Prepared for

CITY OF VANCOUVER

Summary Report

2020 Vancouver Panel Survey

June 2021 | Submitted by:

McElhanney

MUSTEL GROUP MARKET RESEARCH

McElhanney in Association with Mustel Group

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June 25, 2021

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2020 VANCOUVER PANEL SURVEY: SUMMARY REPORT

As requested McElhanney, in association with Mustel, has completed a summary of the 2020 Vancouver Panel Survey. This report provides a summary of the study objectives, survey methodology, characteristics of panel members and their trip making, and a comparison of returning panelists against new recruits. We have also included a section describing contributing factors affecting change in travel behaviour and patterns. With the impacts of the COVID-19 pandemic still being felt, the impacts to Vancouver resident travel have been significant including a 31% drop in trip making as people work, go to school and shop online. This has resulted in significant shifts to mode share including a noticeable drop in transit ridership. How the travel market has responded to the pandemic, and possible long-term effects, will influence how people travel and how the City adapts its programs and policies to a new normal.

We trust you will find this summary of the 2020 Vancouver Panel Survey meets the City's transportation planning requirements as set out in the scope of work. Please contact us if you have any questions or require any clarification.

Sincerely,
McElhanney Ltd.

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Executive Summary

This report summarizes the process and results of the City of Vancouver's eighth Panel Survey conducted in 2020. The Vancouver Panel Survey is the City's annual data collection effort that presents information on the trip-making and travel patterns of Vancouver residents. Its principal functions are to help the City better understand the travel behaviour and preferences of its residents and to assist the City in making informed decisions about transportation investments. The Panel Survey also helps to track progress towards achieving the City's transportation mode share and vehicle kilometres travelled (VKT) targets on an annual basis.

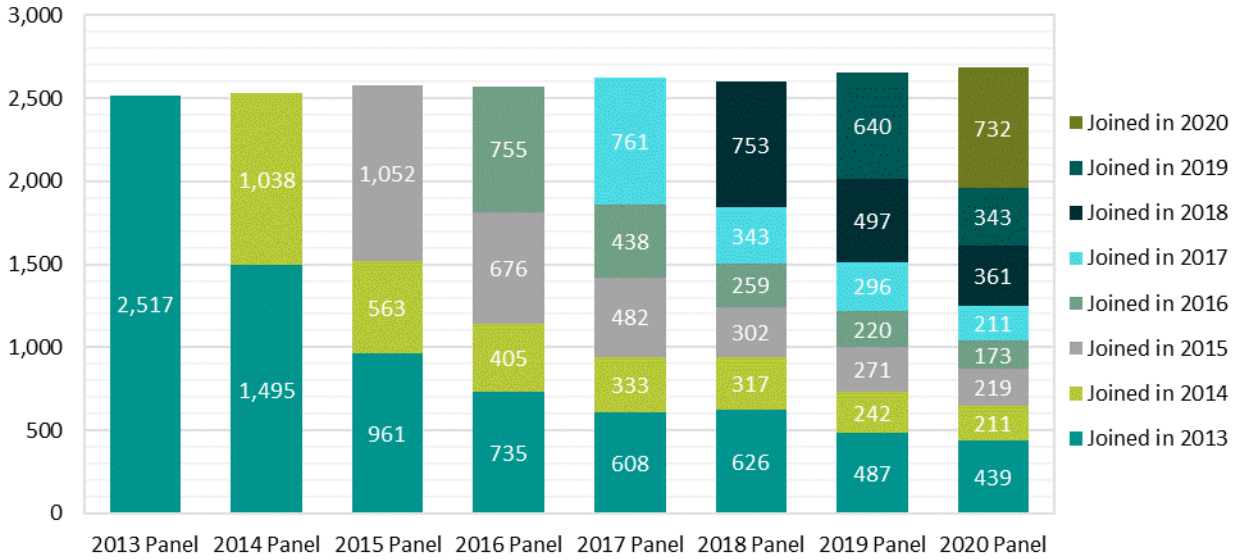
As this survey tracks the travel characteristics of the panel from year to year, the findings provide crucial information on which transportation investments and policies have been the most effective in encouraging travel using sustainable modes. This year's survey also quantifies the impacts that the COVID-19 pandemic has had on travel behaviour and patterns.

The primary component of this survey is a travel diary in which individuals record the details of the trips that they make on an assigned weekday. This trip data is then compared to the previous panel surveys conducted from 2013 to 2019, allowing analysis of transportation trends. As part of the evolution of the Vancouver Panel Survey, there were a few changes made to the survey questionnaire to better reflect recent trends and the City's priorities. These are explained in greater detail within the report, but the following provides a brief overview:

1. The vehicle access question now differentiates between gas powered, hybrid and electric vehicles.
2. Questions regarding the types of bicycles owned by panelists were introduced.
3. The survey added questions about interest in micromobility devices (e-kick scooters, e-skateboards and hoverboards) as well as the current use of and preferred areas to use micromobility devices.
4. The following changes were made related to the mode of transportation chosen for their trip:
    - Added working remotely from home / online learning;
    - Added micromobility and e-micromobility devices;
    - Walking now includes wheelchair, medical mobility scooter or other assistive device;
    - Car2go and ZipCar were removed from the list of car share responses; and
    - Kater was removed as a ride-hailing service.
5. Additional questions to understand the transportation impacts of the COVID-19 pandemic. These questions were designed to:
    - Ascertain the impact of the pandemic on the frequency of trip-making including reasons why trips making has decreased.
    - Record frequency of using transit and ordering delivery of food and other goods before and during the pandemic.
    - Determine the ability to social distance and the level of personal safety on each trip.
    - Record for each trip any mode(s) that may have been taken instead if there were no pandemic.

As with previous studies, the youth referral process and cash-based incentive program were utilized to retain existing panelists, leading to 1,920 of 2,653 panel members returning from 2019 for the 2020 Panel. This equates to an attrition rate of 28%, with 17% of the original panel from 2013 still intact. The composition of the panel over the years of the Panel Surveys (2013-2020), grouped by when panelists first joined, is shown in **Figure E-1**.

Figure E-1: Composition of Panel Survey Participants

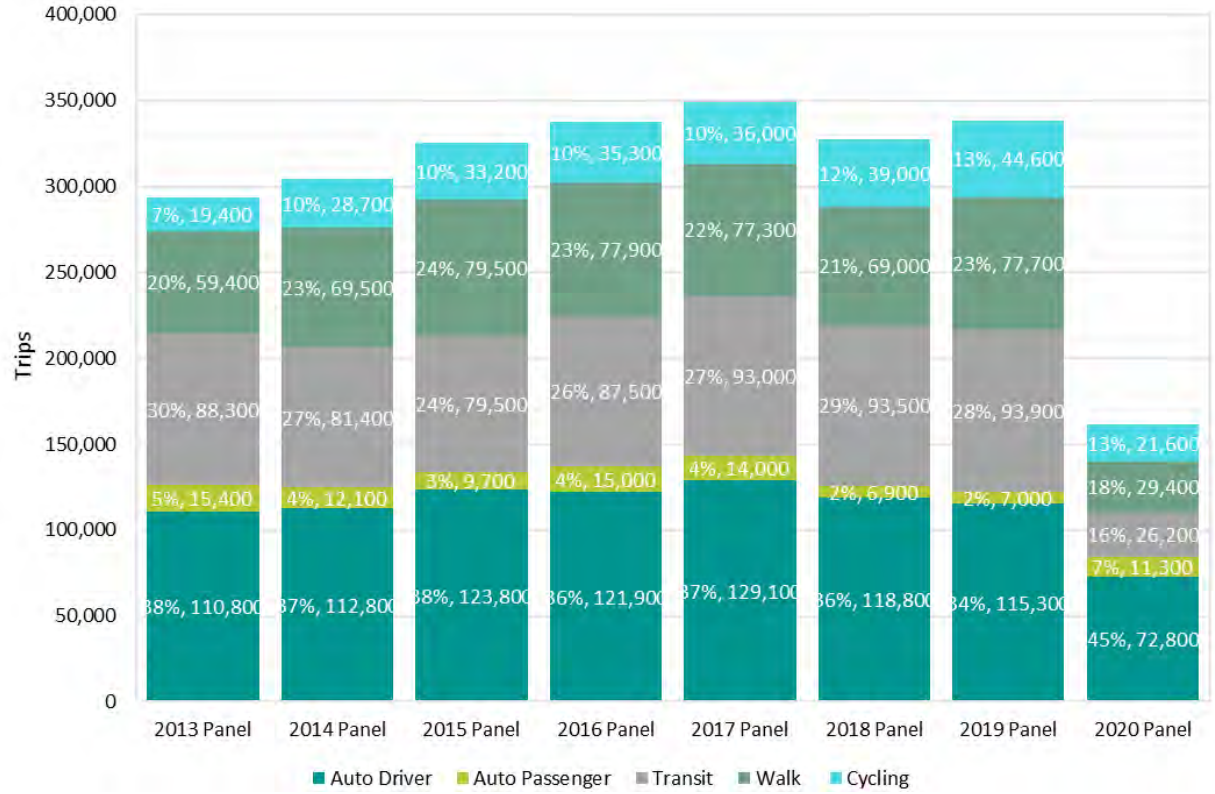


Due to the COVID-19 pandemic, the results of this year's Panel Survey showed significant changes in the trip-making and behavioural patterns of Vancouver residents. Some of the key highlights from the 2020 Panel Survey results include:

1. The sustainable mode share for all trips in 2020 is 44%, down from 54% in 2019 and below the 50% mode share target. However, there were a significant number of trips that were not made, particularly with increased online learning and working remotely from home. Although the survey did not capture this in the trip diary, estimates of working and schooling from home increases the sustainable mode share to 53%, falling in line with the recent trend and above the City's 50% mode share target.
2. Compared to 2019, the total number of trips across all modes decreased by 31%. Of all the modes, transit saw the largest decrease with a 73% reduction in the number of transit trips while auto driver had the lowest decrease with 15% less trips than 2019. This significant difference in reductions for the two modes accounts for the shift in sustainable mode share. The mode shares and total trips by mode are presented in **Figure E-2**. Trips and mode share for work trips are consistent with this trend, as illustrated in **Figure E-3**.
3. VKT per capita continues to trend downwards and 2020 saw the largest year over year decrease since the start of the Panel Survey. Overall, VKT per capita has decreased 21% since 2014.
4. In 2020, 35% of employed residents reported working from home as their usual commute mode, while 63% of students reported attending school remotely. The most common reported usual mode for those who continued to commute was auto for work trips (31% of employed residents) and transit for school trips (21% of students). Further details are presented in **Section 3.3**.

Figure E-2: Total Trips by Mode and Mode Share (2013-2020 Panel Surveys)

Figure E-3: Work Trips by Mode and Mode Share (2013-2020 Panel Surveys)



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1. Introduction

Vancouver is recognized as one of the most livable cities in the world, due in no small part to the way in which the built environment respects and magnifies its natural surroundings. This delicate balance is put under pressure as the City continues to grow and accommodate new residents and businesses. The Greenest City Action Plan, Transportation 2040, and the Climate Emergency Action Plan have set out an overarching vision of a more sustainable and integrated transportation system that will shape the future of how people move and live. To guide progress towards the vision, the City identified several key goals in their long-term strategic plans. By 2030, the City aims to cut its overall carbon pollution in half and have two-thirds of all trips in Vancouver made either on foot, bike, or transit.

The City's role in transportation includes building and maintaining infrastructure; shaping land use through guidelines and policies; managing demand through regulations and pricing; collaborating with TransLink, adjacent communities, and senior levels of government; and educating residents.

In many respects, these goals are already taking shape with the shifting live-work balance on the downtown peninsula supporting a greater number of short distance trips by walking, cycling, and transit. The launch of the Canada Line and the 2010 Winter Olympic Games were a proving ground for demonstrating the latent demand for walk / bike / transit modes of transportation. The City's ongoing commitment to provide bike facilities for all ages and abilities (AAA bike facilities) and transit-oriented development has also gone a long way to support more walk, bike, and transit modes of transport.

In late 2015, the City approved plans to expand the cycling network over five years (2016 to 2020) and to initiate a pilot project to allow those on roller blades, skateboarders, and kick scooters to use AAA bike facilities.[1] Further, the City launched the Mobi bike-share program on July 20, 2016, providing an alternative for people who might not own a bicycle. The City has also continued to invest in and improve the Arbutus Greenway, which was purchased from Canadian Pacific Railway in 2016. At a regional level, transit service continues to be improved. Recent notable improvements include the new RapidBus routes, fleet expansion and increased service hours.

To build off these successes and to plan infrastructure that will encourage more people to walk, bike, and take transit, as well as reduce vehicle-kilometres travelled (VKT), it is critical to track the effectiveness of different initiatives as well as market conditions on travel behaviour and travel patterns. Beyond the City's current data sources, including screenline traffic counts, permanent bike counters, TransLink's Regional Trip Diary Survey, and the Census Journey to Work, the Panel Survey is an effective tool to capture and track transportation trends on an annual basis.

1 Details are included in the Council report "Active Transportation Update and Pilot for Skateboarding in Protected Bike Lanes" http://council.vancouver.ca/20151210/documents/ptec7.pdf

This is the eighth year of the City of Vancouver's annual Panel Survey. As the longest running continuous travel survey administered in Vancouver, this panel survey provides a comprehensive picture of existing and emerging trip-making and travel patterns of Vancouver residents. The survey also plays an important role in monitoring the City's progress towards achieving its mode share, VKT, and emissions targets. Each year, the survey is refined to include metrics related to health, propensity of travel by active transportation modes, and reasons for shifting travel patterns, while, at its core, still being a travel survey.

In 2020, the COVID-19 pandemic brought along many challenges and changes to all aspects of everyday life including transportation. The pandemic and the various responses to the pandemic have impacted travel patterns and behaviour globally and locally. This edition of the Panel Survey attempts to understand and quantify some of these impacts as it relates to transportation in Vancouver and its residents.

1.1. STUDY OBJECTIVES

A panel of Vancouver residents has been recruited to serve in the ongoing annual Vancouver Panel Survey. The Panel Survey is a one-day personal travel diary covering weekday trips by any mode and for any purpose that also captures household and personal demographic information. This excludes commercial driver trips, such as those driving trucks, buses, and taxis, and non-Vancouver residents and tourists.

The primary objectives of the Panel Survey are to:

1. Assess the travel mode share and number of trips for the nine transportation zones in the City;
2. Assess the average VKT by City residents; and
3. Determine factors that have contributed to changes in travel behaviour and travel patterns.

The inaugural 2013 Panel Survey established a benchmark of travel behaviour in the City against which the following panel surveys are compared, allowing the City to capture trends in the key parameters of total trips, mode share, and VKT. Over time, the City can then be better positioned to determine which of its policies and projects have resulted in the desired changes in travel behaviour. This survey approach is unique among other regional travel surveys in that it aims to examine trends in travel behaviour amongst a group of panel members (i.e., a longitudinal survey) rather than comparing results of a new random sample of households every three to five years such as TransLink's Regional Trip Diary Survey. Administering the survey on an annual basis produces a continuously growing data set that allows for trend analysis on the City's sustainable mode share and VKT.

1.2. COMPLEMENTARY DATA SOURCES

The Vancouver Panel Survey is not the only survey or data collected on a regular basis. There are several other complementary data sources that add value to the Panel Survey through result comparison and supporting evidence. These complementary sources include the following.

1.2.1. Census and Journey to Work

Statistics Canada regularly conducts a national census every five years, with the latest survey currently in progress. Journey to Work is one of the topics in the long-form census and collects data specific to the commuting behaviour of Canadians. The census, including Journey to Work, collects a large volume of data, requiring significant time and effort to record, analyze, validate, and present outputs. In the previous Census, the census day was May 10, 2016; however, data was not released to the public until 2017. Journey to Work was part of the last data release at the end of November 2017, over 1.5 years after census day.

The Census and Journey to Work have several benefits and advantages over the Panel Survey which allow them to be important complementary data sources. Having been collected regularly every 5 years since the 1990s, Journey to Work allows for trend analysis on attributes and transportation behaviours dating back well before the start of the Panel Survey. The Census is a mandatory survey administered by Statistics Canada with the Journey to Work having a high sample rate of 20% to 25%. This results in high-quality data that has already undergone data cleaning, review, and analysis. While the raw data is not made publicly available, information at the desired level of granularity is usually either readily available online or available by custom request.

1.2.2. TransLink's Regional Trip Diary

The Regional Trip Diary survey administered by TransLink is a household-level travel survey representing approximately 2% of households in the Lower Mainland. This survey is performed every five to six years with the previous surveys occurring in 2008, 2011, and 2017. This survey focuses on regional issues that have some overlap with the City's interests. However, it may not capture information on emerging trends of particular interest to Vancouver such as car-share and bike-share membership, traveller satisfaction, or use of specific infrastructure within the City. Given the considerable amount of data collected for the Regional Trip Diary, release of the survey results can take over a year as seen with the release of the 2017 Regional Trip Diary in Fall 2019.

Similar to the Census and Journey to Work, the first Regional Trip Diary was conducted years before the inception of the Vancouver Panel Survey in the 1980s, allowing for trends to be observed over the last four decades. Additionally, the Trip Diary has approximately a 2% sampling rate of households in the Lower Mainland and is conducted in the fall when commute patterns are stable with students back to school and commuters back to work from summer holidays.

1.2.3. Talk Vancouver

The Talk Vancouver panel of residents interested in providing feedback to the City is a self-selected sample based on willingness to participate in surveys. This self selection makes it difficult to expand the data reliably

due to the non-random nature of those choosing to participate and can lead to biases in estimated behaviour from other more statistically sound estimates.

1.2.4. Direct Travel Volume Measurement

Direct measurements of travel volume by mode are conducted by various agencies in the region including the City of Vancouver and TransLink. This includes auto volume counts, bike counts, and transit ridership. These measurements provide useful trends on how travel is changing in the City and can be used to back-check the results from other data sources. However, these observations do not produce an overall picture as they are measuring travel, not trips, and therefore can not account for the total size of the travel market. Additionally, no information on the traveller or purpose is collected.

1.3. ADVANTAGES AND DISADVANTAGES OF THE VANCOUVER PANEL SURVEY

The Vancouver Panel Survey provides an annual check-in on transportation mode shares and their progress towards meeting the targets developed in the City's long-range plans. This provides short term feedback on how well the initiatives are performing in encouraging active mode share travel and decreasing vehicle-kilometres travelled. While the complementary surveys and data sources could provide similar insights into travel behaviour, there are trade-offs that should be considered. These trade-offs reflect the advantages and disadvantages of the Vancouver Panel Survey and generally involve the following key considerations.

1.3.1. Frequency of Measurement

The frequencies of the Census Journey to Work and the Regional Trip Diary are sufficient and reasonable given the purpose, size, and complexity of those surveys. The Vancouver Panel Survey allows for an annual measure of local and regional initiatives. There are significant changes anticipated for the City of Vancouver in the coming years that may have impacts on travel for the City's residents, including:

- Broadway Subway Project.
- Arbutus Greenway.
- Expansion of the City's cycling and walking networks.
- Removal of the Georgia and Dunsmuir Viaducts.
- Expansion of the Mobi bike share program.
- Changes of car-sharing services.
- Adoption of ride-sharing services.
- Transit Priority projects.
- Considerations of micromobility devices.

In the future, other significant changes could include the adoption of autonomous vehicles, TransLink's zone system switching to a distance-based fare system, mobility pricing, an economic downturn, businesses permanently adopting remote work policies post-COVID 19, and other technological and socio-economic factors. As the Panel Survey is conducted annually, this provides the City with the opportunity to perform a detailed analysis to determine the correlation and possible causation of changes to travel behaviour and patterns.

1.3.2. Representation of Sample

Random sampling to reduce selection bias in the sample is key to reliable statistical estimates. As the Talk Vancouver survey participants are self-selected, the bike share estimates are drastically different compared to the Census Journey to Work, Regional Trip Diary, and City of Vancouver Panel Survey.

Compared to the TransLink Regional Trip Diary and the Census Journey to Work, the Panel Survey has a significantly lower sampling size of 0.5%. As mentioned earlier, the TransLink Regional Trip Diary has a 2.5% sample size, while the sample size of the Census Journey to Work is between 20% to 25%. Additionally, both the TransLink Regional Trip Diary and the Census are cross-sectional surveys therefore they recruit the full sample size every time. Respondents do not have the option to opt-in to future surveys. While this is more expensive, it does remove potential self-selection bias. With the Panel Survey, there is a potential bias in the returning panelists, as they may be more likely to use active modes.

Regarding sampling boundaries, the Vancouver Panel Survey conforms to the City of Vancouver's nine transportation zones, which reflect unique areas within the City. Other surveys do not necessarily conform to these boundaries and therefore limit their application within Vancouver.

1.3.3. Seasonal Effects

To best reflect stable commute patterns, the Vancouver Panel Survey is conducted in the fall months when people are back to work from summer holidays and schools are in session. Similarly, the Regional Trip Diary is generally carried out in the fall period. However, it has been completed in late spring in the past after post-secondary classes have ended. On the other hand, the Census Journey to Work is typically administered during the spring / summer period.

1.3.4. Responsive to Vancouver's Emerging Priorities (Health, Parking, Friendly Interaction, etc.)

The Panel Survey allows the City to have full control of the survey design to target specific questions relevant to the City. As the Census Journey to Work and the Regional Trip Diary are developed by external agencies, there is limited or no ability for the City to influence the survey instrument. As a result, these surveys may not align with the City's priorities or needs.

1.3.5. Measure of Vancouver Resident Travel and Mode Share

Since the Vancouver Panel Survey collects transportation-related information from City of Vancouver residents only, this allows the City to better understand residents' trip-making behaviour and allows for better informed decision-making. Additionally, as the survey is conducted annually, this data set allows insights into how Vancouver residents' mode choice is changing on a year-to-year basis. Because other surveys are held less frequently, they do not capture the yearly changes in mode share.

1.3.6. Ownership of Data

As the Vancouver Panel Survey is collected for the City of Vancouver, the City has ownership of the data. This allows the City to conduct additional analysis to answer specific questions that may arise after the completion of the panel survey analysis. With the Census and Regional Trip Diary, the data is owned and held by the respective agencies.

1.4. SUSTAINABILITY

Shifting mode share to active forms of transportation, such as walking, cycling, and access to transit services, yields not only environmental, but also socio-economic benefits including the following:

1. Climate change mitigation through reductions in fossil fuel usage and associated greenhouse gas (GHG) emissions.
2. Avoided vehicle operating costs, collision costs, etc.
3. Health benefits associated with:
    - Incorporating physical activity into daily routines.
    - Localized reductions in Criteria Air Contaminants.
4. Enhanced community livability when considering:
    - Social connectedness – residents more engaged within their own neighbourhoods.
    - Improved security – following Crime Prevention Through Environmental Design principles – due to greater use of the public realm.
    - Reduced transportation costs when factored into the housing affordability equation.
5. Postponement of investments in infrastructure expansion or renewal due to lesser demand which can be redirected to more pressing City and regional needs

Collecting trend data on these key areas provides evidence to support ongoing policy refinement and adjust the level of capital investment for sustainable modes as the City works towards its Transport 2040 targets.

1.5. STRUCTURE OF THE REPORT

The report is organized into seven main sections as follows:

1. **Introduction** – Provides the context and outlines the purpose and goals of the study.
2. **Survey Methodology** – Describes the survey instrument and the process used to recruit the panel. It also explains the weighting and expansion of the panel to be statistically representative.
3. **Panel Characteristics** – Corresponds to the 'Person File' in the survey data, and includes general demographic information on age, gender, and household income of the participants. This section also provides a summary of vehicle ownership, car-sharing, transit, walking, and cycling tendencies.
4. **Trip Characteristics** – Corresponds to the 'Trip File' in the survey data and features the bulk of the analytical work in the report which compares the results of the 2020 Transportation Panel Survey with the findings from previous surveys.
5. **Comparison of Returning Panel Members** – Provides a comparative analysis of the characteristics and travel behaviour of returning panelists who participated in the survey every year since 2013.
6. **Contributing Factors Affecting Change** – Provides a high-level commentary on external and contributing factors that may have impacts on trip-making behaviour and travel patterns.
7. **Lessons Learned and Next Steps** – Highlights the key themes and lessons learned from this year's Panel Survey.

2. Survey Methodology

2.1. SURVEY INSTRUMENT

The survey instrument utilized in the 2013 Panel Survey was developed to focus on the City's objectives of tracking mode share, VKT, and other key parameters. The survey was designed in collaboration with City staff and market research experts. The resulting survey instrument sought general structural alignment with TransLink's Regional Trip Diary Survey and was designed to be robust so that minimal changes would be required in future years.

In 2014, modifications were made to the survey instrument to clarify elements that were previously found to be vague. Most changes reflected a desire on the part of the City to gain a better understanding of the emerging car sharing sector, preferences by people cycling, and bicycle / vehicle parking trends. It also introduced a question concerning social interactions during trip making and health-related metrics.

Since then, the year-by-year changes include the following.

2015:

- Added Evo car share as an option.
- Separated the question regarding usual mode of transportation into work and school purposes to eliminate confusion.
- Refined the cycling questions based on weather.
- Sought more in-depth understanding of the walking / cycling portion of trips. This question sheds light on health (i.e., integrating physical activity into commuting) as well as tolerance for transferring between modes.
- Clarified the social interaction question.

2016:

- Added a question to determine membership in Mobi, the City's new bike sharing program.
- Modified / expanded response options within questions to determine most used mode of travel for trips to / from work and/or school (as well for each trip recorded within the diary component), as follows:
  - "Car, truck or van" response option changed to "Private car, truck or van" (either as driver or passenger) and added "Car share" (either as driver or passenger).
  - "Bicycle" changed to "Private bicycle" and added "Bike Share (Mobi)".
- Options for method of payment used by those travelling by transit were modified to reflect TransLink's newly introduced Compass Card Program.
- Modified "Single detached dwelling home" response option to include laneway houses and added "Other" as a response option.
- Added a question to measure the incidence of Aboriginal people in the panel.

2017:

- Revised gender question to include transgender / other identity / prefer not to say as response options.
- Added two questions to determine awareness and level of support for the Broadway Subway Project.
- For clarity, revised “East Indian” response code in the ethnic demographic question to “South Asian”.

2018:

- Removed the two questions added in 2017 concerning awareness and level of support for the Broadway Subway Project.
- Added two new questions concerning trips made during work hours and access to employee programs that support or provide car pooling / car sharing, subsidized transit passes, and subsidized bike share.
- Options for method of payment used by those travelling by transit expanded to include Cash / Debit.
- Added youth referral questions as one of several measures taken to boost youth representation in the panel sample.

2019:

- Use of personal electric bicycle and ride-hailing services (e.g., Kater, Lyft, Uber) were added as response options for questions inquiring about the mode of transportation chosen for their travel.
- Questions concerning participants’ willingness to travel by bicycle in non-ideal weather conditions and preferred cycling environments have been removed.
- A new question has been introduced regarding participants’ level of agreement with the walking environment of their neighbourhood.
- Modified and expanded the question regarding social interactions experienced on the trip to also include response options related to infrastructure, personal safety, and travel comfort.
- Expanded response options for the question asking participants to describe the start time of their trip by including hourly time slots to better understand residents’ trip-making behaviour throughout the day.

2020:

- Expanded question regarding vehicle access to obtain the numbers of gas powered, hybrid and electric vehicles accessible to each panelist.
- Introduced new questions relating to types of bicycles owned as well as interest / use of and preferred areas to use micromobility devices (e-kick scooters, e-skateboards and hoverboards).
- The following changes were made to questions inquiring about the mode of transportation chosen for their trip:
    - Added working remotely from home / online learning and micromobility devices as response options.
    - Walking was modified to include wheelchair, medical mobility scooter or other assistive device.
    - Car2go and ZipCar were removed from the list of car share responses and Kater was removed as a ride-hailing service.

- Revised the demographic question on ethnicity / race to align with other research conducted by the City.

- Questions regarding reasonable walking distances to various destinations and participants' level of agreement with the walking environment in their neighbourhood were removed.
- Question concerning social interactions experienced during a trip was removed.
- Added COVID-19 related questions which were designed to:
  - Ascertain the impact of the pandemic on the frequency of trip-making including reasons why trips made have decreased.
  - Record frequency of using transit and ordering delivery of food and other goods before and during the pandemic.
  - Determine the ability to social distance and the level of safety on each trip.
  - Record for each trip any mode(s) that may have been taken instead if there were no pandemic.

In 2017, a cash prize draw with awards ranging in amounts from $50 to $1,000 replaced the City facility / attraction and $100 Visa Gift Card incentives awarded in 2016. Maintained in 2018, the draw was implemented to increase participation levels among the newly recruited, to reduce the attrition rate among returning panelists, and to streamline the administration of prizes. In 2019, twenty Mobi monthly passes, each valued at approximately $25, were added to the overall participation incentives. The incentive program was unchanged in 2020.

In addition to the above prize draw, in an attempt to boost participation amongst those between 18 to 34 years of age, a $20 direct incentive was provided to each person who registered and completed their trip diary in 2018. In 2019, a slight change was made to the incentive program giving each 18 to 34-year-old participant the choice to either receive the $20 direct incentive or enter the draw. This change was maintained in the 2020 survey year and resulted in reducing the need to issue the direct incentive by 46%.

Residents were recruited by Mustel Group who conducted random probability sampling to best reflect the population demographics in the nine transportation zones.

As in past study waves, residents who completed the required 2019 study components were invited via email to participate in the 2020 survey. To reduce recruiting costs, invitations were also delivered to the panelists who had completed all but the diary component in 2019.

Further, as in previous waves of the research, to address the attrition levels in the 2019 random sample and boost participation of the younger age cohort (18 to 34 years), Mustel Group conducted telephone (including cell phone and landline) recruitment by continuing random selection of gender, but initially focusing on residents of 18 to 34 years of age and in transportation zones where participation levels were below target in previous waves.

Consistent with the previous two years, in an effort to increase representation of the younger age cohort within the panel sample, Mustel Group allowed returning panelists and new recruits to refer an 18 to 34-year-old living in the same household to participate in the survey. The referral program resulted in 23 of the 301 total diaries completed being for this age cohort (7%). Adding in the youth that were referred in 2018 and 2019 who returned and completed in 2020 (46), the total participants recruited through this process in 2020 is 69 (22%).

The survey has two main components: a “person component” and a “trip component”.

In the person component of the questionnaire, the participants were asked to provide the following information to assist in the expansion of the data and obtain general transportation characteristics:

- Demographic information (age, gender, employment, household income, ethnicity).
- Home and work addresses.
- Degree of access to different modes of transportation (private vehicle, car share, private bicycle, bike share, transit).
- Usual travel habits.

In the trip component, participants were required to provide the following details for all trips made during their assigned travel day; this information is used to estimate trip characteristics for the City including:

- Start / end location.
- Time of day.
- Purpose of trip.
- Mode of transportation.
- Odometer readings (for those who reported driving trips).

The complete survey instrument, for both returning panelists and new recruits, is provided in *Appendix B*.

2.2. DATA COLLECTION AND SAMPLING

The sampling strategy was designed to recruit a longitudinal panel representative of residents across Vancouver’s nine transportation zones. These zones are consistent with those that have also been used in TransLink’s Regional Trip Diary Survey. Note that new panel survey members were recruited to replace previous panel members that dropped out. **Figure 2-1** shows how Vancouver’s nine transportation zones relate to the 22 neighbourhood areas within the city.

Figure 2-1: Transportation Zones and Neighbourhood Zones in Vancouver

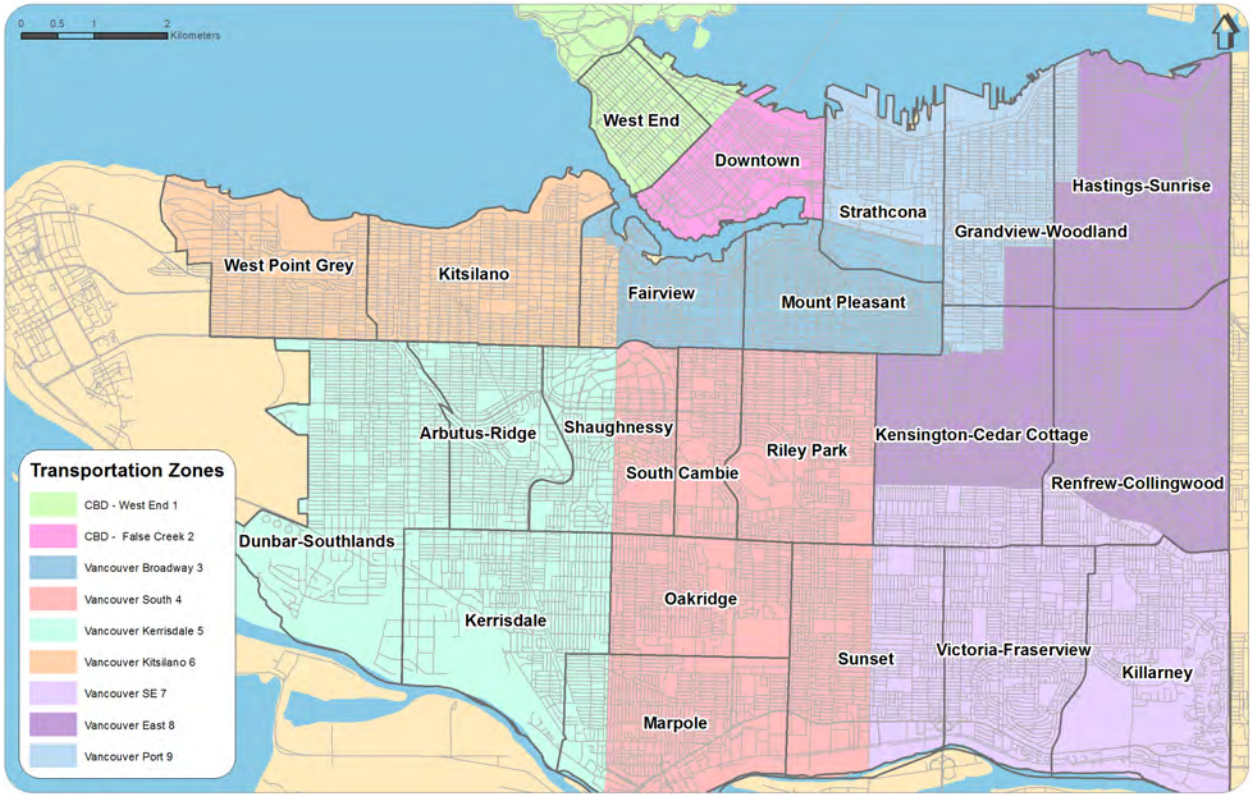


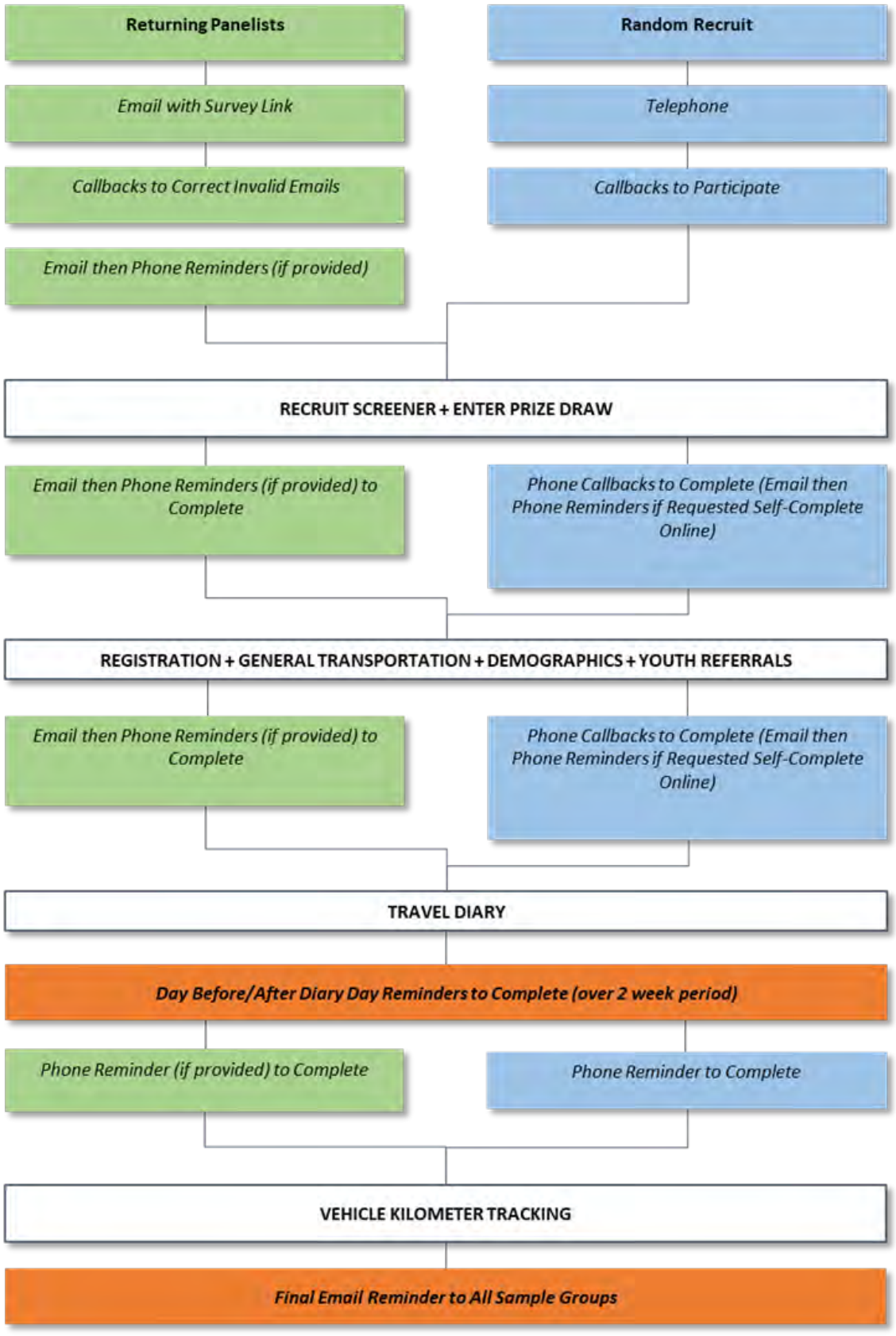
Table 2-1 shows proportionate sampling targets for the estimated 2020 population (based on a projection of the 2016 Census data) required to achieve a representative total of at least 2,500 residents. As in 2019, this year's panel does not include participants below 18 years old. The total estimated population aged 18 years and older from the 2016 Census is approximately 550,905. Of the 18+ population, a 0.5% random sample of residents was achieved, similar to the previous Vancouver Panel Surveys.

Table 2-1: Trip Diary Targets by Transportation Zone (Population 18 years and older)

		2020 Projection Based on 2016 Census Data			
Transportation Zone		Total Population	Population 18+	Proportion 18+	Proportionate Sample
1	CBD – West End	63,128	59,517	10.80%	270
2	CBD – False Creek	64,682	57,808	10.49%	262
3	Vancouver Broadway	64,280	56,756	10.30%	258
4	Vancouver South	89,606	73,233	13.29%	332
5	Vancouver Kerrisdale	63,731	50,255	9.12%	228
6	Vancouver Kitsilano	63,696	55,345	10.05%	251
7	Vancouver SE	86,519	69,057	12.54%	314
8	Vancouver East	104,645	86,017	15.61%	390
9	Vancouver Port	49,127	42,917	7.79%	195
	Total	**649,414**	**550,905**		**2,500**

The panel recruitment process, illustrated in the flow chart in **Figure 2-2**, began in the last week of September, a little more than two weeks later than in 2019. Returning panelists were sent email invitations starting September 28th; new recruitment started on October 1st and ran until November 27th.

Figure 2-2: Panel Survey Flow Chart



The window to enter trip diaries was September 9th to December 7th. The first trip diary completions were made within a week with a substantial portion of completions amongst returning panelists completed within the first few days of November (81%). The bulk of the new recruit completions was entered by the last week of November to maintain a 2,500 sample for statistical significance.

Telephone recruitment to replenish randomly recruited panelists lost to attrition began October 1st. To offset attrition in the returning panelist sample and to encourage new recruits to follow up with their commitment, reminder calls and emails to all groups were conducted throughout the survey period.

Although additional effort was applied to address participation rates below target in the 18 to 34 age cohort and in some of the transportation zones, continued challenges necessitated randomly recruiting all age groups in all zones to achieve the city-wide target. As indicated earlier, Mustel Group recruited panel participants using a random probability sampling method to capture a random distribution of residents from the nine zones that reflects the demographic profile of Vancouver. The panel characteristics (e.g., age, gender) were closely monitored during recruitment. For the random probability sampling, the sample frame consisted of i) published landlines stratified by the City's nine transportation zone designations and ii) random digit generated cell phone numbers within City of Vancouver rate centres.

In an effort to boost the underrepresented youth cohort (18 to 34 years of age) and to ensure targets by transportation zones were met, Mustel Group employed the following measures:

- **Cell Phone Sample**: The random-digit cell phone sample enables expanded coverage to include residents without landlines. While the published landline sample was pre-tagged by zone, the cell phone sample can only be tagged by zone during the interview. City residency and the geographic zone were confirmed for all respondents during the interview process. Within selected households, respondents were chosen at random (e.g., next birthday) or targeted by age / gender as required.
- **Incentives**: As indicated earlier, a cash-based incentive design was implemented in 2017, in lieu of the combination of City based facility / attraction and Visa gift cards awarded in 2016. This and the chance to win one of twenty Mobi monthly bike passes valued at approximately $25 each was added in 2019 and maintained in 2020. Also retained was the $20 direct incentive added for youth in 2018, which was revised in 2019 to a choice of either receiving the direct incentive or entering the draw. Note that while marginally improving the response rate among this group, 46% of the group opted to enter the draw, a substantial savings on direct incentive costs.
- **Additional measures**:
  - In addition to inviting panelists from previous surveys, all participants from the 2019 wave who only completed the registration component were invited to participate in this year's panel survey.
  - Additionally, the 2020 survey includes the referral process that was introduced in the 2018 Panel Survey that allows returning or new panelists 35+ years of age to refer one person from their household between 18 to 34 years of age to participate in the survey.
  - Of the total trip diaries completed by those within the 18 to 34 age cohort, 38% were recruited via landline sample, 37% via cell phone sample and 19% were referred by a returning panelist living in the same household. The referral process and continued cell phone sampling will be ongoing with increasing requirements, especially in contacting the 18 to 34 age cohort, and considering the incidence of landlines is expected to decrease over time.

- In contrast, for the 35 to 54 age group, only 16% were recruited by cell phone. This figure drops to 5% for the 55+ age cohort.

The attrition rate in 2020 was 28%, which is similar to the 29% attrition in 2019.

Travel days for the recording of trips were assigned at random with a goal to equalize the days of the week (Monday to Friday, as required).

Highlights from the 2020 survey sample include the following:

- A total of 2,689 respondents completed the trip diary. **Table 2-2** presents a breakdown of all respondents by geographic sub-area. The target figures show the number of samples required to match the proportions from the census.
- **55.2%** of respondents were female, **44.4%** were male, and the remaining identified as transgender, other gender or refused to answer, a similar distribution as in previous years.
- **1,972** respondents had access to a private vehicle in the random sample with the majority entering an odometer reading (**94%**).

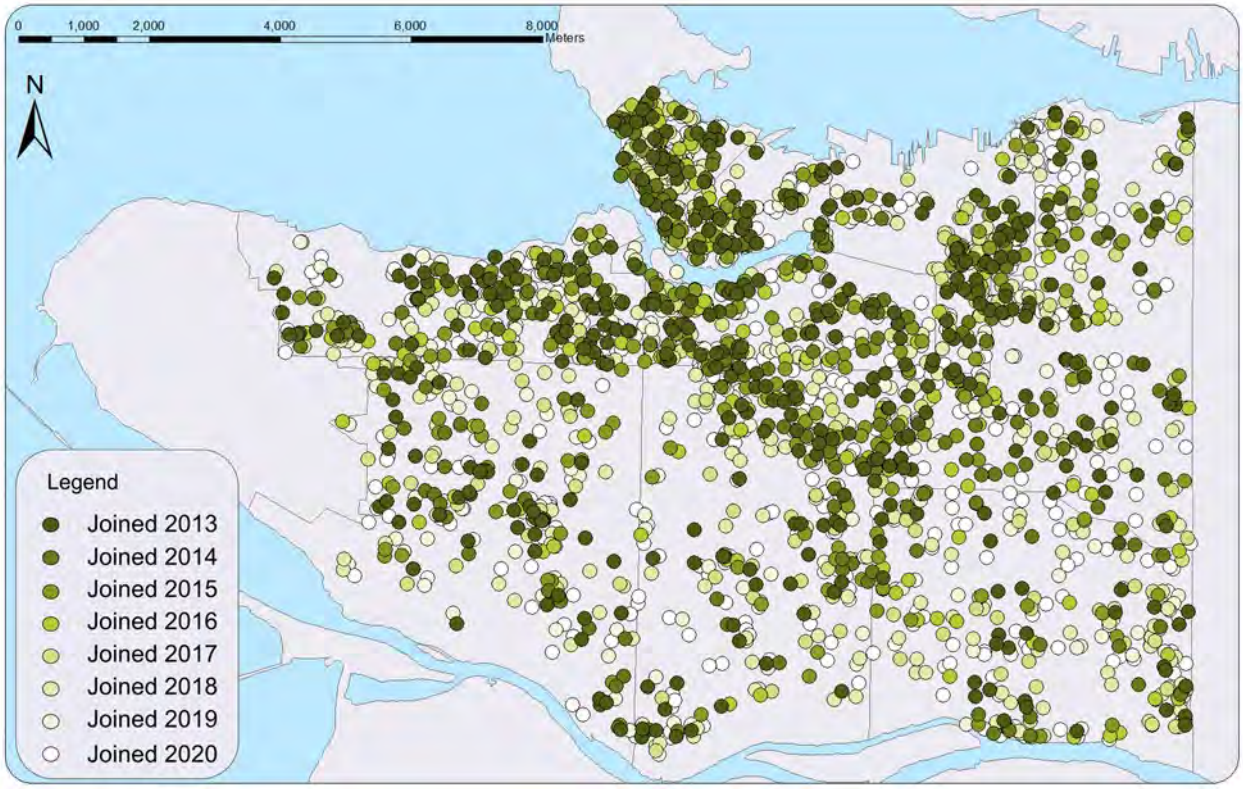
Table 2-2 shows that some of the transportation zones were over sampled and some were under sampled. More samples provide a more statistically reliable dataset and a lower sample can compromise the confidence levels in the reported data. Improvements were made in 2019 to address under-sampling; however, in 2020 as in previous years, it was difficult to recruit panel members from a few transportation zones. CBD-False Creek results were combined with the CBD-West End to provide combined results for Downtown to be consistent with previous measures.

Table 2-2: Completed Trip Diaries by Transportation Zone

	Transportation Zone	Mustel	Target	Δ Target	% Difference
1	CBD – West End	284	270	14	5%
2	CBD – False Creek	245	262	-17	-6%
3	Vancouver Broadway	318	258	60	23%
4	Vancouver South	342	332	10	3%
5	Vancouver Kerrisdale	262	228	34	15%
6	Vancouver Kitsilano	324	251	73	29%
7	Vancouver SE	282	314	-32	-10%
8	Vancouver East	399	390	9	2%
9	Vancouver Port	233	195	38	19%
	Total	**2,689**	**2,500**	**189**	**8%**

Figure 2-3 illustrates the household locations of participating panel members, categorized by new and returning panelists. There is an even geographic distribution of new and returning panelists through each of the transportation zones ensuring no geographic bias. Travel patterns, as further discussed in *Section 4*, vary significantly depending on which neighbourhood is being sampled.

Figure 2-3: Distribution of Participating Panel Members



2.3. SURVEY WEIGHING AND EXPANSION

The final survey data for the random sample was expanded to represent the population of City of Vancouver residents aged 18 years and older.

A firm specializing in sampling, mapping, and census information, Environics Analytics (EA), provided the sample for survey recruitment and developed demographic projections of the current year based on 2016 Census Data. Population forecasts were derived from the 2016 Census base population data by projecting change over the period of 2016 to the current year using Canada Post's dwelling counts at the postal code level to adjust the population of the City's transportation zones.

The travel survey represents a 0.5% random sample of the estimated 2020 population residing within the study area (2,689 respondents out of 550,905 City of Vancouver residents 18 years of age and over). The data collected from this survey must be expanded to the survey universe, that is, the total number of City of Vancouver residents of the same age group (18 years and older).

To ensure a statistically representative sample, the weighting and expansion factors developed for the person and trip data collected in the City of Vancouver Panel Survey in 2020 matched known demographic characteristics for the City of Vancouver's transportation zones as well as age within gender groups.

