbon pollution could be reduced by 2030 (12 percent of the targeted reductions).

### 3. Pollution-free Cars, Trucks, and Busses

This move aims to achieve 50 percent of the kms driven on the roads will be by zero-emission vehicles by 2030. The rapid transition to electric and other zero emissions vehicles would reduce Vancouver's carbon pollution by 283,000 tonnes per year by 2030 (24 percent of the targeted reductions).

### 4. Zero Emissions Space and Water Heating

It is targeted that by 2025, all new & replacement heating & hot water systems will be zero emissions. This goal will reduce Vancouver's carbon pollution by 552,000 tonnes/year in 2030 (46 percent of the targeted reductions).

### 5. Lower Carbon Construction

By 2030, the embodied emissions from new buildings and construction projects are targeted to be reduced by 40 percent compared to a 2018 baseline. The reduction will

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92 "Climate Emergency Action Plan," City of Vancouver: 11-20.

decrease the carbon pollution from new construction projects by 78,000 tonnes/year by 2030. This reduction does not count against the 1.2 million tonnes the City is targeting because nearly all embodied emissions are not included in the City's current inventory.

## **6. Restored Forests and Coast**

This move aims to achieve negative emissions by Fall 2020. By 2060, this forest and coastal ecosystem restoration are expected to remove one million tonnes of CO<sub>2</sub> annually.

## **7. Accelerated Actions**

The City of Vancouver has also formulated a set of accelerated actions as part of its Climate Emergency Response to support the effort. These accelerated actions have three major functions in the City's climate emergency response:

- To tackle urgent issues while the big moves are being prepared
- To address several problems that are not covered by the six big moves
- To be incorporated and become important elements of the six big moves

There are approximately 53 accelerated actions in the City's "Climate Emergency Response" report.

## **Climate Equity Working Group**

As part of its climate emergency response, the City is including equity considerations in its actions and initiatives to combat climate change. This approach was adopted in the realization that climate change does not affect all people equally. Several other jurisdictions have applied this equity principle to their climate policies. This approach aims to reduce the disproportionate impact of climate change, especially for the equity-seeking groups such as Indigenous people, low-income, seniors, immigrants, etc.

## **9.2. Methodology**

A qualitative data analysis approach was used in the study. The methodology mainly relied upon data gathered from interviews, questionnaires and extensive literature reviews. Our timeline to gather data began from mid January till the end of March.

### **9.1.1. Interviews and Questionnaire**

We identified our stakeholders which included Translink, City council and staff, health

authorities, experts and academics, private builders, senior advocacy groups and societies and low-income seniors in Vancouver. Our team utilized the 'Input Zone' strategy which is typically used when a local government has developed a policy or draft proposal and is seeking feedback from stakeholders.<sup>93</sup> Our research team aimed to gather feedback and input on the City's proposed initiatives and identify potential gaps in the implementation of the proposed targets highlighted within the Climate Emergency Response Plan.

The interview questions were tailored according to the interviewee's expertise, their professional, academic and political experiences, and the organization they worked for. By the end of January, our team began connecting with our stakeholders through emails and word of mouth. Interviews were conducted online and in-person till the mid of March. A total of 13 interviews were conducted.

Our team designed the questionnaire in consultation with seniors and low-income senior advocacy groups. To facilitate the collection of meaningful data from minority groups, we translated the questionnaire in four languages (English, French, Chinese and Hindi). As the core focus of our research, we circulated the questionnaire among various senior networks across Metro Vancouver. We were able to gather responses in English and Chinese

### **9.1.2. Literature Review**

In searching for the appropriate jurisdictions to compare within both housing and transportation, those with attributes similar to Vancouver were selected. Many of these cities have around the same population as Vancouver, are demographically diverse, and belong to countries with advanced economies. Special attention was also given to cities that have been renowned for their sustainable practices, as well as the world's financial centres to look for unique policy innovations. Cities with existing policies that apply an equity lens to their climate policies and cities with existing seniors-focused climate policies are also preferable.

### **9.1.3. Stakeholder Analysis**

To identify our stakeholders, our team focused on using web searches and research methods such as interviews and snowball sampling to identify actors who could be plausibly expected to take a stand-in favour or against the proposal. From this process, the following stakeholders were identified:

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93 MODUS Planning, "Design and EngagementPublic Participation, Strategy & Toolkit," :13.



**Decision Maker:**

- City of Vancouver

**National Stakeholders:**

- Province of British Columbia
- City of Toronto
- BC Hydro and Power Authority
- BC Housing
- Online hubs for homeowners and businesses (CleanBC Better Homes)

**Regional Stakeholders:**

- The South Coast British Columbia Transport Authority (referred to throughout as Translink), the regional transportation authority
- Vancouver City Council
- Vancouver City Staff and other healthcare providers
- Vancouver Coastal Health and other health authorities
- Metro Vancouver and neighbouring municipalities (Surrey, Burnaby etc)

**Experts/Academics:**

- University of British Columbia
- Simon Fraser University
- University of Waterloo

**Local stakeholders:**

- Low-income seniors who reside in Vancouver
- Families and community of seniors
- Vancouver residents

**Senior advocacy groups:**

- Transportation non-profit organizations (e.g. MOSAIC)
- Non-profit 'think and do' tanks (e.g. One Earth)
- Senior Advisory Committee (City of Vancouver)
- Senior Societies (e.g. Britannia Community Centre and The Wilson Center)

- Technical and Aging networks (e.g. AGEWELL)
- Taxi, ride-share, and other commercial transit providers
- Senior Programs providers (e.g. Empower Me)
- Electricity and natural gas distribution companies (e.g. FortisBC)
- Private Building Companies (e.g. Principle of Oris Consulting Ltd.)