2.3.1. Person Expansion

For the person data collected, the random survey sample was expanded based on the age categories within the gender groups as well as within the City of Vancouver's geographic transportation zones. Although there are nine such zones in the City, due to limited sampling in geographic zone 2 (CBD – False Creek), this zone was combined with zone 1 (CBD West End) and they were treated as one to represent Downtown Vancouver in the expansion process[2].

A total of 48 weighted expansion categories were required to cover the eight transportation zones, three age categories (18 to 34, 35 to 54, and 55 and over), and two genders. Additional expansion cells were included for respondents who identified themselves as transgender, other identity, or refused to identify their gender. These respondents were represented as their actual proportion within the corresponding zone and age category. As there were only 9 records where gender was not identified as male or female, the additional expansion process has no overall effect on the gender distribution. **Table 2-3** shows the actual survey sample age and gender distribution prior to weighting. Compared to 2019, similar proportions of each age cohort participated. **Table 2-4** shows the City's 2020 population estimates based on the 2016 Census.

Table 2-3: Panel Survey Age and Gender Distribution

Gender	18-24	25-34	35-44	45-54	55-64	65+	Total
Male	1.5%	3.6%	4.4%	7.3%	9.6%	18.1%	44.4%
Female	1.9%	4.1%	4.7%	9.0%	11.5%	23.9%	55.2%
TransGender	-	-	-	<1%	-	<1%	<1%
Other	-	-	-	<1%	-	-	<1%
Refused	<1%	<1%	-	-	<1%	<1%	<1%
Total	**3.5%**	**7.7%**	**9.1%**	**16.3%**	**21.2%**	**42.2%**	**100.0%**

Table 2-4: 2020 Demographic Projections (based on 2016 Census)

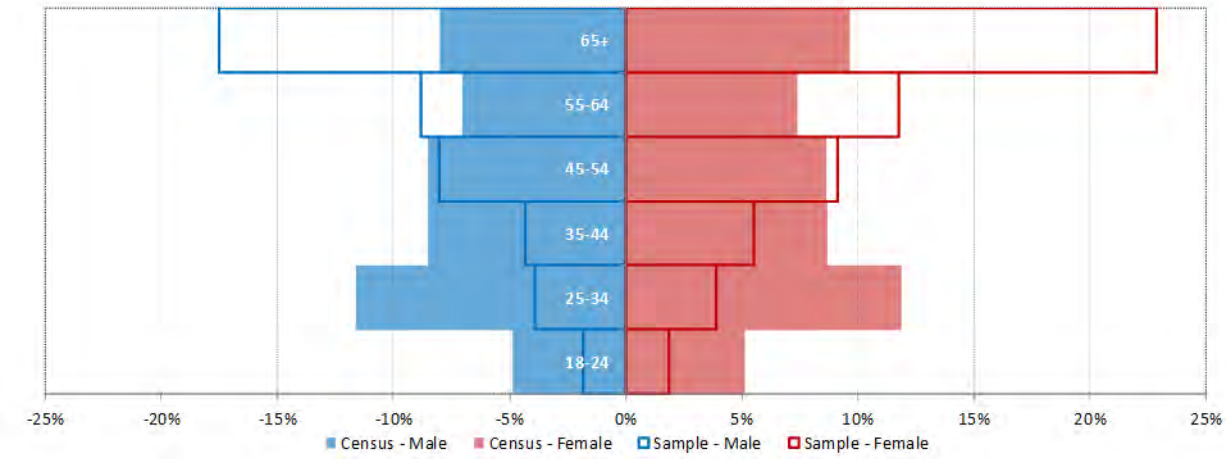
Gender	18-24	25-34	35-44	45-54	55-64	65+	Total
Male	4.9%	11.6%	8.5%	8.5%	7.0%	8.0%	48.5%
Female	5.1%	11.9%	8.7%	8.7%	7.4%	9.6%	51.5%
Total	**10.0%**	**23.5%**	**17.2%**	**17.2%**	**14.4%**	**17.6%**	**100.0%**

Figure 2-4 illustrates the age and gender distribution of the survey sample versus the entire City of Vancouver population. As evident, under-sampling of the 18 to 34 age group and over-sampling of the 55+ age group continues. The youth cohort represents 33.5% of the City's population based on the 2016 Census. However, they represent only 11.2% of the survey sample. This group is difficult to reach in any market research effort as they typically do not have a landline and cell phone lists do not provide information on the home location of cell owners, providing only the location where the cell phone was purchased. Therefore, it is expensive and difficult to target geographic transportation zones based on cell phone samples for younger age groups. This does present some challenges for tracking trends in travel behaviour,

[2] It was also decided to show the results of CBD-West End and False Creek in the report's analysis sections both individually and merged (Sections 3 to 5, wherever relevant) to account for the low sampling in CBD-False Creek and to be consistent with previous reporting.

especially considering that this age group is the most mobile, i.e., no children and not married. On the other end, the 65 + age group represents 42.2% of the survey sample which is more than double the 17.7% share of the study area population.

Figure 2-4: Age and Gender Distribution: Survey Sample versus Study Area



In the end, for the total sample size of 2,689 to be reflective of the entire City of Vancouver population over 18 years of age for this survey (550,905), the overall average expansion factor applied to the dataset was 204.8 (that is, each person's record represents the travel characteristics of just over 200 Vancouver residents). The expanded person factor by age cohorts demonstrates that a higher factor was applied to the youth and a lower one for the over 55 age group, as follows:

- 18 to 34 years – 648.2.
- 35 to 54 years – 267.8.
- 55 years and over – 101.1.

The expanded person weight above was then applied to the data collected from the trip diaries, but also included a weekday equalizer weight to balance the trips over the week (Monday to Friday). Note that the expanded population also includes people who reported 'rather not say' for the age question.

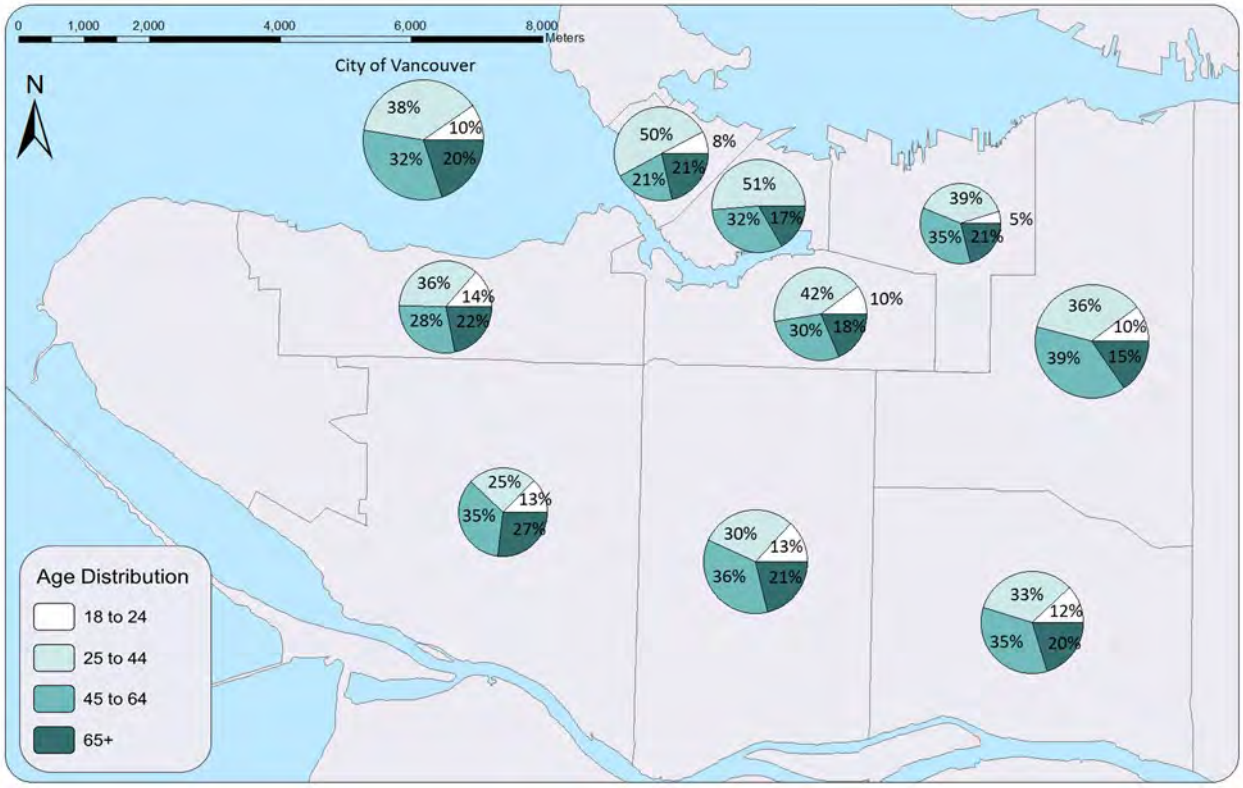
3. Panel Characteristics

Key characteristics of the participants of the Panel Survey are presented in this section of the report. It should be noted that the breakdowns shown in the following sections represent the expansion of the sample to the census control population by age group as explained in *Section 2.3*.

3.1. AGE DISTRIBUTION

The age distribution of panelists in each of the nine transportation zones is shown in **Figure 3-1**. The pie charts are scaled to represent the population of each zone. In all the zones, the 18 to 24 age group continues to be under-represented as they have been in previous years. In the CBD-False Creek zone, there is no representation of this age group. However, there is a higher representation of this age group in the CBD-West End, Broadway, Kitsilano and Port zones compared to the 2019 Panel Survey. In the CBD-West End, CBD-False Creek, Vancouver Broadway, and Vancouver Kitsilano transportation zones, more than half of the respondents are between the ages of 18 and 44.

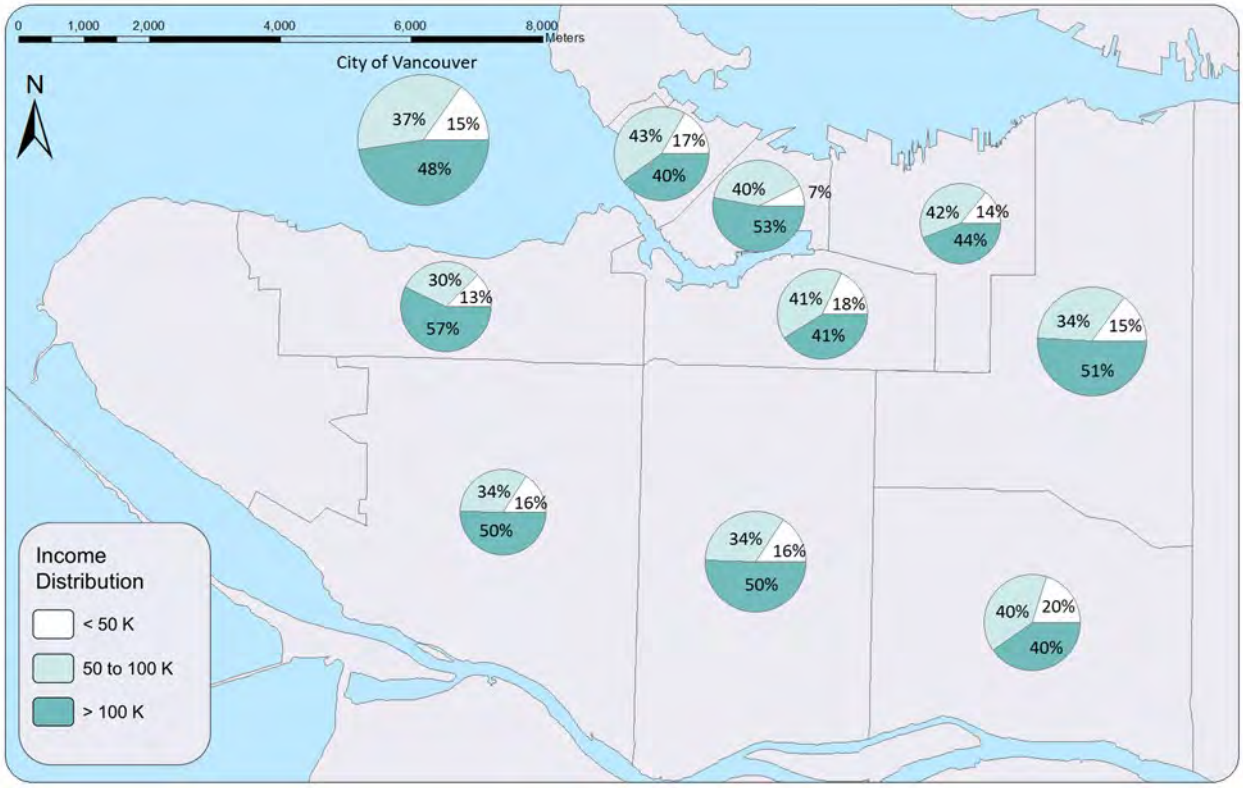
Figure 3-1: Age Distribution: Weighted Population



3.2. INCOME DISTRIBUTION

The distribution of the panelists' reported annual household income is shown in **Figure 3-2**. The pie charts are scaled to represent the population of each zone. Nearly half of the households in Vancouver reported a household income greater than $100,000 per year. Kitsilano has the highest proportion of households making more than $100,000 annually, while Southeast has the largest percentage of households making less than $50,000 per year. Overall, there are only minor differences in the income distribution when compared to the 2019 Panel Survey.

Figure 3-2: Income Distribution: Weighted Population

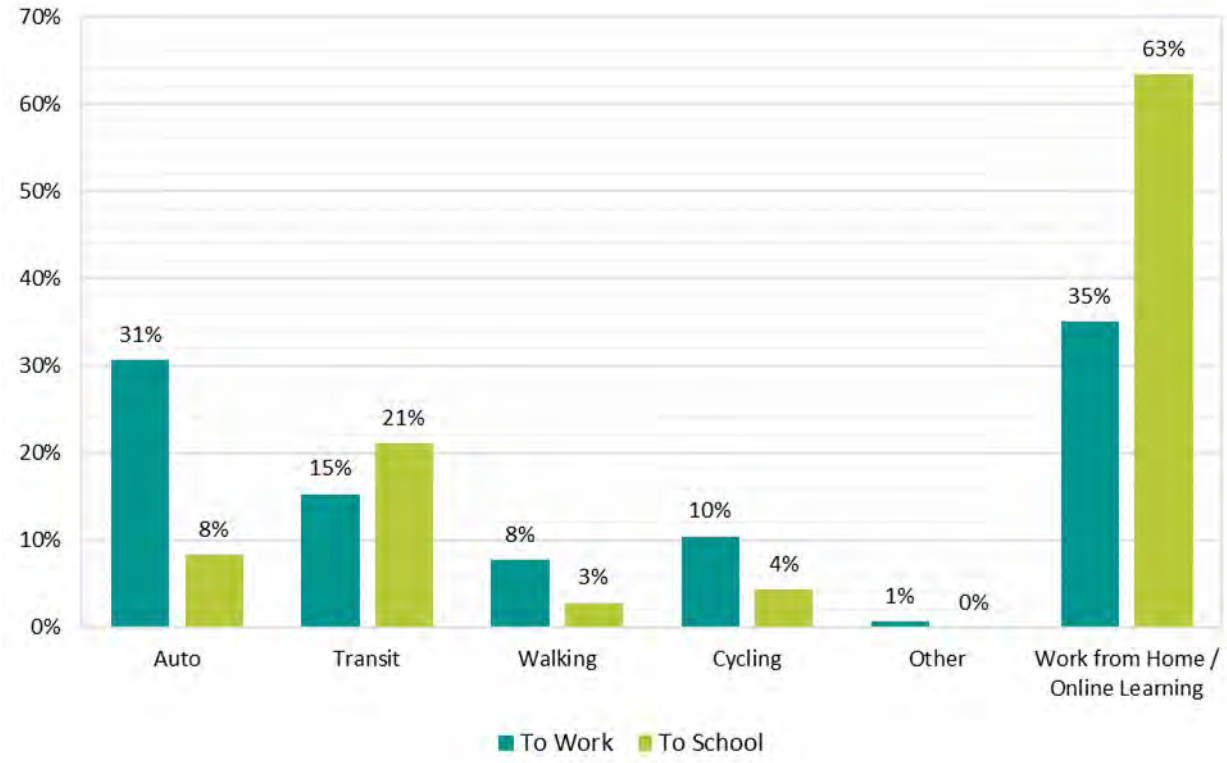


3.3. USUAL COMMUTE MODE

Due to COVID-19, which led to the increased number of people working remotely from home and schools moving towards online learning, a new answer option was added to the question asking respondents about their usual mode of travel to work or school. The usual commute mode does not represent actual trips that were taken by residents, but instead shows how residents usually commute to work or school. Additionally, the usual commute mode is a stated measure, compared to actual trips recorded in the trip diary, which is an observed measure. As shown in **Figure 3-3**, in 2020, 35% of employed residents reported working from home, while 63% of students attended school remotely. Of those who continued to travel to their employer's workplace, commute by personal vehicle, either as a driver or passenger, was the most common mode choice, followed by public transit. Overall, 31% of the employed residents reported personal vehicle as their usual commute mode while 15% selected public transit.

In comparison to work commutes, a smaller proportion of students commute to school by car (8%) and a larger proportion take transit (21%). A very high proportion of students did their learning online from home.

Figure 3-3: Usual Mode of Travel to Commute

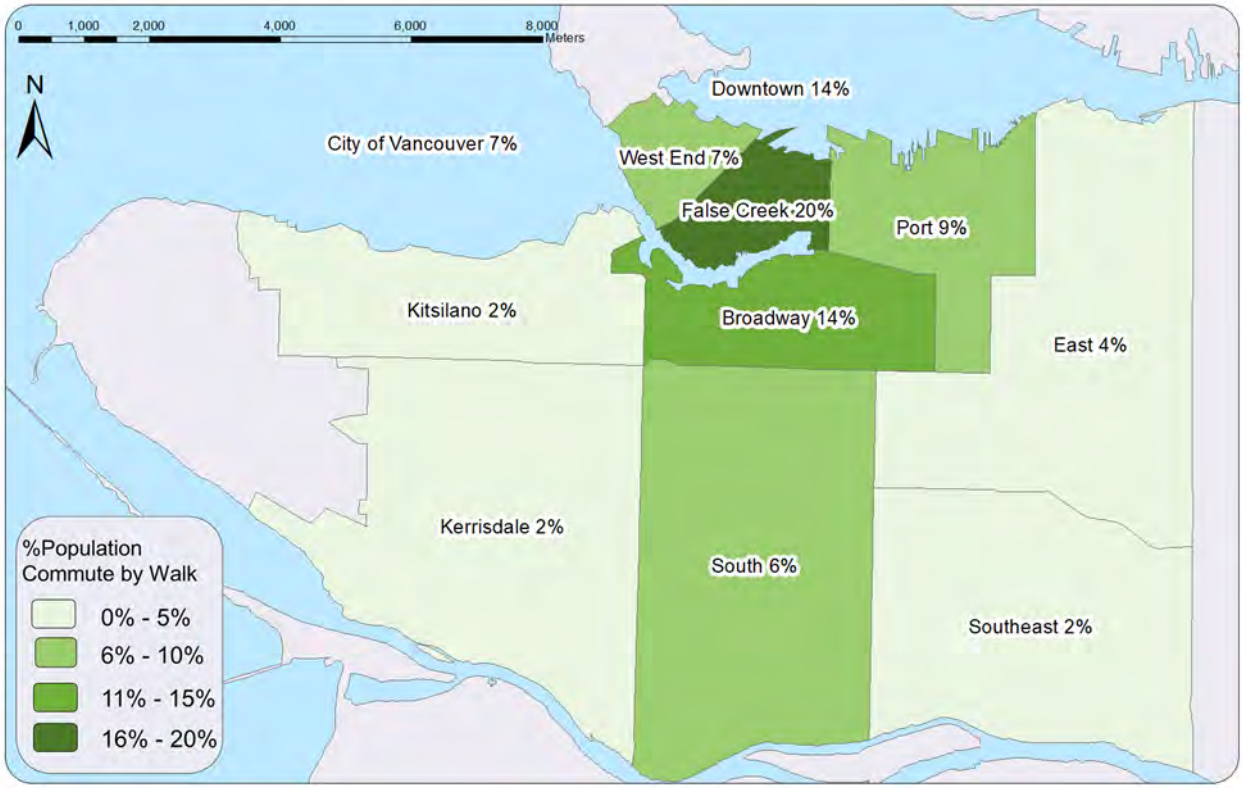


3.4. WALKING

With the COVID-19 response measures having drastically accelerated the transition to telework, this year saw a drop in the number of residents who identified walking as their usual mode of travel to work or school. While only 7% of residents identified walking as their usual mode, the findings from the trip diaries reveal that, in fact, 18% of all trips made in 2020 to either work or school were made on foot.

Looking at the transportation zones displayed in **Figure 3-4**, more than 10% of the population living in the CBD – False Creek and Broadway zones reported walking to be their usual mode of travel for work or school trips. Evidently, these zones have high walkability scores as many residents are located close to their jobs and have access to a well-developed pedestrian network.

Figure 3-4: People Identifying Walking as Their Usual Mode of Travel to Work / School



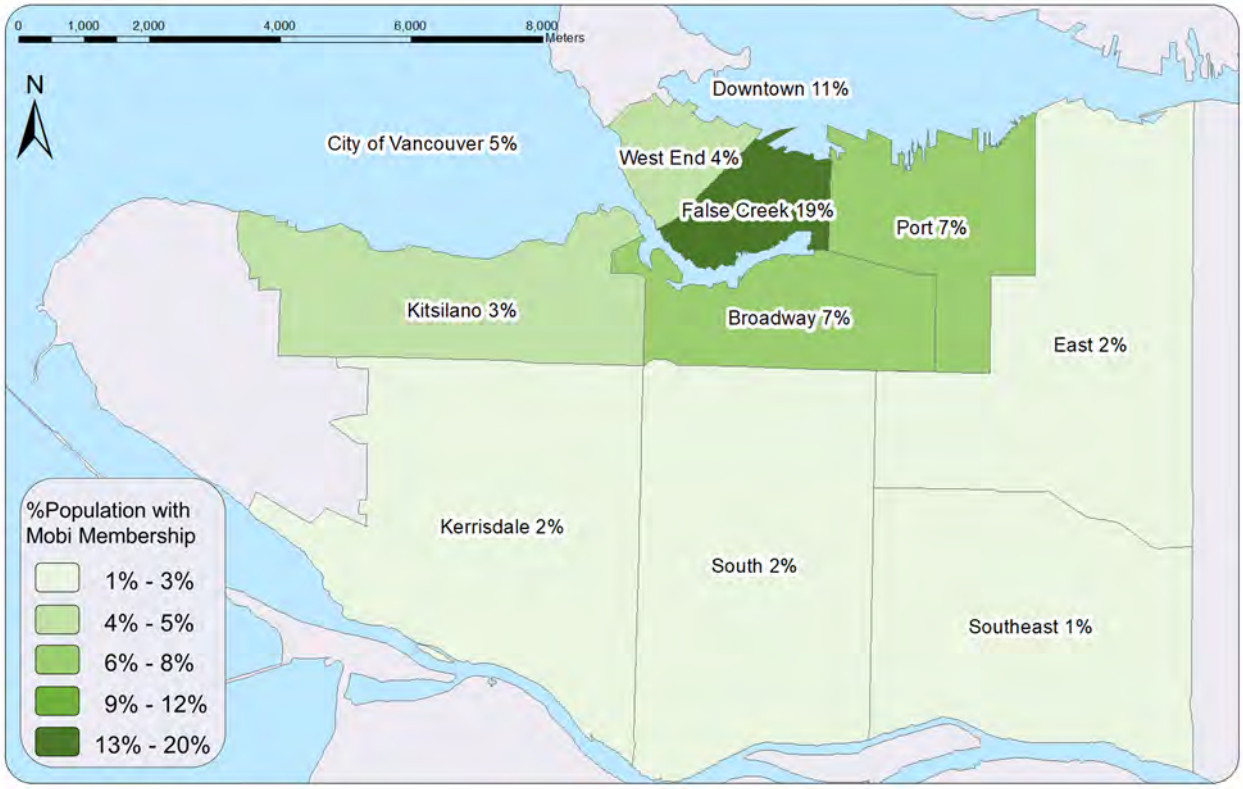
3.5. CYCLING

Trip diary responses received for this year's panel survey show that there were approximately 109,400 bike trips made by residents, representing an 8% share of all trips.

In July of 2016, to encourage more people to travel by bike, the City of Vancouver launched a public bike share program called Mobi. In its first year, the Mobi bike share system included coverage in downtown Vancouver and as far east as Main St, as far south as 16th Ave and as far west as Arbutus St. In November of 2017, the City announced a Phase II Expansion, extending the service area further east to Commercial Drive with an additional 50 stations and 500 bikes. Since its inception, the Mobi public bike share program has made cycling more convenient and offers a new transportation choice for Vancouver residents.

The percentage of people with Mobi memberships within the City of Vancouver is shown in **Figure 3-5**. Overall, 5% of Vancouver residents are registered with Mobi as a member. In general, membership is reported to be the highest for transportation zones within the Mobi coverage area. Membership is highest in the downtown zones with 11% of residents reported to be Mobi members. As shown in the figure, membership decreases as the zones get further away from the downtown area. Based on a summary of Mobi trip information provided by the City, it was estimated that 1.1% of all bike trips within the City were made using the Mobi bike share program, a slight increase from 1.0% in 2019.

Figure 3-5: Percentage of Population with Mobi Membership



3.6. TRANSIT USAGE

The distribution of people who reported transit as their usual mode of travel to work is shown in **Figure 3-6**. Downtown Vancouver has the highest self-reported level of transit use (21%) for people travelling to work. Overall, 15% of Vancouver residents reported transit as their usual commute mode, down from 33% from last year's panel survey. This finding is corroborated by the significant decrease in transit ridership across the region. TransLink has been tracking their ridership recovery and the 2020 Transit Service Performance Review reported a 41% ridership recovery system-wide for early fall 2020. For the Vancouver/UBC region, the recovery was similar at 42%, reflecting a 58% decrease compared to Fall 2019.

While TransLink and the Province have responsibility for transit provision, the City can also take an active role in supporting transit usage by improving walking and cycling connections to bus stops and SkyTrain / SeaBus stations, as well as amenities at these locations including shelters, information displays, and good lighting. Additionally, the City plays an important role in supporting bus speed priority on high ridership and under performing routes.

Figure 3-6: People Identifying Transit as Their Usual Mode of Travel to Work

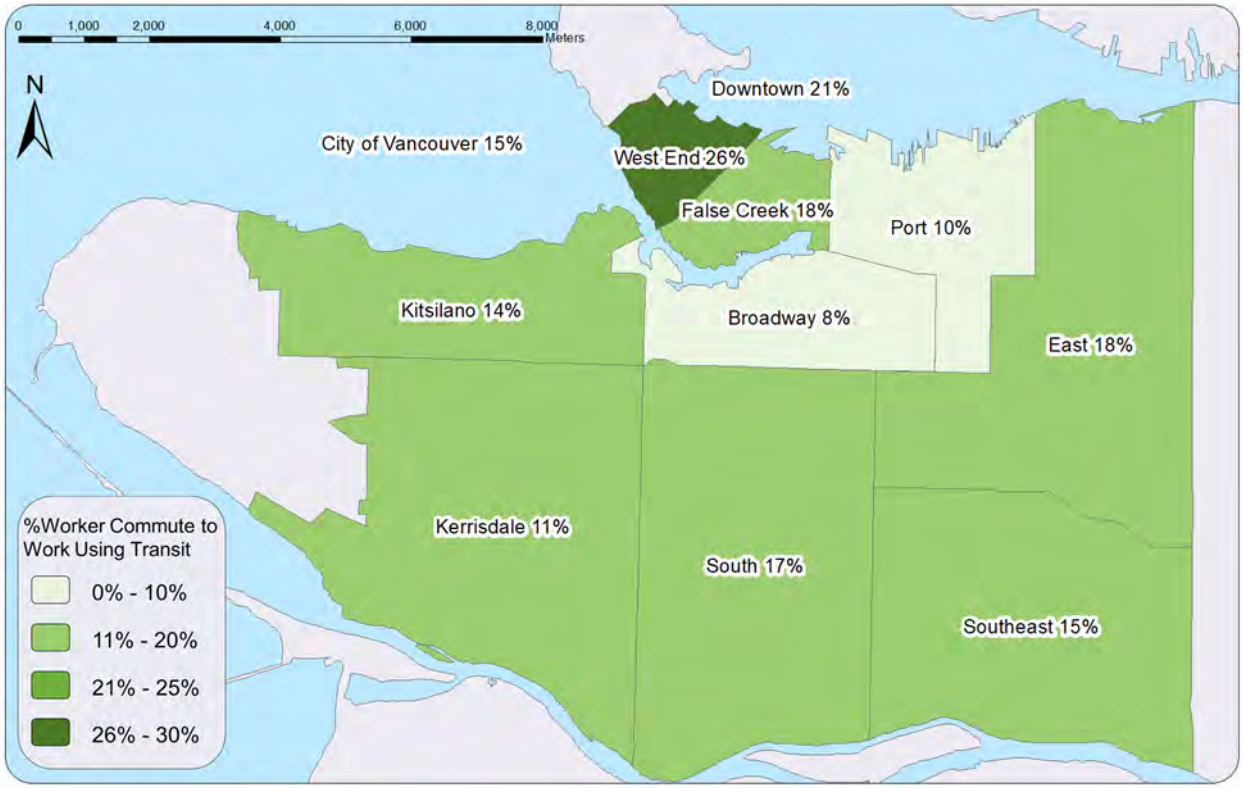
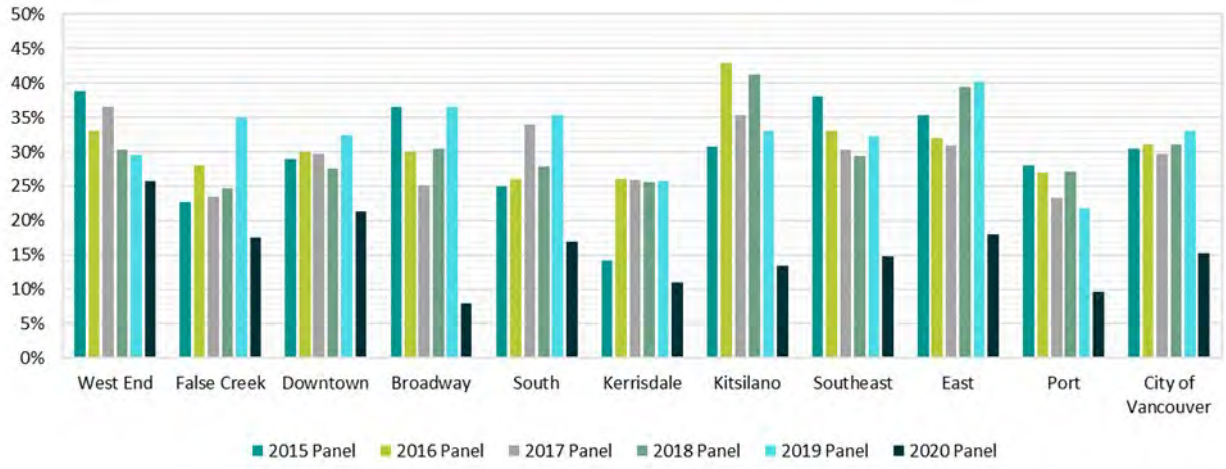


Figure 3-7 compares the reported use of transit as the usual mode of travel to work throughout the last six years. As shown in the figure, the percentage of residents who indicated they usually take transit to work has dropped substantially in 2020 across all transportation zones. This is not surprising as public transit systems across Canada have all experienced a steep decline in ridership.

Figure 3-7: Comparison of Transit Reported as Usual Mode of Travel to Work



The geographic distribution of students identifying transit as their usual mode of travel to school is exhibited in **Figure 3-8**. As a response to the COVID-19 pandemic, many post secondary institutions have shifted to

online learning. As a result, there is a significant drop in the number of students who indicated that they use transit to commute to school this year when compared to previous surveys. This level of reduction becomes apparent when comparing the results to previous, as illustrated in **Figure 3-9**. While the CBD – West End shows an increase in the reported use of transit as the mode of choice to travel to school, it should be noted that exploring further by the Vancouver subzones should be done with caution as there is some variability year to year due to the small sample size.

Figure 3-8: People Identifying Transit as their Usual Mode of Travel to School

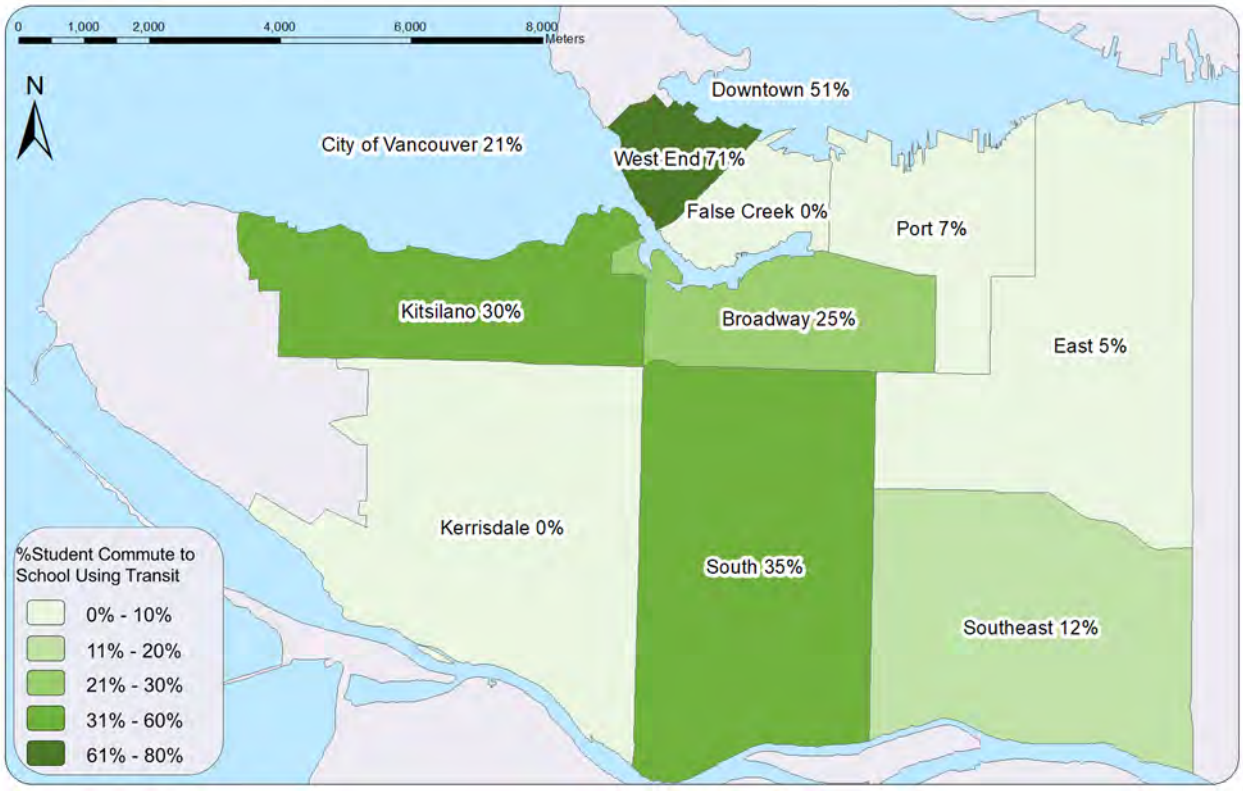
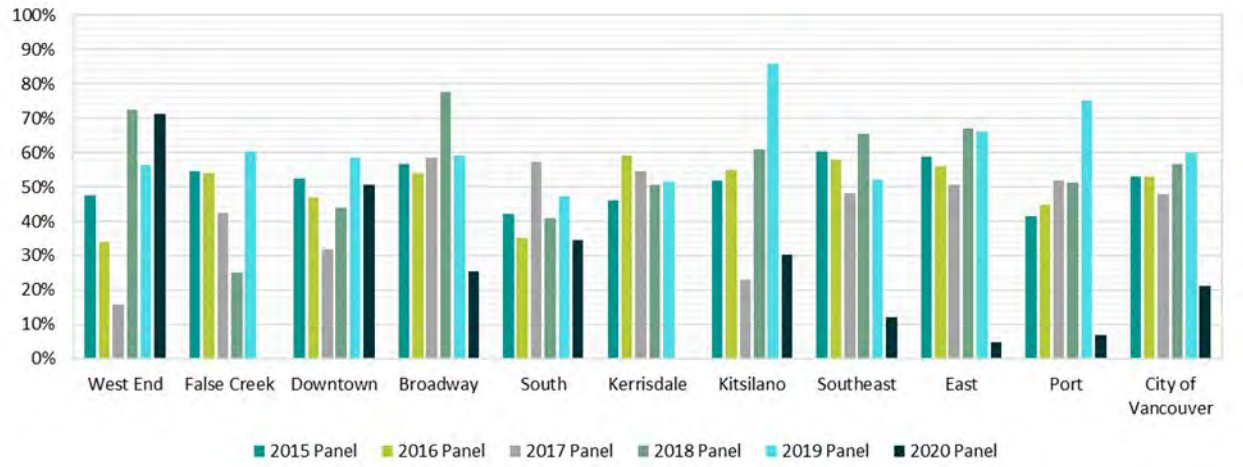


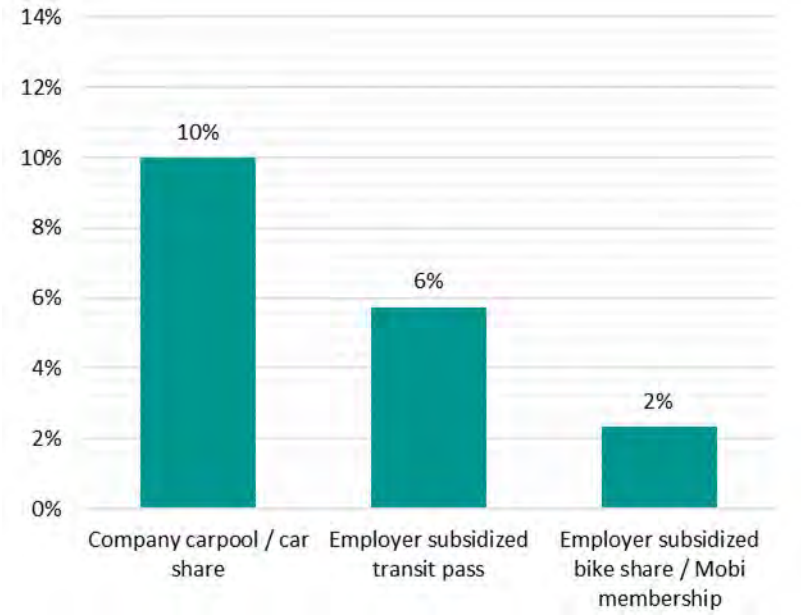
Figure 3-9: Comparison of Transit Reported as Usual Mode of Travel to School



3.7. BUSINESS TRIPS DURING WORK

Of those who work, either full-time, part-time, or self-employed, 30% reported making business related trips during work hours. Of those who make business related trips, 82% indicated that they do not have access to any employee subsidized programs. **Figure 3-10** shows the percentage of workers who have access to different employee subsidized programs. It should be noted that it is possible for one employee to have access to more than one employee subsidized program.

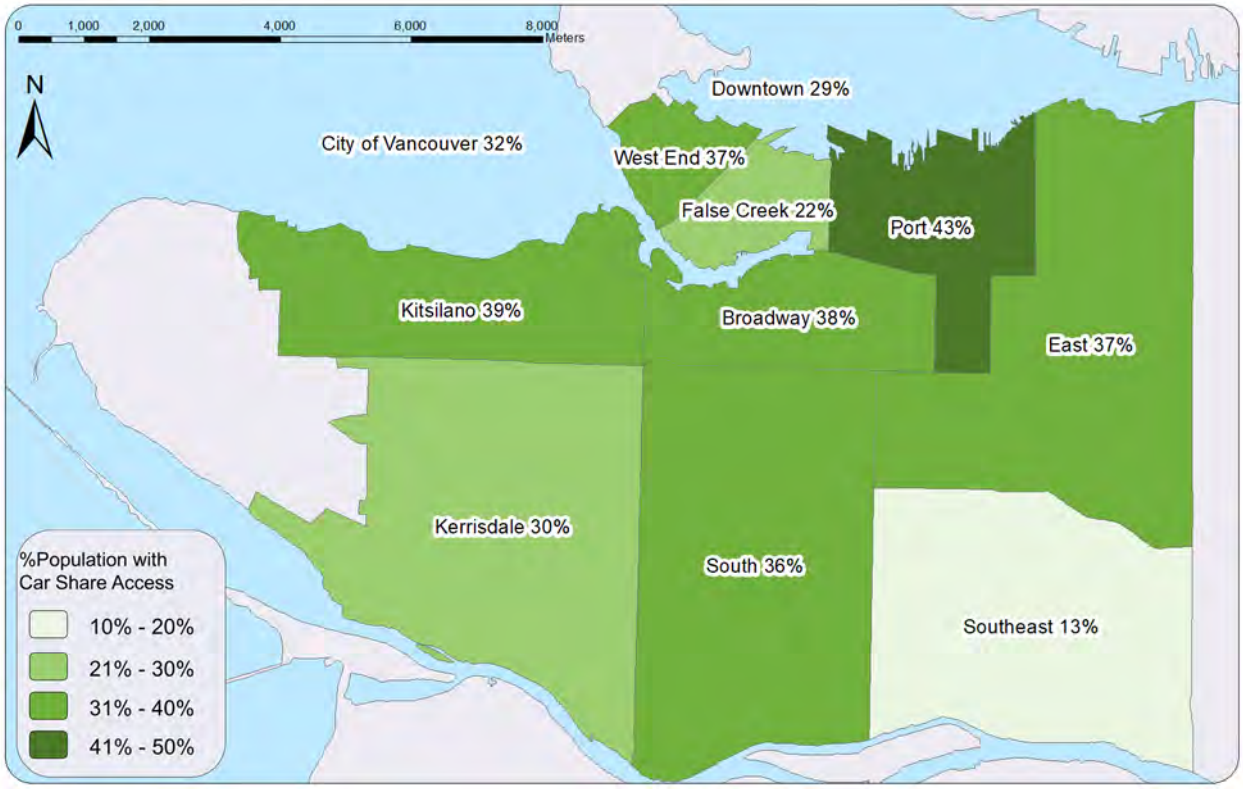
Figure 3-10: Access to Employee Programs



3.8. CAR SHARE ACCESS

The distribution of residents in the City of Vancouver with access to car share programs is shown in **Figure 3-11**. There was a decrease in the subscription of car sharing programs among Vancouver residents from 37% in 2019 to 32% in 2020. This decrease can be explained by the departure of Car2Go and ZipCar services across British Columbia as well as overall reduction in the number of trips as a result of the restrictions imposed during the pandemic. The Vancouver Port zone continues to have the highest car share access while the Vancouver Southeast zone continues to have the lowest access. The largest drop was seen in Downtown, with an 11% drop in subscriptions among residents.

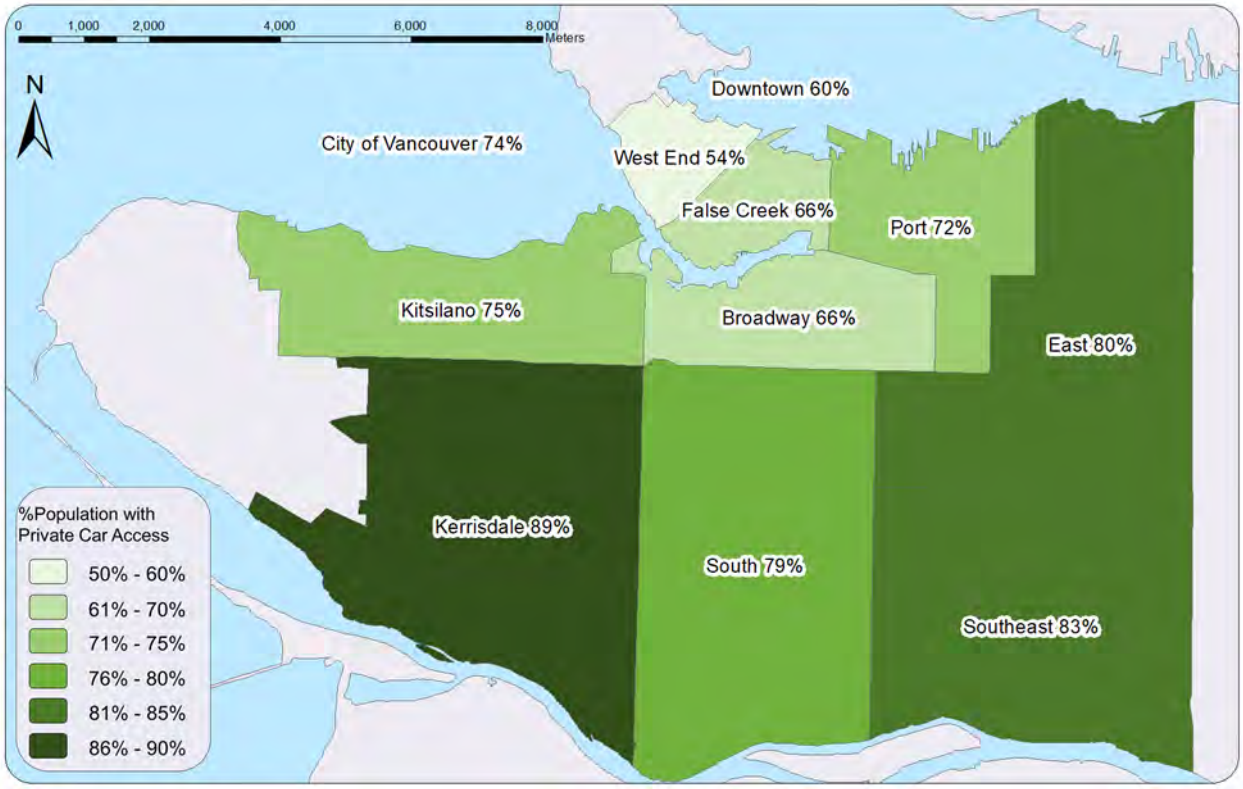
Figure 3-11: Access to Car Share Programs



3.9. PRIVATE VEHICLE ACCESS

The distribution of residents with access to a private vehicle is shown in **Figure 3-12**. Almost three-quarters of the Vancouver population has access to a private vehicle, while about 40% of downtown residents do not have access to a personal car. As depicted in the figure, the proportion of residents with access to a private vehicle increases as the zones get further away from Downtown. Overall, there is a decrease in private vehicle access from 86% in 2019 to 74% in 2020 within the City of Vancouver.

Figure 3-12: Private Vehicle Access



As shown in **Figure 3-13**, households with higher income generally have more access to private vehicles. Of those who reported a household income of over $100,000, 84% have access to a private vehicle compared to 56% for those who reported a household income of under $50,000. Overall, private vehicle ownership has decreased across all household income ranges compared to 2019.

Figure 3-13: Access to Private Vehicle by Household Income

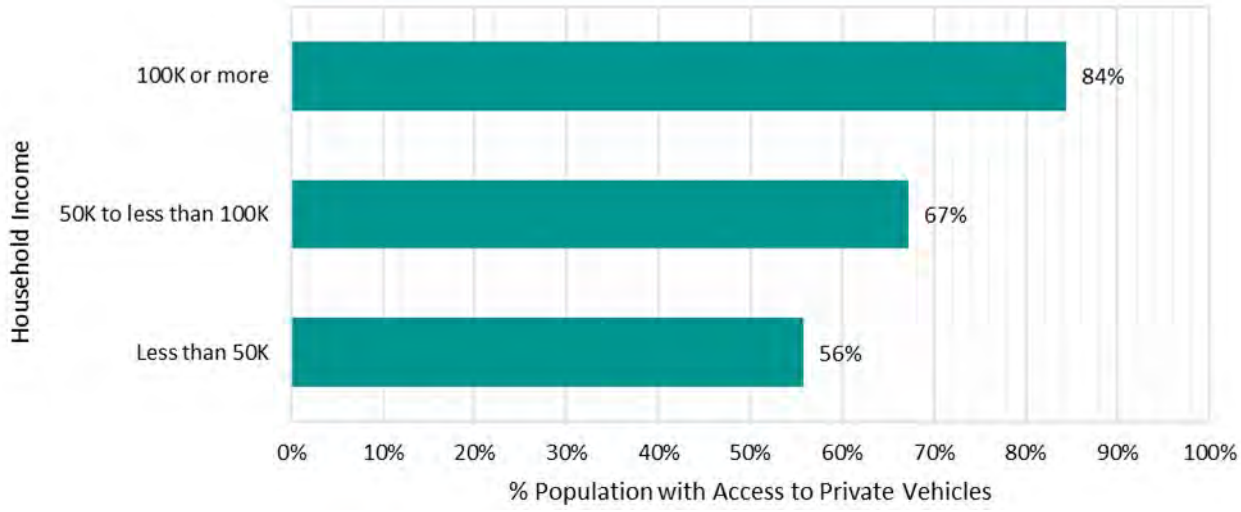
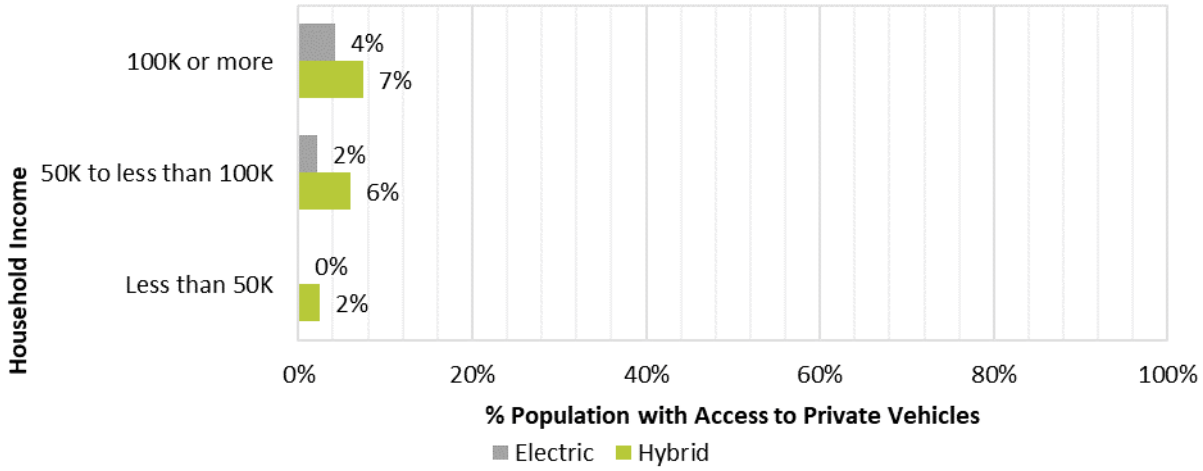


Figure 3-14 shows the percentage of residents within the City of Vancouver with access to private electric and hybrid vehicles. It should be noted that access to electric, hybrid and gas / diesel powered vehicles is not mutually exclusive. For example, a person can have access to both an electric and gas / diesel powered vehicle. Those with higher household incomes have a higher adoption rate for electric and hybrid vehicles, with 4% of those with a household income of over $100,000 having access to electric vehicles and 7% with access to hybrid vehicles. There is still a way to go before electric and hybrid vehicles becomes more common than gas / diesel powered vehicles in the City. As reported by the Provincial Ministry of Energy, Mines and Carbon Innovation[3], 9.4% of light-duty vehicles sales were electric vehicles. As reported, "The Zero-Emission Vehicles (ZEV) Act requires automakers to meet increasing levels of ZEV sales to reach 10% of new light-duty vehicle sales by 2025, 30% by 2030 and 100% by 2040".

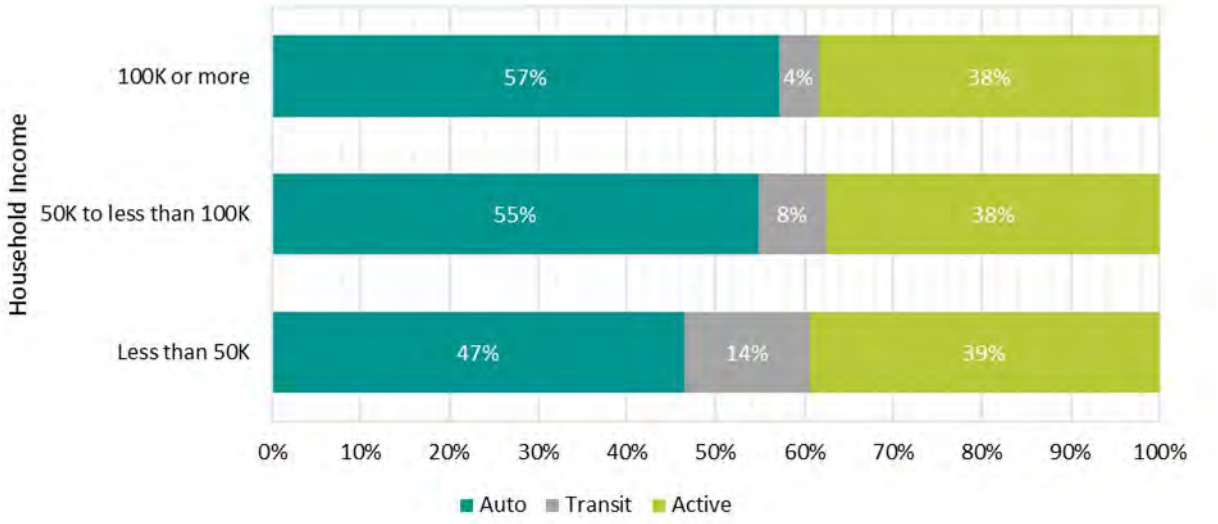
Figure 3-14: Access to Private Electric / Hybrid Vehicle



Based on the 2020 trip diary responses, approximately 762,600 trips were made with a private vehicle (as a driver or passenger), which represents a 56% auto mode share of all trips. Although there was a drop in private vehicle access for households with lower income, **Figure 3-15** shows an increase in the proportion of auto trips made by this group from 37% in 2019 to 47%. In all three household groups, auto is the preferred mode choice and transit is the least preferred. However, the lowest income group has the highest percentage of transit trips out of the three groups.

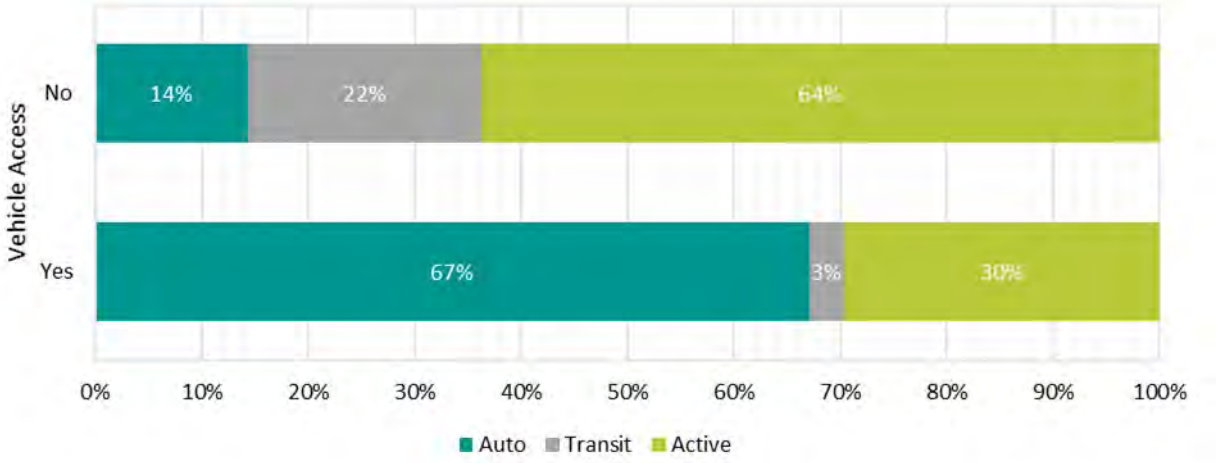
[3] https://news.gov.bc.ca/releases/2021EMLI0024-000628

Figure 3-15: Mode Share by Household Income



Having access to a private vehicle has an impact on mode choice. Those who have invested significant upfront costs to lease or own a vehicle are more likely to drive, since the incremental travel costs are relatively low. This can clearly be seen in **Figure 3-16** where 67% of those with access to a private vehicle travelled using a car. In comparison, the vast majority of those without access to a personal vehicle either cycled, travelled by foot, or used other active modes to arrive to their destination. Compared to the 2019 Panel Survey, residents with and without access to a private vehicle both show a decrease in the use of the public transit system during the COVID-19 pandemic.

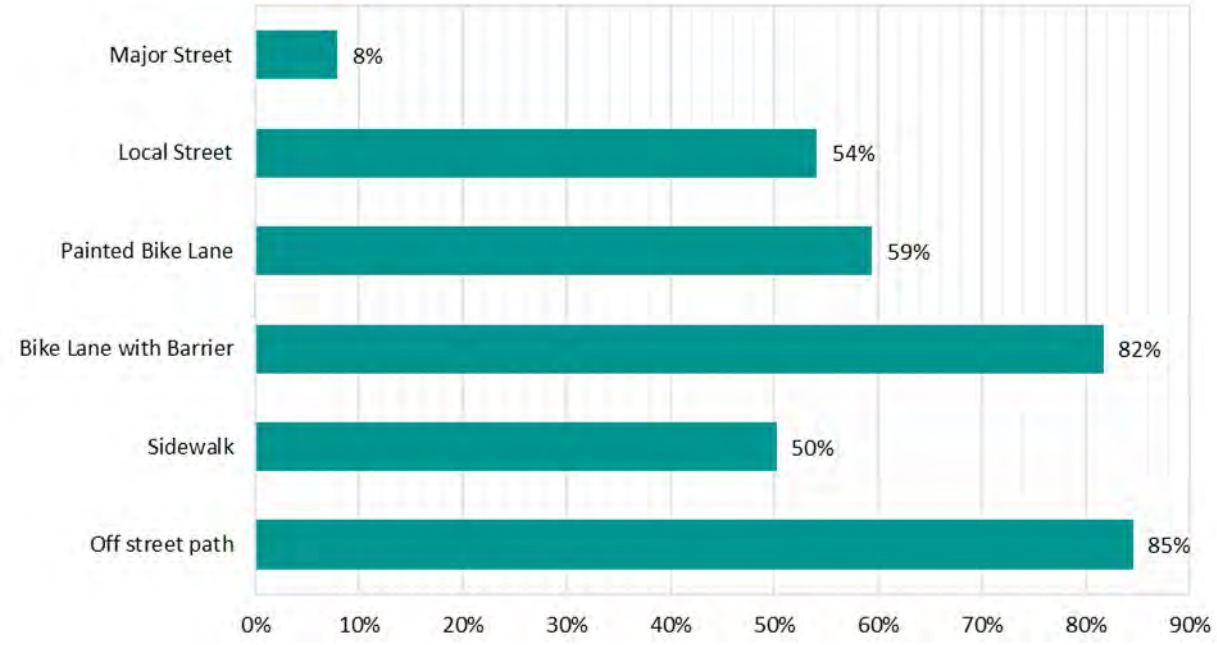
Figure 3-16: Mode Share by Private Vehicle Access



3.10. ELECTRIC MICROMOBILITY DEVICES

Electric micromobility devices such as e-kick scooters, e-skateboards and hoverboards are not yet commonly used in the City of Vancouver but this is an emerging new mode. The City is interested in gauging interests in and preferences for the use of these devices. Therefore, the panelists were asked about their interest in using one of these devices and where they would prefer to ride them. It was found that 16% of residents are interested in using an electric micromobility device. As shown in **Figure 3-17**, of those who are interested in using electric micromobility devices, most people would prefer using them on an off-street path (e.g., Seawall or Arbutus Greenway) or bike lanes with barriers between traffic.

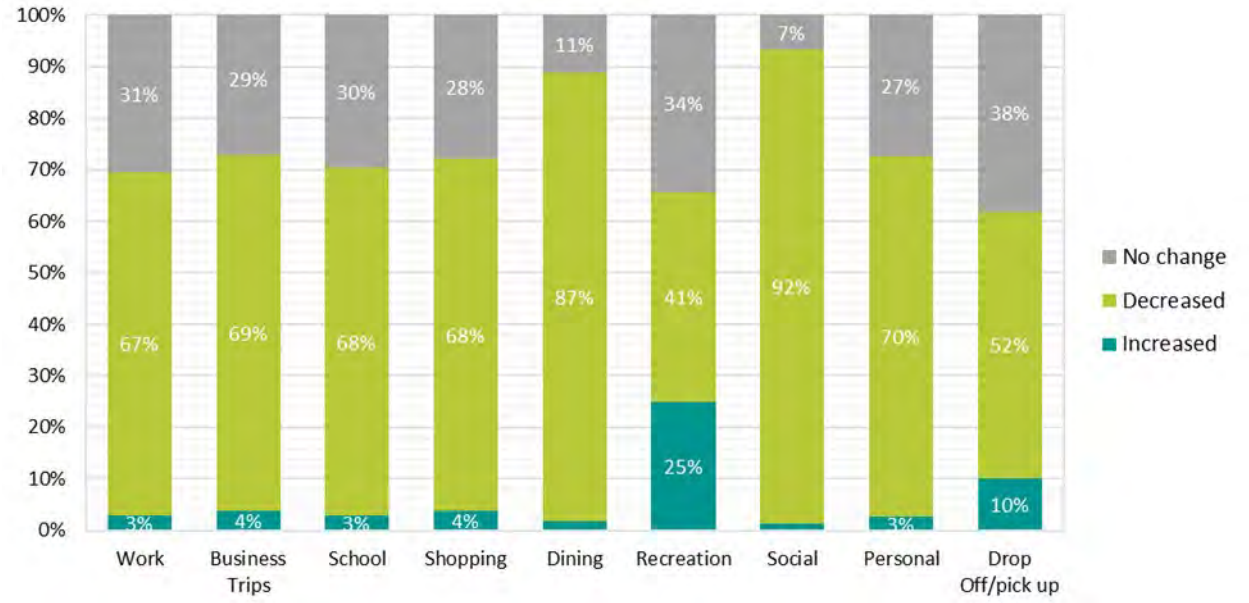
Figure 3-17: Electric Micromobility Devices Preferred Paths



3.11. IMPACTS OF COVID-19

To assess the impact of the pandemic on the frequency of trips being made by Vancouver residents, panelists were asked to report how the pandemic has affected trip frequency for certain purposes. Overall, 69% of residents reported a decrease in trips during the pandemic. For comparison, based on the trip diary responses, the total number of trips made decreased by 31% compared to 2019. **Figure 3-18** shows the changes in reported trip frequency for different purposes. For all purposes, the vast majority of residents reported decreased trip frequencies with very few reporting an increase in trip-making. When compared to other purposes, a larger percentage of residents saw an increase in making recreational trips and drop off / pick-up trips. This increase can be explained by people generally having more time for recreational activities during the pandemic and more people wanting to use private vehicles instead of public modes such as transit.

Figure 3-18: COVID-19 Reported Trip Frequency by Purpose



In addition, panelists were asked to report specifically on their transit use frequency before COVID-19 (before mid-March 2020), during Phase 1 of the pandemic (mid-March to May 18, 2020) and during Phase 2 of the pandemic (May 19, 2020 and onwards). As shown in **Figure 3-19**, the number of people who did not use transit at all increased from 12% pre-pandemic to 74% during Phase 1. During Phase 2, there was a slight recovery in transit use with only 53% indicating that they did not use transit during this time.

Additionally, the most frequent transit user group declined significantly. Before COVID-19, 24% of panelists reported using transit at least 5 days a week. This dropped to only 2% during Phase 1 and 4% during Phase 2 of the pandemic.

An additional question asked panelists whether their use of transit has decreased compared to before the pandemic. 81% of residents said that their use of transit has decreased. Based on the 2020 trip diary responses, the total number of transit trips decreased by 73% compared to 2019. For those who said they saw a decrease in their transit use, respondents were asked to specify the main reason for the decrease, which is presented in **Figure 3-20**. As shown, the leading reasons for the decrease in transit use are concerns about exposure to the COVID-19 virus, concerns about social distancing on transit, and the travel restrictions imposed by the government for non-essential trips. Concerns about transit reliability was the least concerning reason for the decrease in transit trips. In addition, 13% of those who experienced a decrease in their transit use also indicated facing challenges while completing their trips using alternative modes.

Figure 3-19: COVID-19 Reported Transit Trip Frequency

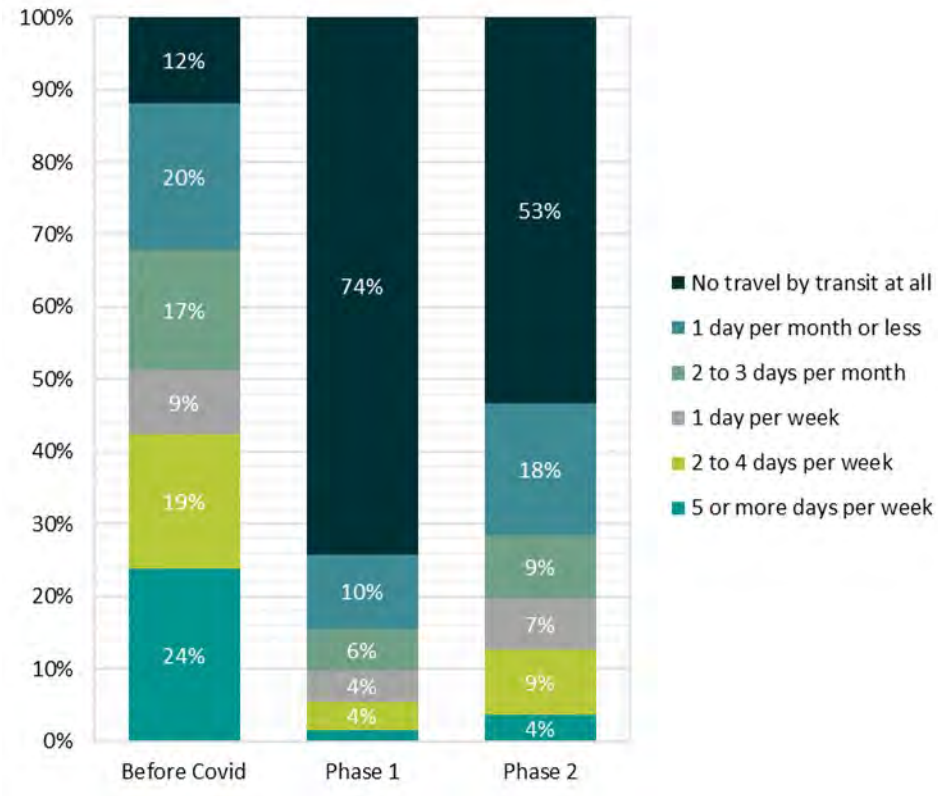
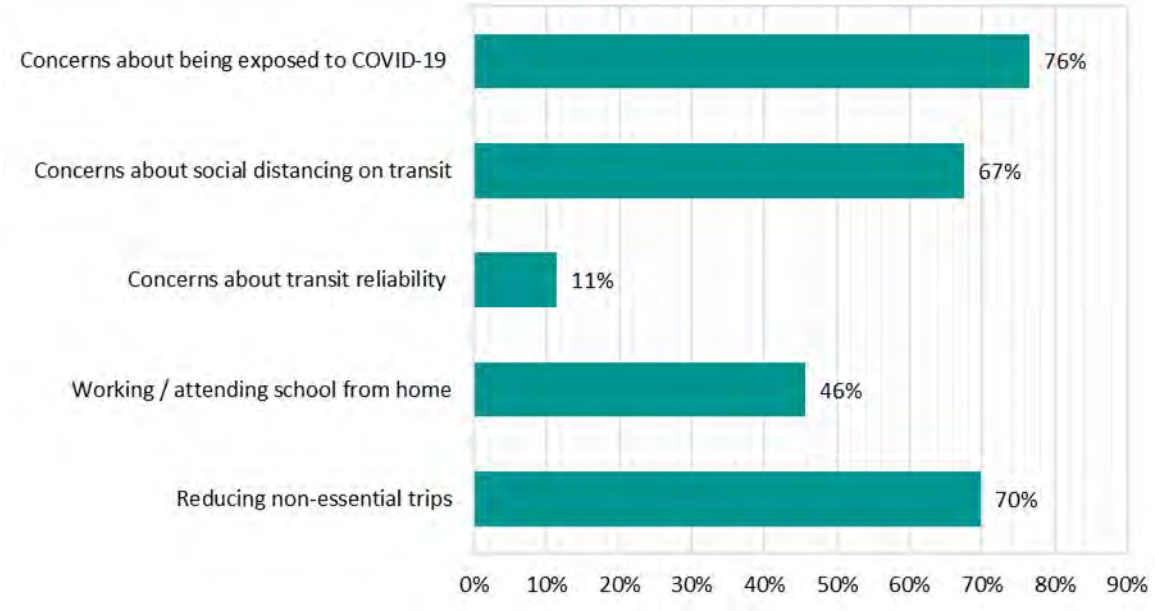
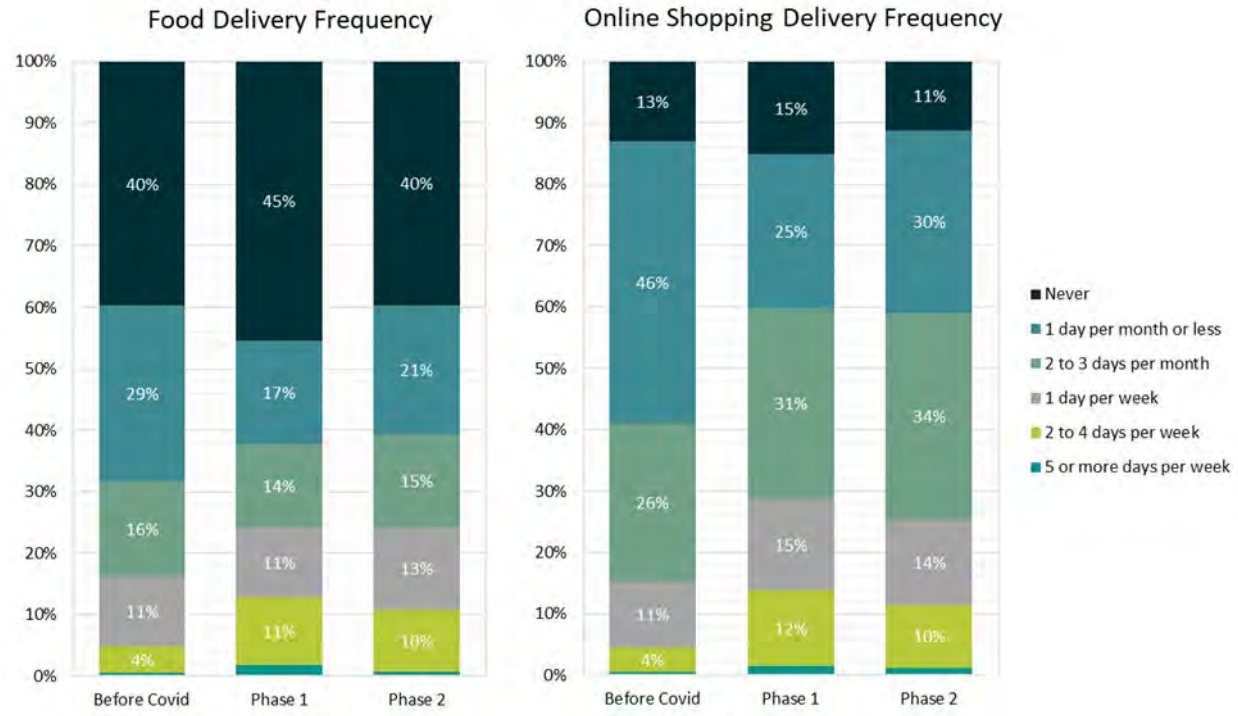


Figure 3-20: Decreased Transit Trip Frequency Reasons



Panelists were also asked to report on their frequency of food delivery and delivery of other goods ordered online before COVID-19 and during Phases 1 and 2 of the pandemic. **Figure 3-21** presents the results of these questions. The COVID-19 pandemic has seen increased frequency of food delivery use and online shopping delivery. Compared to pre-pandemic levels, the proportion of residents who never used delivery services for their food and online purchases has not significantly changed. However, of those that use these services, there has been increased in frequency. For food delivery, the number of residents who had food delivered infrequently (3 days or less per month) has decreased while those who had food delivered more frequency (at least 2 days per week) more than doubled in Phase 2 of the pandemic. The responses showed that for those who purchased their goods online, they also did so more frequently during the COVID-19 pandemic. The number of residents who shopped online less than once a month reduced from 46% before the pandemic to 30% in Phase 2, while those who shopped online frequency (at least 2 days per week) more than doubled in Phase 2 of the pandemic.

Figure 3-21: Food and Online Shopping Delivery Frequency



4. Trip Characteristics

One major aspect of the panel survey is to track trends in transportation choices, especially as they relate to specific City initiatives and infrastructure improvements. This section of the report presents current travel patterns of Vancouver residents, including the travel mode, trip purpose, trip rates, VKT, origin-destination patterns and average trip distances. Comparison to previous years is included in this section to examine the trends in travel preferences and behaviours over the years.

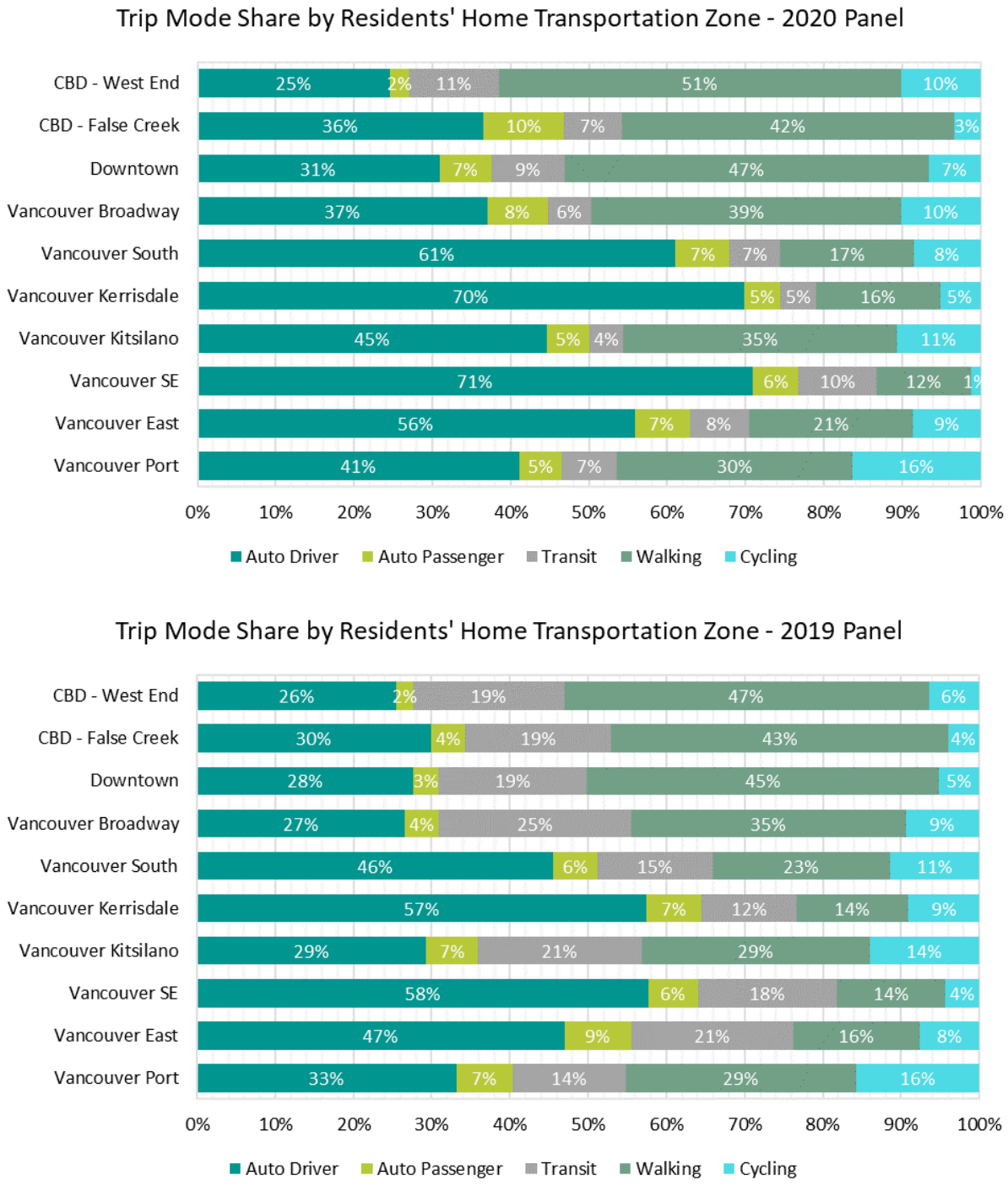
4.1. MODE SHARE

On a typical fall weekday in 2020, Vancouver residents made a total of 1,361,900 trips per day. The mode share of the total trips over the years of the Panel Surveys (2013-2020) are presented in **Figure 4-1**. As shown in the figure, there was a significant decrease in the number of trips made in 2020 with approximately 620,700 less trips being made compared to 2019, representing a 31% reduction overall in trips. The decrease in overall trips can be attributed to the pandemic and the increased number of people shifting to working from home and attending classes online. Of the trips made in 2020, 56% were made by auto, 7% by transit, and 37% by active modes. Although the pandemic has led the share of auto trips to reach an all-time high since the start of the Panel Survey, the total number of auto trips at an all time low. However, the decrease in transit trips significantly outpaced the decreases for all other modes. Auto trips saw a decrease of 17% while transit trips saw a decrease of 73%. This resulted in the auto mode share to increase from 46% in 2019 to 56% in 2020 and transit mode share to decrease from 18% to 7%. The mode share of the active modes has remained steady over the last three years at about 37%.

Figure 4-1: Total Trips by Mode Share (2013-2020)

The mode share by residents' home transportation zone for 2020 and 2019 are shown in **Figure 4-2**. The overall travel pattern by zone in 2020 is consistent with the patterns observed in 2019. However, there is a decrease in the share of transit trips in every zone and an increase in the share of auto trips in all zones except for the CBD – West End zone. Downtown also has the highest share of walk trips, due to the high density of population and employment in the area.

Figure 4-2: Trip Mode Share by Residents' Home Transportation Zone



While it is possible to track trends in mode share at the zone level, some caution should be exercised as disaggregating the data to this level can produce results with wide confidence ranges, especially in cases where the mode shifts are within + / - 2%. It is generally more appropriate to compare results between panel surveys at more aggregate levels, for example, by using sustainable mode share city-wide.

Table 4-1 compares the 2019 and 2020 sustainable mode share for trips, which includes transit, walking and cycling trips, by transportation zone. The table also shows the corresponding 95% confidence intervals.

Table 4-1: Aggregate Walk / Bike / Transit by Transportation Zone and Sample Size

Transportation Zone	2020 Panel		2019 Panel	
	Sustainable Mode Share (%)	95% Confidence Interval	Sustainable Mode Share (%)	95% Confidence Interval
CBD - West End	73%	(68%-78%)	72%	(67%-78%)
CBD - False Creek	53%	(47%-59%)	66%	(59%-72%)
Downtown	62%	(58%-67%)	69%	(65%-73%)
Vancouver Broadway	55%	(50%-61%)	69%	(64%-74%)
Vancouver South	32%	(27%-37%)	49%	(43%-54%)
Vancouver Kerrisdale	26%	(20%-31%)	36%	(30%-41%)
Vancouver Kitsilano	50%	(44%-55%)	64%	(59%-69%)
Vancouver Southeast	23%	(18%-28%)	36%	(30%-42%)
Vancouver East	37%	(32%-42%)	44%	(40%-49%)
Vancouver Port	53%	(47%-60%)	60%	(53%-66%)
City of Vancouver	44%	(42%-46%)	54%	(52%-56%)

As shown in **Figure 4-3**, those in the youngest age group (18 to 24) use transit the most as observed in previous panel surveys. In all age groups, transit use decreased while auto use increased, which follows the general observed trends for 2020.

Figure 4-3: Mode Share by Age Distribution

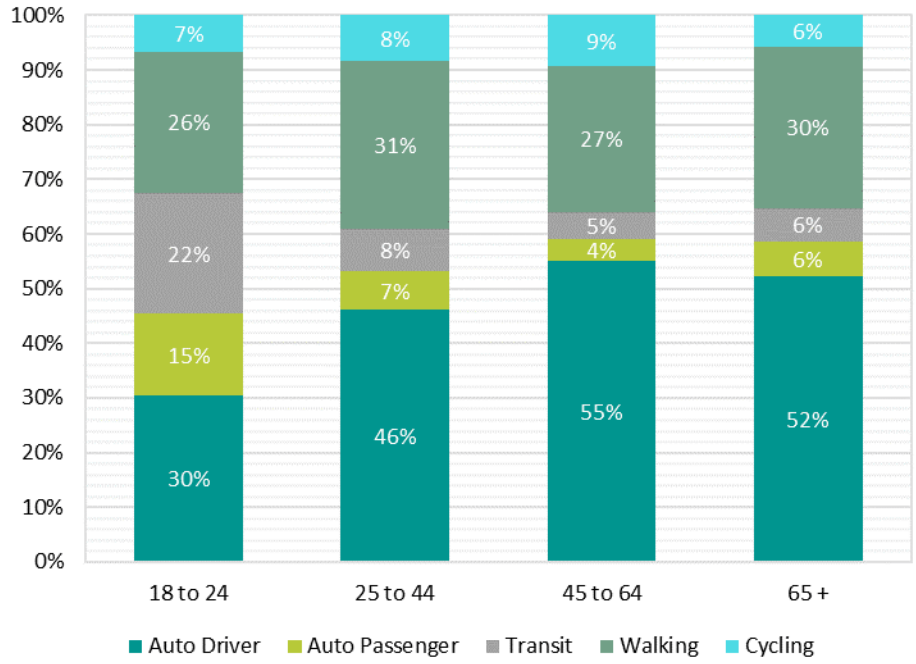


Figure 4-4 compares the 18 to 24 age cohort over the years of the survey. The share of auto use as a driver has not increased much since 2019; however, the share of auto use as a passenger has increased by 10%. The walking mode share has also seen an increase since the previous years. Due to low sampling, the mode share for this group varies year to year.

Figure 4-4: Mode Share for 18-24 Cohort Across Survey Years (2013-2020)

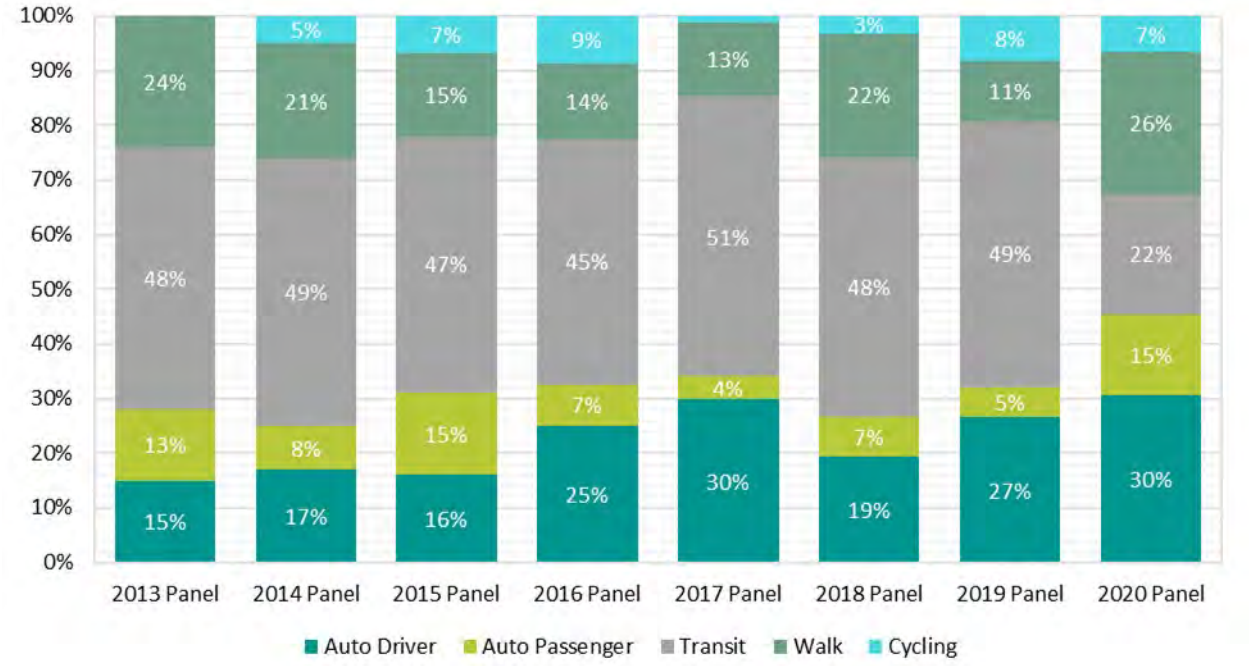
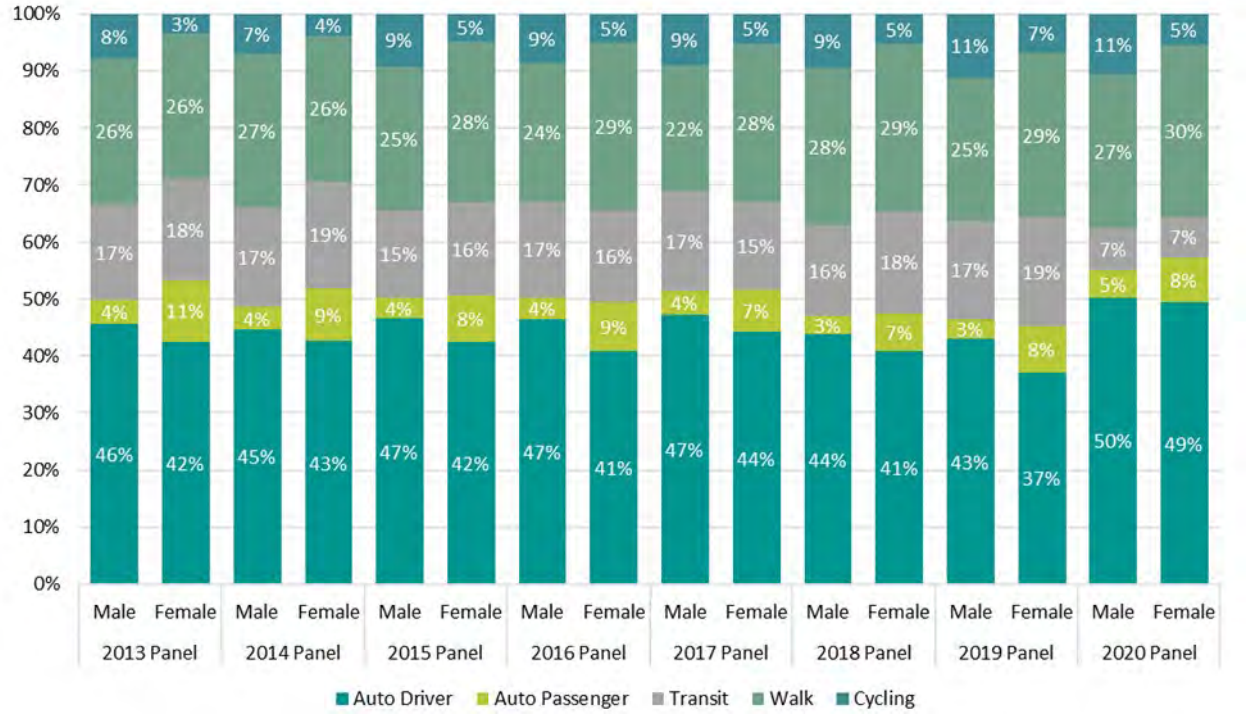


Figure 4-5 compares the mode share by gender across the panel survey years (2013-2020). The general trend between the genders remains consistent in 2020 with auto as the dominant mode for both genders. However, it was found that women had a higher share of passenger trips compared to men as in previous years. In addition, women had a higher share of walking trips while men had a higher share of cycling trips, and both genders reported a similar share of transit trips.

Figure 4-5: Mode Share by Gender



4.2. TRIP PURPOSE

The distribution of trip purposes for the 2019 and 2020 surveys are compared in **Figure 4-6**. The largest changes come from the decreased work trips and school trips in 2020 compared to 2019. In 2020, the share of work trips was down from 17% to 12% and there were almost no reported school trips. In contrast, the share of shopping trips increased from 10% in 2019 to 15% in 2020. The share of trips returning home also increased, suggesting less trip chaining in 2020. The shares of other trips were generally similar to 2019.

Figure 4-7 compares the number of trips taken by each trip purpose for the 2019 and 2020 surveys. Overall, all trip purposes saw a decrease in 2020 except for shopping trips, which increased slightly. Work trips decreased by 52% and school trips decreased by 93% compared to 2019. This drastic drop in work and school trips can be attributed to the increase in people working from home and schools moving to online learning due to COVID-19.

Figure 4-6: Trip Purpose Distribution

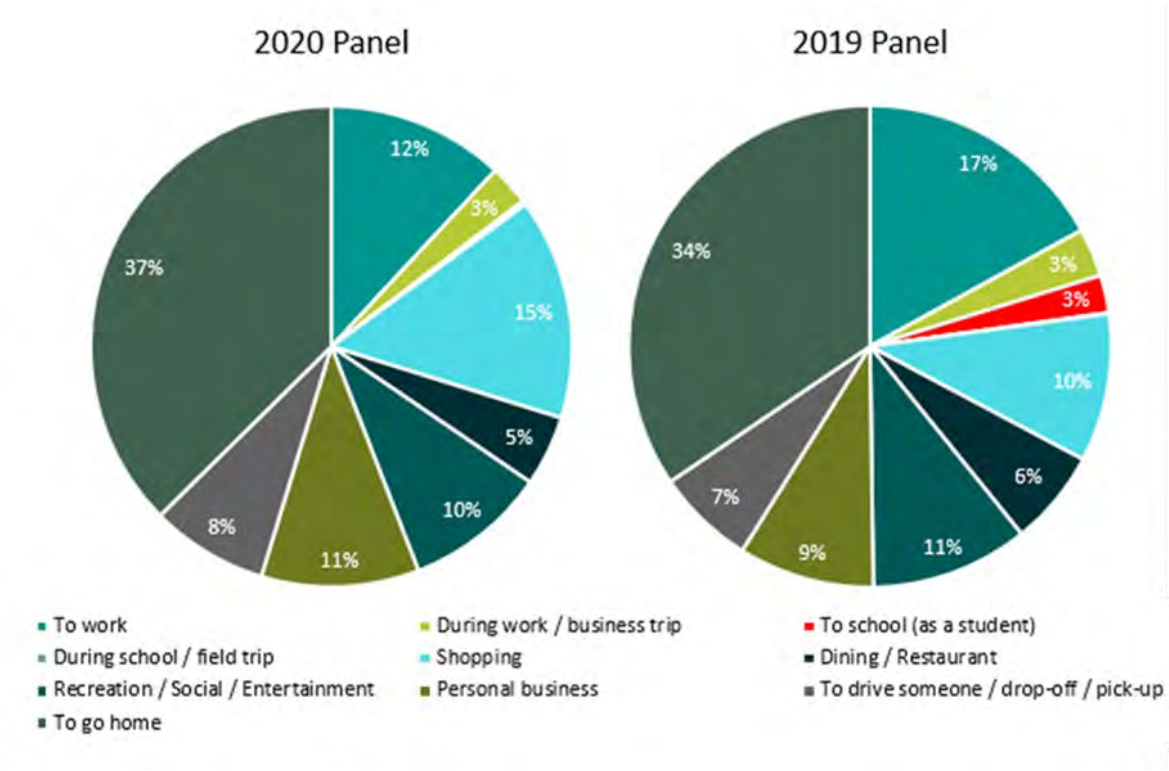
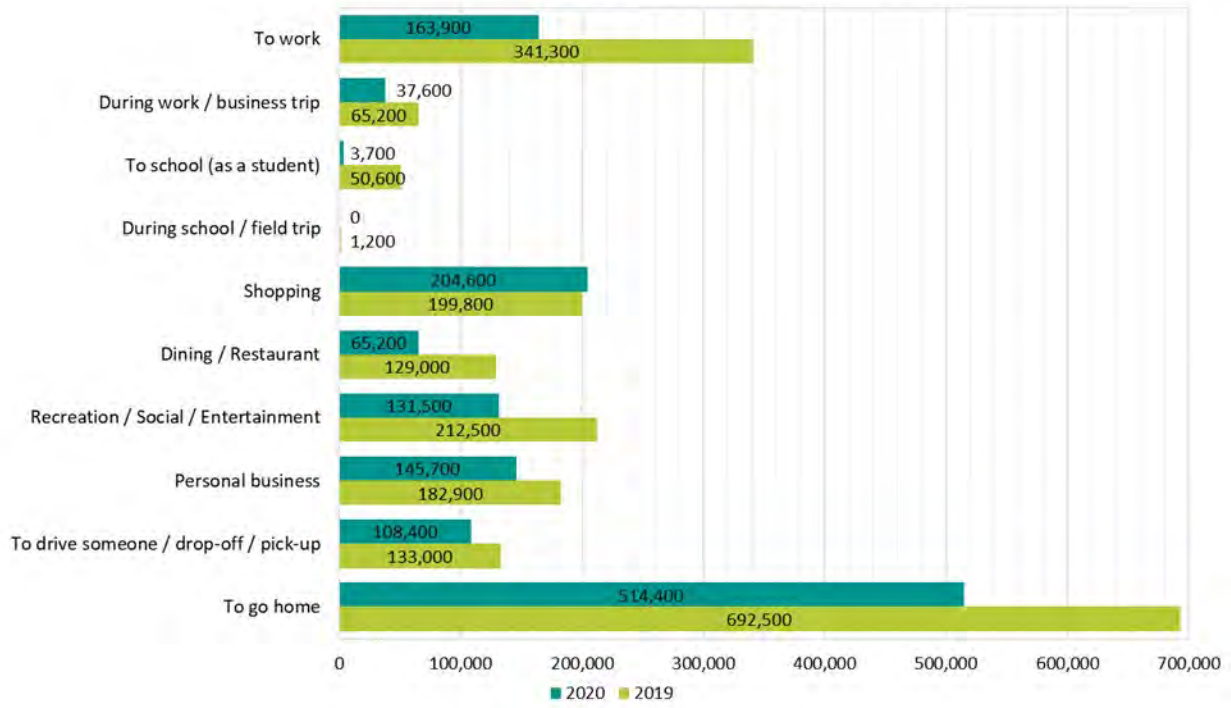
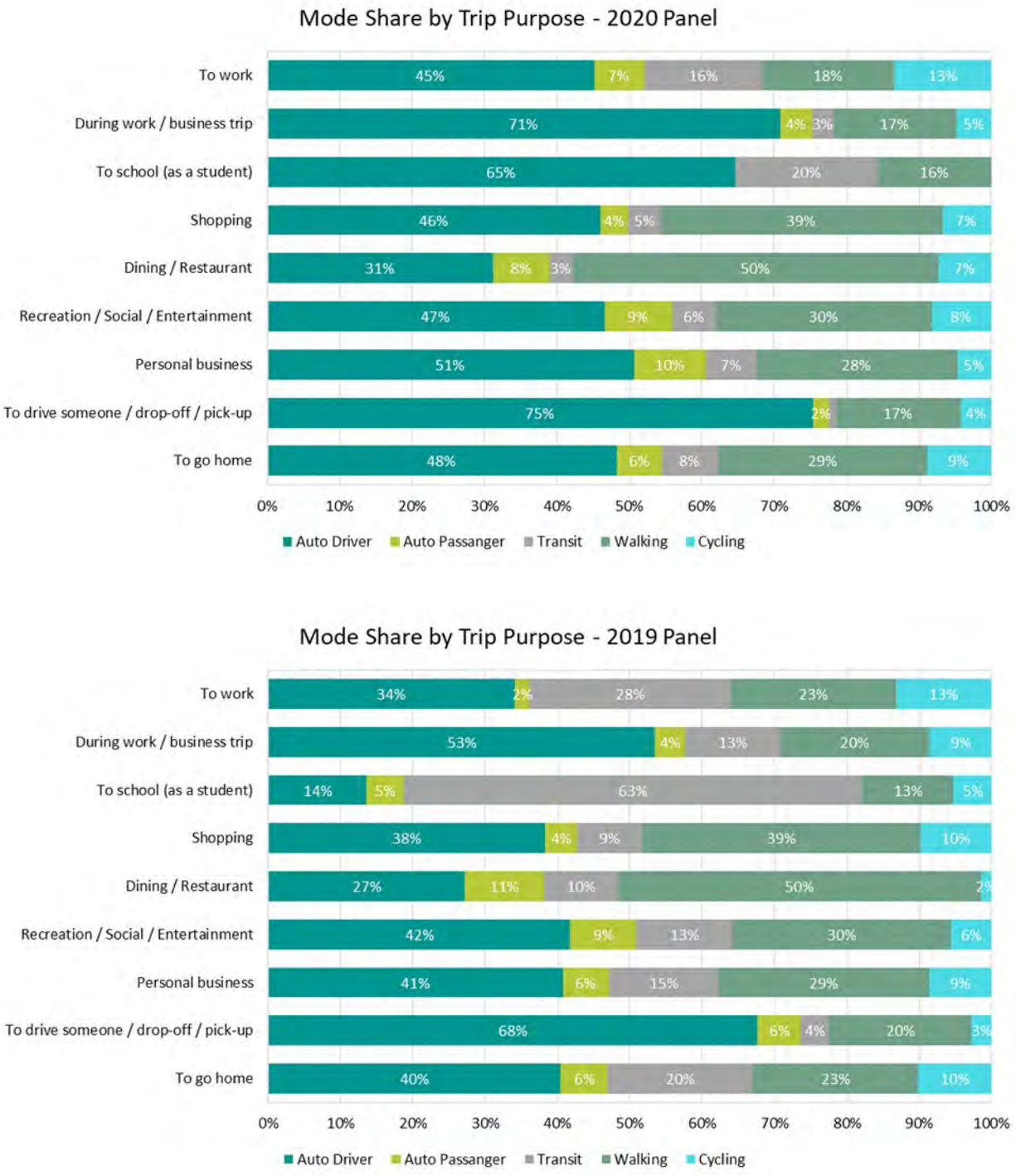


Figure 4-7: Trips by Trip Purpose



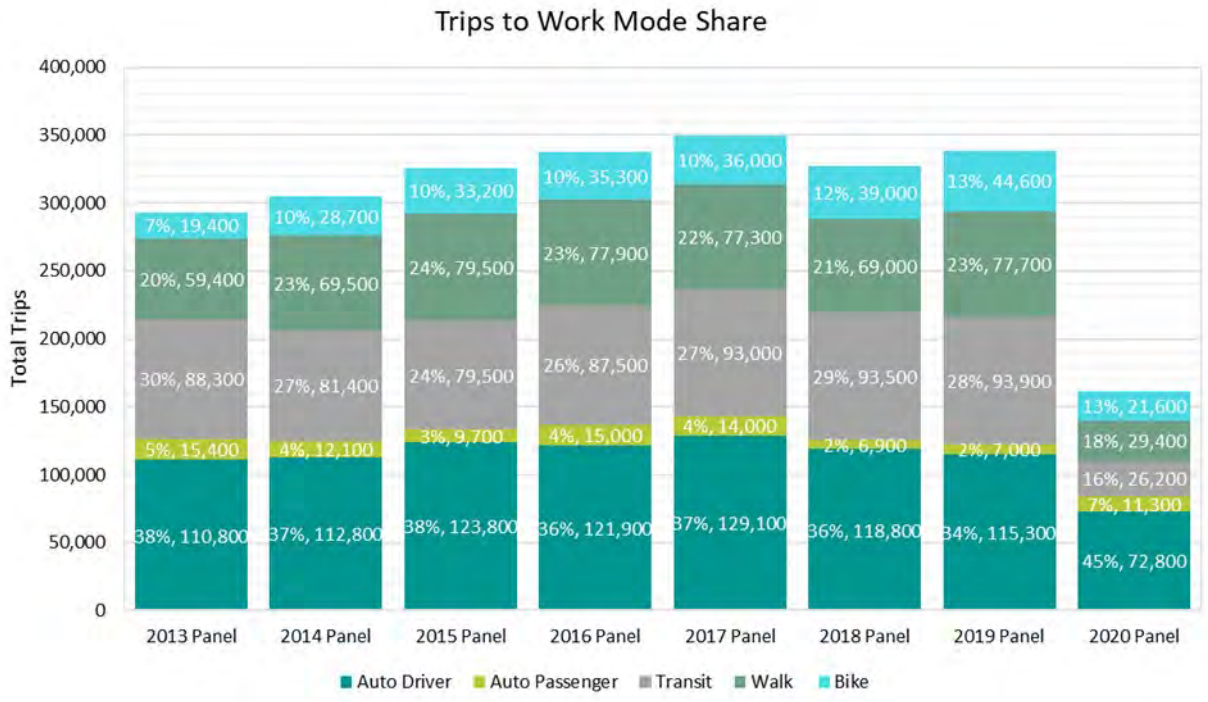
When comparing the mode share by trip purpose, auto use dominates for most trip purposes in 2020 as seen in **Figure 4-8**. The mode share trends are shifting in most cases between 2019 and 2020. Compared to 2019, auto mode shares have increased, while transit mode shares decreased for all purposes, which follows the general pattern seen in 2020 for mode share.