The second step focused on mapping out our stakeholders. We classified them by the amount of power vested in them, their level of financial or emotional interest in the outcome of our project and their willingness to participate in the consultation process.

## 9.2. Sample of Interview Questions

### 9.2.1. Interview with Academia

1. Many of the concerns around accommodating seniors that we have found city planners or affiliated groups like Translink have been focused on mobility concerns. With respect to home energy efficiency upgrades, the creation of complete, walkable/rollable communities, and public transportation, to what extent do you believe the city needs to be aware of age related cognitive impairments as well?
2. A sizable proportion of green products, particularly those related to temperature regulation and home energy efficiency retrofits involve complex user interface technology. Do you believe that existing “gold standards” for green building upgrades have sufficiently considered the user experience for seniors? If not, in what ways do you see them traditionally fall short?
3. The City of Vancouver, like many other major cities looking to reduce transportation related emissions, are considering the creation of what they refer to as “complete communities”. When designing communities that allow seniors to safely age in place, what are the factors you find that urban planners most often overlook?
4. In your country visit experiences, such as Norway, did you find that equity has been considered critically in climate policy and if not, was this highlighted by any of the advocacy groups you’ve met with?
5. Can you point out that in the same way people who have been victimized by non climate action can similarly be victimized by ambitious climate action?
6. Do you feel there were people left out of the conversation while creating Vancouver’s Greenest Cities Plan, and if so who would be included at the table if you could go back?

### **9.2.2. Interview with Non-Profit Organizations**

1. Many of the concerns around accommodating seniors that we have found city planners or affiliated groups like Translink have been focused on mobility concerns. With respect to home energy efficiency upgrades, the creation of complete, walkable/rollable communities, and public transportation, to what extent do you believe the city needs to be aware of age related cognitive impairments as well?
2. When One Earth did the “Local Governments and the Sharing Economy Project” it related matters of sustainable economic development and social equity. It was noted in your research that the sharing economy presents challenges to local governments because it often falls within regulatory and legal grey areas, including concerns about tax revenues, business competitiveness and health and safety. This idea of a shared economy has been raised by the seniors we have interviewed, such as community and shared driving or models of cooperative living in shared spaces. Can you please speak more to some of the barriers local governments still grapple with for embracing shared economics models, and any suggestions you may have to overcome those barriers?
3. From your experience working with sustainable development initiatives, what are some of the biggest impacts ambitious environmental policy has on low-income seniors (or vulnerable populations more broadly)?
4. Based on your past experiences, in terms of engaging seniors, are there any specific factors or characteristics that are significantly different and need to be considered than other groups of people?
5. During the settlement service your organization does especially to the seniors and low-income people, what are the main barriers for them to settle, specifically in terms of housing and public transit?

### **9.2.3. Interview with Government Officials**

1. Do you foresee any areas in which low-income seniors may experience challenges in their accessibility and usability of public transit as a result of these measures (such as health effects of longer waiting times in rain and heat, location of bus stops in relation to senior care facilities and so on)?
2. Based on your experience/knowledge, what are the main barriers for seniors in renovating their house, or adopting new technologies?
3. Based on your experience, what are the primary barriers for the City of Vancouver to engage with seniors?
4. Beyond consultation, how does the jurisdiction approach including low-income senior residents in policy development?

5. Are there any partnerships the City has been seeking with other stakeholders, such as advocacy groups and companies? For example TTC, ride-sharing services, and automakers in transportation, as well as construction firms in housing.
6. From your observations and data, which group of people have benefited the most from the policy, especially with regards to affordability and accessibility?

#### **9.2.4. Interview with Corporations**

1. From your research, what are the main challenges for seniors on transit? Has TransLink introduced any initiatives to better accommodate seniors?
2. What are the times in which the City and TransLink have experienced success in working together and what factors they believed made the process successful?
3. Can you discuss a successful project you've done that integrated sustainability and affordable housing?
4. Are there any cities that are doing a good job at fostering this type of collaboration to achieve sustainable and affordable housing?
5. What are your thoughts on some of the actions proposed in the CER, such as wanting all new and replacement heating and hot water systems to be zero emission systems by 2025?
6. The City of Vancouver, like many other major cities looking to reduce transportation related emissions, are considering the creation of what they refer to as "complete communities". When designing communities that allow seniors to safely age in place, what are the factors you find that urban planners most often overlook?

#### **9.2.5. List of Interviewees**

1. David R. Boyd, Environmental Lawyer, Author, and Professor at The University of British Columbia
2. Lili Liu, Dean of Applied Health Science at The University of Waterloo
3. Yasmin Abraham, Vice President of EmpowerMe, Founder and SVP of Kambo Energy Group
4. Areef Abraham, President and CEO of Community Power
5. Linda Swanston, Program Manager, Policy and Research City of Toronto
6. Tarras Adams, Simon Fraser University Alumnus
7. Andrea Winkler, Team Lead - Public Engagement and Transportation Planning, City of Vancouver
8. Keane Gruending, Senior Communication Advisor at TransLink



9. Fearghal King, Project Manager at TransLink
10. Dana Westermarck, Principal of Oris Consulting Ltd.
11. Daisy Au, Coordinator Seniors Club at MOSAIC
12. Wes Regan, Policy and Projects Lead at Vancouver Coastal Health
13. Anonymous Senior Interview, board member of the Wilson Centre Seniors Advisory Committee
14. Tanya Paz, Transportation and Sustainability Consultant
15. Dagmar Timmer, Managing Director, OneEarth