Figure 4-8: Mode Share by Trip Purpose



The 52% decrease in work trips is the largest decrease of all trip purposes. According to Statistics Canada, Metro Vancouver's employment saw an 8% decrease in 2020 compared to 2019, which accounts for some of the decreased work trips[4]. In addition, there was a significant increase in people working from home due to COVID-19. **Figure 4-9** compares the mode shares for trips to work throughout the survey years (2013-2020). With the exception of auto passenger trips, trips by all other modes decreased significantly in 2020. Although the number of trips decreased, the mode share of auto trips was at an all-time high at 52% (driver and passenger) while the transit mode share reached an all-time low at 16%.

Figure 4-9: Comparison of Panel Survey Trips to Work

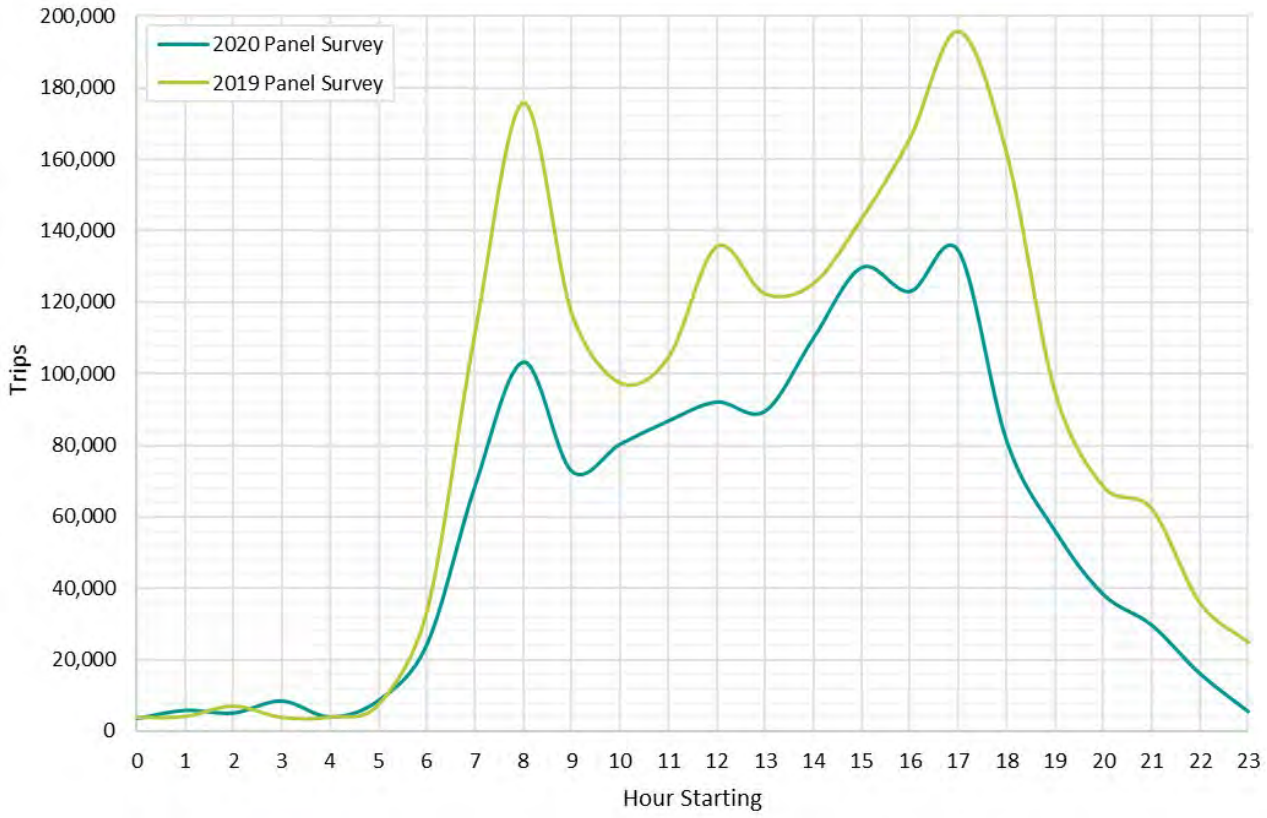


[4] Statistics Canada. Table 14-10-0096-01 Labour force characteristics by census metropolitan area, annual, inactive https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1410009601

4.3. TIME OF DAY

Survey participants were asked to provide the start time for each of their recorded trips. **Figure 4-10** shows the number of trips taken per each hour of the day on a typical weekday. As shown in the figure, the AM peak hour occurs at 8:00 AM while the PM peak hour occurs at 5:00 PM.

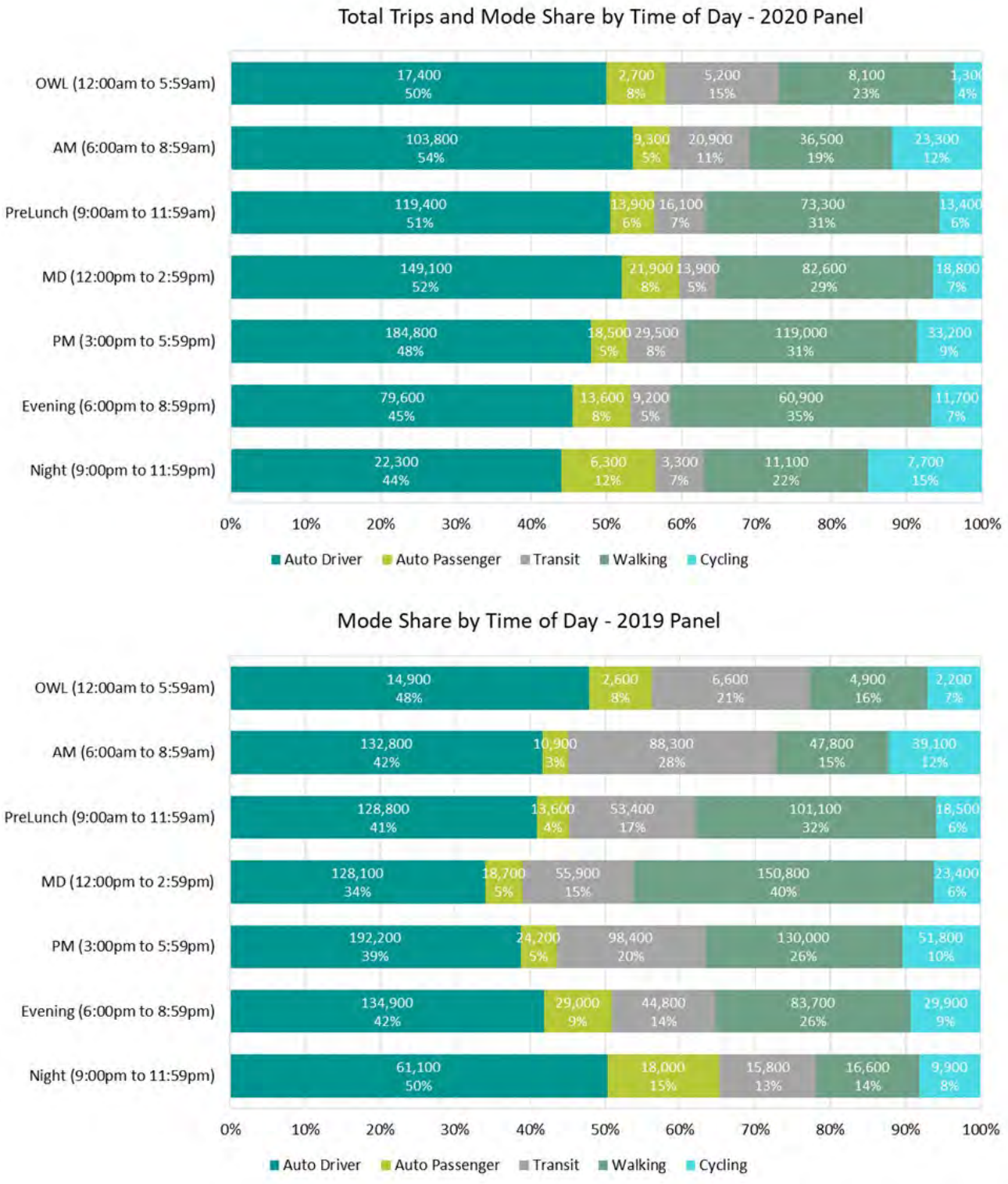
Figure 4-10: Hourly Trip Profile



Although there is a 32% reduction in total daily trips, the reduction varies throughout the day. In the morning period of 7:00 AM to 10:00 AM, the total number of trips is 40% less than 2019. This time period is typically associated with commuting trips which were significantly lower this year. In the late afternoon and evening, from 4:00 PM to midnight, the combine reduction of trips is also 40% compared to last year. It is during this time that many dining, recreational, social, entertainment, and return to home trips are made, which all saw reductions compared to last year. The period from 10:00 AM and 4:00 PM saw less than 20% reduction in total trips.

The mode shares by time of day for the 2019 and 2020 panel surveys are presented in **Figure 4-11**. Throughout all times of the day, auto is the dominant mode. Focusing on the AM, MD, and PM periods, all modes have experienced a decline in the number of trips this year with the exception of auto trips made during the MD which has seen an increase of about 24,000 trips.

Figure 4-11: Mode Share Distribution by Time of Day



4.4. TRIP RATES

As mentioned previously, there was a 31% reduction in trips in 2020 compared to 2019. This equates to about 1 less trip per person per day. As shown in **Figure 4-12** the daily trip rate has consistently ranged between 3.7 and 3.9 in the past years. However, the average daily trip rate dropped to 2.7 in 2020.

Figure 4-12: Daily Trip Rates (2013-2020)

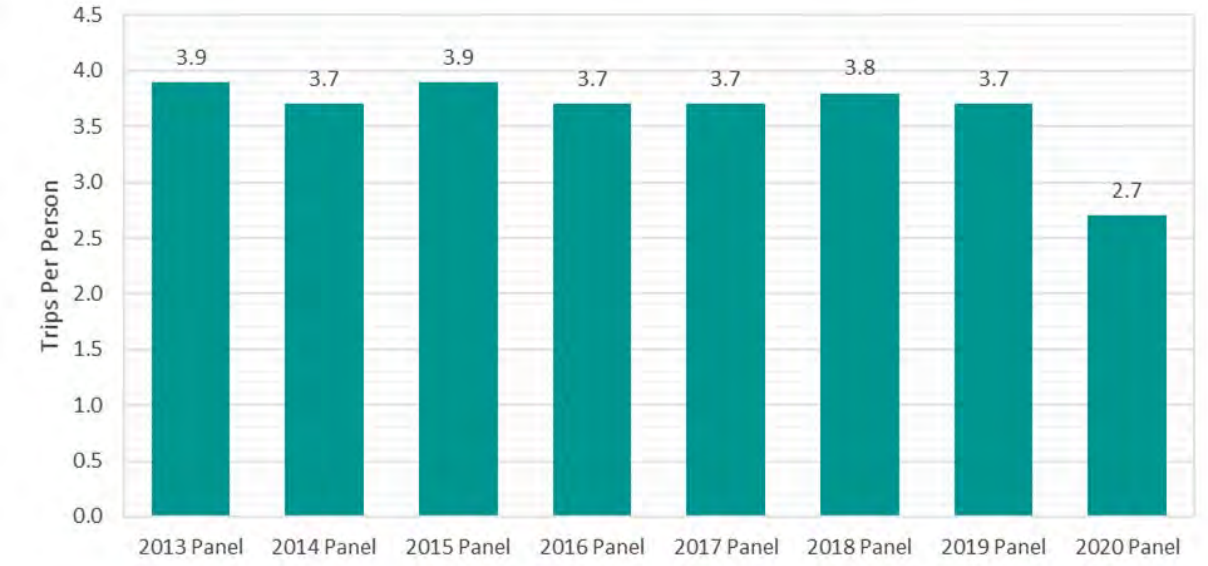


Figure 4-13 shows daily trip rates by gender over the years of the panel survey. In previous years, women had slightly higher trip rates; however, in 2020, males and females had similar trip rates.

Figure 4-13: Daily Trip Rates by Gender (2013-2020)

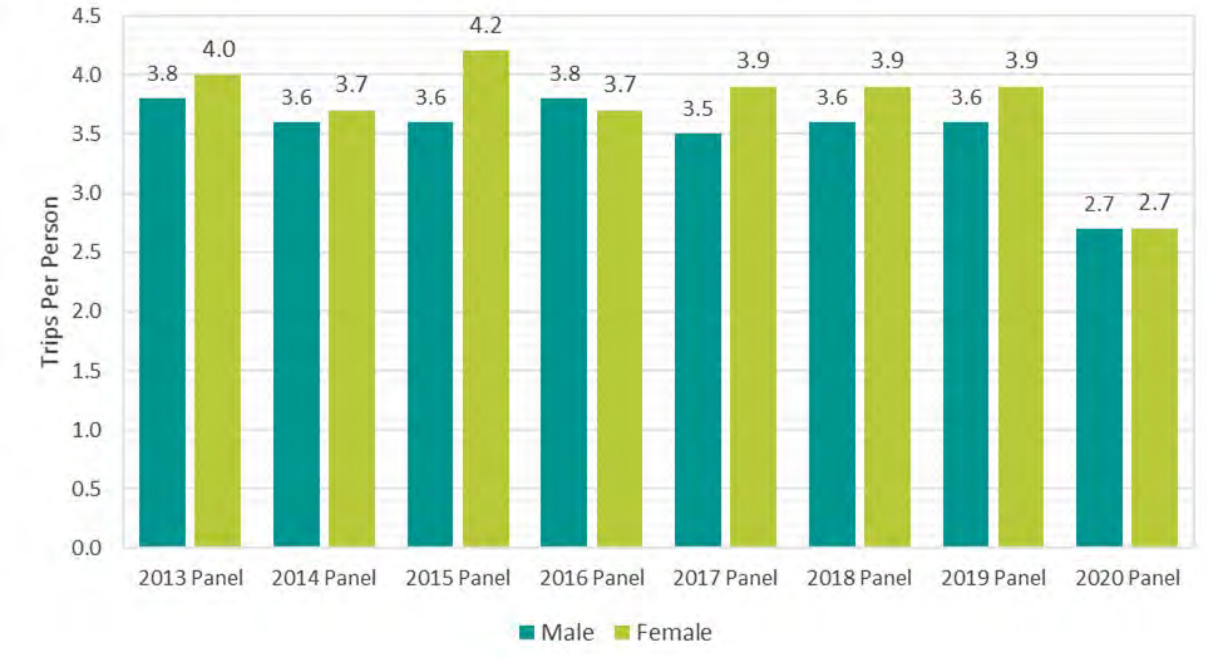
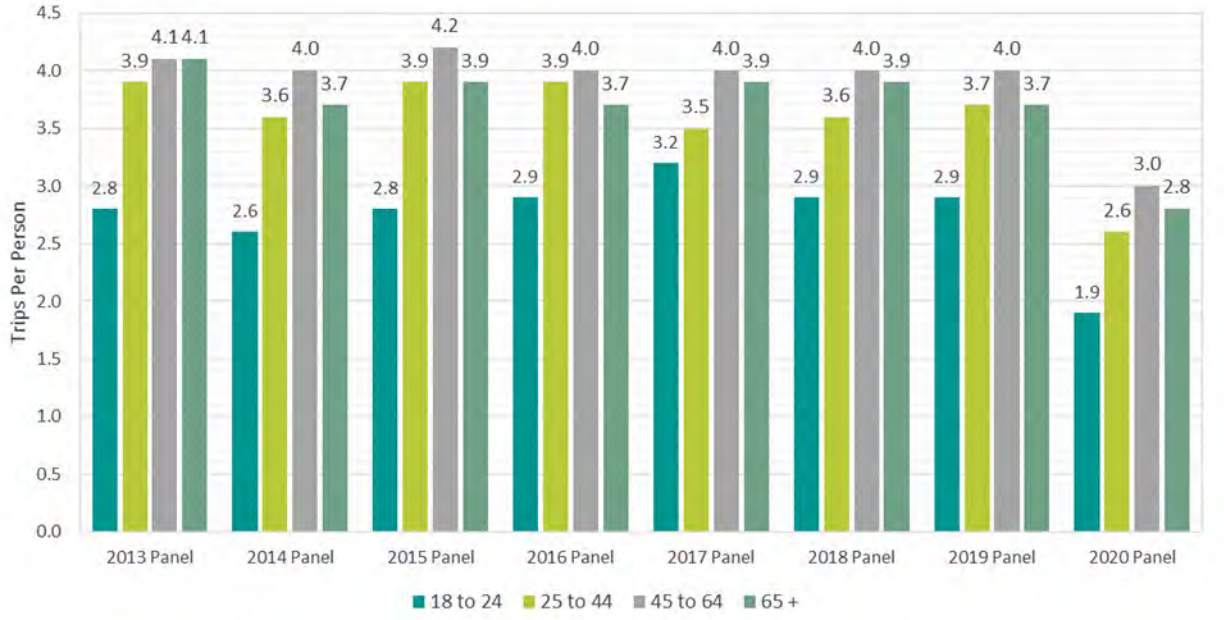


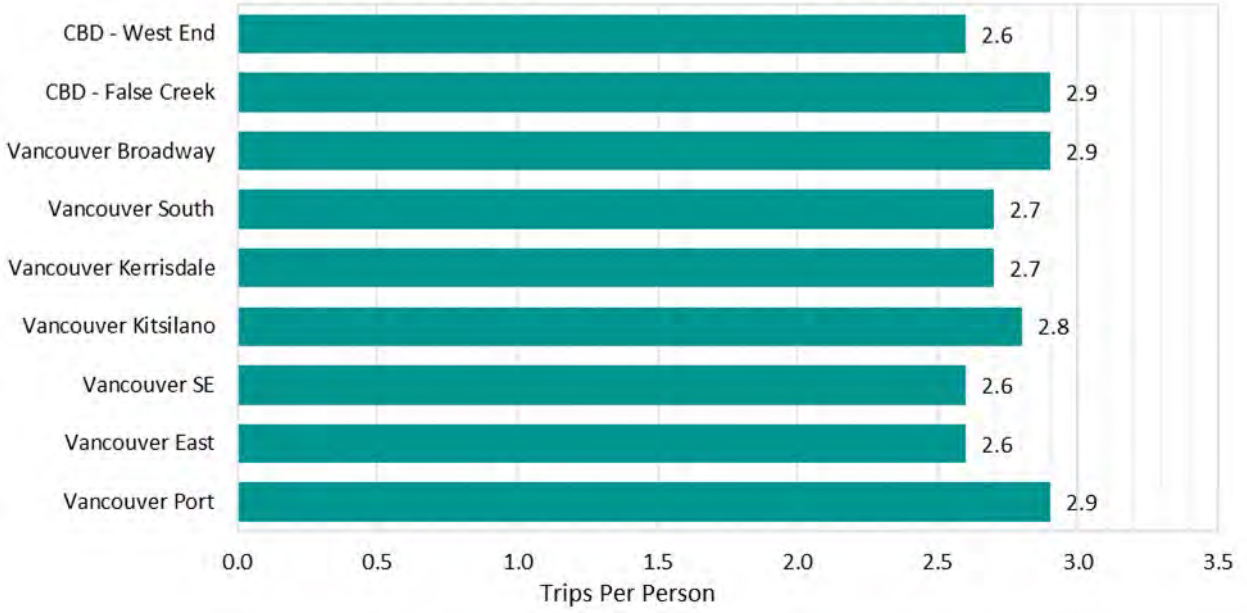
Figure 4-14 compares the trip rates by age group over the years. While the trip rates in 2020 for each age group have decreased by approximately one trip per person, the trend remains similar with the 18 to 24 age group having the lowest trip rate and the 45 to 64 age group having the highest trip rate.

Figure 4-14: Daily Trip Rates by Age Group (2013-2020)



When comparing the trip rates by transportation zone, there is not a significant different between the rates. As shown in **Figure 4-15**, residents of False Creek, Broadway, Kitsilano and Vancouver Port made slightly more trips per day than the City average, while residents of West End, Vancouver SE and Vancouver East made slightly less trips than the City average.

Figure 4-15: Daily Trip Rates by Transportation Zone



4.5. VEHICLE KILOMETRES TRAVELLED

The Greenest City action plan and Transportation 2040 have set a goal to reduce the average distance driven per resident by 20% compared to 2007 levels. This measurement is referred to as vehicle-kilometres travelled (VKT). It is important to track whether VKT is trending in the right direction to meet this goal. In 2014, VKT was calculated using a variety of methods and data sources including AirCare, Insurance Corporation of British Columbia (ICBC), the regional (EMME) transportation model, and Vancouver Panel Survey odometer data. The AirCare VKT model had been used by various local agencies to estimate Metro Vancouver's VKT and GHG emissions for many years. As this program was discontinued in December 2014, it unfortunately cannot be used to track VKT in the future. Of the remaining methods, the Panel Survey odometer reading was deemed to provide the most reliable method to track VKT for the following reasons:

- It provides an adequate sample size statistically to estimate the average VKT per vehicle in Vancouver using the odometer readings of returning panelists.
- This method for calculating VKT is dynamic. In other words, the VKT will change year over year based on the outcomes of the Panel Survey.
- This method produced results with the closest approximation to the regionally accepted AirCare VKT method and represents a reliable method with new survey data.

The odometer readings from returning panelists were used to calculate the average annual VKT of residents in the City. In 2020, the average vehicle age of all reported vehicles was approximately 10.5 years, compared to 10.2 years in 2019. Of all the odometer readings provided by the panelists, there were 912 odometer readings that were appropriate for use in the analysis.

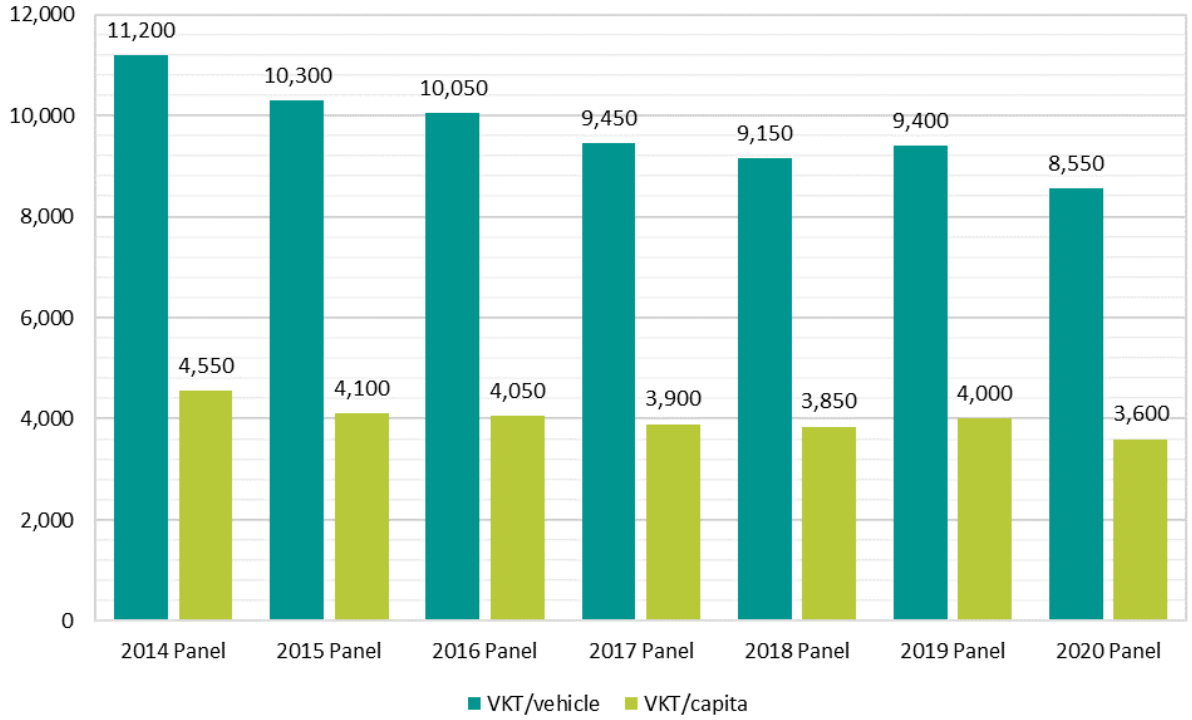
In the previous Panel Surveys, the annual vehicle fleet size for Vancouver was estimated from 2015 data. For this year, historical vehicle fleet data, from 2015 to 2020, was obtained through ICBC's new open data source[5]. VKT per capita from previous Panel Survey years has been recalculated based on the new data source. While the general trend remains the same, the VKT per capita values differ from previous reports.

The 2020 vehicle fleet was estimated from this data to calculate the VKT per vehicle in the City. **Figure 4-16** shows the trends in VKT per vehicle and VKT per capita since 2014. In 2020, the average VKT per vehicle was 8,550 km. The VKT per vehicle has been trending down over the years with a 24% decrease in 2020 since 2014. The VKT per capita has also been decreasing with a 21% decrease since 2014. Both VKT per vehicle and per capita decreased by 10% from last year. This represents the largest year to year decrease since this metric has been tracked in the Panel Survey. This suggests that panelists are taking shorter and fewer trips with their vehicles.

To get the total VKT for 2020, the VKT per capita was expanded to the total Vancouver population. The annual total VKT for 2020 is 2.5 billion, which is a decrease of approximately 0.1 billion VKT from 2019.

[5] https://public.tableau.com/profile/icbc#!/
Contains information licensed under ICBC's Open Data Licence.

Figure 4-16: Trends in VKT per Vehicle and VKT per Capita



4.6. SUSTAINABLE (WALK + BIKE + TRANSIT) MODE TREND ANALYSIS

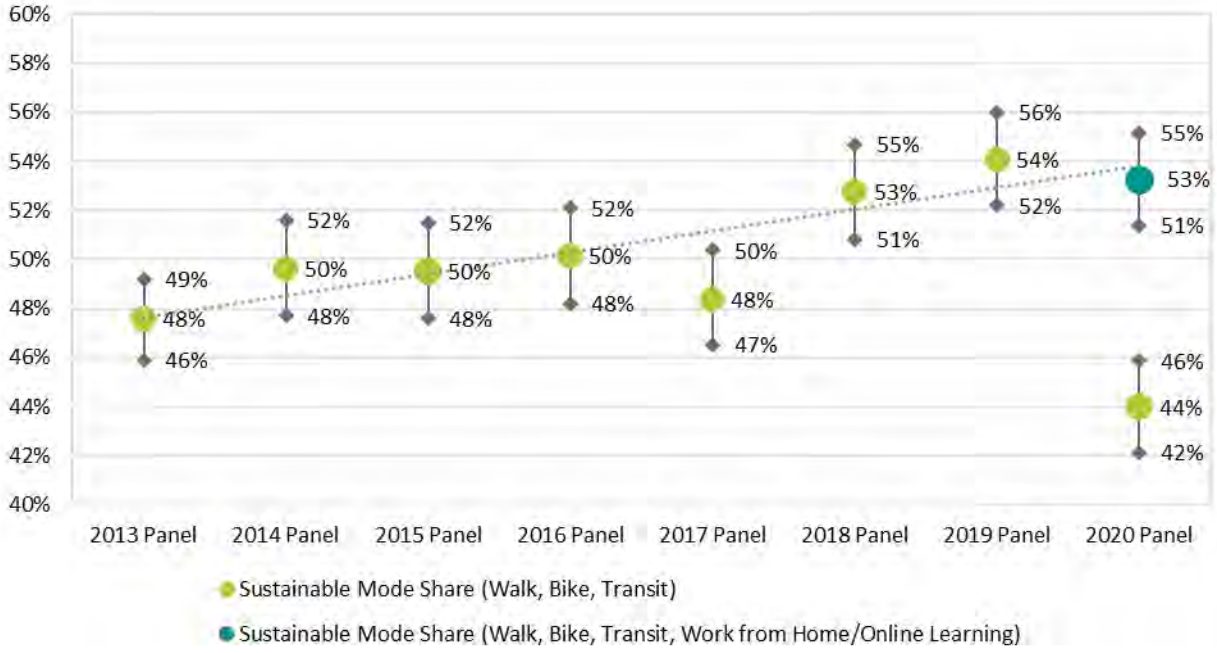
Figure 4-17 shows the trends in sustainable mode share with 95% confidence over the years from 2013 to 2020. Sustainable modes include public transport, walking, and cycling. Note that cycling trips also include all trips made with micromobility devices. As shown by the green circle, the sustainable mode share for 2020 was 44%, down from 54% in 2019. This reduction can be attributed to a number of factors such as the increased number of people working from home, schools moving to online learning, travel restrictions imposed by the Provincial Health Officer, and concerns about being exposed to the virus.

Work from home and online learning are arguably sustainable "modes" as no vehicle emissions are emitted. These are trips that would have otherwise been made if it were not for COVID-19. Therefore, an effort was made to understand the impact of this significant increase in work from home and online learning on the sustainable mode share such that the results can be compared to previous years.

It should be noted that work from home and online learning were not included in the trip diary component of the survey and participants were not asked to identify if they worked from home or attended school online on their diary day. Therefore, an incremental mode shift was estimated based on the participants' answers from the usual commute mode question provided in ***Section 3.3***. The rate of work from home was adjusted based on the 2016 Census for historical, pre-COVID-19 rates of work from home for Vancouver.

With the work from home and online learning trips estimated, the adjusted sustainable mode share for 2020 is estimated to be 53%, slightly lower than the 2019 sustainable mode share of 54%. The trend shows that in future years, the sustainable mode share is likely to continue increasing with continued improvements to the regional transit system and the City's active modes network.

Figure 4-17: Trends in Sustainable Mode Share (High and Low Ranges)



The trends in walk, bike, and transit over the years are shown in **Figure 4-18**. Overall, the number of trips across all three modes have seen a steep decline. However, the share of walking trips increased in 2020 compared to 2019, while the share of cycling trips decreased slightly. Transit shows the largest drop at 7% in 2020 compared to 18% in 2019.

Figure 4-18: Trends in Sustainable Mode Share

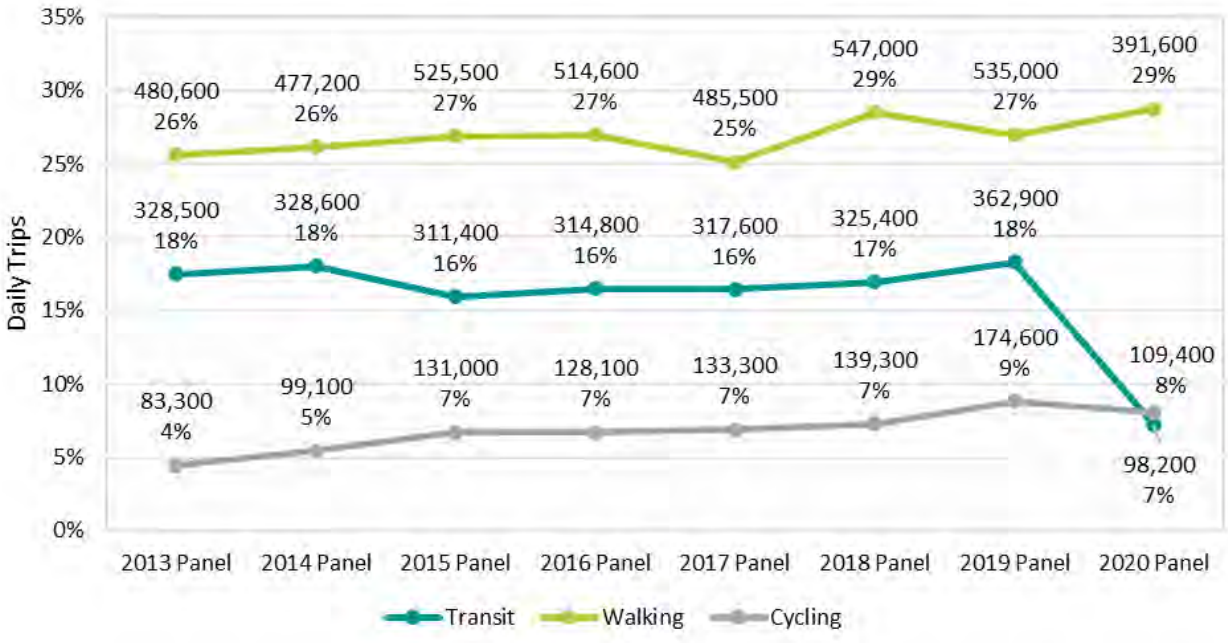
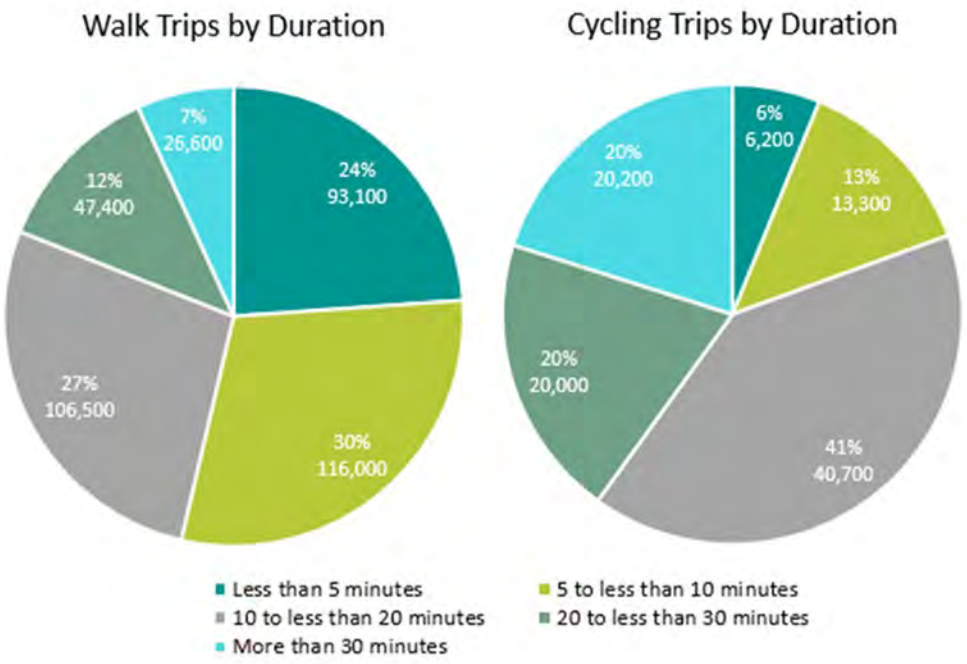


Figure 4-19 shows the distribution of trips by duration for walking and cycling. Approximately 81% of walk trips and 60% cycling trips are under 20 minutes. People who bike are willing to take longer trips than those who walk, with 20% and 7% of people travelling for more than 30 minutes by bike and walking respectively.

Figure 4-19: Walk and Cycle Trips by Duration



The distribution of walk and bike trips by distance is shown in **Figure 4-20**. Assuming an average walking speed of 5 km / hour, a 10-minute walk trip is about 0.8 km in length. Approximately 42% of walk trips were reported to be under 1 km, which is congruent with the reported duration of 54% of walk trips being under 10 minutes. Assuming an average cycling speed of 20 km / hour, a 30-minute cycling trip is about 10 km in length. Approximately 88% of cycling trips were reported to be under 10 km, which is in agreement with 80% of reported cycling trips being under 30 minutes.

Figure 4-21 shows the duration of the walking or cycling portion of a trip made to access rapid transit or bus modes. Around 44% of rapid transit users and 65% of bus users reported having a walk or bike portion of up to 10 minutes for their trip. More people using rapid transit (10%) are willing to walk or bike for more than 30 minutes compare to those using bus services (5%). Compared to 2019, there is a higher proportion of rapid transit users who have longer walking or cycling portions in their trip. In 2019, approximately 56% of rapid transit users reported a walking or cycling portion of up to 10 minutes, which is 12 percentage points higher than 2020. In contrast, the proportion of bus users' walk or cycling portion remains consistent from 2019. From the figure, it is clear that those who use rapid transit are willing to walk or cycle further compared to bus users.

Figure 4-20: Walk and Cycle Trips by Distance

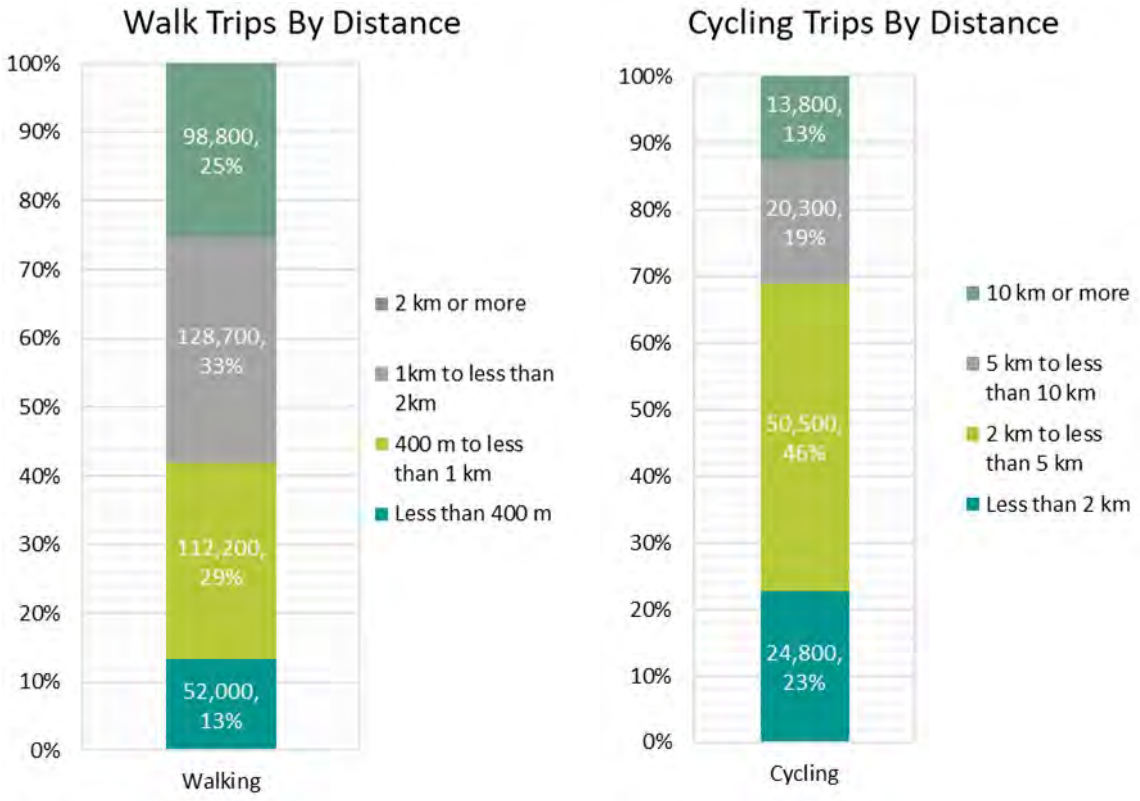
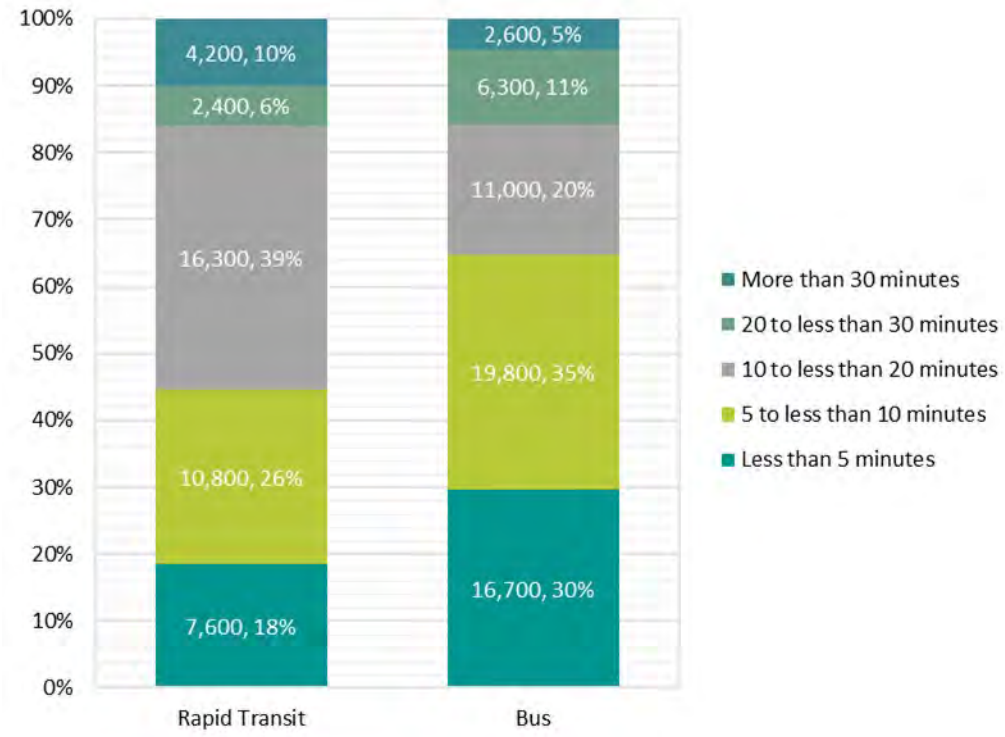


Figure 4-21: Duration of Walk or Bike Trips by Primary Travel Mode



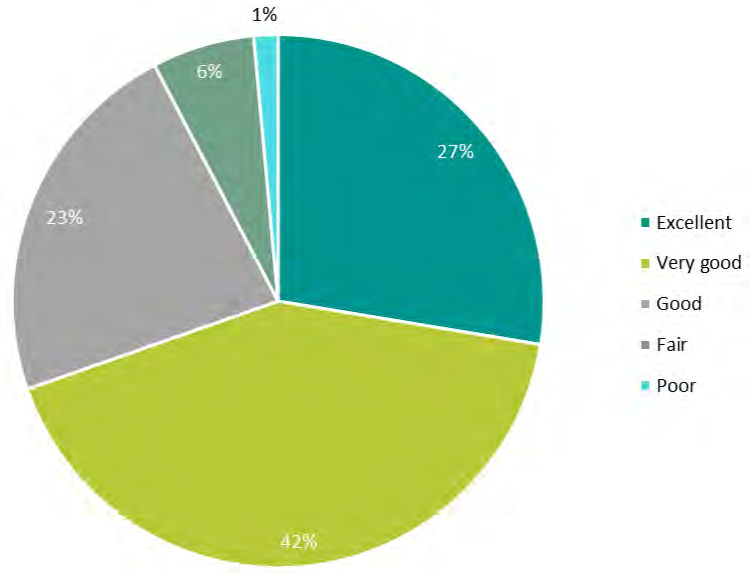
4.7. HEALTH STATUS

The My Health My Community[6] Survey was conducted from 2013 to 2014 across the Lower Mainland to better understand community health as it related to transportation choices (i.e., commute to work / school). The survey is part of an emerging field of study exploring the ways in which transportation choices impact our lifestyle and health. Evidence from other jurisdictions shows that well-planned and accessible transportation systems can increase physical activity, improve air quality, and reduce vehicle-related injuries, leading to better physical and mental health.

In 2014, a question was introduced to the Panel Survey asking respondents to report on their perceived health. Self-reported overall health assessments are simple but well established as having a strong correlation with overall mortality risk; they capture aspects of health that are difficult to capture, such as disease severity, social function, psychological reserves, etc. By incorporating a health-related question into the Vancouver Panel Survey, the City is able to track trends in health versus mode choice over time.

The participants' self-reported health status is summarized in **Figure 4-22**. Approximately 69% of residents reported having very good or excellent health, while only about 1% reported as having poor health. Overall, the findings are similar to previous survey results and generally agree with the findings of the Canadian Community Health Survey (Fraser Health Authority + Vancouver Health Authority subsets)[7].

Figure 4-22: Self-Reported Health Status of Respondents



6 My Health My Community is a non-profit partnership between Vancouver Coastal Health (VCH), Fraser Health (FH) and the eHealth Strategy Office (eHSO) at the University of British Columbia (UBC).

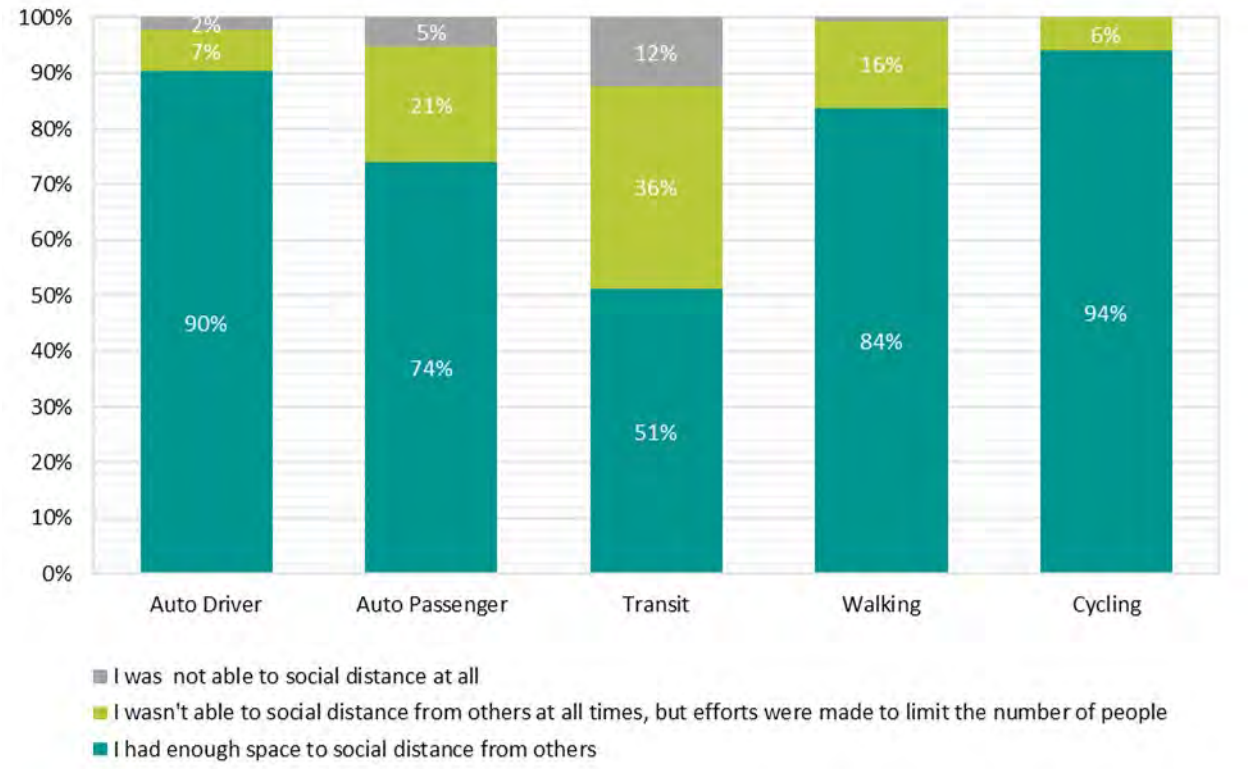
7 Based on 2009-2013 data from the Canadian Community Health Survey which only includes excellent, very good, fair, and poor health categories.

4.8. IMPACTS OF COVID-19

As part of the trip diary component of the survey, panelists answered questions related to social distancing and safety experiences in the context of COVID-19. These questions were answered for each trip made by the panelists on their respective diary day.

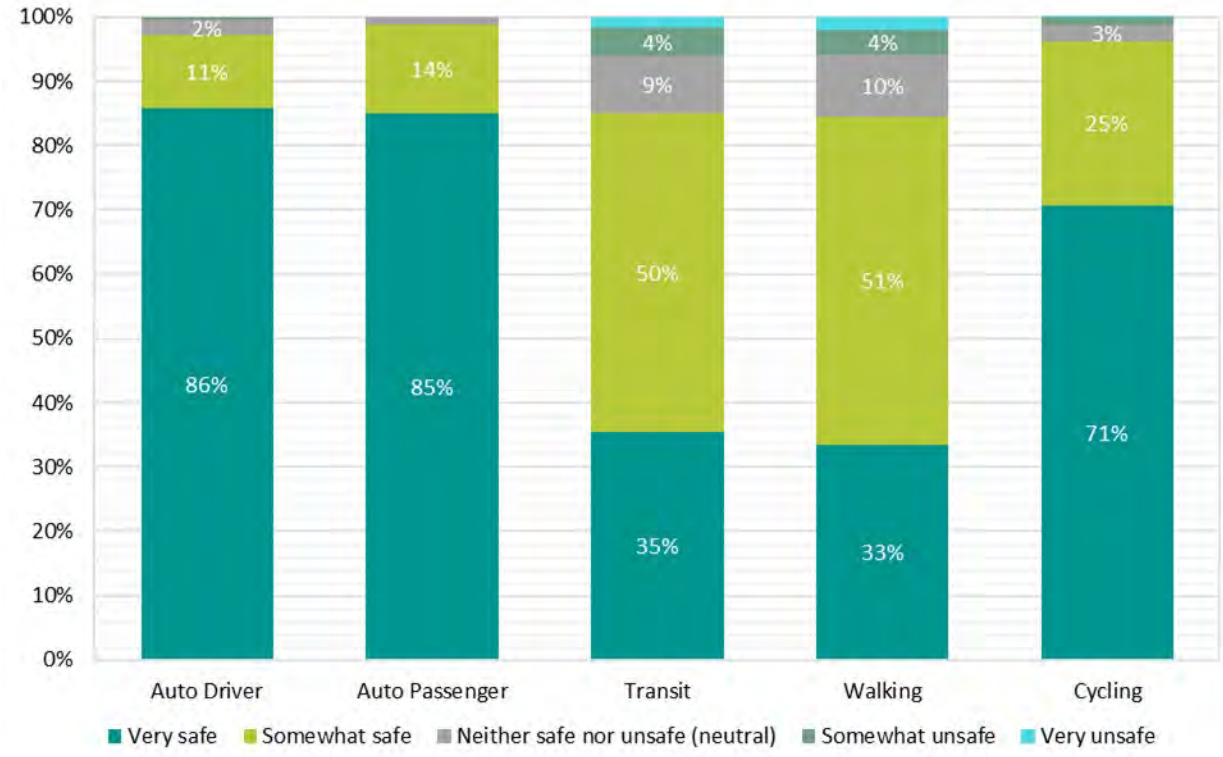
Overall, 85% of trip responses indicated that residents were given enough space to keep a distance from others during their trips while 3% indicated that residents felt that they were not able to socially distance at all. The perceived social distancing by mode is shown in **Figure 4-23** where it can be clearly seen that social distancing is most challenging for trips made using public transit services. From all the modes, transit has the highest level of interaction with others and lowest opportunity to avoid contact.

Figure 4-23: COVID-19 - Social Distancing by Mode



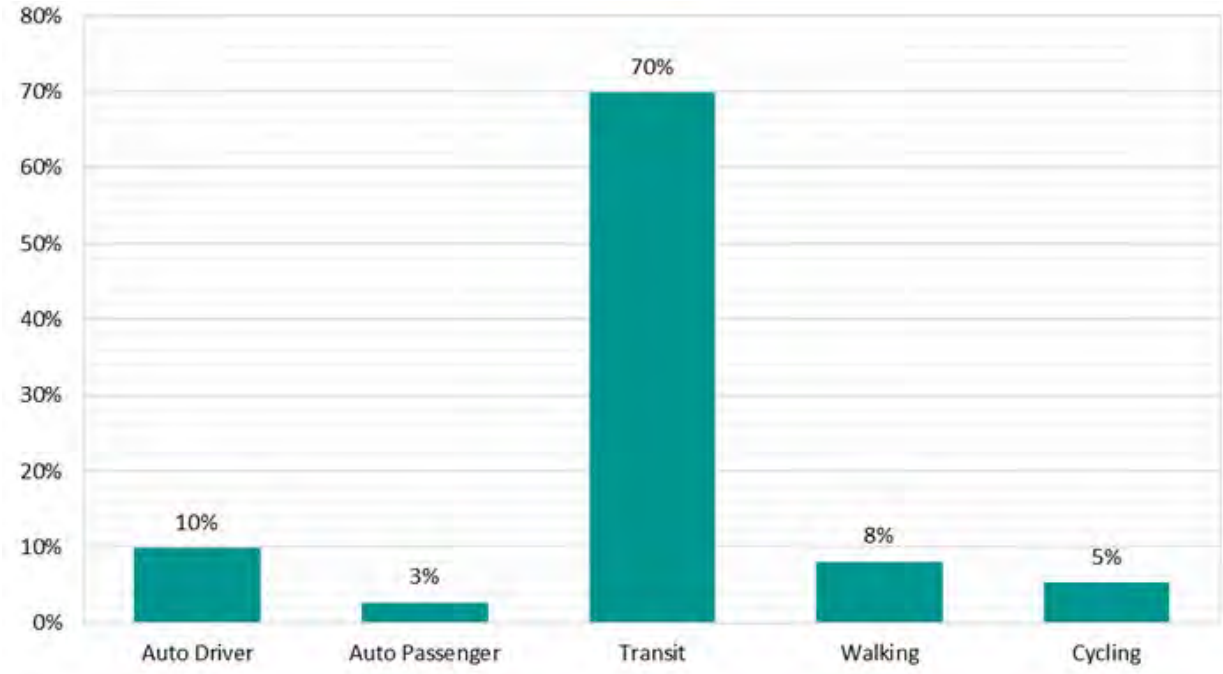
In terms of safety, 78% of trip responses revealed that residents felt very safe during their trips, while only 1% indicated that residents felt unsafe. As shown in **Figure 4-24**, even across the different modes, most trips were identified as either very safe or somewhat safe. Transit and walking trips had the highest rate of somewhat unsafe or very unsafe trips at a combine 6%.

Figure 4-24: COVID-19: Safety by Mode



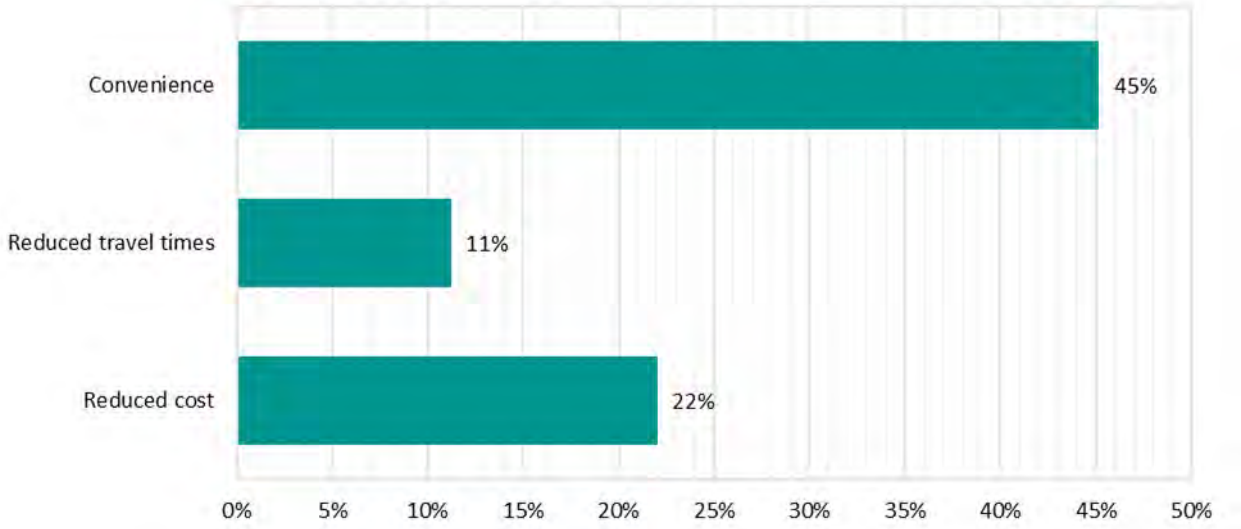
The pandemic resulted in a significant reduction in trips. In addition, the panelists identified that 8% of trips they made would have been made with a different mode if not for the pandemic. **Figure 4-25** displays which modes would have likely chosen instead with transit being the preferred mode choice for most trips.

Figure 4-25: COVID-19: Alternative Mode Choice



The residents' main reason for choosing the specified mode as their alternative mode is presented in **Figure 4-26**. The most common reason for choosing a different mode was for convenience, followed by reduced cost.

Figure 4-26: Reasons for Choosing an Alternative Mode



4.9. ORIGINS AND DESTINATIONS

The daily origin and destination (O-D) patterns for Vancouver residents based on geocoded trip-end coordinates is presented in **Table 4-2**. The breakdown of trips from each transportation zone to other zones in and outside of the City is shown in the table. **Figure 4-27** through **Figure 4-35** also show the distribution of trips to and from each transportation zone. In addition, each figure shows the number of trips made within the City and outside the City by origin zone. The O-D patterns by each mode are attached in ***Appendix A***.

It was found that the O-Ds are well balanced throughout the City, which is supported by the symmetry on either side of the green diagonal in the table. It was also found that, of all trips, approximately 78% were made within the City, which means that the majority of trips made by residents started and ended within the City.

Table 4-2: Origins and Destinations within Transportation Zones and Outside Vancouver

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	56,100	26,800		4,800	3,600	1,500	4,100	1,900	1,900	1,700	14,100
False Creek	25,000	71,700		10,400	6,400	5,700	5,800	1,300	3,600	8,700	12,100
Downtown			179,600	15,200	10,000	7,200	9,900	3,200	5,500	10,400	26,200
Vancouver Broadway	4,200	10,500	14,700	72,100	17,800	5,500	18,100	3,100	13,200	7,000	9,400
Vancouver South	2,400	6,100	8,500	18,300	64,500	11,600	6,300	14,800	13,400	5,600	13,400
Vancouver Kerrisdale	1,500	6,000	7,500	6,000	11,700	54,000	13,500	3,400	2,200	900	10,100
Vancouver Kitsilano	5,800	3,400	9,200	15,500	5,800	13,900	76,100	2,600	4,200	2,400	11,600
Vancouver Southeast	1,500	1,700	3,200	3,800	14,200	3,000	3,100	43,000	14,600	1,700	17,400
Vancouver East	1,500	4,100	5,600	11,300	12,700	1,900	3,600	16,600	60,900	20,000	25,200
Vancouver Port	1,800	8,900	10,700	7,100	5,700	1,100	2,900	1,000	18,300	43,000	11,700
Outside Vancouver	15,100	11,400	26,500	12,000	13,200	9,200	9,300	16,200	25,300	11,200	53,200

Figure 4-27: Trip Distribution To / From West End

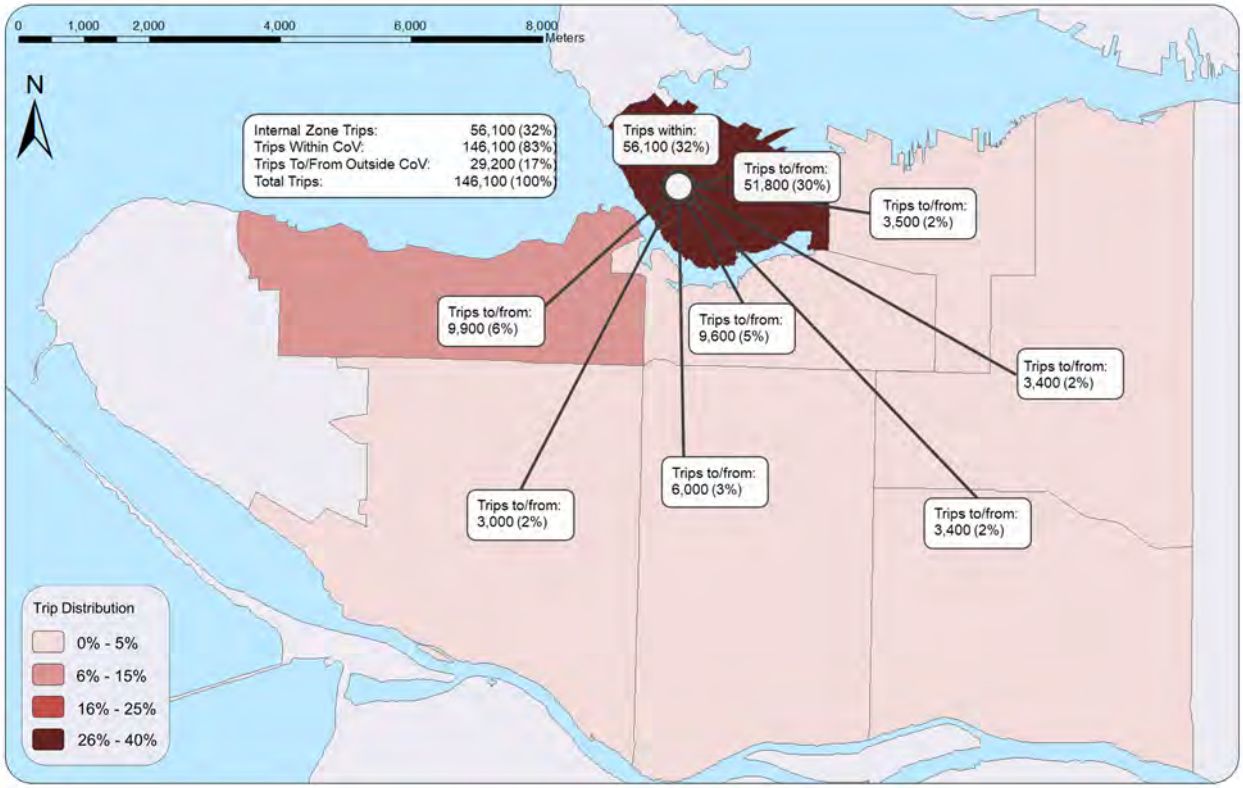


Figure 4-28: Trip Distribution To / From False Creek

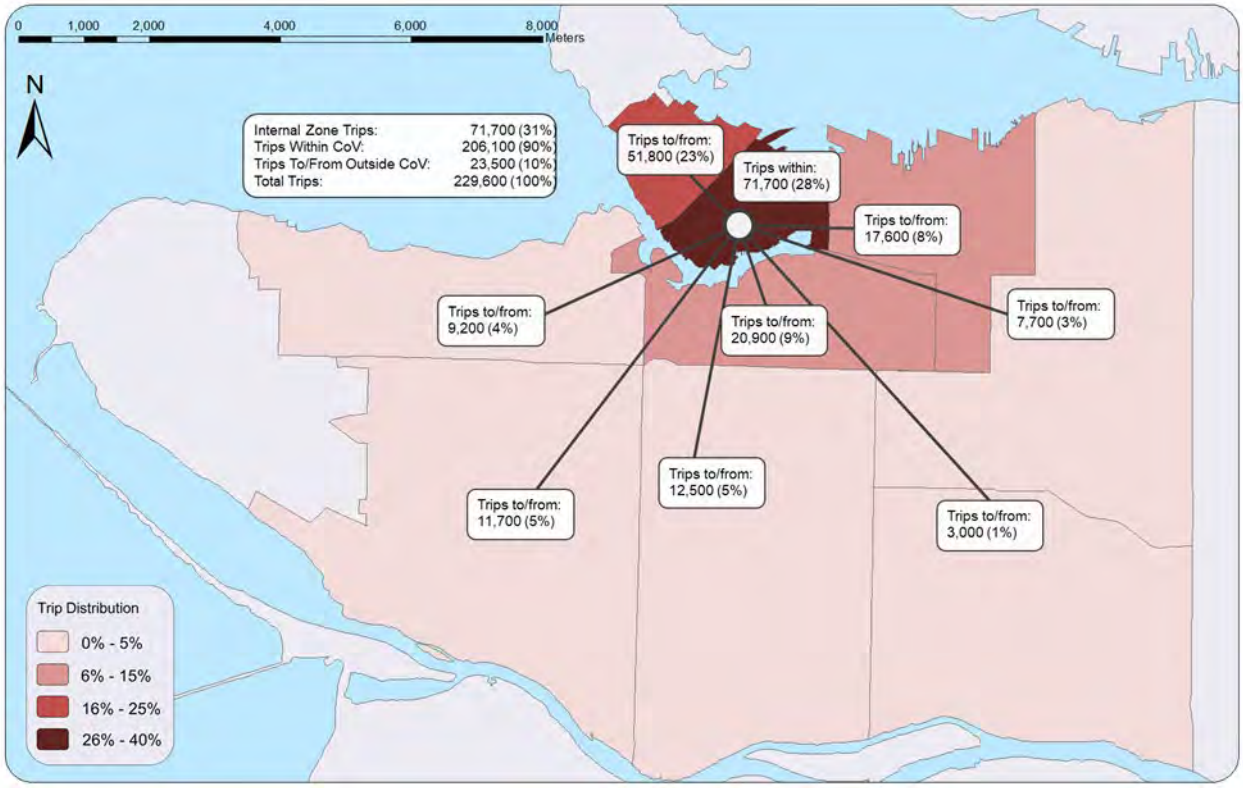


Figure 4-29: Trip Distribution To / From Vancouver Broadway

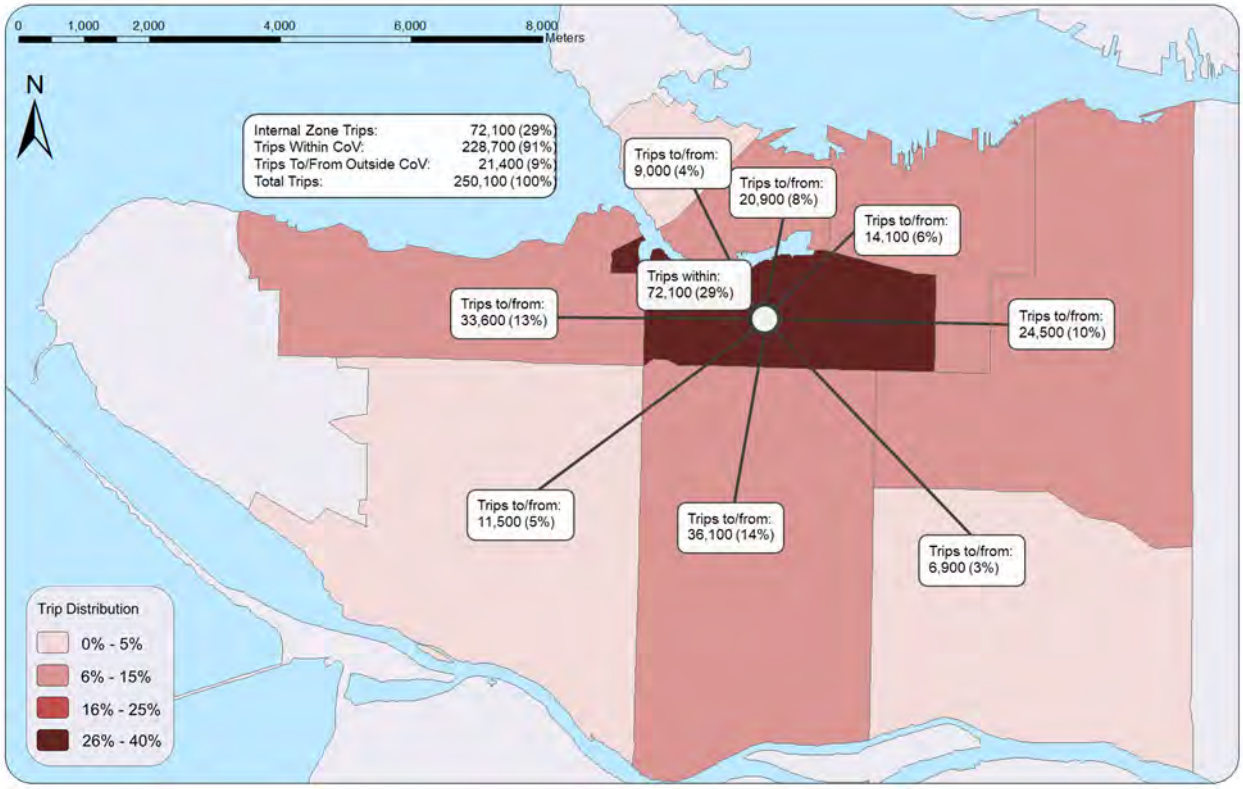


Figure 4-30: Trip Distribution To / From Vancouver South

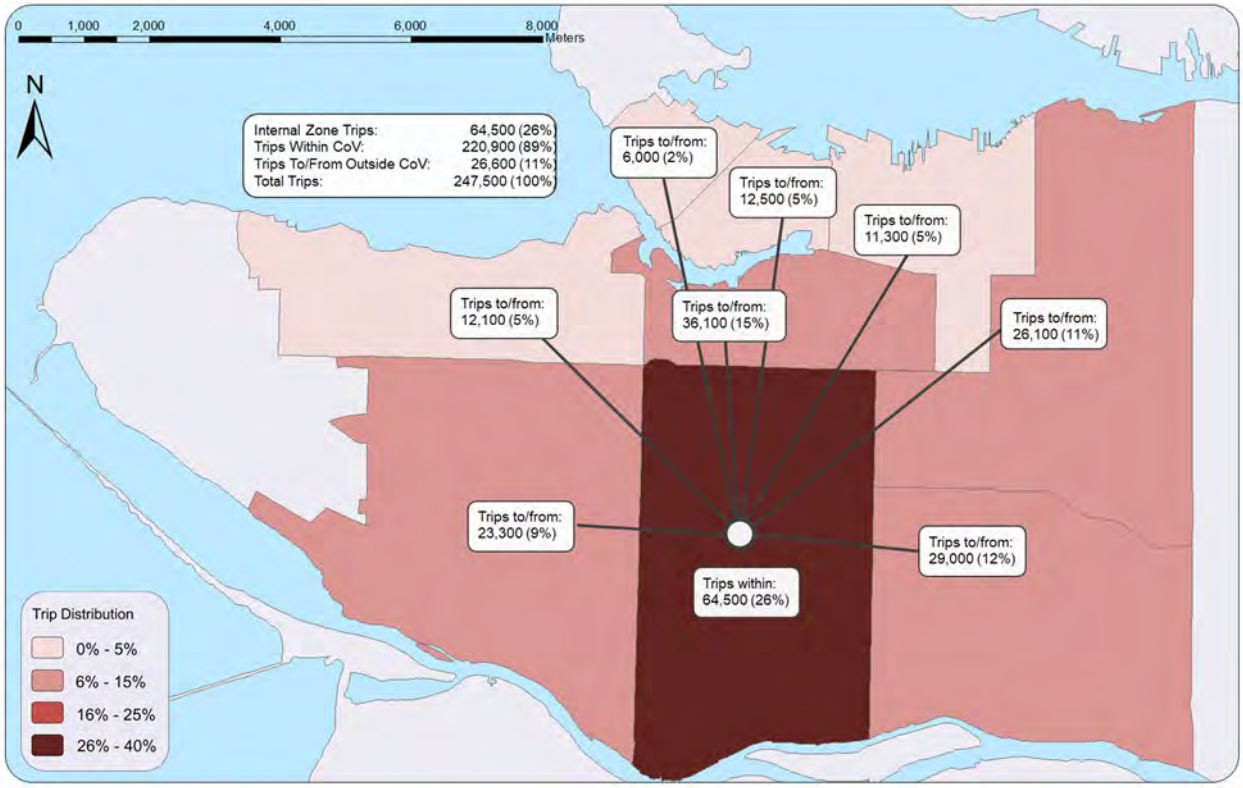


Figure 4-31: Trip Distribution To / From Vancouver Kerrisdale

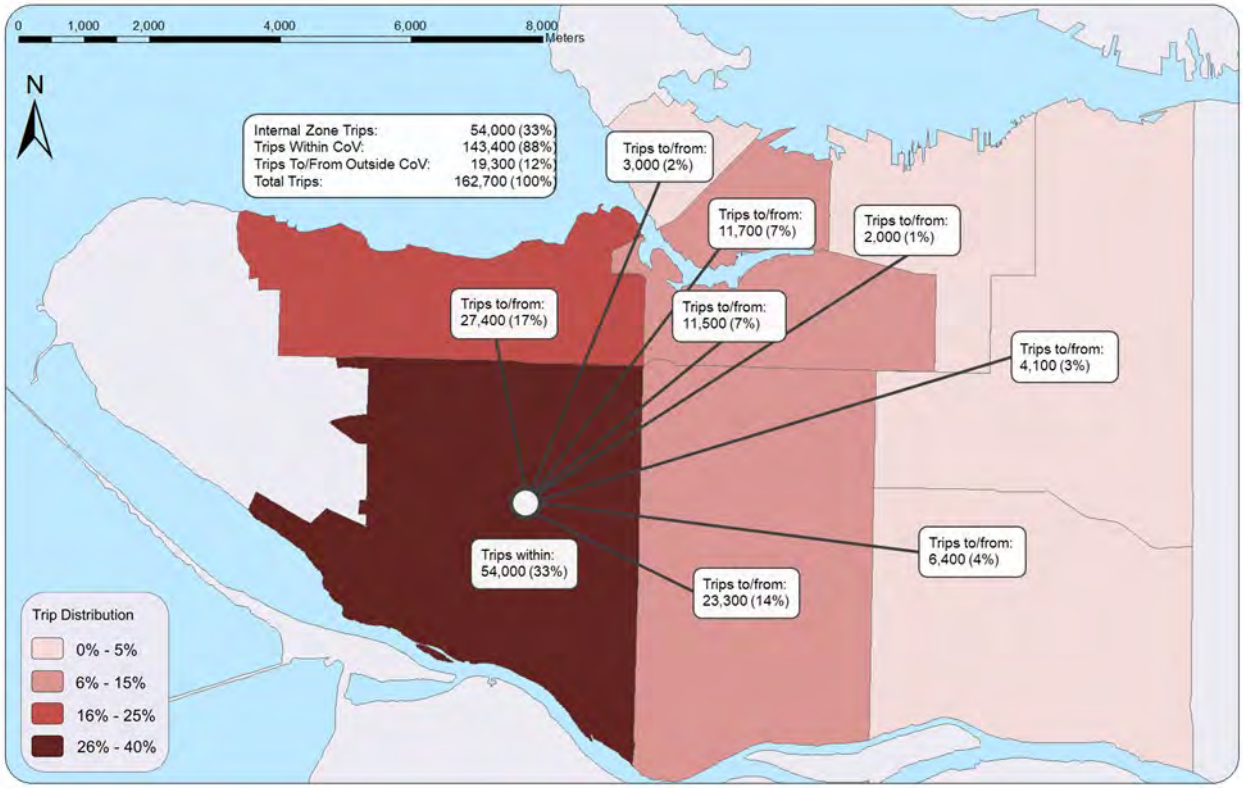


Figure 4-32: Trip Distribution To / From Vancouver Kitsilano

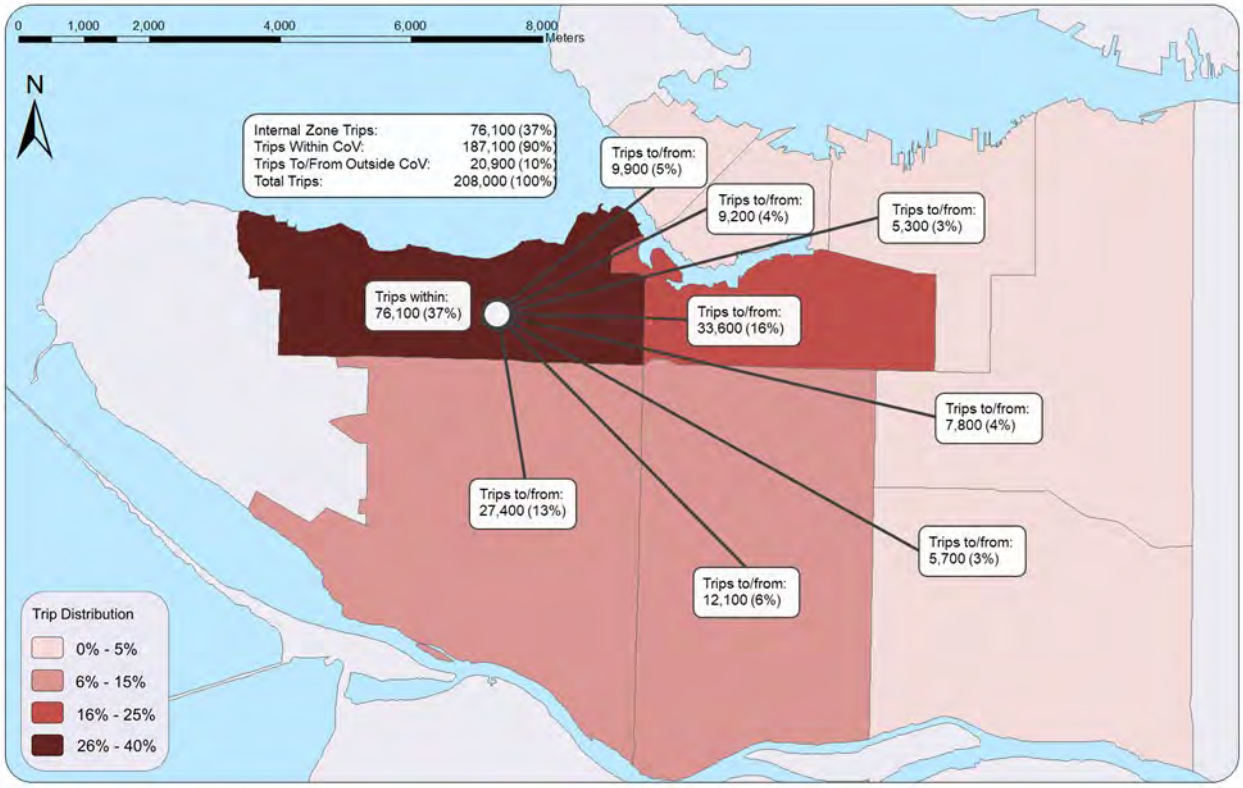


Figure 4-33: Trip Distribution To / From Vancouver Southeast

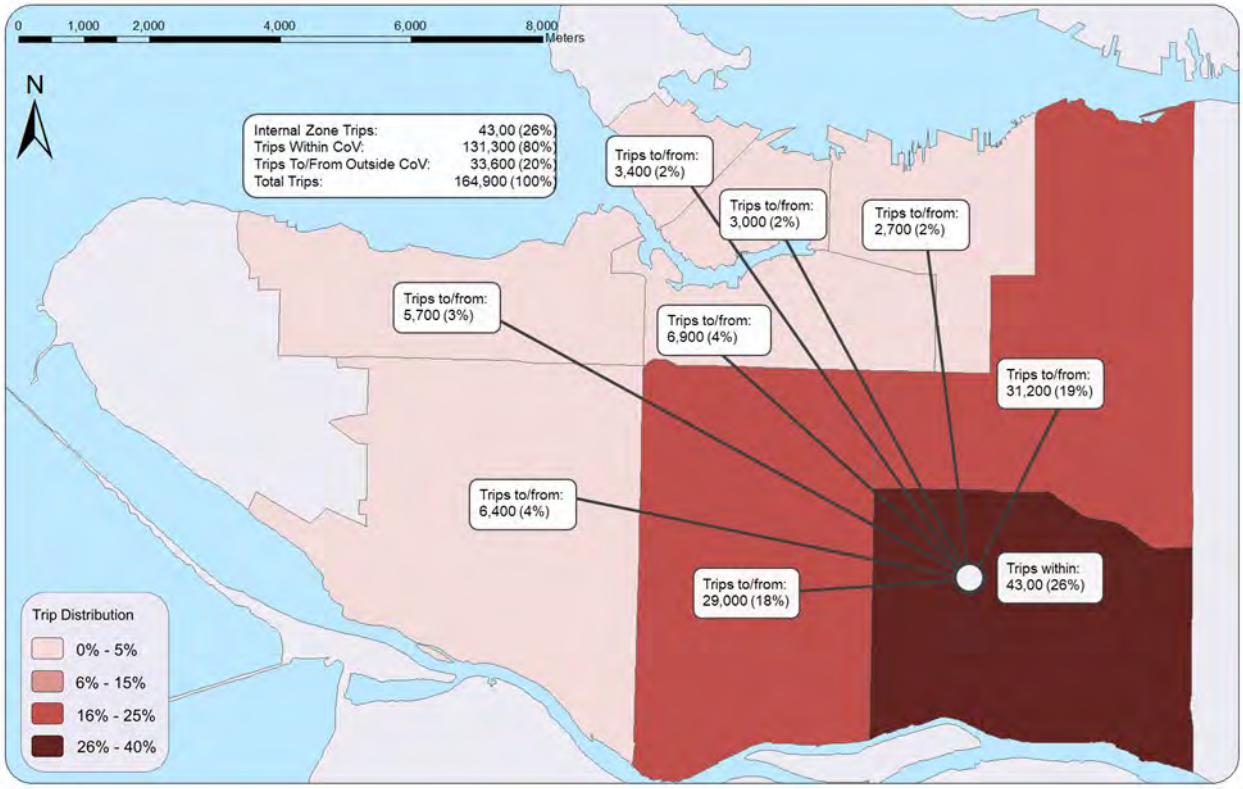


Figure 4-34: Trip Distribution To / From Vancouver East

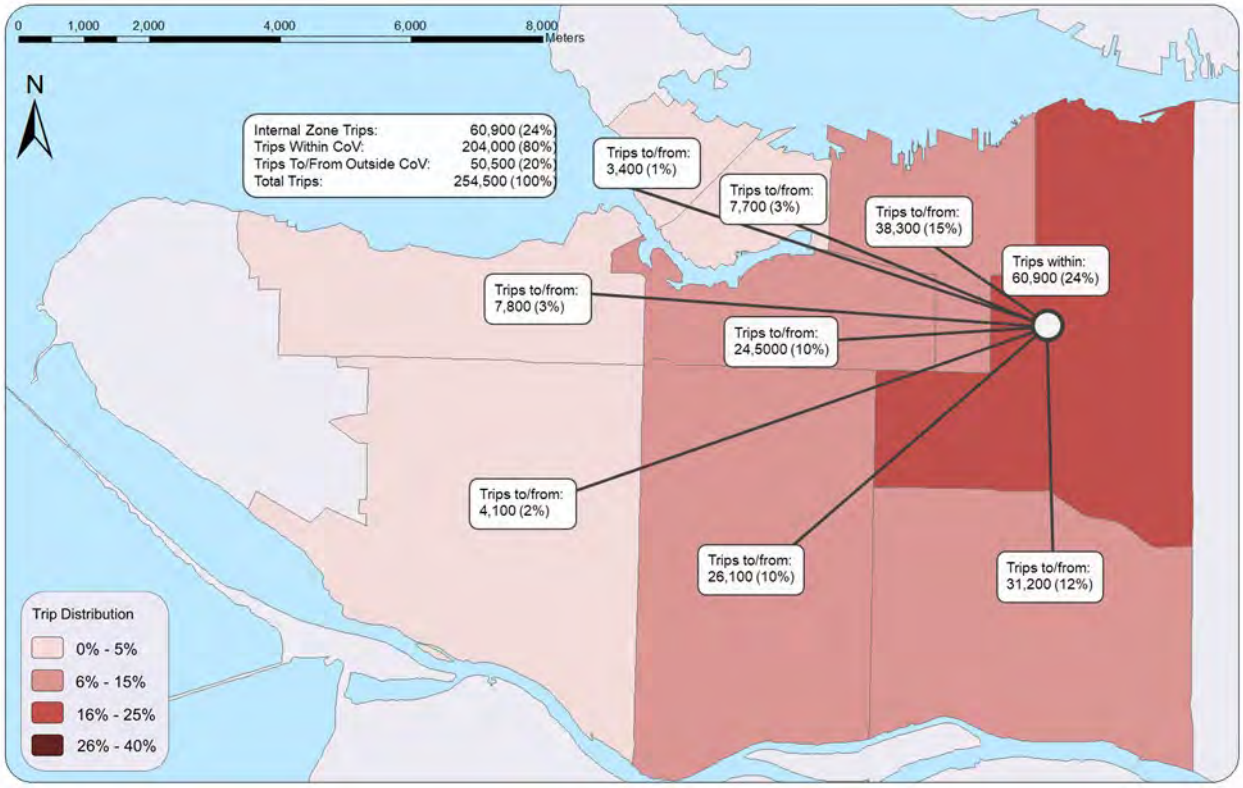
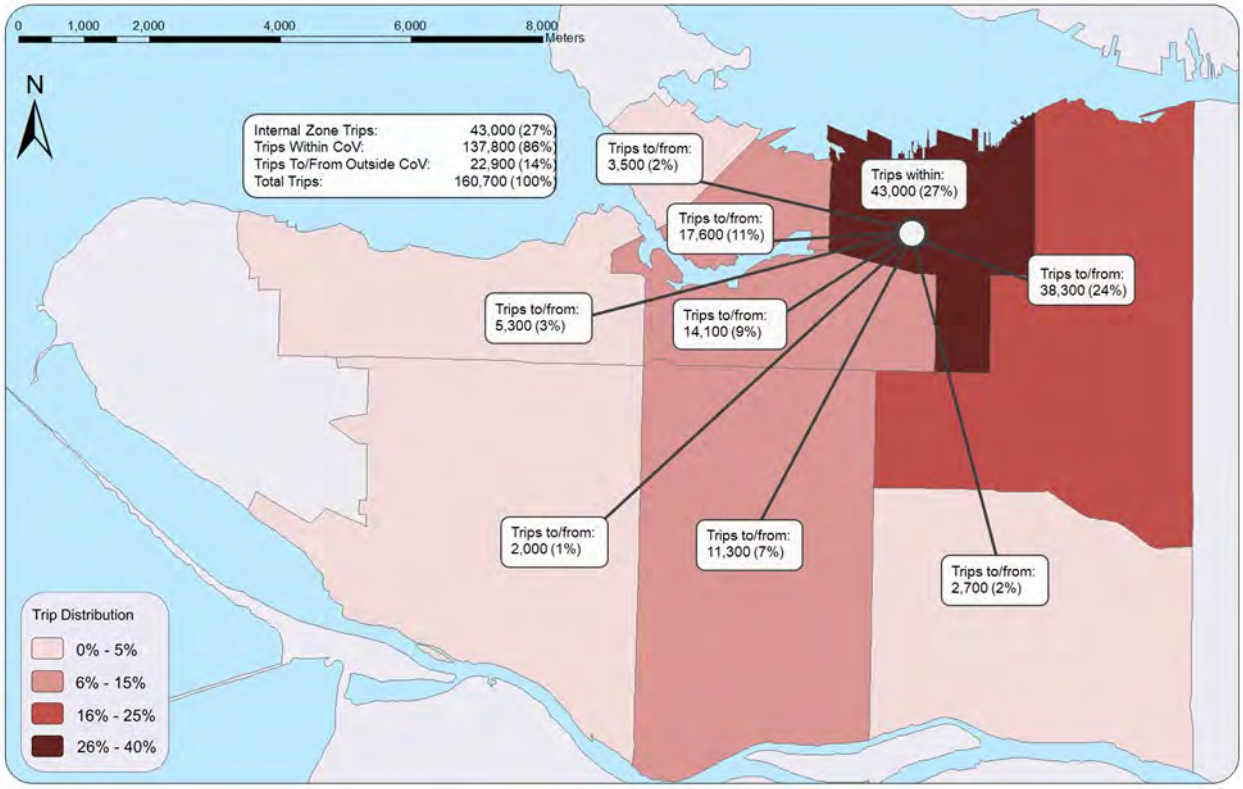


Figure 4-35: Trip Distribution To / From Vancouver Port



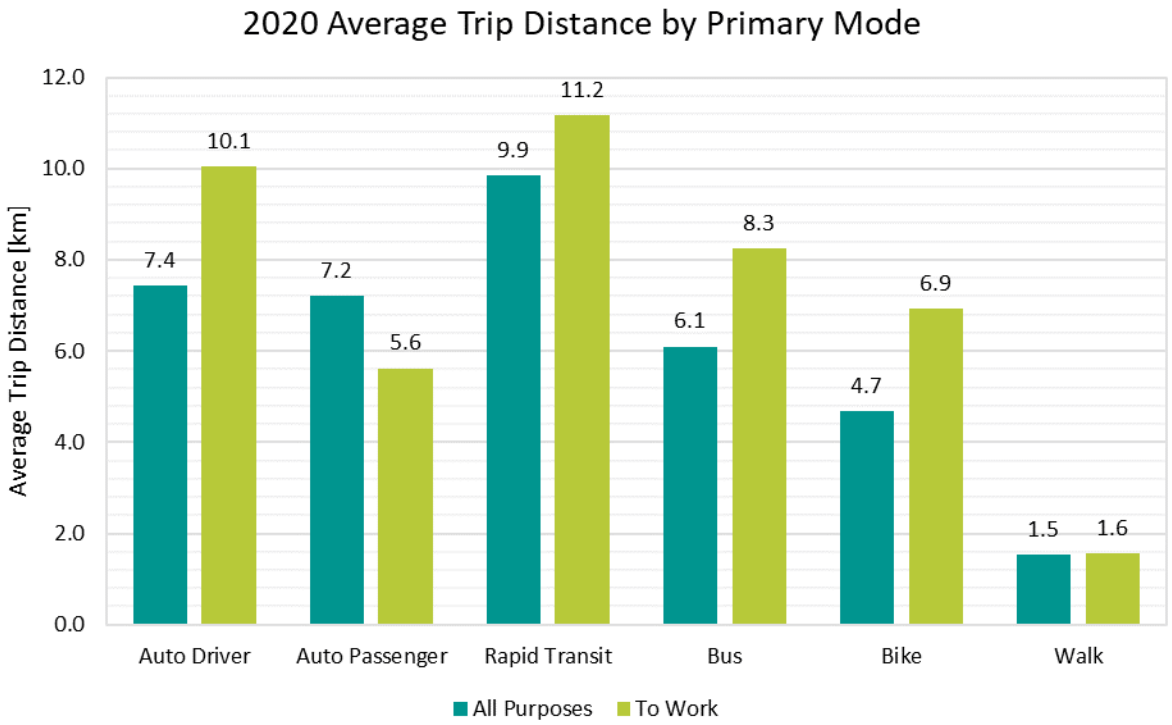
4.10. AVERAGE TRIP DISTANCE

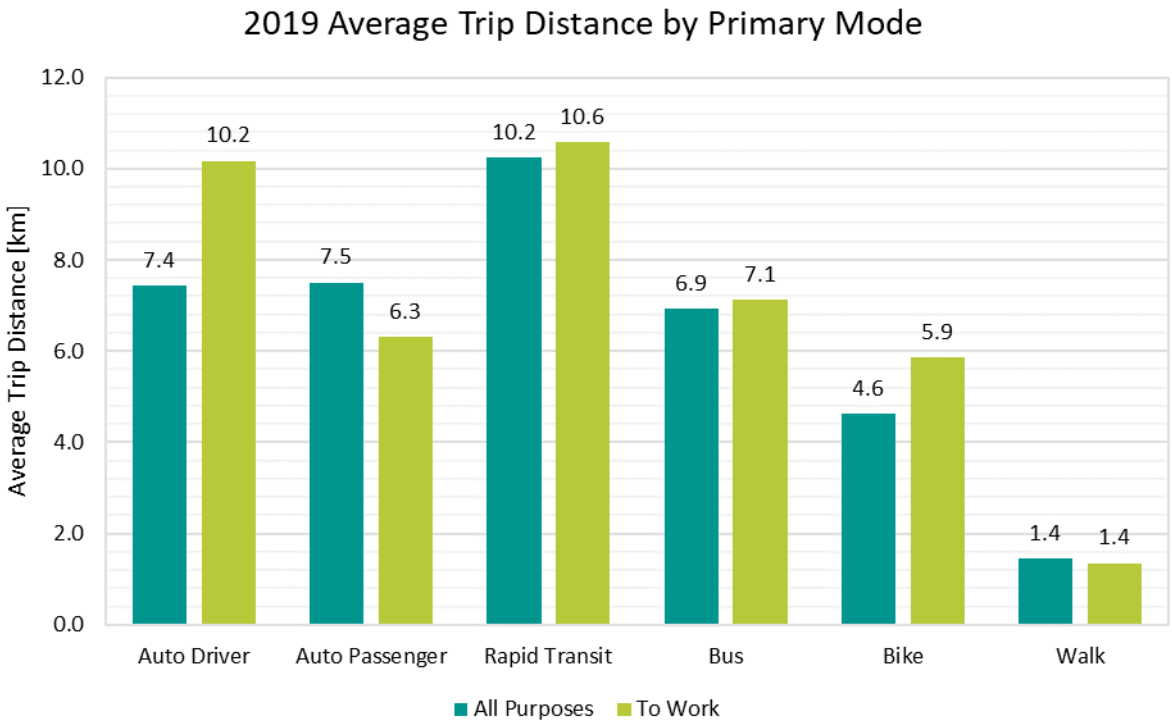
Trip lengths were estimated using the distance matrix from TransLink's Regional Transportation Model's shortest distance assignment. The origin and destination location for each reported trip was matched with the model's transportation zones using the corresponding latitude and longitude coordinates. The average distance travelled for all trips and work trips by each mode in 2020 and 2019 are shown in **Figure 4-36**.

In general, people are willing to travel further when using rapid transit with average trip distances of 9.9km and 11.2km for work. For those travelling by auto, drivers were found to travel longer distances to work than passengers with average trip distances of 10.1 km compared to 5.6 km. The figure also shows that people are generally willing to travel further for work that other trip purposes.

Compared to the 2019 Panel Survey, the general trend has remained consistent. However, in 2020, the average trip distances were longer for sustainable modes, especially for travel to work.

Figure 4-36: Average Trip Distance by Primary Mode



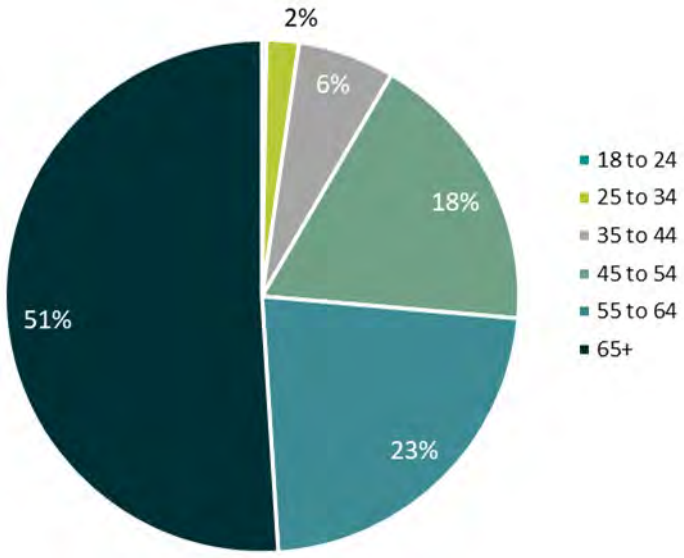


5. Comparison of Returning Panel Members

A high-level trend analysis of panelists who have continually participated in the Panel Survey since 2013 is presented in this section.

This year, there were 345 panelists who have participated annually since the first survey. The age distribution of returning panelists is shown in **Figure 5-1**. As seen in the distribution, the older age cohorts represent a high share of the returning panelists.

Figure 5-1: Age Distribution of Returning Panelists



5.1. ACCESS TO A VEHICLE

Trends in access to motor vehicles of the returning panelists are shown in **Table 5-1** in terms of access to private vehicles and car share programs over the last eight years. As shown, the proportions of returning panelists with and without access to a personal vehicle and having a valid driver's license have remained relatively steady for the past six years. However, in 2020, there was a reduction in access to car share programs, which can be attributed to the discontinuation of Car2Go and ZipCar programs in the province.

Table 5-1: Access to Motor Vehicles (2013-2020)

	2013	2014	2015	2016	2017	2018	2019	2020
Valid Driver License	95%	95%	94%	94%	94%	94%	94%	94%
Private Vehicle Access	77%	81%	82%	83%	82%	83%	81%	82%
Car Share Program	16%	21%	24%	26%	28%	32%	33%	29%
No Car Access	17%	11%	11%	11%	10%	10%	11%	11%

5.2. MODE SHARE PATTERNS

A comparison of mode share among newly recruited panelists and returning panelists was completed. As shown in **Figure 5-2**, the auto and transit mode shares are higher among new recruits, while returning panelists show a preference for travelling by bicycle or on foot. This finding is similar to previous years which show that returning panelists tend to travel more by active modes.

Figure 5-2: Comparison of Mode Share Amongst New Recruits and Returning Panelists

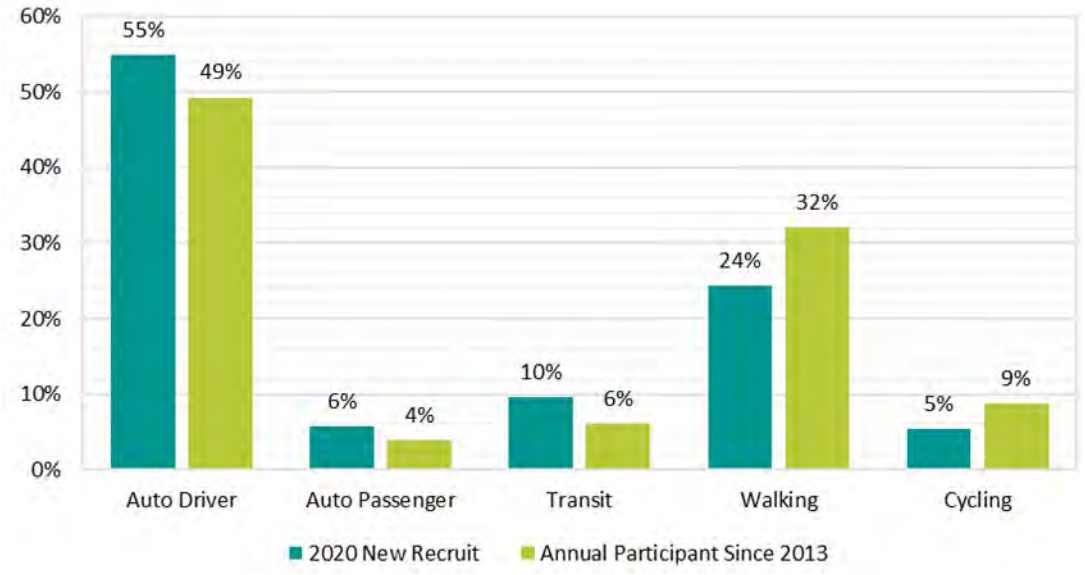
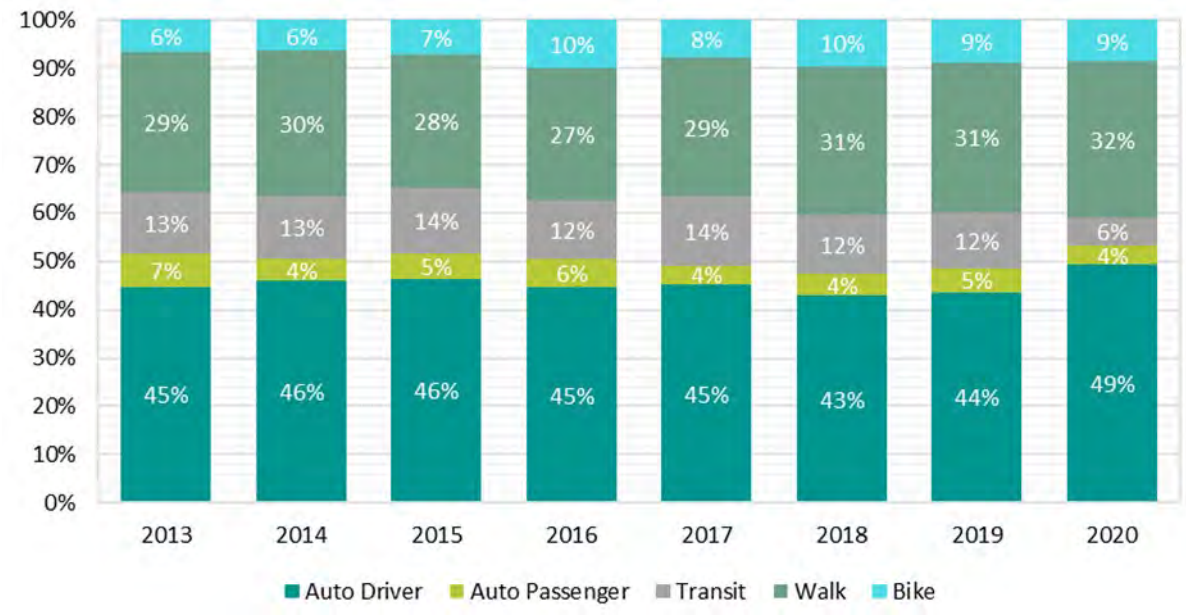


Figure 5-3 shows the trend in mode share of returning panelists from 2013 to 2020 for all trips. The shares of active modes have remained relatively consistent over the years. As shown, the pandemic has changed how returning panelists travel, as shown by the shift from the use of public transit system to increased use of their own private vehicles. The large decrease in transit use can be attributed to the global pandemic as mentioned in previous sections.

Figure 5-3: Trend in Returning Panelists' Mode Share (2013-2020)



The trend in mode share for commuting trips of returning panelists is shown in **Figure 5-4**. Prior to 2020, there was a trend towards increased transit and active modes and decreased use of autos. However, as a

result of the pandemic, transit use has decreased significantly among returning panelists, as exhibited by the transit mode share reported for this year.

Figure 5-4: Trend in Mode Share for Commuting Trips (2013-2020)

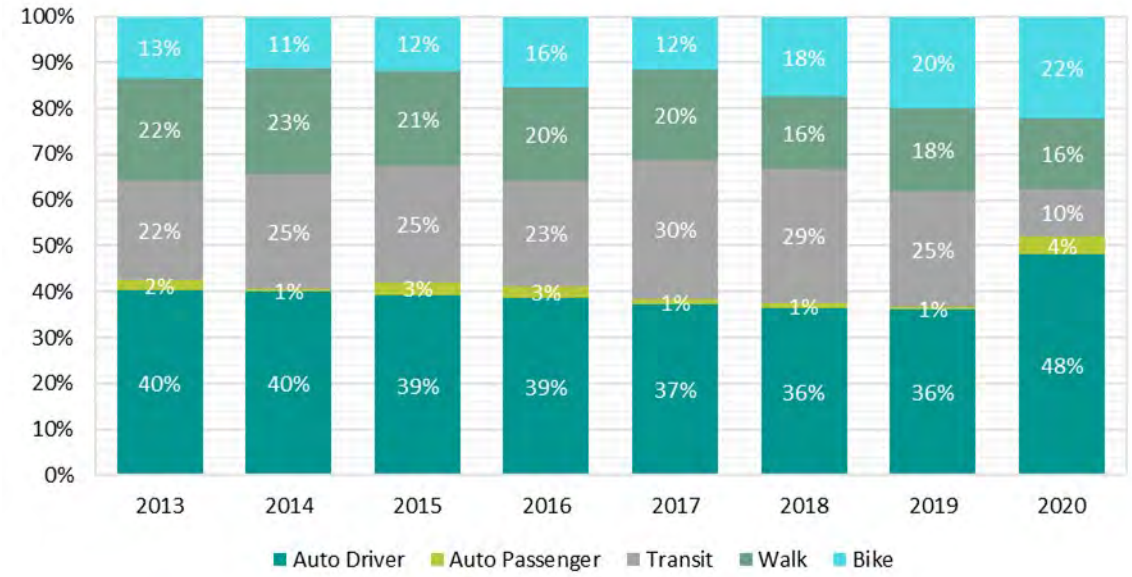
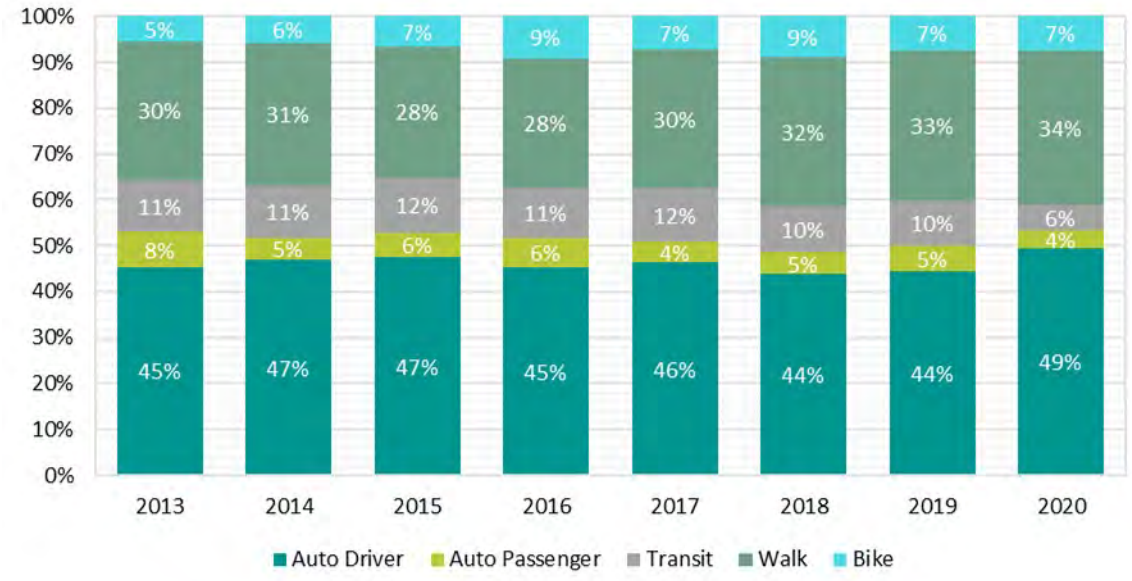


Figure 5-5 shows the trend in mode share for non-commuting trips of returning panelists from 2013 to 2020. For non-commuting trips, mode share did not change as drastically. Similar to the commuting trips, returning panelists have generally resorted to using their motor vehicles instead of using transit services during the pandemic.

Figure 5-5: Trend in Mode Share for Non-Commuting Trips (2013-2020)



6. Contributing Factors Affecting Change

This section provides a brief discussion of the trends that have influenced travel behaviour and patterns across Metro Vancouver and the City of Vancouver, particularly in the past decade. These include changes in socio-economic patterns (population and employment), transit ridership, and fuel prices. **Table 6-1** provides a description of these accounts and their corresponding data sources.

Table 6-1: Socio-Economic Accounts Affecting Travel

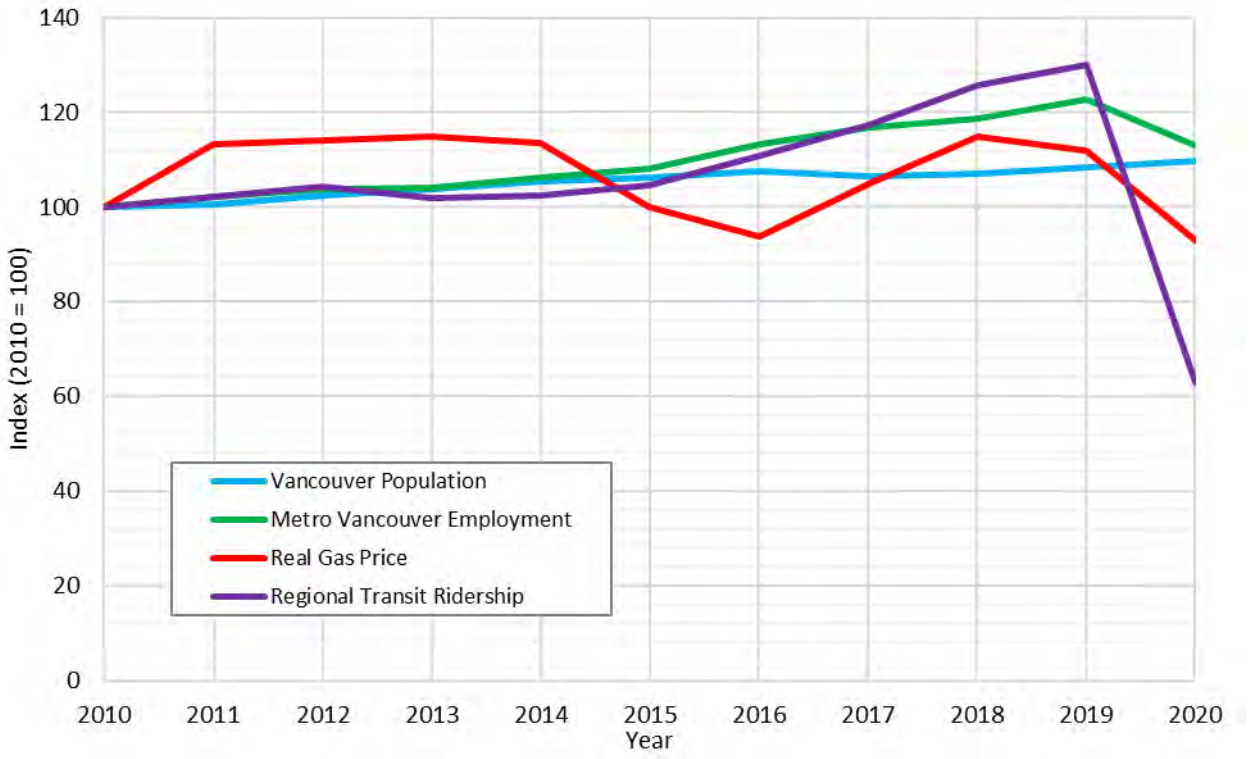
Account	Description	Geography	Source
Socio-economic	Population	City of Vancouver	Stats Can
Socio-economic	Employment	Metro Vancouver	Stats Can
Network Ridership	Transit	Metro Vancouver	TransLink
Cost	Fuel Price	Metro Vancouver	Stats Can

On March 17, 2020, the BC government declared a state of emergency and initiated a multi-phase approach to support the province's response to the COVID-19 pandemic. This included travel restrictions and physical distancing measures, as well as encouraging the shift of schools and workplaces to an online setting to help slow the spread of the virus. As seen in the findings from the 2020 Panel Survey, these preventive measures have led residents to adjust their lifestyles, with many residents changing their daily routines. Previously Vancouverites left their homes for work, dining, or leisure activities, which have shifted to working remotely and doing more activities online or close to home. Consequently, this abrupt change has had a drastic impact on people's usual travel behaviour and travel patterns.

During the initial stages of the pandemic, TransLink reported an 83% drop in ridership across their entire transit system. Overall, people generally made fewer trips across all modes and resorted to walking, biking, or driving their personal vehicle more often this year. This shift in travel behaviour can be attributed to the increased number of workers and students moving to working remotely and learning online, implementation of travel restrictions, and fears of contracting the virus.

The impacts of COVID-19 were widespread and affected a variety of socio-economic factors. Specifically, there was a significant decrease in employment levels and economic activity which led to reductions in transit ridership and fuel prices, as shown in **Figure 6-1**. Note that the trends shown in the figure are indexed to the year 2010.

Figure 6-1: Socio-Economic Trends Indexed to 2010



7. Lessons Learned and Next Steps

The 2020 Vancouver Panel Survey builds upon the data collected from previous Panel Surveys. Having a panel of residents that are surveyed on an annual basis provides the City with a unique and valuable dataset to track trends in transit and active mode share and vehicle usage.

Some of the key lessons learned and suggested next steps from the 2020 Panel Survey data collection and analysis phases include the following:

- Working from home and online learning present opportunities to reduce VKT and transportation related carbon emissions. However, based on how mode share had been calculated in the Vancouver Panel survey to date, both work from home and online learning are not reflected within the sustainable mode share. Therefore, a discussion is required to understand and correctly evaluate the City's priorities and update corresponding targets as required.

- Electric vehicles (EV) currently represent a small share of all passenger vehicles in the City. However, the level of adoption is increasing quickly as fuel prices continue to increase, policies to encourage EVs continue to be implemented, supply and choice of EVs increases, and overall attitudes and preference of EVs continue to improve. New vehicle sales of EVs in BC hit 9.4% in 2020, five years ahead of the targets established in the CleanBC program. The ICBC open-source data presents an opportunity to efficiently track the number of EVs and their share of the total passenger vehicle fleet in the City. However, additional effort will be required to accurately capture and differentiate EV VKT from non-EV VKT. This is an important metric to measure as part of the City's Climate Emergency Action Plan, specifically Big Move 3 which aims to achieve 50% of VKT by zero emission vehicles by 2030.

- The panel continues to get older and the recruitment of the younger age cohort through the traditional approach remains difficult, as with other market research efforts. Recent changes including direct cash incentives and the referral program have improved recruitment for the young age cohorts, but additional effort will be required in the coming years. Leveraging the City's social media presence presents a cost-effective approach to target this age cohort and should be utilized along with gradual increase in the total number of panelists.

- The Panel Survey includes a significant amount of effort and technical expertise to do logic and error checking, programming, weighting, expansion, and analysis. This level of effort should be maintained for future panel surveys to maintain data consistency and to ensure quality analysis and results. Any potential bias from deviations from the current methodology (e.g., social media recruitment) should be evaluated as well to ensure consistency with past Panel Surveys and other regional trip diary surveys.

APPENDIX A

Original and Destination Patterns by Mode

Figure A-1: Origins and Destinations of Auto Trips (Total Auto Trips and Auto Mode Share)

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	4,300	8,300		2,400	2,800	1,400	3,100	1,100	900	1,300	4,400
False Creek	5,800	11,000		5,200	4,100	3,400	4,800	600	1,100	4,600	10,200
Downtown			29,400	7,600	6,900	4,800	7,900	1,700	2,000	5,900	14,600
Vancouver Broadway	2,000	5,100	7,100	17,000	9,800	3,200	9,900	2,200	9,200	4,500	7,300
Vancouver South	1,400	3,800	5,200	9,600	37,000	10,200	4,900	12,200	10,100	3,500	11,900
Vancouver Kerrisdale	1,400	4,200	5,600	3,700	10,200	32,900	9,300	3,300	2,100	700	8,700
Vancouver Kitsilano	4,600	3,000	7,600	6,800	4,100	9,600	30,200	2,300	3,000	2,000	8,900
Vancouver Southeast	600	800	1,400	3,100	12,100	2,900	2,800	30,000	10,600	1,000	14,600
Vancouver East	1,200	1,400	2,600	8,300	8,800	1,900	2,500	12,700	30,000	8,700	22,000
Vancouver Port	1,300	4,400	5,700	5,000	3,300	900	1,900	400	8,200	10,200	8,200
Outside Vancouver	4,900	9,100	14,000	9,900	12,000	8,500	6,800	13,300	22,000	7,100	42,600

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	8%	31%		50%	78%	93%	76%	58%	47%	76%	31%
False Creek	23%	15%		50%	64%	60%	83%	46%	31%	53%	84%
Downtown			16%	50%	69%	67%	80%	53%	36%	57%	56%
Vancouver Broadway	48%	49%	48%	24%	55%	58%	55%	71%	70%	64%	78%
Vancouver South	58%	62%	61%	52%	57%	88%	78%	82%	75%	63%	89%
Vancouver Kerrisdale	93%	70%	75%	62%	87%	61%	69%	97%	95%	78%	86%
Vancouver Kitsilano	79%	88%	83%	44%	71%	69%	40%	88%	71%	83%	77%
Vancouver Southeast	40%	47%	44%	82%	85%	97%	90%	70%	73%	59%	84%
Vancouver East	80%	34%	46%	73%	69%	100%	69%	77%	49%	44%	87%
Vancouver Port	72%	49%	53%	70%	58%	82%	66%	40%	45%	24%	70%
Outside Vancouver	32%	80%	53%	83%	91%	92%	73%	82%	87%	63%	80%

Figure A-2: Origins and Destinations of Transit Trips (Total Transit Trips and Transit Mode Share)

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	1,100	1,700	0	600	500	100	600	700	700	200	5,700
False Creek	700	1,800	0	2,200	1,200	1,200	600	600	1,700	1,100	1,800
Downtown	0	0	5,300	2,800	1,700	1,300	1,200	1,300	2,400	1,300	7,500
Vancouver Broadway	500	400	900	3,000	1,700	600	400	900	1,600	800	1,800
Vancouver South	600	1,600	2,200	1,900	1,700	0	800	600	800	200	1,500
Vancouver Kerrisdale	100	900	1,000	500	100	200	1,000	100	100	0	400
Vancouver Kitsilano	800	300	1,100	500	800	1,200	1,200	200	500	100	800
Vancouver Southeast	900	800	1,700	700	700	100	200	900	1,100	700	2,200
Vancouver East	200	1,700	1,900	700	1,400	0	0	1,300	1,300	1,500	2,100
Vancouver Port	100	900	1,000	900	700	100	0	300	1,800	900	600
Outside Vancouver	5,900	1,800	7,700	1,700	1,200	100	900	2,000	1,600	1,100	800

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	2%	6%		13%	14%	7%	15%	37%	37%	12%	40%
False Creek	3%	3%		21%	19%	21%	10%	46%	47%	13%	15%
Downtown			3%	18%	17%	18%	12%	41%	44%	13%	29%
Vancouver Broadway	12%	4%	6%	4%	10%	11%	2%	29%	12%	11%	19%
Vancouver South	25%	26%	26%	10%	3%	0%	13%	4%	6%	4%	11%
Vancouver Kerrisdale	7%	15%	13%	8%	1%	0%	7%	3%	5%	0%	4%
Vancouver Kitsilano	14%	9%	12%	3%	14%	9%	2%	8%	12%	4%	7%
Vancouver Southeast	60%	47%	53%	18%	5%	3%	6%	2%	8%	41%	13%
Vancouver East	13%	41%	34%	6%	11%	0%	0%	8%	2%	8%	8%
Vancouver Port	6%	10%	9%	13%	12%	9%	0%	30%	10%	2%	5%
Outside Vancouver	39%	16%	29%	14%	9%	1%	10%	12%	6%	10%	2%

Figure A-3: Origins and Destinations of Walk Trips (Total Walk Trips and Walk Mode Share)

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	45,100	12,900	0	500	100	0	400	0	0	0	3,000
False Creek	14,000	54,400	0	1,600	600	0	100	0	0	1,600	0
Downtown	0	0	126,400	2,100	700	0	500	0	0	1,600	3,000
Vancouver Broadway	200	2,900	3,100	46,000	5,200	0	6,400	0	100	300	300
Vancouver South	100	200	300	5,100	19,000	600	300	1,300	900	100	0
Vancouver Kerrisdale	0	0	0	0	600	18,800	1,600	0	0	0	800
Vancouver Kitsilano	400	100	500	6,300	200	1,400	38,300	0	500	300	0
Vancouver Southeast	0	0	0	0	700	0	0	11,800	2,200	0	500
Vancouver East	0	0	0	200	1,000	0	400	2,000	22,400	6,500	0
Vancouver Port	300	1,900	2,200	300	0	0	300	200	5,900	28,200	100
Outside Vancouver	3,500	0	3,500	300	0	500	0	500	300	100	8,900

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	80%	48%		10%	3%	0%	10%	0%	0%	0%	21%
False Creek	56%	76%		15%	9%	0%	2%	0%	0%	18%	0%
Downtown			70%	14%	7%	0%	5%	0%	0%	15%	11%
Vancouver Broadway	5%	28%	21%	64%	29%	0%	35%	0%	1%	4%	3%
Vancouver South	4%	3%	4%	28%	29%	5%	5%	9%	7%	2%	0%
Vancouver Kerrisdale	0%	0%	0%	0%	5%	35%	12%	0%	0%	0%	8%
Vancouver Kitsilano	7%	3%	5%	41%	3%	10%	50%	0%	12%	13%	0%
Vancouver Southeast	0%	0%	0%	0%	5%	0%	0%	27%	15%	0%	3%
Vancouver East	0%	0%	0%	2%	8%	0%	11%	12%	37%	33%	0%
Vancouver Port	17%	21%	21%	4%	0%	0%	10%	20%	32%	66%	1%
Outside Vancouver	23%	0%	13%	3%	0%	5%	0%	3%	1%	1%	17%

Figure A-4: Origins and Destinations of Trips made by Bike Modes (Total Other Trips and Bike Mode Share)

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	4,500	3,500	0	1,200	300	0	0	100	300	200	500
False Creek	4,100	1,000	0	1,400	500	1,100	200	100	700	1,500	100
Downtown	0	0	13,100	2,600	800	1,100	200	200	1,000	1,700	600
Vancouver Broadway	1,300	1,800	3,100	5,400	1,000	1,700	1,500	0	2,300	1,300	100
Vancouver South	400	500	900	1,500	6,500	900	200	700	1,000	1,700	100
Vancouver Kerrisdale	0	900	900	1,800	800	1,800	1,600	0	0	200	100
Vancouver Kitsilano	0	0	0	1,800	700	1,500	5,800	100	200	0	1,900
Vancouver Southeast	0	100	100	0	700	0	100	0	500	0	100
Vancouver East	0	900	900	2,100	1,000	0	800	400	6,000	3,100	1,000
Vancouver Port	100	1,700	1,800	900	1,700	200	700	200	2,300	3,700	2,700
Outside Vancouver	500	500	1,000	100	100	100	1,700	300	1,300	2,800	400

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	8%	13%		25%	8%	0%	0%	5%	16%	12%	4%
False Creek	16%	1%		13%	8%	19%	3%	8%	19%	17%	1%
Downtown			7%	17%	8%	15%	2%	6%	18%	16%	2%
Vancouver Broadway	31%	17%	21%	7%	6%	31%	8%	0%	17%	19%	1%
Vancouver South	17%	8%	11%	8%	10%	8%	3%	5%	7%	30%	1%
Vancouver Kerrisdale	0%	15%	12%	30%	7%	3%	12%	0%	0%	22%	1%
Vancouver Kitsilano	0%	0%	0%	12%	12%	11%	8%	4%	5%	0%	16%
Vancouver Southeast	0%	6%	3%	0%	5%	0%	3%	0%	3%	0%	1%
Vancouver East	0%	22%	16%	19%	8%	0%	22%	2%	10%	16%	4%
Vancouver Port	6%	19%	17%	13%	30%	18%	24%	20%	13%	9%	23%
Outside Vancouver	3%	4%	4%	1%	1%	1%	18%	2%	5%	25%	1%

Figure A-5: Origins and Destinations of Trips made by Other Modes (Total Other Trips and Other Mode Share)

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	1,000	300	0	100	0	0	0	0	0	0	300
False Creek	400	3,500	0	0	0	0	0	0	0	0	0
Downtown	0	0	5,200	100	0	0	0	0	0	0	300
Vancouver Broadway	200	200	400	700	100	0	0	0	0	0	0
Vancouver South	0	0	0	100	300	0	100	0	600	0	0
Vancouver Kerrisdale	0	0	0	0	0	400	0	0	0	0	0
Vancouver Kitsilano	0	0	0	0	0	100	500	0	0	0	0
Vancouver Southeast	0	0	0	0	100	0	0	300	100	0	0
Vancouver East	0	0	0	0	600	0	0	100	1,100	100	100
Vancouver Port	0	0	0	0	0	0	0	0	100	100	100
Outside Vancouver	300	0	300	100	0	0	0	100	100	0	500

Origin / Destination	West End	False Creek	Downtown	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver Southeast	Vancouver East	Vancouver Port	Outside Vancouver
West End	2%	1%		2%	0%	0%	0%	0%	0%	0%	2%
False Creek	2%	5%		0%	0%	0%	0%	0%	0%	0%	0%
Downtown			3%	1%	0%	0%	0%	0%	0%	0%	1%
Vancouver Broadway	5%	2%	3%	1%	1%	0%	0%	0%	0%	0%	0%
Vancouver South	0%	0%	0%	1%	0%	0%	2%	0%	4%	0%	0%
Vancouver Kerrisdale	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%
Vancouver Kitsilano	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%
Vancouver Southeast	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	0%
Vancouver East	0%	0%	0%	0%	5%	0%	0%	1%	2%	1%	0%
Vancouver Port	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%
Outside Vancouver	2%	0%	1%	1%	0%	0%	0%	1%	0%	0%	1%

APPENDIX B

2020 Panel Survey Instruments

INTRODUCTION

Welcome back to the City of Vancouver Annual Travel Survey!

Your assigned travel day is next **(INSERT DAY)**.

Please read this information regarding your one-day trip diary.

- If you are unable to record your trips to the online survey for your assigned day, you can do so within a week or two afterwards.
- Watch this video with key points to remember on your travel day (Trip Diary Video).
- Also, if you plan to be away for a period of time, you can still participate as the survey is open until the end of November.
- Before recording and entering your trips, we will first confirm information you provided last year.

NOTE: Even if any of the following applies to you, we still need you to complete the survey.

- You do not make any trips on your assigned day
- The trips you take on your assigned day are not typical
- Your trip patterns have not changed from year to year

When you are ready to begin the first part of the survey, click the NEXT button.

Need help/ more info? Click here (link to www.mustelgroup.com/covsurveyhelp)

CONFIRM PANELIST: Did you complete last year's City of Vancouver Transportation Survey?

1. Yes → **SKIP THESE Q'S** **A. GENDER, C. AGE BELOW, + Q7 IN DEMOGRAPHICS**
2. No

A. Do you identify as:

1. Male 2. Female 3. Transgender 4. Other (specify) 5. Prefer not to answer

D. EMAIL ADDRESS

The email address we have on file for you for this Annual Transportation Survey is below. If you wish to update to a more frequently used address, or one that is more convenient, please let us know.

Your email address: _____

1. Yes, this information is correct
2. No, I need to update this information

E. UPDATE EMAIL

Please enter the email address you prefer to use:_____

Confirm email:_____

ALERT IF BOTH FIELDS BELOW DO NOT MATCH

B. Please confirm the home postal code you entered last year. If changed, please update so we are sure you still live in the survey area. AUTO_POPULATE FROM 2016 (6-digit) __ __ __ __ __ __

1. Yes, this information is correct 2. No, I need to update this information

IF DIFFERENT FROM TAGGED COV SUB-AREA, BUT IS ONE OF 8 OTHER VALID SUB-AREAS, ACCEPT.
IF DIFFERENT AND NOT IN ANY COV SUB-AREAS, THANK AND END. QA.page

Please enter your 6 digit home postal code with no spaces or punctuation.

__ __ __ __ __ __

(FLAG EMPLOYEE) EVERYONE- EMPLOYMENT SCREENER: QAA1. Do you or does anyone in your household work for the City of Vancouver, Mustel Group or McElhanney?

1. Yes → QAA2. Please note that while we can include your responses for this study, due to standard contest rules you will not be eligible for any incentives or prizes.

   Are you still interested in participating?

   a. Yes → REMOVE FROM PRIZE DRAW AND CONTINUE

   b. No → THANK AND END INTERVIEW Sorry this was not of interest to you. Please click the button below to exit the survey.
2. No CONTINUE
3. Not sure → FOLLOW QAA2.page FLOW ABOVE

AUTO-POPULATE

C. Please confirm this is the age group that applies to you? (INSERT AGE GROUP)

1. Yes, this information is correct
2. No, I need to update this information UPDATE YEAR OF BIRTH: Please select the year in which you were born.

   _____

IF REFUSED YEAR BORN: C2. Please choose the age group that applies to you from the list below.

1. 18-24
2. 25-34
3. 35-44
4. 45-54
5. 65+
6. PREFER NOT TO ANSWER

ii) PRIVACY: As one of the goals of this study is to understand and track changes in residents' travel patterns over time, your contact information linked with your survey responses would be retained by the City **for this annual study only**. Note that all information would remain confidential in a secure environment and would not be used on an individual basis for any other purpose.

Do you agree to share your personal contact and linked survey responses with the City of Vancouver for the sole purpose of participating in this transportation survey?

Yes
No – EXIT SURVEY

Questions about privacy? Click here to find out more.

PRIZE DRAW

This year, (IF 18 TO 34 you will have the option to receive a guaranteed $20 for completing all survey tasks or) you will have a 1-in-10 chance to win one of 20 monthly Mobi bike passes or one of 245 cash-based incentives as follows:

Prize	# of prizes	Amount
1st	3	$ 1,000.00
2nd	4	$ 750.00
3rd	6	$ 500.00
4th	12	$ 250.00
5th	40	$ 100.00
6th	180	$ 50.00
Mobi Monthly Bike Pass	20	$ 25.00

IF 35+

1. Yes, please enter me into the draw. *(Upon completing the full survey, we will enter you to the prize draw. Note that winners will be contacted within the first quarter of 2021. You must complete the full survey to be eligible.)*

2. No, thank you

IF 18 to 34

1. I prefer to receive the guaranteed $20 for completing all survey tasks.

2. I prefer to be entered to the draw. *(Upon completing the full survey, we will enter you to the prize draw. Note that winners will be contacted within the first quarter of 2021. You must complete the full survey to be eligible.)*

3. No, thank you

REGISTRATION QUESTIONS

R1. Please confirm your first and last name. Also, as the trip diary could include trips you make to or from work and home, please confirm the home address you provided last year.

1. Yes, this information is correct
2. No, I need to update this information → Please update your name and address.

Please confirm your name and address.
To make the process easier for you to enter your trip information, we have a few additional questions.
What is your first and last name? If you prefer to provide initials that works.
As the trip diary could include trips you make to or from work and home, please enter your home address.

FNAME: LNAME: _____
SUITE#: STREET#: STREET: STREET TYPE: STREET DIRECTION:
CITY: PROVINCE: POSTAL CODE

IF UPDATING INFORMATION (R1=2), OBTAIN NEW ADDRESS AND DISPLAY MAP WITH NEW HOME LOCATION IDENTIFIED [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]

R3. Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**
3. Mapping system cannot find my address/ intersection

If the map software is unable to find your location, please move the marker to the correct location.

R4. If you are employed, your trip diary may include trips you make to and from work. Please confirm the work address you provided last year?

STREET#: STREET: STREET TYPE: STREET DIRECTION:
CITY: PROVINCE: POSTAL CODE

1. Yes, this information is correct
2. No, I need to update this information → Please enter your work address here to simplify trip reporting later. When recording the street number enter the building address only; no apartment or suite number is necessary.

   Do not work (unemployed)
   No work address (no fixed work address OR only work from home)
   Enter work address

IF UPDATING INFORMATION (R4=2), OBTAIN NEW EMPLOYMENT INFO. IF CHANGE OF WORK ADDRESS, DISPLAY MAP WITH NEW WORK LOCATION IDENTIFIED. [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]

Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

If you have more than one work address, please provide your second work address here.
When recording the street number enter the building address only; no apartment or suite number is necessary

1. No second work address
2. Yes – **ENTER 2nd WORK ADDRESS**

STREET#: STREET: STREET TYPE: STREET DIRECTION:
CITY: PROVINCE: POSTAL CODE

DISPLAY MAP WITH WORK LOCATION IDENTIFIED [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]

Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

PROFILING, GENERAL TRANSPORT & PARKING QUESTIONS

1. Do you currently have a valid driver's license?
   1. Yes 2. No → SKIP TO Q3a

2. How many of the following vehicles do you own or have regular access to (please include all cars, vans or light trucks that are **brought home and parked overnight** but not motorcycles / scooters or bicycles; do not include car share vehicles)?
   Gas Powered _____ [drop down 0-10]
   Hybrid _____[drop down 0-10]
   Electric _____[drop down 0-10]

3. What car share services are you a part of, if any? (check all that apply)
   2. Modo___ 4. Evo___
   5. Other___ None___

   3a. Are you a member of "Mobi", the City of Vancouver's public bike share system?
   1. Yes
   2. No

13. How many of the following do you have in your household?
Human-powered bicycle [drop down 0-10]
Electric bicycle [drop down 0-10]

14. Electric micromobility devices like e-kick scooters, e-skateboards and hoverboards are becoming more common. Are you using or interested in using one of these devices?
Yes
No

IF YES:
14a. Where do or would you prefer to ride an electric micromobility device like an e-kick scooter, e-skateboard or hoverboard? (check all that apply)
Off street path (e.g. Seawall or Arbutus Greenway)
Sidewalk
Bike Lane Protected from Traffic with a Barrier (eg. Burrard Bridge, Hornby)
Painted Bike Lane
Local Street (no line markings)
Major Street
Other specify:_____

4. Are you a commercial driver, that is do you drive or make deliveries as part of your job (e.g., if a bus or taxi driver, courier, etc.)?
   1. Yes → *Note that this survey concerns your travel for personal trips and those including travel to and from your job, but not trips made as part of your commercial driving job.*
   2. No

MOVED FROM DEMOGRAPHICS

Q4. EMPLOYMENT: Are you:

a. Working full-time (30+ hours per week) **(HIDE IF Do not work "SELECTED IN R4)**
b. Working part-time (less than 30 hours per week) **(HIDE IF Do not work "SELECTED IN R4)**
c. Self-employed
d. Volunteer only (not for pay)
e. Unemployed
f. Looking after home/family
g. Retired
h. Student full-time
i. Student part-time
j. Prefer not to answer

ABOVE IS MULTIPLE RESPONSE EXCEPT:
STUDENT FULL-TIME AND STUDENT PART-TIME CANNOT BE SELECTED TOGETHER.
WORKING FULL-TIME AND WORKING PART-TIME CANNOT BE SELECTED TOGETHER.
VOLUNTEER ONLY CANNOT BE SELECTED WITH WORKING FULL-TIME / PART-TIME.
RETIRED CANNOT BE SELECTED WITH WORKING FULL-TIME.
UNEMPLOYED CANNOT BE SELECTED WITH WORKING FULL-TIME / PART-TIME / SELF-EMPLOYED.
PREFER NOT TO ANSWER CANNOT BE SELECTED WITH OTHER ANSWERS.

ASK IF WORKING FULL/ PART TIME, SELF-EMPLOYED SELECTED ALONE OR WITH OTHER PERMITTED RESPONSES:

5. a) What is your **usual mode of transportation** at this time of year for trips to or from **work**? If you use more than one mode, select the one used for **most of the travel distance. CHECK ONE ONLY**

a. Private car, truck, or van **as a driver**
b. Private car, truck, or van **as a passenger**
c. Car share as a driver (e.g. Modo, Evo, etc)
d. Car share as a passenger (e.g. Modo, Evo, etc)
e. Transit bus
f. SkyTrain
g. West Coast Express
h. SeaBus
i. HandyDART
j. School bus
k. Other bus
l. Personal bicycle
m. Personal electric bicycle
n. Bike Share (Mobi)
o. Walking (including wheelchair, medical mobility scooter or other assistive device)
p. Taxi
q. Ride hailing (e.g. Lyft, Uber, etc.)
r. Motorcycle or moped
s. Personal micromobility device (e.g. kick scooter, skateboard, inline skates, unicycle)
t. Personal electric micromobility device (e.g. e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
u. Other → Please describe other mode of travel _____
v. WORK REMOTELY FROM HOME

ASK IF STUDENT FULL/ PART TIME SELECTED ALONE OR WITH OTHER PERMITTED RESPONSES: b) What is your **usual mode of transportation** at this time of year for trips to or from **school as a student**? If you use more than one mode, select the one used for **most of the travel distance. CHECK ONE ONLY**

a. Private car, truck, or van **as a driver**
b. Private car, truck, or van **as a passenger**
c. Car share **as a driver** (e.g Modo, Evo, etc)
d. Car share as a passenger (e.g Modo, Evo, etc)
e. Transit bus
f. SkyTrain
g. West Coast Express
h. SeaBus
i. HandyDART
j. School bus
k. Other bus
l. Personal bicycle
m. Personal electric bicycle
n. Bike Share (Mobi)
o. Walking (including wheelchair, medical mobility scooter or other assistive device)
p. Taxi
q. Ride hailing (e.g Lyft, Uber, etc.)
r. Motorcycle or moped
s. Personal micromobility device (e.g. kick scooter, skateboard, inline skates, unicycle)
t. Personal electric micromobility device (e.g. e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
u. Other (specify) _____
v. ATTEND SCHOOL REMOTELY

6. In general, how has the pandemic affected the frequency of your trips made for the following purposes? Answer those that apply to your situation.

	Increased	Decreased	The pandemic has not affected my transportation choices at all
Travel to work			
Trips during work/business trip			
Travel to school			
Shopping			
Dinning/restaurant			
Recreation (including dog walking, jogging, etc.)			
Social/entertainment			
Personal business (e.g. bank, doctor, volunteering, etc.)			
To drop-off/pick-up someone (via driving, walking, transit, cycling, etc.)			

7. How often did you typically travel by transit (e.g. bus, Skytrain, HandyDART, West Coast Express, Sea Bus) during the following time periods?

	Before COVID-19: (October 2019 to mid-March 2020)	COVID-19 Phase 1 : height of the pandemic (mid-March to May 18th, 2020)	COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to present)
a. 5 or more days per week	o	o	o
b. 2 to 4 days per week	o	o	o
c. One day per week	o	o	o
d. Two to three days per month	o	o	o
e. One day per month or less	o	o	o
f. No travel by transit at all	o	o	o

8. Has your use of transit decreased during the pandemic (mid-March 2020 to the present) compared to before the pandemic (before mid-March 2020)?
    a. Yes
    b. No → **SKIP TO Q11**

9. What are the main reasons for this decrease in transit use? (Check all that apply)
    a. Reducing non-essential trips
    b. Working/ attending school from home
    c. Concerns about transit reliability
    d. Concerns about social distancing on transit
    e. Concerns about being exposed to COVID-19
    f. Other specify:

10. Have you faced any challenges completing these trips using alternate modes?
    a. Yes
    b. No

15. During the time periods listed below, how often did you and your household **order meals for delivery** (i.e. pizza delivery, DoorDash, Uber Eats, etc.)?

	Before COVID-19: (October 2019 to mid-March 2020)	COVID-19 Phase 1 : height of the pandemic (mid-March to May 18th, 2020)	COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to present)
a. 5 or more days per week	o	o	o
b. 2 to 4 days per week	o	o	o
c. One day per week	o	o	o
d. Two to three days per month	o	o	o
e. One day per month or less	o	o	o
f. Never	o	o	o

16. And during the same time periods listed, how often did you and your household **receive other goods ordered online** (i.e. clothing, furniture, appliances, etc.)?

	Before COVID-19: (October 2019 to mid-March 2020)	COVID-19 Phase 1 : height of the pandemic (mid-March to May 18th, 2020)	COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to present)
a. 5 or more days per week	o	o	o
b. 2 to 4 days per week	o	o	o
c. One day per week	o	o	o
d. Two to three days per month	o	o	o
e. One day per month or less	o	o	o
f. Never	o	o	o

SKIP 11-12 IF REGISTRATION QR4 = Do not work (unemployed)

11. Do you make any trips for business purposes during work?
    1. Yes
    2. No → SKIP Q12

12. Do you have access to employee programs that support or provide the following (MULTIPLE RESPONSE):
    Check all that apply
    1. Company Carpool / Car Share
    2. Employer Subsidized Transit Pass
    3. Employer Subsidized Bike Share / Mobi Membership
    4. Other specify:_____
    5. No, I do not have access to such programs

DEMOGRAPHICS

A few questions to help us classify the survey data.

1. Including you, how many people reside in your household?
    DROP DOWN MENU

2. The City is interested in tracking the health of its residents. In general, would you say that your health is…
    a. Excellent
    b. Very good
    c. Good
    d. Fair
    e. Poor
    f. Prefer not to answer

3. What type of dwelling do you currently live in?
    a. A single detached home (includes basement suites, laneway houses, etc)
    b. An apartment or condo in a low rise (5 levels or less)
    c. An apartment or condo in a high rise (more than 5 levels)
    d. A townhouse/row house
    e. Semi-detached home or a duplex (includes basement suites)
    f. Residential care or long term care facility
    g. A mobile home
    h. Other
    i. Prefer not to answer

5. HOUSEHOLD INCOME: Which of the following best describes your total **household** income (the combined gross income for all household members)?
    a. Less than $25,000
    b. $25,000 to less than $50,000
    c. $50,000 to less than $75,000
    d. $75,000 to less than $100,000
    e. $100,000 to less than $150,000
    f. $150,000 or more
    g. Prefer not to answer

6. What is the highest level of education you have completed?
    a. Have not completed high school
    b. Completed high school/secondary school
    c. Trade certificate or diploma from a vocational school or apprenticeship training
    d. Non-university certificate or diploma from a community college, CEGEP or nursing school
    e. University certificate below bachelor's level
    f. Bachelor's degree
    g. Graduate degree (master's degree or doctorate)
    h. Prefer not to answer

7. Were you born in Canada?
    a. Yes
    b. No
    c. Prefer not to answer

8. What is your racial identity? (Check all that apply)
    a. Asian – East (e.g. Chinese, Korean, Japanese)
    b. Asian – South East (e.g. Vietnamese, Cambodian, Malaysian, Filipino)
    c. Asian – South (e.g. Indian, Pakistani, Sri Lankan, Bangladeshi)
    d. Asian – West (e.g. Iranian, Afghan, Turkish)
    e. Black (African, Caribbean/Latin America, Canadian/American)
    f. Hispanic or Latin American (e.g. Brazil, Mexican, Chilean, Cuban)
    g. Middle Eastern/ North African (e.g. Arab, Persian, Kurdish)
    h. White (e.g. European – English, Italian, Ukrainian, French)
    i. Other (specify)
    j. Don't know **(MUTUALLY EXCLUSIVE)**
    k. Prefer not to answer **(MUTUALLY EXCLUSIVE)**

9a) Do you identify as First Nations (with or without status, Treaty or Non Treaty), Metis or Inuit, or do you have any other North American Indigenous ancestry? 9
    a. Yes →ASK 9b
    b. No
    c. Don't Know
    d. Prefer not to answer

b) How do you describe your First Nations, Metis or Inuit, or any other North American Indigenous ancestry? (Check all that apply)
    a. First Nations
    b. Inuit
    c. Metis
    d. Other indigenous ancestry, specify (open text box)
    e. Don't Know **(MUTUALLY EXCLUSIVE)**
    f. Prefer not to answer **(MUTUALLY EXCLUSIVE)**

ASKED ONLY OF THOSE 35 YEARS AND OLDER, AND HAVE MORE THAN 1 PERSON IN HOUSEHOLD:

10a. Is there anyone in your household between the ages of 18 and 34 years?

1. Yes
2. No → **THANK AND END**

9999. Prefer not to answer → **THANK AND END**

IF YES IN Q10a

10b. We would like to invite one additional household member from this age group to also participate in this transportation survey. Do you think they would be interested?

1. Yes
2. No → **THANK AND END**

Please provide their email address and we will send them a link to the survey.

EMAIL: _____

RE-ENTER EMAIL: _____

And could we have their name and phone number? We may need to call them to make sure they received the email.

NAME:_____

PHONE:_____

Is this a cell or landline number?

Cell Landline

Who should we say has referred this youth to our survey? _____

The email invitation has been sent and they should receive it shortly.

They should look for an email from:	covtravelsurvey@mustelgroup.ca
with the following subject line:	City of Vancouver Annual Transportation Survey

If convenient, please have them check their Inbox to make sure they have it.

If they do not see it in their Inbox, please have them check their SPAM or JUNK mail folder.

If it is still not there, please call us at this number: (778) 383-3416.
Please press **next** to continue.

SEND NEW RECRUIT EMAIL TO SELF-COMPLETE ONLINE

City of Vancouver Annual Transportation Survey

Your assigned travel day is next **(INSERT DAY)**.

Please read this information regarding your one-day trip diary.

- If you are unable to record your trips to the online survey for your assigned day, you can do so within a week or two afterwards.
- Watch this video with key points to remember on your travel day (Trip Diary Video).
- Also, if you plan to be away for a period of time, you can still participate as the survey is open until the end of November.
- Before recording and entering your trips, we will first confirm information you provided last year.

NOTE: Even if any of the following applies to you, we still need you to complete the survey.

- You do not make any trips on your assigned day
- The trips you take on your assigned day are not typical
- Your trip patterns have not changed from year to year

If you are ready to begin the trip diary, click the NEXT button. Otherwise click the Exit button and return to complete your diary when you are ready.

TRIP BEHAVIOUR (Monday to Friday only)

Trip Diary

The City needs to understand residents' transportation choice each time they make a trip within or through the Lower Mainland. Please watch this quick video on how to fill in the trip diary: Trip Diary video.

In this survey, we are asking about all of your trips taken on Wednesday between midnight and 11:59 p.m. (a full 24-hour day).

DEFINITION OF A TRIP

A trip is travel from one location to another location for a purpose.

- Include trips made by all means (e.g., walking, cycling, transit, car, etc.)
- Include short trips (e.g., stopping at a coffee shop, a gas station or dropping someone off)
- Include return trips (e.g., going home)
- Include recreational outings that end at the same place they started (e.g., dog walking, going for a walk or jogging)

*Please click the **Next** button to start the survey.*

Please confirm the date of your (ASSIGNED DAY) travel:

INSERT CALENDAR

1. Did you make any trips that started and ended on [ASSIGNED DAY], between midnight and 11:59 p.m (a full 24-hour day)?
    1. Yes
    2. No, stayed home or was out of town for the whole day → SKIP TO VKT SECTION

1. Trip 1

Q1a) What was the **starting location**? If this trip started from home or work, please click "Home" or "Work". Otherwise, give precise address, nearby cross-streets or a landmark. Be sure to include the municipality.
If you need help, please refer to this map. (COV ON GOOGLE MAPS)

- Home address
- Work address
- Precise address (specify below)
- Nearby cross-streets (specify below)
- Landmark (specify below)

Q1b) What was your **end location**? If this trip ended at home or work, please click "Home" or "Work". Otherwise, give precise address, nearby cross-streets or a landmark. Be sure to include the municipality.
If this is a recreational trip where your start and end locations are the same, please select that response. (Examples of recreational trips are dog walking, jogging, etc)
If you need help, please refer to this map. (COV ON GOOGLE MAPS)

- Home address
- Work address
- Precise address (specify below)
- Nearby cross-streets (specify below)
- Landmark (specify below)
- Same as origin (a recreational trip)

Municipality:

1. Vancouver
2. Burnaby
3. Coquitlam
4. Delta/Ladner/Tsawwassen
5. Langley/Langley Township/Fort Langley/Aldergrove
6. Maple Ridge
7. New Westminster
8. North Vancouver
9. Pitt Meadows
10. Port Coquitlam
11. Port Moody/Anmore/Belcarra
12. Richmond
13. Surrey
14. West Vancouver (including Horseshoe Bay/Lions Bay)
15. White Rock
16. All Other Locations Ending Outside of Metro Vancouver

GOOGLE MAP WITH PIN POINT OF LOCATION. Confirm: Is this the correct location? IF YES: **INSERTION OF LAT-LONG FROM GEO-CODER.** IF NO, RETURN TO END LOCATION SCREEN FOR RE-ENTRY/REVISION OF LOCATION DETAIL)

Q1c) What time of day did you start this trip?

1. 12:00am to 12:59am
2. 1:00am to 1:59am
3. 2:00am to 2:59am
4. 3:00am to 3:59am
5. 4:00am to 4:59am
6. 5:00am to 5:59am
7. 6:00am to 6:59am
8. 7:00am to 7:59am
9. 8:00am to 8:59am
10. 9:00am to 9:59am
11. 10:00am to 10:59am
12. 11:00am to 11:59am
13. 12:00pm to 12:59pm
14. 1:00pm to 1:59pm
15. 2:00pm to 2:59pm
16. 3:00pm to 3:59pm
17. 4:00pm to 4:59pm
18. 5:00pm to 5:59pm
19. 6:00pm to 6:59pm
20. 7:00pm to 7:59pm
21. 8:00pm to 8:59pm
22. 9:00pm to 9:59pm
23. 10:00pm to 10:59pm
24. 11:00pm to 11:59pm

Q1d) IF RESPONSE "Same as origin" IN b) ask: Approximately how long was this recreational trip?

1. Less than 10 minutes
2. 10 to less than 20
3. 20 to less than 30
4. 30 to less than 40
5. 40 to less than 50
6. 50 to less than 60 minutes
7. 60 minutes or more

Q1e) What was the main **purpose** of this trip? ONE RESPONSE ONLY AUTO CODE AS "Recreation" IF RESPONSE "Same as origin" IN b)

1. To work
2. During work/business trip
3. To school (as student)
4. Shopping
5. Dining/restaurant
6. Recreation (including dog walking, jogging, etc)/social/entertainment)
7. Personal business (e.g. bank, doctor, volunteering, etc)
8. To drop-off/pick-up someone (via driving, walking, transit, cycling, etc.)
9. To go home

Q1f) How did you travel to this location? Choose all that apply. If more than one, list in order of use.
If you walked and used other modes, select "walked as part of the trip" as well as the other modes.
Please enter your first travel mode below and click next.

1. Private car, truck, or van as a driver
2. Private car, truck, or van as a passenger
3. Car share as a driver (ex Modo, Evo, etc)
4. Car share as a passenger (ex Modo, Evo, etc)
5. Transit bus
6. SkyTrain (Expo, Canada and Millennium Lines)
7. West Coast Express
8. SeaBus
9. HandyDART
10. School bus
11. Other bus
12. Walked/jogged the whole way (CANNOT BE COMBINED WITH OTHER RESPONSES)
13. Walked/jogged as part of the trip
14. Personal bicycle
15. Personal electric bicycle
16. Bike Share (Mobi)
17. Taxi
18. Ride hailing (e.g. Lyft, Uber, etc.)
19. Motorcycle or moped
20. Personal micromobility device (e.g. kick scooter, skateboard, inline skates, unicycle)
21. Personal electric micromobility device (e.g. e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
22. Other (specify) _____

Second mode, third mode, etc.
(SAME LIST BUT WITH "No others" ADDED CODE AT TOP OF LIST)

IF TRIP.(f) RESPONSE IS "Transit Bus", "SkyTrain", "WestCoast Express", "Seabus", "HandyDART", "School Bus", "Other bus", "Walked/jogged the whole way", "Walked/jogged as part of the trip", or "Bicycle" ASK:
Q1k. Approximately how long was the walking and/or biking portion of this trip?

1. Less than 5 minutes
2. 5 to less than 10
3. 10 to less than 20
4. 20 to less than 30
5. 30 to less than 40
6. 40 to less than 50
7. 50 to less than 60 minutes
8. 60 minutes or more

AUTO CODE AS "No", IF RESPONSE "Same as origin" IN b)
Q1g) Was this trip a stop along the way to your next location? (e.g. a short trip such as a drop off, gas station, coffee shop, etc.)

1. Yes → Did you pre-plan to make this stop? 1. Yes 2. No
2. No

Q1h2. TRIP SUMMARY: Please carefully review the information you have provided for this trip.
INSERT

START LOCATION
END LOCATION
TIME OF DAY
MAIN PURPOSE OF TRIP
METHODS OF TRAVEL

Is this information complete and correct?

1. Yes *(If you select this and click **Next**, you will not be able to make changes to this trip)*
2. No *(If you select this and click **Next**, you will be taken through the trip to make corrections)*

To make corrections:
If you click **Next** on this page, you will be taken back through your trip to make changes.

As you go through the trip and the page that displays does not require corrections, simply click **Next** to continue until you reach the information that needs to be changed. Then select or type in the correct response to the question. Please be sure to follow the instructions carefully when you access the map pages.

After you have revised the trip, you will again be asked to verify that it is correct.

Click **Next** to revise your trip OR click **Back** if you arrived here by mistake.

COVID & TRANSPORTATION

Q1h3. In the context of COVID-19 and social distancing, please select one of the following that describes your experience during this trip:

a. I had enough space to social distance from others
b. I wasn't able to social distance from others at all times, but efforts were made to limit the number of people
c. I was not able to social distance at all

In the context of COVID-19, how safe did you feel during this trip?

a. Very safe
b. Somewhat safe
c. Neither safe nor unsafe (neutral)
d. Somewhat unsafe
e. Very unsafe

Q1h4. If there wasn't a pandemic happening at this time, would you have made this trip using a different transportation mode or modes?

a) Yes
b) No →**SKIP TO TRIP COMMENTS**

Q1h5. Which mode or modes would you have chosen instead? (Select all that apply)

1. Private car, truck, or van as a driver
2. Private car, truck, or van as a passenger
3. Car share as a driver (ex Modo, Evo, etc)
4. Car share as a passenger (ex Modo, Evo, etc)
5. Transit bus
6. SkyTrain (Expo, Canada and Millennium Lines)
7. West Coast Express
8. SeaBus
9. HandyDART
10. School bus
11. Other bus
12. Walk/jog the whole way (CANNOT BE COMBINED WITH OTHER RESPONSES)
13. Walk/jog as part of the trip
14. Personal bicycle
15. Personal electric bicycle
16. Bike Share (Mobi)
17. Taxi
18. Ride hailing (e.g. Lyft, Uber, etc.)
19. Motorcycle or moped
20. Personal micromobility device (e.g. kick scooter, skateboard, inline skates, unicycle)
21. Personal electric micromobility device (e.g. e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
22. Other (specify) _____

Q1h6. Why would you have chosen that mode/ those modes? (Chose your main reason):

a) Reduced cost
b) Reduced travel times
c) Convenience
d) Other. (specify)_____

TRIP COMMENTS

Do you have any other details or comments about **this trip** that you would like to provide?

*If you have no additional comments, click **NEXT** to continue.*

Q1i) Did you make another trip on this day before 11:59pm? (Remember to include return trips.)

1. Yes
2. No (last trip of the day) → IF LAST TRIP DID NOT RETURN HOME, ASK j)

Q1j) Did you return home before 11:59pm on this travel day?

1. Yes
2. No - Did not return home on this day → **IF Q1g =** Yes, a stop along to another destination, **INSERT ERROR MESSAGE:** You mentioned earlier this trip was a stop along the way to another destination. Is it correct that you did not make any more trips today?
   If this is correct you can leave your answer as is and click "Next" again to continue, otherwise please correct your response. (**CLICKING NEXT SKIPS TO TOTAL TRIP SUMMARY, THEN VKT)**

Trips 2-15: REPEAT TRIP QUESTIONS STARTING WITH….

b) **Destination:** Where did you go next? ALL OTHER QUESTIONS SAME AS ABOVE

AFTER LAST TRIP OF DAY, TOTAL TRIP SUMMARY: Please review your trips below.

k) Are your trips complete?

INSERT TRIP SUMMARIES

TRIP	FROM	TO	PURPOSE
1	ADDRESS	ADDRESS	PURPOSE
2	ADDRESS	ADDRESS	PURPOSE
3, etc.	ADDRESS	ADDRESS	PURPOSE

1. Yes 2. No

IF NO: This action will delete all of your trips. You will need to re-enter all of your trips to complete the survey. Are you certain that you wish to delete all of your trips? **tripReset.page**

1. Yes → **REDO ALL TRIP ENTRIES** **2.** No → **CONTINUE**

VKT SECTION

IF PRIVATE VEHICLE CHOSEN IN RECRUIT PROFILING AND GENERAL TRANSPORT SECTION (Q2), ASK

QS1. Below is the make**,** model and year of the private vehicle you provided to us in the 2018 survey (the one you typically used for your personal trips). If this has changed please let us know.

INSERT: **MAKE** **MODEL** **YEAR**

1. Yes, this is the private vehicle I typically use for my personal trips → **ASK Q SEND ODOMETER**
2. No, the private vehicle I typically use for my personal trips has changed

IF NO: What type of private vehicle do you typically drive? Please choose the make of your vehicle. If you cannot locate the vehicle you typically drive scroll down to the very bottom of the drop-down menu and select "OTHER". **(IF OTHER CHOSEN, PROMPT** Please specify other for the make of your vehicle)

QS1a. Please choose the model and year of your vehicle.

(IF OTHER CHOSEN, PROMPT Please specify other for the model of your vehicle)

INSERT IF COMMERCIAL DRIVER IDENTIFIED IN RECRUIT PROFILING & GENERAL TRANSPORT SECTION (Q3) This is the vehicle typically driven for your personal trips. If you typically use a commercial vehicle for your personal trips, select that vehicle from the list below.

DROP DOWN MENUS AS PER NRCAN DATASET

AS NRCAN LIST ONLY INCLUDES PASSENGER VEHICLES, ALLOW OVERRIDE

Is this a zero-emission vehicle?

Yes
No

Q Send Odometer**:** It is important for the City to understand how many kilometers residents are driving in a year as it helps provide a measure of fuel consumption and emissions, which impact air quality and climate change.

Would you like to enter your odometer reading now, or email a link to enter it later? The email link will provide you with a mobile-friendly way to enter the odometer, so you can complete it in your car with your smartphone or tablet, if you choose.

1. Provide my odometer reading right now
2. Email a link to enter my odometer reading later (Please specify the email address you would prefer to receive the link to the odometer reading. _____@_____.

QS2. Please record the current odometer reading for this vehicle (to nearest 100km's). If unsure, you may check the vehicle and return to enter later. _____ km's

CLOSING: This completes our survey. Thank you very much for your input and interest in this annual trip diary survey! As a small thank you, once all trip diaries have been collected and analyzed, we will email you key results and a link to the full report from this year's survey made possible by your participation. If you are eligible for (IF UNDER 35 YEARS AND CHOSE PRIZE DRAW: and chose) the prize draw, all winners will be contacted within the first quarter of 2021.

IF 18 TO 34: Your $20 incentive will be mailed to you within 4 to 8 weeks after the survey closes.

Thank you once more and we'll be in touch in 2021!

Please click the button below to submit the survey.

RECRUITMENT SCREENER – NEW TEL RECRUITS

Random sample & Cell sample: City of Vancouver households.

Hello, I'm __ of Mustel Group, a professional research company calling on behalf of the City of Vancouver to invite you to participate in an important annual online transportation study. Your household has been randomly selected for this panel transportation study and your input will help the City make better decisions regarding future transportation plans and investments for area residents.

Please note this call may be monitored or recorded for quality control purposes.
Location. In which city do you live? 1. Vancouver (CONTINUE) 2. Other (THANK & END)

A. **(GENDER)** To randomize our interviews, may I please speak to the male/female in your household who is 18 years of age or older and whose birthday comes next? **IF TRANSGENDER/OTHER IDENTITY OFFERED, CODE ACCORDINGLY**
1. Male 2. Female 3. Transgender 4. Other (specify)_____ 5. Prefer not to say

B. **(HOME POSTAL)** To ensure our sample covers all areas of the City of Vancouver, may I please have your 6-digit home postal code? __ __ __ __ __ __
IF DIFFERENT FROM TAGGED COV SUB-AREA, BUT IS ONE OF 8 OTHER VALID SUB-AREAS, ACCEPT.
IF DIFFERENT AND NOT IN ANY COV SUB-AREAS, THANK AND END.

(FLAG EMPLOYEE) EVERYONE- EMPLOYMENT SCREENER: QAA1. Do you or does anyone in your household work for the City of Vancouver, Mustel Group, or McElhanney?

1. Yes → QAA2. Please note that while we can include your responses for this study, due to standard contest rules you will not be eligible for any incentives or prizes. Are you still willing to participate?
   a. Yes → REMOVE FROM PRIZE DRAW AND CONTINUE
   b. No → THANK AND END INTERVIEW Sorry this was not of interest to you.
2. No CONTINUE
3. Not sure → FOLLOW QAA2.page FLOW ABOVE

C. **(YEAR BORN)** And so we can be sure the sample represents all ages of residents please tell me the year in which you were born? ____ **IF REFUSED YEAR BORN: (AGE CODE)** C2. If you prefer, I can read you a short list and you can let me know which one applies to you.
1. 18-24
2. 25-34
3. 35-44
4. 45-54
5. 55-64
6. 65+
7. PREFER NOT TO ANSWER

Your household has been randomly selected for this panel and your input will help the City make better decisions regarding future transportation investments for area residents. By participating, you will be making an important contribution to the City. In appreciation of your time, (IF 18 TO 34 you will have the option to receive a guaranteed $20 for completing all survey tasks or) you will have a 1-in-10 chance to win one of 245 cash-based incentives ranging from $50 to $1,000 or one of 20 monthly Mobi bike passes! Further details on the prize draw are available once you access the survey.

READ ONLY IF ASKS FOR SPECIFICS:

# of Prizes	Prize Amount
3	$1,000
4	$ 750
6	$ 500
12	$ 250
40	$ 100
180	$ 50
20 Mobi Monthly bike passes	$ 25

The survey is in two parts. My time with you today will take approximately 10-14 minutes, depending on your answers, and then we would email you an invitation to the second part, which involves recording your travel for one day.

Would you be willing to participate in this annual transportation survey? IF REQUIRED: The second part is simply a log or diary of the trips you make on a single assigned day.

1. Yes
2. No → THANK AND END: Those are all the questions for today. Goodbye.

QS1.Do you have access to email?

3. Yes
4. No → THANK AND END: Those are all the questions for today. Goodbye.

PERSUADERS—only if needed:

- Even if you travel a little, a lot or not at all, your survey responses matter.
- We are interested in all types of travel: walking, cycling, transit and personal or shared vehicle trips, etc.
- If you are planning to be away, the survey is open until the end of November, so you have plenty of time to complete it.
- This is strictly a transportation survey; we are not selling or soliciting anything.
- Your number was selected at random for participation in this research.
- This study is important as it will help the City better understand travel patterns, transportation needs and to help make better decisions regarding transportation investments for area residents.
- City of Vancouver Contact only if requested: Phone 311

ii) PRIVACY: As one of the goals of this study is to understand and track changes in residents' travel patterns over time, your contact information linked with your survey responses would be retained by the City **for this annual study only**. Note that all information would remain confidential in a secure environment and would not be used on an individual basis for any other purpose.

Do you agree to share your personal contact and linked survey responses with the City of Vancouver for the sole purpose of participating in this transportation survey?
Questions about privacy? Click here to find out more.

Yes → PRIZE DRAW & EMAIL CAPTURE
No → THANK AND END. Those are all the questions for today. Thank you.

PRIZE DRAW (SKIP IF QAA1 EMPLOYMENT SCREENER = STUDY EMPLOYEE)

Do you wish to (IF 18 TO 34: receive a guaranteed $20 or) be entered into the prize draw? **READ IF NECESSARY:** You would be eligible to win various prizes including one of 20 monthly Mobi bike passes or one of 245 cash-based incentives ranging from $50 to $1,000!

READ ONLY IF ASKS FOR SPECIFICS:

# of Prizes	Prize Amount
3	$1,000
4	$ 750
6	$ 500
12	$ 250
40	$ 100
180	$ 50
20 Mobi Monthly bike passes	$ 25

In all, approximately a 1-in-10 chance to win.

IF 35+

1. Yes, please enter me into the draw. *(Upon completing the full survey we will enter you to the prize draw. Note that winners will be contacted within the first quarter of 2021. You must complete the full survey to be eligible.)*

2. No, thank you

IF 18 to 34

1. I prefer to receive the guaranteed $20 for completing all survey tasks.

2. I prefer to be entered to the draw. *(Upon completing the full survey we will enter you to the prize draw. Note that winners will be contacted within the first quarter of 2021. You must complete the full survey to be eligible.)*

3. No, thank you

D. **EMAIL CAPTURE:** May I please have your name and email address so we can send you the survey link?
READ IF NECESSARY: Be assured that your email address will not be shared with any marketing companies and you will not receive any SPAM emails.

i. First name: _____ Last name: _____
ii. email address: _____
iii. CONFIRM BY RE-ENTERING AND REPEATING UNTIL CORRECT: email:_____

SEND EMAIL INVITATION – SEE INVITE TEXT AFTER DEMOGRAPHICS

Your email invitation has been sent and you should receive it shortly.
Please look for an email from covtravelsurvey@mustelgroup.ca
with the following subject line: City of Vancouver Annual Transportation Survey.
If convenient, please check your INBOX now to make sure you have it.
IF NOT RECEIVED: Maybe check your SPAM or JUNK mail folder.
IF STILL NOT RECEIVED, RETURN AND VERIFY EMAIL ADDRESS
IF CHECK LATER: If you do not receive the email, please call us at this number: 778-383-3416

REGISTRATION QUESTIONS

R1. Please confirm your first and last name. Also, as the trip diary could include trips you make to or from work and home, please confirm the home address you provided last year.

1. Yes, this information is correct
2. No, I need to update this information → Please update your name and address.

Please confirm your name and address.
To make the process easier for you to enter your trip information, we have a few additional questions.
What is your first and last name? If you prefer to provide initials that works.
As the trip diary could include trips you make to or from work and home, please enter your home address.

FNAME: LNAME: _____
SUITE#: STREET#: STREET: STREET TYPE: STREET DIRECTION:
CITY: PROVINCE: POSTAL CODE

IF UPDATING INFORMATION (R1=2), OBTAIN NEW ADDRESS AND DISPLAY MAP WITH NEW HOME LOCATION IDENTIFIED [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]

R3. Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**
3. Mapping system cannot find my address/ intersection

If the map software is unable to find your location, please move the marker to the correct location.

R4. If you are employed, your trip diary may include trips you make to and from work. May I have your work address?

Do not work (unemployed)
No work address (no fixed work address OR only work from home)
Enter work address

STREET#: STREET: STREET TYPE: STREET DIRECTION:
CITY: PROVINCE: POSTAL CODE

IF UPDATING INFORMATION (R4=2), OBTAIN NEW EMPLOYMENT INFO. IF CHANGE OF WORK ADDRESS, DISPLAY MAP WITH NEW WORK LOCATION IDENTIFIED. [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]

Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

SKIP IF "Do not work" OR "No work address (no fixed work address OR only work from home).

If you have more than one work address, please provide your second work address here.
When recording the street number enter the building address only; no apartment or suite number is necessary

1. No second work address
2. Yes – **ENTER 2nd WORK ADDRESS**

STREET#: STREET: STREET TYPE: STREET DIRECTION:
CITY: PROVINCE: POSTAL CODE

DISPLAY MAP WITH WORK LOCATION IDENTIFIED [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]

Is this the correct location?

1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

PROFILING, GENERAL TRANSPORT & PARKING QUESTIONS

1. Do you currently have a valid driver's license?
   1. Yes 2. No → SKIP TO Q3a

2. How many of the following vehicles do you own or have regular access to (please include all cars, vans or light trucks that are **brought home and parked overnight** but not motorcycles / scooters or bicycles; do not include car share vehicles)?
   Gas Powered _____ [drop down 0-10]
   Hybrid _____[drop down 0-10]
   Electric _____[drop down 0-10]

3. What car share services are you a part of, if any? (check all that apply)
   2. Modo___ 4. Evo___ 5. Other___ None___

   3a. Are you a member of "Mobi", the City of Vancouver's public bike share system?
   1. Yes 2. No

13. How many of the following do you have in your household?
Human-powered bicycle [drop down 0-10]
Electric bicycle [drop down 0-10]

14. Electric micromobility devices like e-kick scooters, e-skateboards and hoverboards are becoming more common. Are you using or interested in using one of these devices?
Yes
No

IF YES:
14a. Where do or would you prefer to ride an electric micromobility device like an e-kick scooter, e-skateboard or hoverboard? (check all that apply)
Off street path (e.g. Seawall or Arbutus Greenway)
Sidewalk
Bike Lane Protected from Traffic with a Barrier (eg. Burrard Bridge, Hornby)
Painted Bike Lane
Local Street (no line markings)
Major Street
Other specify:_____

4. Are you a commercial driver, that is do you drive or make deliveries as part of your job (e.g., if a bus or taxi driver, courier, etc.)?
   1. Yes → *Note that this survey concerns your travel for personal trips and those including travel to and from your job, but not trips made as part of your commercial driving job.*
   2. No

   MOVED FROM DEMOGRAPHICS
   Q4. EMPLOYMENT: Are you:
   a. Working full-time (30+ hours per week) **(HIDE IF Do not work" SELECTED IN R4)**
   b. Working part-time (less than 30 hours per week) **(HIDE IF Do not work" SELECTED IN R4)**
   c. Self-employed
   d. Volunteer only (not for pay)
   e. Unemployed
   f. Looking after home/family
   g. Retired
   h. Student full-time
   i. Student part-time
   j. Prefer not to answer

ABOVE IS MULTIPLE RESPONSE EXCEPT:
STUDENT FULL-TIME AND STUDENT PART-TIME CANNOT BE SELECTED TOGETHER.
WORKING FULL-TIME AND WORKING PART-TIME CANNOT BE SELECTED TOGETHER.
VOLUNTEER ONLY CANNOT BE SELECTED WITH WORKING FULL-TIME / PART-TIME.
RETIRED CANNOT BE SELECTED WITH WORKING FULL-TIME.
UNEMPLOYED CANNOT BE SELECTED WITH WORKING FULL-TIME / PART-TIME / SELF-EMPLOYED.
PREFER NOT TO ANSWER CANNOT BE SELECTED WITH OTHER ANSWERS.

ASK IF WORKING FULL/ PART TIME, SELF-EMPLOYED SELECTED ALONE OR WITH OTHER PERMITTED RESPONSES:

5. a) What is your **usual mode of transportation** at this time of year for trips to or from **work**? If you use more than one mode, select the one used for **most of the travel distance. CHECK ONE ONLY**
    a. Private car, truck, or van **as a driver**
    b. Private car, truck, or van **as a passenger**
    c. Car share as a driver (e.g. Modo, Evo, etc)
    d. Car share as a passenger (e.g. Modo, Evo, etc)
    e. Transit bus
    f. SkyTrain
    g. West Coast Express
    h. SeaBus
    i. HandyDART
    j. School bus
    k. Other bus
    l. Personal bicycle
    m. Personal electric bicycle
    n. Bike Share (Mobi)
    o. Walking (including wheelchair, medical mobility scooter or other assistive device)
    p. Taxi
    q. Ride hailing (e.g. Lyft, Uber, etc.)
    r. Motorcycle or moped
    s. Personal micromobility device (e.g. kick scooter, skateboard, inline skates, unicycle)
    t. Personal electric micromobility device (e.g. e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
    u. Other → Please describe other mode of travel _____
    v. WORK REMOTELY FROM HOME

ASK IF STUDENT FULL/ PART TIME SELECTED ALONE OR WITH OTHER PERMITTED RESPONSES:
b) What is your **usual mode of transportation** at this time of year for trips to or from **school as a student**? If you use more than one mode, select the one used for **most of the travel distance. CHECK ONE ONLY**

a. Private car, truck, or van **as a driver**
b. Private car, truck, or van **as a passenger**
c. Car share **as a driver** (e.g Modo, etc)
d. Car share as a passenger (e.g Modo, Evo, etc)
e. Transit bus
f. SkyTrain
g. West Coast Express
h. SeaBus
i. HandyDART
j. School bus
k. Other bus
l. Personal bicycle
m. Personal electric bicycle
n. Bike Share (Mobi)
o. Walking (including wheelchair, medical mobility scooter or other assistive device)
p. Taxi
q. Ride hailing (e.g Lyft, Uber, etc.)
r. Motorcycle or moped
s. Personal micromobility device (e.g. kick scooter, skateboard, inline skates, unicycle)
t. Personal electric micromobility device (e.g. e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
u. Other (specify) _____
v. ATTEND SCHOOL REMOTELY

6. In general, how has the pandemic affected the frequency of your trips made for the following purposes? Answer those that apply to your situation.

	Increased	Decreased	No change
Travel to work			
Trips during work/business trip			
Travel to school			
Shopping			
Dinning/restaurant			
Recreation (including dog walking, jogging, etc.)			
Social/entertainment			
Personal business (e.g. bank, doctor, volunteering, etc.)			
To drop-off/pick-up someone (via driving, walking, transit, cycling, etc.)			

7. How often did you typically travel by transit (e.g. bus, Skytrain, HandyDART, West Coast Express, Sea Bus) during the following time periods?

	Before COVID-19: (October 2019 to mid-March 2020)	COVID-19 Phase 1 : height of the pandemic (mid-March to May 18th, 2020)	COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to present)
a. 5 or more days per week	o	o	o
b. 2 to 4 days per week	o	o	o
c. One day per week	o	o	o
d. Two to three days per month	o	o	o
e. One day per month or less	o	o	o
f. No travel by transit at all	o	o	o

8. Has your use of transit decreased during the pandemic (mid-March to the present) compared to before the pandemic (before mid-March)?
   a. Yes
   b. No → **SKIP TO Q15**

9. What are the main reasons for this decrease in transit use? (Check all that apply)
   a. Reducing non-essential trips
   b. Working/ attending school from home
   c. Concerns about transit reliability
   d. Concerns about social distancing on transit
   e. Concerns about being exposed to COVID-19
   f. Other specify:

10. Have you faced any challenges completing these trips using alternate modes?
   a. Yes
   b. No

15. During the time periods listed below, how often did you and your household **order meals for delivery** (i.e. pizza delivery, DoorDash, Uber Eats, etc.)?

	Before COVID-19: (October 2019 to mid-March 2020)	COVID-19 Phase 1 : height of the pandemic (mid-March to May 18th, 2020)	COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to present)
a. 5 or more days per week	o	o	o
b. 2 to 4 days per week	o	o	o
c. One day per week	o	o	o
d. Two to three days per month	o	o	o
e. One day per month or less	o	o	o
f. Never	o	o	o

16. And during the same time periods listed, how often did you and your household **receive other goods ordered online** (i.e. clothing, furniture, appliances, etc.)?

	Before COVID-19: (October 2019 to mid-March 2020)	COVID-19 Phase 1 : height of the pandemic (mid-March to May 18th, 2020)	COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to present)
a. 5 or more days per week	o	o	o
b. 2 to 4 days per week	o	o	o
c. One day per week	o	o	o
d. Two to three days per month	o	o	o
e. One day per month or less	o	o	o
f. Never	o	o	o

SKIP 11-12 IF REGISTRATION QR4 = Do not work (unemployed)

11. Do you make any trips for business purposes during work?
    1. Yes
    2. No → SKIP Q12

12. Do you have access to employee programs that support or provide the following (MULTIPLE RESPONSE):
    Check all that apply
    1. Company Carpool / Car Share
    2. Employer Subsidized Transit Pass
    3. Employer Subsidized Bike Share / Mobi Membership
    4. Other specify:_____
    5. No, I do not have access to such programs

DEMOGRAPHICS

A few questions to help us classify the survey data.

1. Including you, how many people reside in your household?
    DROP DOWN MENU

2. The City is interested in tracking the health of its residents. In general, would you say that your health is…
    a. Excellent
    b. Very good
    c. Good
    d. Fair
    e. Poor
    f. Prefer not to answer

3. What type of dwelling do you currently live in?
    a. A single detached home (includes basement suites, laneway houses, etc)
    b. An apartment or condo in a low rise (5 levels or less)
    c. An apartment or condo in a high rise (more than 5 levels)
    d. A townhouse/row house
    e. Semi-detached home or a duplex (includes basement suites)
    f. Residential care or long term care facility
    g. A mobile home
    h. Other
    i. Prefer not to answer

5. HOUSEHOLD INCOME: Which of the following best describes your total **household** income (the combined gross income for all household members)?

a. Less than $25,000
b. $25,000 to less than $50,000
c. $50,000 to less than $75,000
d. $75,000 to less than $100,000
e. $100,000 to less than $150,000
f. $150,000 or more
g. Prefer not to answer

6. What is the highest level of education you have completed?

a. Have not completed high school
b. Completed high school/secondary school
c. Trade certificate or diploma from a vocational school or apprenticeship training
d. Non-university certificate or diploma from a community college, CEGEP or nursing school
e. University certificate below bachelor's level
f. Bachelor's degree
g. Graduate degree (master's degree or doctorate)
h. Prefer not to answer

7. Were you born in Canada?

a. Yes
b. No
c. Prefer not to answer

8. What is your racial identity? (Check all that apply)

a. Asian – East (e.g. Chinese, Korean, Japanese)
b. Asian – South East (e.g. Vietnamese, Cambodian, Malaysian, Filipino)
c. Asian – South (e.g. Indian, Pakistani, Sri Lankan, Bangladeshi)
d. Asian – West (e.g. Iranian, Afghan, Turkish)
e. Black (African, Caribbean/Latin America, Canadian/American)
f. Hispanic or Latin American (e.g. Brazil, Mexican, Chilean, Cuban)
g. Middle Eastern/ North African (e.g. Arab, Persian, Kurdish)
h. White (e.g. European – English, Italian, Ukrainian, French)
i. Other (specify)
j. Don't know **(MUTUALLY EXCLUSIVE)**
k. Prefer not to answer **(MUTUALLY EXCLUSIVE)**

9. a) Do you identify as First Nations (with or without status, Treaty or Non Treaty), Metis or Inuit, or do you have any other North American Indigenous ancestry?

l. Yes
m. No
n. Don't Know
o. Prefer not to answer

b) How do you describe your First Nations, Metis or Inuit, or any other North American Indigenous ancestry? (Check all that apply)

a. First Nations
b. Inuit
c. Metis
d. Other indigenous ancestry, specify (open text box)
e. Don't Know **(MUTUALLY EXCLUSIVE)**
f. Prefer not to answer **(MUTUALLY EXCLUSIVE)**

ASKED ONLY OF THOSE 35 YEARS AND OLDER, AND HAVE MORE THAN ONE PERSON IN HOUSEHOLD: Finally, …

10a. Is there anyone in your household between the ages of 18 and 34 years?

1. Yes
2. No → **THANK AND END**
99. Prefer not to answer → **THANK AND END**

IF YES IN Q10a

10b. We would like to invite one additional household member from this age group to also participate in this transportation survey. Do you think they would be interested?

1. Yes 2. No → **THANK AND END**

10c. Is he/ she available right now?

1. Yes 2. No

10d. **IF 10c = YES:**

Hello, I'm __ of Mustel Group, a professional research company and we are inviting you to participate in an important annual online transportation study.

Your participation will help the City make better decisions regarding future transportation plans and investments for area residents like yourself. In appreciation of your time to complete all survey tasks, you will have the option to receive a guaranteed $20 for completing all survey tasks or you will have a 1-in-10 chance to win one of 245 cash-based incentives ranging from $50 to $1,000 or one of 20 monthly Mobi bike passes! Further details on the prize draw are available once you access the survey.

IF ASKS WHAT IS INVOLVED: We will email you a link to the two-part online survey. The first is a brief 10-minute registration, and the second a one-day diary that is completed at a later date. The survey runs from mid-September to the end of November, giving you plenty of time to complete it.

Will you participate?

1. Yes 2. No → THANK AND END

IF YES: Can I have your first name: _____

And your email address:_____

RE-ENTER EMAIL: _____

And a telephone number in case we need to contact you:

1. TEL:_____
2. SAME AS CURRENT CALL

The email invitation has been sent and you should receive it shortly.

You should look for an email from: covtravelsurvey@mustelgroup.ca with the following subject line: City of Vancouver Annual Transportation Survey. If convenient, please check your Inbox to make sure you have received it.

If you do not see it in your Inbox, please check your SPAM or JUNK mail folder. If it is still not there, please call us at this number: (778) 383-3416.

10e. **IF 10c = NO (REFERRED YOUTH)**

Please provide their email address and we will send them a link to the survey.

EMAIL: _____

RE-ENTER EMAIL: _____

And could we have their name and phone number? We may need to call them to make sure they received the email.

NAME: _____

PHONE: _____

Is this a cell or landline number?

Cell Landline

Who should we say has referred this youth to our survey? _____

The email invitation has been sent and they should receive it shortly.
They should look for an email from: covtravelsurvey@mustelgroup.ca with the following subject line: City of Vancouver Annual Transportation Survey. If convenient, please have them check their Inbox to make sure they have received it. If they do not see it in their Inbox, please check them their SPAM or JUNK mail folder. If it is still not there, please call us at this number: (778) 383-3416.

SEND NEW RECRUIT EMAIL TO SELF-COMPLETE ONLINE

EMAIL INVITATION

Hello and welcome to the City of Vancouver Annual Transportation Survey!

Your unique link to the trip diary survey is below.

Note that your assigned travel day is a **(INSERT DAY)**. Please keep track of your trips on this day and then access the survey to complete the online diary [IF UNDER 35 YEARS:to receive a guaranteed $20 or] [IF 35 YEARS AND OVER: and] be entered to the prize draw for a 1-in-10 chance to win one of 245 cash-based incentives ranging from $50 to $1,000 or one of 20 monthly Mobi bike passes! (Approximate chances of winning are 1-in-10.)

When you access the survey you will first be able to review helpful information on how to complete it.

Here is YOUR UNIQUE LINK:
http://www.covtravelsurvey.com/dash/Dash?id=covtravel,34232343

Below is your **PIN Number**. This is important if you need to contact our Help Line (see below) for any questions or assistance with your survey. Be sure to provide this number when emailing or calling in.
YOUR PIN: 34232343

If your email program doesn't support hyperlinks and you are unable to click on the link above, please copy and paste the link directly into your browser.

Thank you in advance for your participation!

Mustel Group Study Team (covtravelsurvey@mustelgroup.ca)
402-1505 West 2nd Ave,
Vancouver, BC V6H 3Y4

Need Help?
Reply to this email or call us at: **778-383-3416**
(Please have your PIN Number handy when you do.)

To unsubscribe from receiving email reminders, please click here (insert hyperlink)

To unsubscribe from this survey altogether, please click here (insert hyperlink)

City of Vancouver Annual Transportation Survey

Your assigned travel day is next **(INSERT DAY)**.

Please read this information regarding your one-day trip diary.

- If you are unable to record your trips to the online survey for your assigned day, you can do so within a week or two afterwards.
- Watch this video with key points to remember on your travel day (Trip Diary Video).
- Also, if you plan to be away for a period of time, you can still participate as the survey is open until the end of November.
- Before recording and entering your trips, we will first confirm information you provided last year.

NOTE: Even if any of the following applies to you, we still need you to complete the survey.

- You do not make any trips on your assigned day
- The trips you take on your assigned day are not typical
- Your trip patterns have not changed from year to year

If you are ready to begin the trip diary, click the NEXT button. Otherwise click the Exit button and return to complete your diary when you are ready.

TRIP BEHAVIOUR (Monday to Friday only)

The City needs to understand residents' transportation choices each time they make a trip within or through the Lower Mainland. Please watch this quick video on how to fill in the trip diary: **Link to Trip Diary Video**

In this survey, we are asking about all of your trips taken on [INSERT ASSIGNED DAY] between midnight and 11:59 p.m. (a full 24-hour day).

PROGRAMMER NOTE: INSERT THIS TEXT IF DRIVES OR MAKES DELIVERIES AS PART OF JOB (PROFILING AND GENERAL TRANSPORT QUESTION 3 = YES):

Please remember to exclude trips you make as part of your job (i.e. driving a bus, taxi or commercial vehicle), but do include trips to and from work as well as any other personal trips you make.

DEFINITION OF A TRIP (ON FIRST SCREEN – HAVE AS LINK OR DROP DOWN ON EVERY OTHER TRIP SCREEN)

A trip is travel from one location to another location for a purpose.

- **Include trips made by all means (walking, cycling, transit, car, etc)**
- **Include short trips** (e.g., stopping at a coffee shop, a gas station or dropping someone off)
- **Include return trips** (e.g., going home)
- **Include recreational outings that end at the same place they started** (e.g., dog walking, going for a walk or jogging)

T1. Did you make any trips that started and ended on [INSERT ASSIGNED DAY], between midnight and 11:59 p.m. (a full 24-hour day)?

1. No, stayed home or was out of town for the whole day → SKIP TO VKT SECTION
2. Yes

1. Trip 1

Q1a) What was the **starting location**? If this trip started from home or work, please click "Home" or "Work". Otherwise, give precise address, nearby cross-streets or a landmark. Be sure to include the municipality.
If you need help, please refer to this map. (COV ON GOOGLE MAPS)

- Home address
- Work address
- Precise address (specify below)
- Nearby cross-streets (specify below)
- Landmark (specify below)

Q1b) What was your **end location**? If this trip ended at home or work, please click "Home" or "Work". Otherwise, give precise address, nearby cross-streets or a landmark. Be sure to include the municipality.
If this is a recreational trip where your start and end locations are the same, please select that response. (Examples of recreational trips are dog walking, jogging, etc)
If you need help, please refer to this map. (COV ON GOOGLE MAPS)

- Home address
- Work address
- Precise address (specify below)
- Nearby cross-streets (specify below)
- Landmark (specify below)
- Same as origin (a recreational trip)

Municipality:

1. Vancouver
2. Burnaby
3. Coquitlam
4. Delta/Ladner/Tsawwassen
5. Langley/Langley Township/Fort Langley/Aldergrove
6. Maple Ridge
7. New Westminster
8. North Vancouver
9. Pitt Meadows
10. Port Coquitlam
11. Port Moody/Anmore/Belcarra
12. Richmond
13. Surrey
14. West Vancouver (including Horseshoe Bay/Lions Bay)
15. White Rock
16. All Other Locations Ending Outside of Metro Vancouver

GOOGLE MAP WITH PIN POINT OF LOCATION. Confirm: Is this the correct location? IF YES: **INSERTION OF LAT-LONG FROM GEO-CODER.** IF NO, RETURN TO END LOCATION SCREEN FOR RE-ENTRY/REVISION OF LOCATION DETAIL)

Q1c) What time of day did you start this trip?

1. 12:00am to 12:59am
2. 1:00am to 1:59am
3. 2:00am to 2:59am
4. 3:00am to 3:59am
5. 4:00am to 4:59am
6. 5:00am to 5:59am
7. 6:00am to 6:59am
8. 7:00am to 7:59am
9. 8:00am to 8:59am
10. 9:00am to 9:59am
11. 10:00am to 10:59am
12. 11:00am to 11:59am
13. 12:00pm to 12:59pm
14. 1:00pm to 1:59pm
15. 2:00pm to 2:59pm
16. 3:00pm to 3:59pm
17. 4:00pm to 4:59pm
18. 5:00pm to 5:59pm
19. 6:00pm to 6:59pm
20. 7:00pm to 7:59pm
21. 8:00pm to 8:59pm
22. 9:00pm to 9:59pm
23. 10:00pm to 10:59pm
24. 11:00pm to 11:59pm

Q1d) IF RESPONSE "Same as origin" IN b) ask: Approximately how long was this recreational trip?

1. Less than 10 minutes
2. 10 to less than 20
3. 20 to less than 30
4. 30 to less than 40
5. 40 to less than 50
6. 50 to less than 60 minutes
7. 60 minutes or more

Q1e) What was the main **purpose** of this trip? ONE RESPONSE ONLY AUTO CODE AS "Recreation" IF RESPONSE "Same as origin" IN b)

1. To work
2. During work/business trip
3. To school (as a student)
4. Shopping
5. Dining/restaurant
6. Recreation (including dog walking, jogging, etc)/social/entertainment
7. Personal business (e.g. bank, doctor, volunteering, etc)
8. To drop-off/pick-up someone (via driving, walking, transit, cycling, etc.)
9. To go home

Q1f) How did you travel to this location? Choose all that apply. If more than one, list in order of use.
If you walked and used other modes, select "walked as part of the trip" as well as the other modes.
Please enter your first travel mode below and click next.

1. Private car, truck, or van as a driver
2. Private car, truck, or van as a passenger
3. Car share as a driver (ex Modo, etc)
4. Car share as a passenger (ex Modo, Evo, etc)
5. Transit bus
6. SkyTrain (Expo, Canada and Millennium Lines)
7. West Coast Express
8. SeaBus
9. HandyDART
10. School bus
11. Other bus
12. Walked/jogged the whole way (CANNOT BE COMBINED WITH OTHER RESPONSES)
13. Walked/jogged as part of the trip
14. Personal bicycle
15. Personal electric bicycle
16. Bike Share (Mobi)
17. Taxi
18. Ride hailing (e.g., Lyft, Uber, etc.)
19. Motorcycle or moped
20. Personal micromobility device (e.g. kick scooter, skateboard, inline skates, unicycle)
21. Personal electric micromobility device (e.g. e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
22. Other (specify) _____

Second mode, third mode, etc.
(SAME LIST BUT WITH "No others" ADDED CODE AT TOP OF LIST)

IF TRIP.(f) RESPONSE IS "Transit Bus", "SkyTrain", "WestCoast Express", "Seabus", "HandyDART", "School Bus", "Other bus", "Walked/jogged the whole way", "Walked/jogged as part of the trip", or "Bicycle" ASK:
Q1k. Approximately how long was the walking and/or biking portion of this trip?

1. Less than 5 minutes
2. 5 to less than 10
3. 10 to less than 20
4. 20 to less than 30
5. 30 to less than 40
6. 40 to less than 50
7. 50 to less than 60 minutes
8. 60 minutes or more

AUTO CODE AS "No", IF RESPONSE "Same as origin" IN b)
Q1g) Was this trip a stop along the way to your next location? (e.g. a short trip such as a drop off, gas station, coffee shop, etc.)

1. Yes → Did you pre-plan to make this stop? 1. Yes 2. No
2. No

Q1h2. TRIP SUMMARY: Please carefully review the information you have provided for this trip.
INSERT

START LOCATION
END LOCATION
TIME OF DAY
MAIN PURPOSE OF TRIP
METHODS OF TRAVEL

Is this information complete and correct?

1. Yes *(If you select this and click **Next**, you will not be able to make changes to this trip)*
2. No *(If you select this and click **Next**, you will be taken through the trip to make corrections)*

To make corrections:
If you click **Next** on this page, you will be taken back through your trip to make changes.

As you go through the trip and the page that displays does not require corrections, simply click **Next** to continue until you reach the information that needs to be changed. Then select or type in the correct response to the question. Please be sure to follow the instructions carefully when you access the map pages.

After you have revised the trip, you will again be asked to verify that it is correct.

Click **Next** to revise your trip OR click **Back** if you arrived here by mistake.

Q1h3. In the context of COVID-19 and social distancing, please select one of the following that describes your experience during this trip:

a. I had enough space to social distance from others
b. I wasn't able to social distance from others at all times, but efforts were made to limit the number of people
c. I was not able to social distance at all

In the context of COVID-19, how safe did you feel during this trip?

a. Very safe
b. Somewhat safe
c. Neither safe nor unsafe (neutral)
d. Somewhat unsafe
e. Very unsafe

Q1h4. If there wasn't a pandemic happening at this time, would you have made this trip using a different transportation mode?

a) Yes
b) No →**SKIP TO TRIP COMMENTS**

Q1h5. Which mode would you have chosen instead?

1. Private car, truck, or van as a driver
2. Private car, truck, or van as a passenger
3. Car share as a driver (ex Modo, Evo, etc)
4. Car share as a passenger (ex Modo, Evo, etc)
5. Transit bus
6. SkyTrain (Expo, Canada and Millennium Lines)
7. West Coast Express
8. SeaBus
9. HandyDART
10. School bus
11. Other bus
12. Walk/jog the whole way (CANNOT BE COMBINED WITH OTHER RESPONSES)
13. Walk/jog as part of the trip
14. Personal bicycle
15. Personal electric bicycle
16. Bike Share (Mobi)
17. Taxi
18. Ride hailing (e.g. Lyft, Uber, etc.)
19. Motorcycle or moped
20. Personal micromobility device (e.g. kick scooter, skateboard, inline skates, unicycle)
21. Personal electric micromobility device (e.g. e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
22. Other (specify) _____

Q1h6. Why would you have chosen that mode? (Chose your main reason):

a) Reduced cost
b) Reduced travel times
c) Convenience
d) Other. (specify)_____

TRIP COMMENTS

Do you have any other details or comments about **this trip** that you would like to provide?
*If you have no additional comments, click **NEXT** to continue.*

Q1i) Did you make another trip on this day before 11:59pm? (Remember to include return trips.)
1. Yes
2. No (last trip of the day) → IF LAST TRIP DID NOT RETURN HOME, ASK j)

Q1j) Did you return home before 11:59pm on this travel day?
1. Yes
2. No - Did not return home on this day → **IF Q1g =** Yes, a stop along to another destination, **INSERT ERROR MESSAGE:** You mentioned earlier this trip was a stop along the way to another destination. Is it correct that you did not make any more trips today?
If this is correct you can leave your answer as is and click "Next" again to continue, otherwise please correct your response. (**CLICKING NEXT SKIPS TO TOTAL TRIP SUMMARY, THEN VKT)**

Trips 2-15: REPEAT TRIP QUESTIONS STARTING WITH….

b) **Destination:** Where did you go next? ALL OTHER QUESTIONS SAME AS ABOVE

AFTER LAST TRIP OF DAY, TOTAL TRIP SUMMARY: Please review your trips below.

k) Are your trips complete?

INSERT TRIP SUMMARIES

TRIP	FROM	TO	PURPOSE
1	ADDRESS	ADDRESS	PURPOSE
2	ADDRESS	ADDRESS	PURPOSE
3, etc	ADDRESS	ADDRESS	PURPOSE

1. Yes 2. No

IF NO: This action will delete all of your trips. You will need to re-enter all of your trips to complete the survey. Are you certain that you wish to delete all of your trips? **tripReset.page**

1. Yes → **REDO ALL TRIP ENTRIES** **2.** No → **CONTINUE**

VKT SECTION

IF PRIVATE VEHICLE CHOSEN IN RECRUIT PROFILING AND GENERAL TRANSPORT SECTION (Q2), ASK

QS1. What type of private vehicle do you typically drive? Please choose the make of your vehicle. If you cannot locate the vehicle you typically drive scroll down to the very bottom of the drop-down menu and select "OTHER".
(IF OTHER CHOSEN, PROMPT Please specify other for the make of your vehicle)

QS1a. Please choose the model and year of your vehicle.
(IF OTHER CHOSEN, PROMPT Please specify other for the model of your vehicle)

INSERT IF COMMERCIAL DRIVER IDENTIFIED IN RECRUIT PROFILING & GENERAL TRANSPORT SECTION (Q3) This is the vehicle typically driven for your personal trips. If you typically use a commercial vehicle for your personal trips, select that vehicle from the list below.

DROP DOWN MENUS AS PER NRCAN DATASET
AS NRCAN LIST ONLY INCLUDES PASSENGER VEHICLES, ALLOW OVERRIDE

Is this a zero-emission vehicle?
Yes
No

Q Send Odometer. It is important for the City to understand how many kilometers residents are driving in a year as it helps provide a measure of fuel consumption and emissions, which impact air quality and climate change.

Would you like to enter your odometer reading now, or email a link to enter it later? The email link will provide you with a mobile-friendly way to enter the odometer, so you can complete it in your car with your smartphone or tablet, if you choose.

1. Provide my odometer reading right now
2. Email a link to enter my odometer reading later (Please specify the email address you would prefer to receive the link to the odometer reading. _____@_____.

Qs2. Please record the current odometer reading for this vehicle (to nearest 100km's). If unsure, you may check the vehicle and return to enter later. _____ km's

CLOSING: This completes our survey. Thank you very much for your input and interest in this **annual trip diary** survey!

As a small thank you, once all trip diaries have been collected and analyzed, we will email you key results and a link to the full report from this year's survey made possible by your participation. If you are eligible for the prize draw, all winners will be contacted within the first quarter of 2021.

CLOSING: This completes our survey. Thank you very much for your input and interest in this annual trip diary survey! As a small thank you, once all trip diaries have been collected and analyzed, we will email you key results and a link to the full report from this year's survey made possible by your participation. If you are eligible for (IF UNDER 35 YEARS AND CHOSE PRIZE DRAW: and chose) the prize draw, all winners will be contacted within the first quarter of 2021.

IF 18 TO 34: Your $20 incentive will be mailed to you within 4 to 8 weeks after the survey closes.

Thank you once more and we'll be in touch in 2021!

Please click the button below to submit the survey.

APPENDIX C

2020 Summer Mini-Survey Technical Report

TECHNICAL MEMO

To	Prepared by
Liliana Quintero, P.Eng. City of Vancouver	**Kristina Kwong**, EIT, **Manvir Sohi**, EIT **Reviewed by** **Basse Clement**, P.Eng.
Re	**Date**
2020 Vancouver Panel Summer Survey - **DRAFT**	September 23rd, 2020

1. Introduction

Since 2013, the City of Vancouver (the City) has embarked on an annual travel survey of residents to assess changes in travel patterns, behaviour, and preferences. In addition to monitoring changes in urban mobility, the travel survey is used to benchmark progress towards the City's mode share and VKT targets as set out in the Greenest City Action Plan, Transportation 2040, and the more recent Climate Emergency Response Plan. To maintain consistency with other travel surveys conducted in the Metro Vancouver region, the City's transportation survey is administered each fall amongst a panel of Vancouver residents.

In addition to the annual fall survey, the City has occasionally engaged panelists during the summer to collect information about current events that have an impact on transportation in the City. This summer, the panelists were surveyed to understand how travel choices and preferences of Vancouver residents are changing as a result of the COVID-19 pandemic.

This technical memorandum provides a summary of the responses collected from the 2020 Vancouver Panel Summer Survey and is presented in five sections following this introduction:

- *Section 2* summarizes the demographic distribution of the survey participants.
- *Section 3* summarizes participants' employment status during different phases of the pandemic.
- *Section 4* provides a summary on participants' usual mode of transportation for trips taken during the pandemic.
- *Section 5* presents the results of the questions related to working remotely from home.
- *Section 6* assesses the impact of the pandemic on participants' transportation choices.

Note that the results presented in *Sections 3 to 6* are weighted by age, gender, and transportation zone.

The complete summer survey instrument is included in *Appendix A* for reference.

2. Demographic Distribution of Panelists

The Summer Survey was conducted from July 15th to August 5th. Invitations were sent to all 2,653 current panel members who participated in the 2019 Fall Panel Survey. In total, 2,026 panelists completed the summer survey and of these, 34 respondents indicated that they will not be returning for the fall survey.

Similar to the gender ratio from the fall panelists, 56% of the summer panelists are female and 44% are male. *Figure 1* displays the distribution of participating panel members by the City's nine designated transportation zones, which was fairly consistent with the previous fall survey.

Figure 1: Distribution of Panelists by Sub-Region

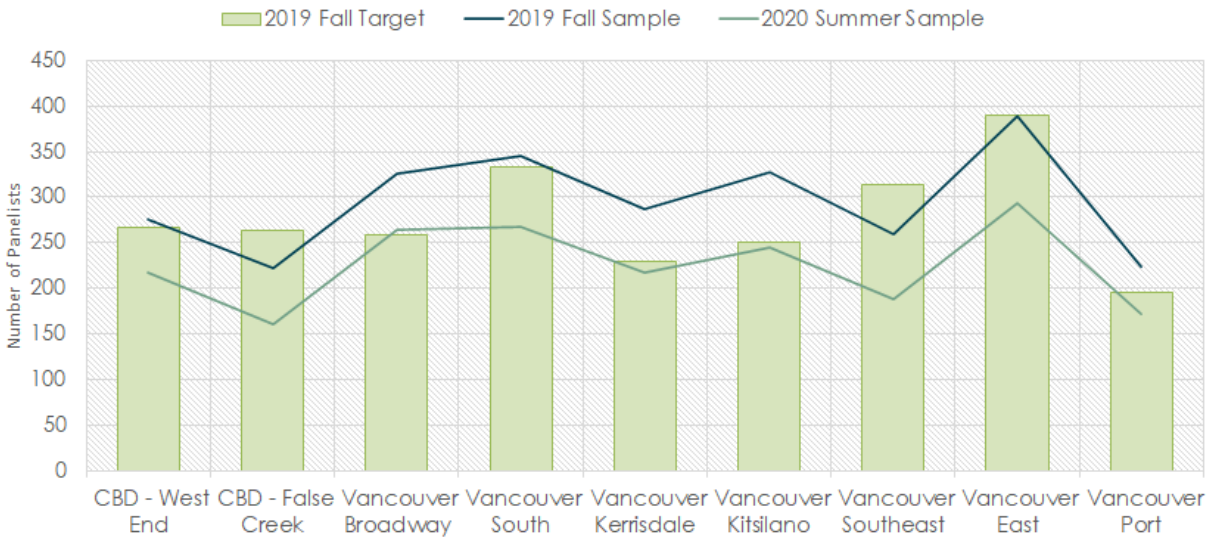
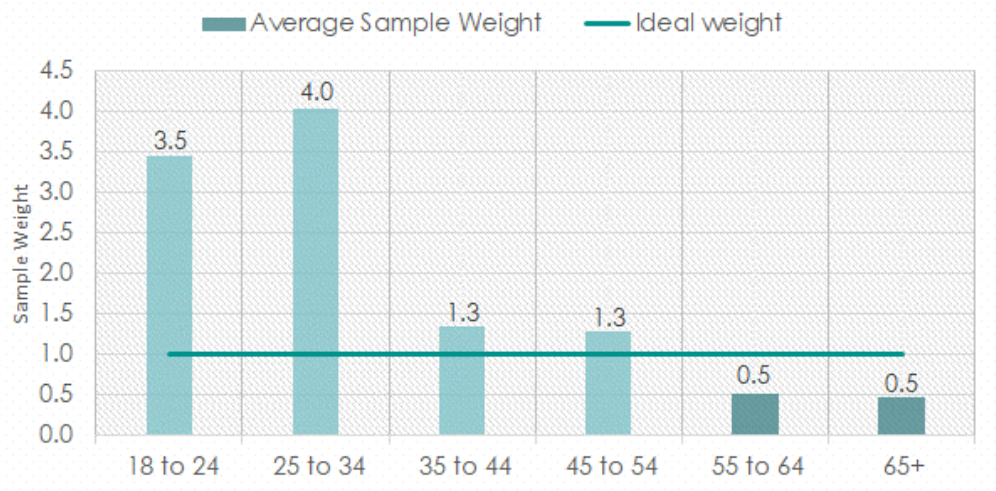


Figure 2 illustrates the average weight of summer panelists by age cohorts. Weights are assigned to each panelist based on factors such as age, gender, and transportation zone to achieve a weighted sample that is reflective of the City's population. For example, a weight of 3.5 means that one panelist is representing the response for 3.5 Vancouver residents. A weight greater than 1 was assigned to all age groups under 55 years old due to the under-sampling of residents belonging to these age cohorts.

Figure 2: Weight by Age Group Categories

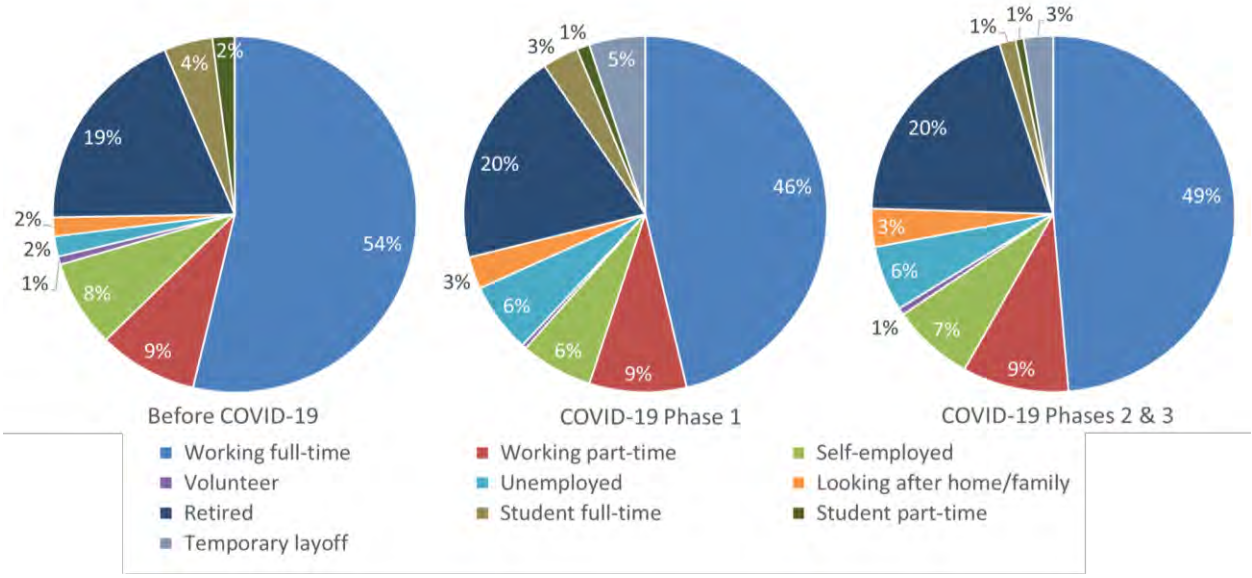


3. Employment Status

In response to the COVID-19 pandemic, the BC government implemented a multi-phase approach to mitigate the impacts of the pandemic. Phase 1 of the BC Restart Plan was introduced in mid-March and declared a public health emergency and a provincial state emergency. Some of the changes included travel restrictions, including the 14-day isolation plan, closing of many non-essential businesses and services, banning of mass gatherings of more than 50 people, physical distancing measures, and the reduction of in-classroom learning and childcare. On May 18th, Phase 2 of the BC Restart Plan was implemented and allowed for the easing of certain restrictions. While non-essential travel, especially between communities, continued to be limited, many businesses, including childcare, offices, and medical services, were able to reopen with new safety and physical distancing measures. Phase 3, implemented on June 24th, further reduced the restrictions with the opening of additional non-essential businesses and services including BC parks, schools, and vacation accommodations. Furthermore, restrictions against non-essential travel within BC was lifted.

With regard to employment status, the survey results indicate COVID-19 had a significant impact. As shown in *Figure 3*, 71% of the panelists reported as being employed full-time, part-time or self-employed before COVID-19. During Phase 1, this percentage drops to 61% before climbing back to 65% during Phases 2 and 3. Conversely, the percentage for unemployed and temporary layoff rose from 2% before the pandemic to 11% during the height of the restrictions and 9% during Phases 2 and 3 when some of the restrictions were eased. Furthermore, the survey indicated two thirds of the changes to employment status of workers was related to COVID-19. The results also indicated a reduction of full-time and part-time students, however, over half these changes were not related to COVID-19, and likely due to the end of the school semester.

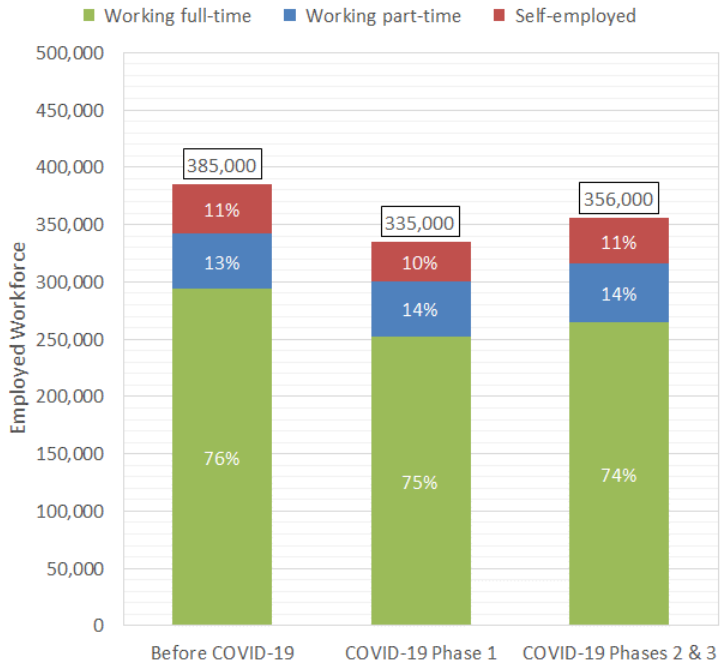
Figure 3: Employment Status



As presented in

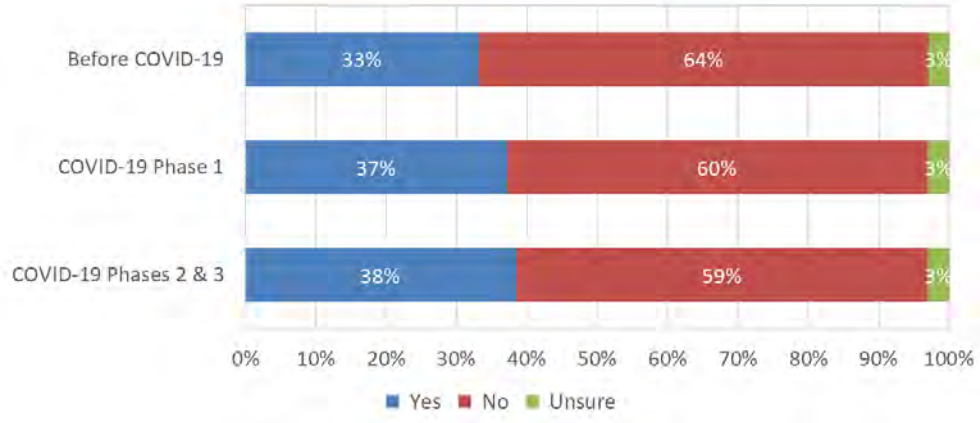
Figure 4, the distribution of full-time, part-time, and self-employed workers have remained consistent to pre-COVID-19 conditions. With the closure of non-essential businesses during Phase 1 of the BC Restart Plan, employment levels amongst Vancouver residents dropped by about 50,000 workers, from 385,000 workers to 335,000 workers. As the province lifted restrictions during Phases 2 and 3, employment levels increased by about 21,000 workers.

Figure 4: Employed Workforce



Given the distinction between essential and non-essential work in the BC Restart Plan, the panelists were asked whether they were employed as an essential worker during the different phases of the BC Restart Plan. As indicated in *Figure 5*, there are a greater share of those employed in essential services during the BC Restart Plan when compared to pre-COVID-19 conditions. This trend was expected as the closure of many non-essential businesses and services led to layoffs and shifts in employment.

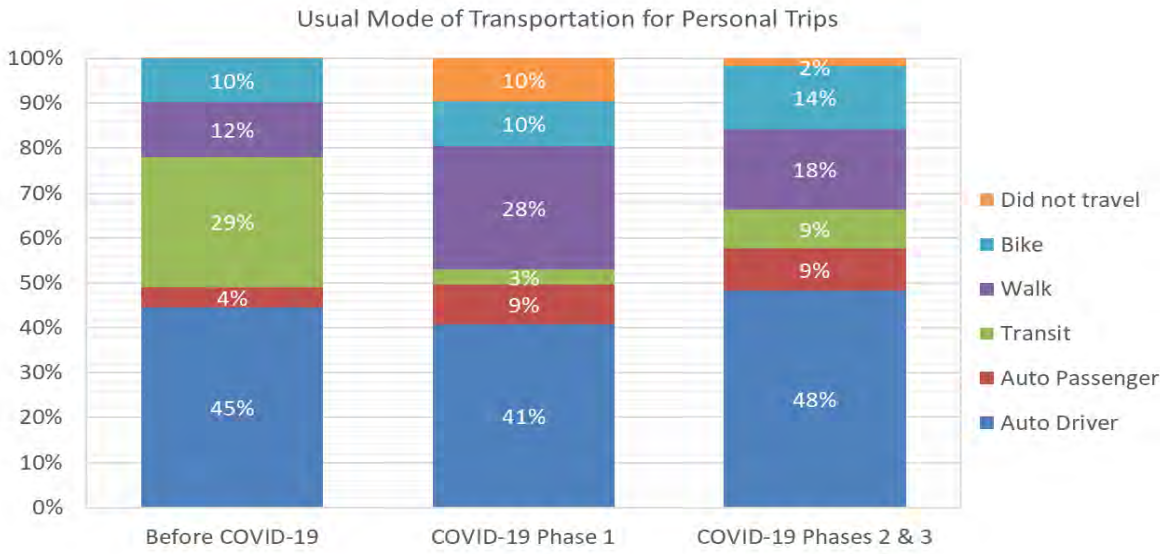
Figure 5: Workers Employed in Essential Services



4. Usual Mode of Transportation

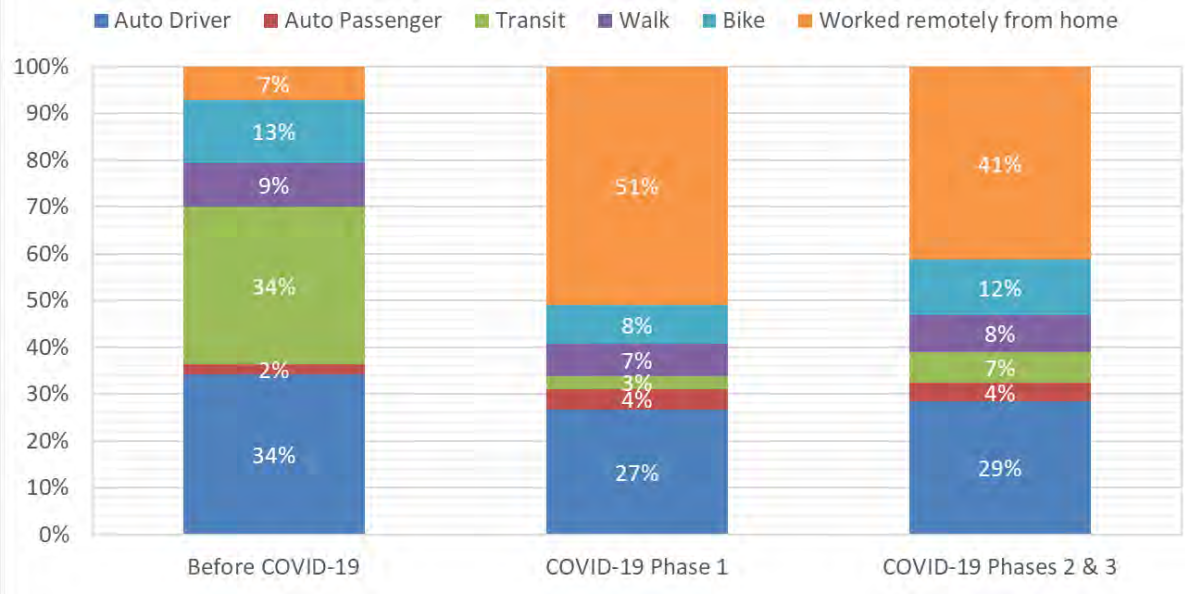
As part of the survey questionnaire, all survey participants were asked to identify their usual mode of transportation for personal trips taken before the start of the COVID-19 pandemic and during the roll-out of Phase 1 and Phases 2 and 3. Prior to the COVID-19 pandemic, 29% of respondents identified transit as their usual mode of transport for personal trips. As indicated in *Figure 6*, the share of transit users has significantly declined during the pandemic, reaching a low of 3% during Phase 1. This sizeable decrease is counteracted by an increased uptake of active travel, specifically trips made by foot, and private vehicle use as a passenger. Furthermore, 10% of respondents stated that they did not travel during the height of the pandemic. With the easing of restrictions introduced during Phases 2 and 3 of the BC Restart Plan, the mode shares of vehicle use as an auto driver, public transit, and cycling increased as Vancouver residents reverted back to trip-making.

Figure 6: Usual Mode of Travel for Personal Trips



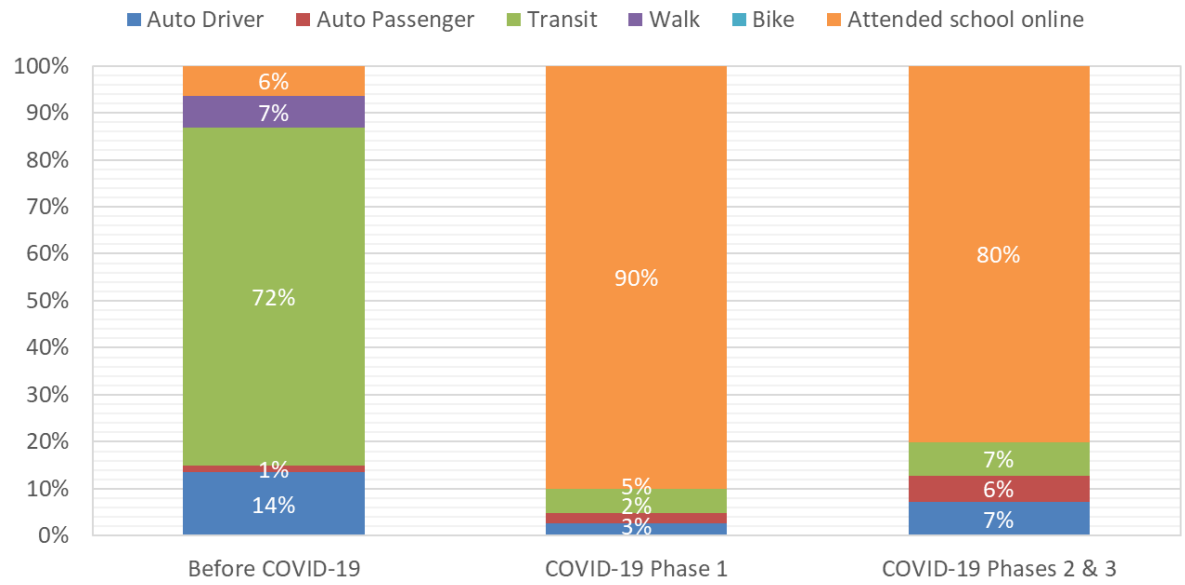
Before the onset of the COVID-19 pandemic, auto driver and public transit were indicated as the usual modes of travel to work with the highest share at approximately 34% each. With the COVID-19 pandemic, there was a significant shift in usual mode. During Phase 1, transit and auto driver declined to 3% and 27%, respectively, as a result of workers shifting to working remotely from home during Phase 1. As illustrated in *Figure 7*, a staggering 51% of those employed, worked from home during the height of the pandemic. With the roll-out of Phases 2 and 3 of the BC Restart Plan, this figure decreased to 41% as offices and non-essential businesses and services began to reopen. This high share of panelists who continued to work remotely from home indicates a pattern that is likely to continue until at least the end of the pandemic and potentially change working patterns beyond the pandemic.

Figure 7: Usual Mode of Travel for Work Trips



Based on survey responses, the majority of students indicated public transit as their usual mode to travel to school before the pandemic while only 6% of students were enrolled in online learning. As indicated in *Figure 8*, the share of students enrolled in online learning grew from 6% to 90% when most schools closed during Phase 1. While restrictions were lifted during Phases 2 and 3, 80% of students continued attending school online. Of those who have returned to in-person learning, they either travelled to school by use of public transit or private vehicle. With the re-opening of schools for this fall, the share of students attending school online is likely to decrease significantly and would have to be monitored to determine the relative effect on other travel modes.

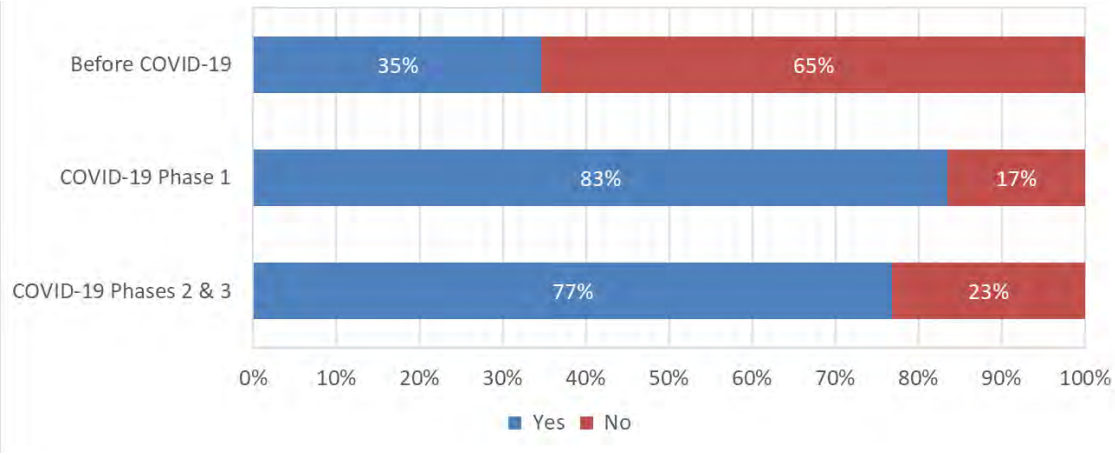
Figure 8: Usual Mode of Travel for School Trips



5. Working Remotely

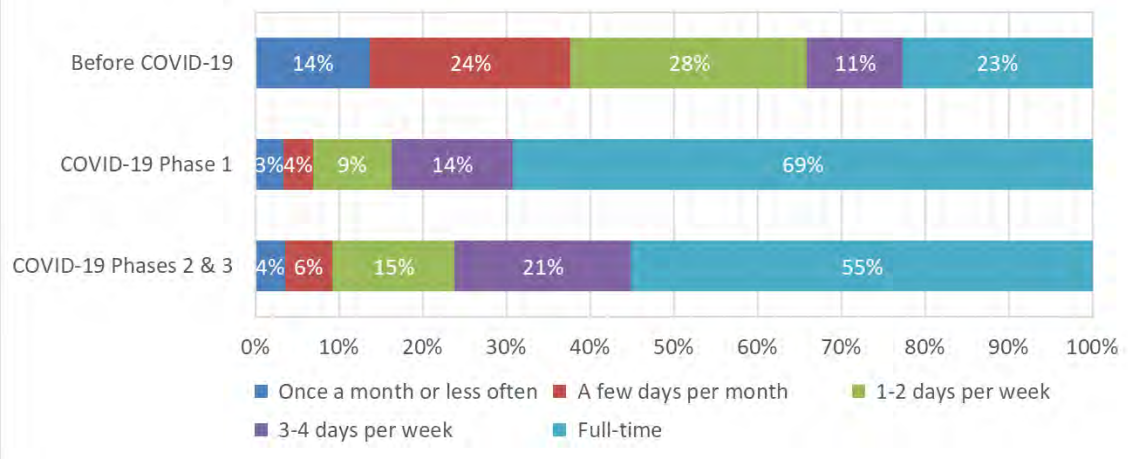
As shown in *Figure 9*, only 35% of those employed indicated that they were working remotely from home before the pandemic. During Phase 1, this figure increased to 83% as on-site work was reduced significantly and employers and employees adapted to working remotely where possible. With the easing of restrictions and reopening of many businesses and services as part of Phases 2 and 3, the share of employees working from home decreased from 83% to 77%. Despite this decrease, the share of working remotely has more than doubled compared to the conditions before the pandemic, representing another potential shift in travel that may last beyond this pandemic. In fact, from the survey, it was seen that about one-third of employees had been asked by their employers if they would be willing to continue working remotely in the future.

Figure 9: Percent of Workers Working Remotely



Of those who worked remotely before the pandemic, 38% worked away from the office less than once a week while only 23% worked full-time from home. As shown in *Figure 10*, the proportion of people working full-time grew substantially to 69% during Phase 1 of the BC Restart Plan. As the province entered Phases 2 and 3, survey responses show more than half of employees working full-time from home and another 36% working from home at least once a week. The pandemic has not only resulted in more employees working remotely from home, but it has also increased the frequency.

Figure 10: Frequency of Working Remotely



As presented earlier in *Figure 9*, 17% of workers did not work remotely from home at all during Phase 1 of the pandemic. As shown in the figure on the right, about three-quarters of the surveyed employees, who did not work remotely during any period, stated that they cannot perform their job remotely. Furthermore, approximately 12% indicated that their employer did not allow for remote working, while another 8% prefer to work from their place of work.

Figure 11: Reasons for Not Working Remotely

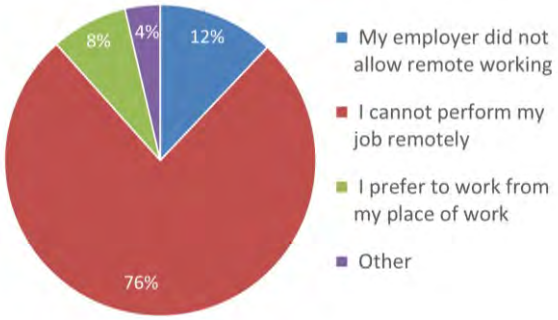
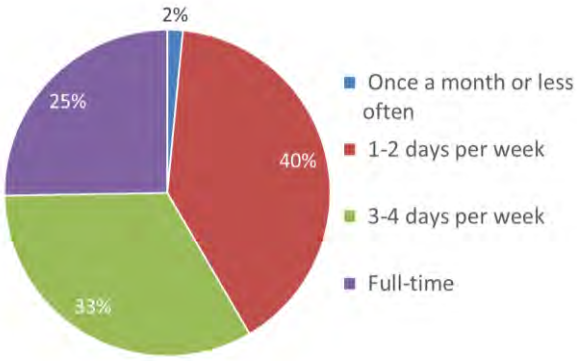


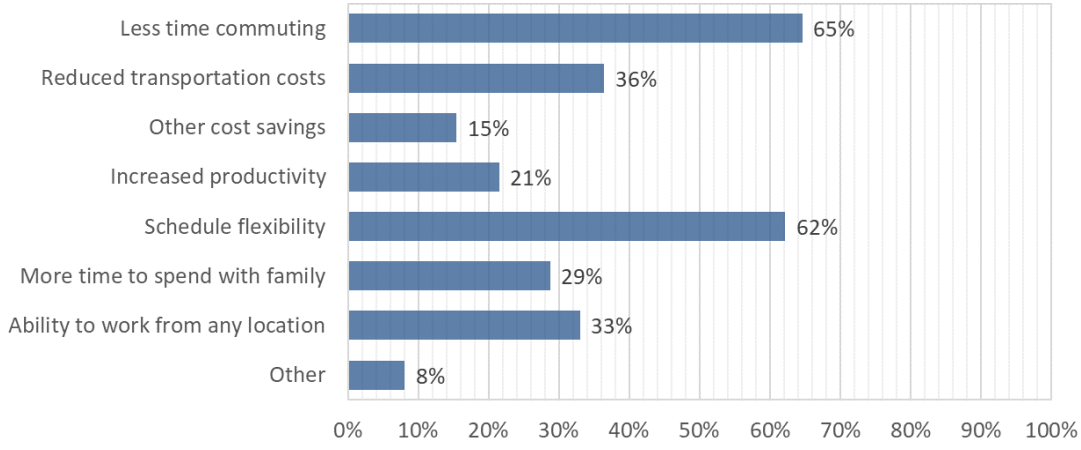
Figure 12: Desired Frequency for Working Remotely



About two-thirds of the employed panelists indicated they would be interested in working remotely from home in the future, either part-time or full-time, while 17% were unsure and 16% said they would not be interested. Those who expressed interest in working remotely were asked how regularly they would be interested working from home. As shown in *Figure 12* to the left, almost all indicated that they would be interested in the flexibility to work remotely from home at least once a week, with a quarter interested in working from home full-time.

As shown in *Figure 13*, the leading reasons for their interest in working remotely are shorter commute times (65% of responses) and schedule flexibility (62% of responses). This was followed by reduced transportation costs, ability to work from any location, and more time to spend with family.

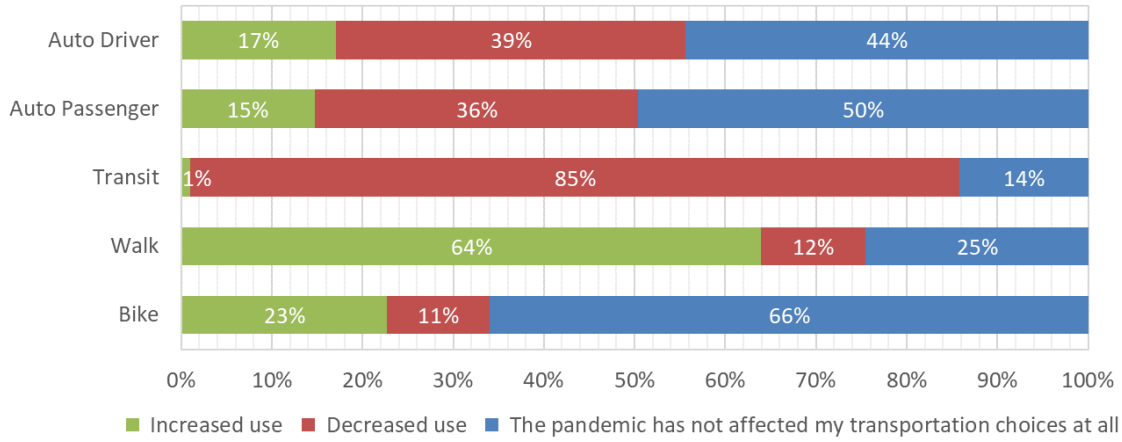
Figure 13: Reasons for Interest in Working Remotely



6. Impact on Transportation Choices

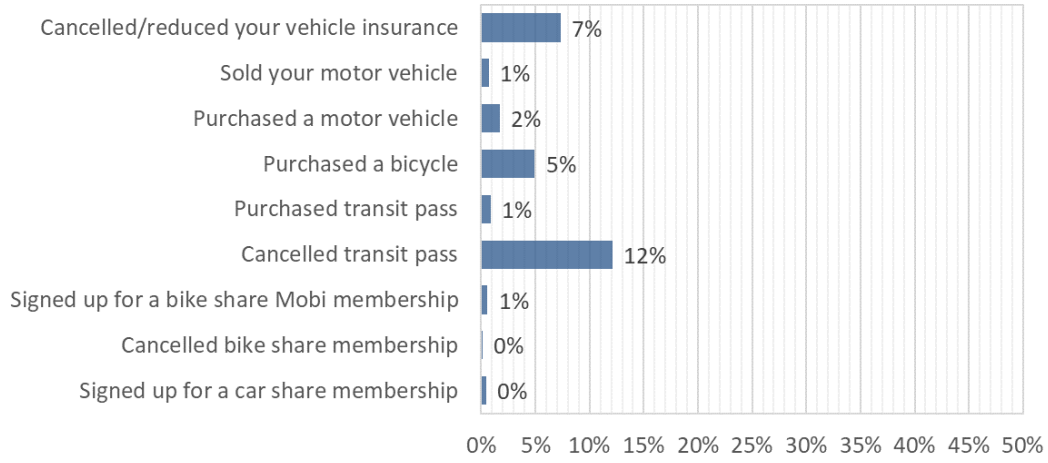
As part of the survey questionnaire, participants were asked whether the COVID-19 pandemic influenced their transportation mode choices. As shown in *Figure 14*, respondents reported a significant decrease in the use of public transit and decreases in the use of private vehicle both as an auto driver and auto passenger. About two-thirds indicated that the pandemic did not affect their choice in riding their bicycle. As a result of the pandemic, 64% of respondents revealed that they travelled more by foot.

Figure 14: Impact of the Pandemic on Use of Transportation Modes



The last question included in the survey asked panelists whether the COVID-19 pandemic resulted in any of the changes listed in *Figure 15*. 70% of respondents indicated they did not make any of the listed changes with respect to their vehicle, bicycle, transit pass, bike share membership, or car share membership. For the remaining 30%, *Figure 15* presents the changes they made due to the pandemic. The cancellation of transit passes, and cancellation/reduction of vehicle insurance were the two biggest changes followed by the purchase of a bicycle. These choices align with the changes observed in the panelists' travel choices and behaviours, explicitly the reduction of transit and auto travel with shifts to active modes and working remotely.

Figure 15: Impact of Pandemic on Transportation Choices



APPENDIX D

2020 Summer Mini-Survey Instrument

Mini Panel Survey Summer 2020 – FINAL

Welcome to the City of Vancouver's 2020 Summer Survey!

As a transportation survey panelist, your opinions are important to us so please take the time to read the questions carefully before responding.

As a thank you for your participation, you will be eligible to win one of ten $100 cash prizes. Prize draw details will be provided at the end of the survey.

(ACCESS SURVEY)

A1. Are you planning to participate in this year's City of Vancouver Transportation Survey?

(You will only have to provide responses for one day between September and December.)

❑[1] Yes ❑[2] Not sure ❑[3] No ❑[4] DO NOT LIVE IN VANCOUVER ANYMORE

A2. IF Not sure/ NO: Why is that?

IF A1 = No, SKIP TO Q1

A3. To make the process easier for you to enter trip information in the fall survey, please confirm or update the home address you provided last year.
(INSERT ADDRESS FROM 2019)

❑[1] Yes, this is my home address
❑[2] No, I need to update my home address → Please enter your correct home address.
❑[3] DO NOT LIVE IN VANCOUVER → THANKS AND TERMINATE.

1. Regarding **trips made for personal reasons**, what has been your usual mode of transportation during the following time periods? If you use more than one mode for your trip, please select the mode that covers the most distance.

Examples of personal trips: doctor appointments, visiting friends, moving, shopping, recreation, entertainment, etc. Do not include trips to or from work or school.

Mode of transportation	a) Before COVID-19: October 2019 to mid-March 2020	b) COVID-19 Phase 1: height of the pandemic (mid-March to May 18th, 2020)	c) COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to July 2020)
Private Vehicle as a driver			
Private Vehicle as a passenger			
Car Share as a driver			
Car Share as a passenger			
Ride Hailing (Taxi, Uber, Lyft, etc.)			
Transit (bus, SkyTrain, West Coast Express, SeaBus, HandyDart)			
Personal bicycle			
Bike Share (Mobi)			
Walk			
Other			
N/A; No travel at all during this period			

2. What has been your **employment status** during each of the following time periods? Check only one for each time period. If your status is combined of two or more options below, please select the one that you spend most time on.

	a) Before COVID-19: October 2019 to mid-March 2020	b) COVID-19 Phase 1: height of the pandemic (mid-March to May 18th, 2020)	c) COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to July 2020)
Working full-time			
Working part-time			
Self-employed			
Volunteer			
Unemployed			
Looking after home/family			
Retired			
Student full-time			
Student part-time			
Temporary layoff			
Prefer not to answer			

[If retired, volunteer, looking after home/family, unemployed or temporary layoff in all periods, skip to Q15]

3. [If changed occupation status in Q2] Was the change to your occupation COVID-19 related?

1. Yes
2. No
3. Unsure

[If working FT, PT, Self-employed in Q2]: Essential services are those daily services essential to preserving life, health, public safety and basic societal functioning. (Essential Services_Covid-19)

4. Have you worked as an essential service worker during each of the following periods?

	a) Before COVID-19: October 2019 to mid-March 2020	b) COVID-19 Phase 1: height of the pandemic (mid-March to May 18th, 2020)	c) COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to July 2020)
Yes			
No			
Unsure			

5. [If working FT, PT, Self-employed in Q2c] In which industry do you currently work?

- ☐ 1. Accommodation
- ☐ 2. Architecture/Design
- ☐ 3. Arts & Culture
- ☐ 4. Creative Co-Working
- ☐ 5. Digital Entertainment & Interactive
- ☐ 6. Education
- ☐ 7. Entertainment
- ☐ 8. Film & TV
- ☐ 9. Finance
- ☐ 10. Government
- ☐ 11. Health
- ☐ 12. Information & Communication Technology
- ☐ 13. Legal
- ☐ 14. Manufacturing
- ☐ 15. Non-profit
- ☐ 16. Real Estate
- ☐ 17. Restaurant
- ☐ 18. Social Purpose Real Estate
- ☐ 19. Transportation
- ☐ 20. Non-sector specific stakeholder
- ☐ 21. Other sector _____

6. [If working FT, PT, Self-employed in Q2] What is your **usual mode of transportation for trips to or from work**? If you use more than one mode, select the one used for most of the travel distance.

Check only one for each time period.

Mode of transportation	a) Before COVID-19: October 2019 to mid-March 2020	b) COVID-19 Phase 1: height of the pandemic (mid-March to May 18th, 2020)	c) COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to July 2020)
Private Vehicle as a driver			
Private Vehicle as a passenger			
Car Share as a driver			
Car Share as a passenger			
Ride Hailing (Taxi, Uber, Lyft, etc.)			
Transit (bus, SkyTrain, West Coast Express, SeaBus, HandyDart)			
Personal bicycle			
Bike Share (Mobi)			
Walk			
Other			
Worked remotely from home			

7. [If student FT, PT in Q2] What is your **usual mode of transportation for trips to or from school**? If you use more than one mode, select the one used for most of the travel distance. Check only one for each time period.

Mode of transportation	a) Before COVID-19: October 2019 to mid-March 2020	b) COVID-19 Phase 1: height of the pandemic (mid-March to May 18th, 2020)	c) COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to July 2020)
Private Vehicle as a driver			
Private Vehicle as a passenger			
Car Share as a driver			
Car Share as a passenger			
Ride Hailing (Taxi, Uber, Lyft, etc.)			
Transit (bus, SkyTrain, West Coast Express, SeaBus, HandyDart)			
School bus/ other bus			
Personal bicycle			
Bike Share (Mobi)			
Walk			
Other			
Attended school online			
Not Applicable (graduated, not enrolled in school this semester, etc.)			

8. [If working FT, PT, Self-employed in Q2] Have you worked remotely (either part-time or full-time) during each of the following time periods? [if answered "Worked remotely from home for Q6, skip Q8 and go to Q9]

	a) Before COVID-19: October 2019 to mid-March 2020	b) COVID-19 Phase 1: height of the pandemic (mid-March to May 18th, 2020)	c) COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to July 2020)
Yes			
No			

9. [If yes to Q8] How often have you worked remotely during each of the following time periods?

Frequency	a) Before COVID-19: October 2019 to mid-March 2020	b) COVID-19 Phase 1: height of the pandemic (mid-March to May 18th, 2020)	c) COVID-19 Phases 2 & 3: easing of restrictions (May 19th, 2020 to July 2020)
Once a month or less often			
A few days per month			
1-2 days per week			
3-4 days per week			
Full time			

10. [If no to Q8] Why didn't you work remotely?

1. My employer did not allow remote working
2. I cannot perform my job remotely
3. I prefer to work from my place of work
4. Other specify_____

11. Are you interested in working remotely (either part-time or full-time) in the future?

1. Yes
2. No
3. Unsure

12. [If yes to Q11] How regularly would you be interested in working remotely in the future?

1. Once a month or less often
2. 1-2 days per week
3. 3-4 days per week
4. Full-time

13. [If yes to Q11] What are the main reasons you are interested in working remotely in the future? [Select top three]

1. Less time commuting
2. Reduced transportation costs (e.g. gas, parking, transit passes, etc.)
3. Other cost savings (e.g. lunch, coffee, etc.)
4. Increased productivity
5. Schedule flexibility
6. More time to spend with family
7. Ability to work from any location
8. Other [open text]

14. [If yes during COVID phases 1, 2 or 3 in Q8] Has your employer asked you if you are willing to remain working remotely (either part-time or full-time) in the future?

1. Yes
2. No
3. Unsure

15. In general, how has the pandemic affected your transportation usage of the following modes? Choose any that apply to your situation.

	Increased use	Decreased use	The pandemic has not affected my transportation choices at all
Private Vehicle as a driver			
Private Vehicle as a passenger			
Car Share as a driver			
Car Share as a passenger			
Ride Hailing (Taxi, Uber, Lyft, etc.)			
Transit (bus, SkyTrain, West Coast Express, SeaBus, HandyDart)			
Personal bicycle			
Bike Share (Mobi)			
Walk			
Other, please specify			

16. Have you done any of the following because of the pandemic? Select any that apply.

1. Cancelled/reduced your vehicle insurance
2. Sold your motor vehicle
3. Purchased a motor vehicle
4. Purchased a bicycle
5. Purchased transit pass
6. Cancelled transit pass
7. Signed up for a bike share Mobi membership
8. Cancelled bike share membership
9. Signed up for a car share membership
10. Other change due to the pandemic
11. Did not make any change due to the pandemic

CLOSING:
Thank you for completing this survey.

Once we have collected all surveys, a draw to win one of ten prizes of $100 will be conducted and winners will be contacted within 4 to 6 weeks. Good Luck!

(IF A1 = Yes OR Not sure participating in this year's transportation survey)
We thank you for continuing to be a City of Vancouver Transportation Survey Panelist and look forward to your continued participation this year. We will contact you in September so look out for the email invitation then.

In the meantime, below is a link to results from the 2019 City of Vancouver Transportation Panel Survey: [INSERT 2019 REPORT LINK]

Enjoy the rest of the summer!
The COV Transportation Survey Team
You may now close your browser.

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McElhanney

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