

2022 Vancouver Transportation Fall Survey

FINAL REPORT

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Prepared for:



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Executive Summary

This report summarizes the findings and methodology of the tenth Panel Survey conducted by the City of Vancouver (the City) in 2022. The Vancouver Transportation Panel Survey is the annual data collection program that seeks real-world trip-generation and travel pattern data of residents throughout the city. This survey will help the City understand travel behaviour and preferences and will help guide and inform transportation investments. The Panel survey is intended to track trip rates, mode shares, vehicle kilometres travelled and other key metrics that will help policy makers, programmers, and researchers assess the impact of transportation initiatives and plan for future investments.

The methodology of the 2022 Vancouver Transportation Survey (VTS) was retained from 2021. The core survey questions tracking key transportation indicators have remained largely unchanged compared to previous cycles of the VTS, with a few refinements in 2022. Specifically, the 2022 survey was revised to include new questions related to the travel behaviours of school-aged children (4-12 years old). Changes were also made to include questions about telecommuting behaviour to better understand how telecommuting patterns have changed in the past three years, and whether incentive programs at the workplace or school impacted a person's mode choice.

An address-based sampling approach was used to randomly select new participants from across the City, who were invited to participate via an invitation letter. Those with a corresponding phone number were also contacted by phone. Existing survey panel members were invited to participate this year via email invitation and/or follow-up phone call. A small number of supplementary surveys to obtain a better representation of younger demographics were also collected by way of asking participants to invite other members of their household under the age of 25 years old to participate.

In 2022, social media advertisements were used to recruit 104 younger individuals under the age of 30. Several content pieces were developed using images and videos aimed at engaging the target audience. The ads were run online via the tools in Meta Business Suite.

This executive summary highlights and summarizes some of the key takeaways of the 2022 survey report.

The overall daily trip rate increased slightly from 2.8 trips per person in 2021 to 2.9 trips per person in 2022, accounting for an additional 63,000 daily trips in 2022 compared to 2021. This is down from an average of 3.7 trips per person in 2019 prior to the onset of the COVID-19 global pandemic. **Figure E1** shows the daily trips broken down by mode share made by the residents of the city between 2013 and 2022. Auto trips (driver and passenger combined) account for 49% of all daily trips, which is a decrease from 2021 (57%) and is similar to 2019 patterns (46%). All transit, walk and bicycle mode shares have increased by small amounts. Transit has increased to 16% in 2022 compared to 13% in 2021, walk has increased to 28% in 2022 compared to 26% in 2021 and bicycle has increased to 7% in 2022 compared to 4% in 2021.

In 2022, the quantity of all trips, for all mode shares, has increased slightly by 4% above 2021 levels and is still 18% below 2019 levels; and the mode shares are relatively similar to 2019 mode shares. This likely indicates that Vancouverites have reduced trips compared with pre-pandemic levels regardless of which mode they use for travel.

Figure E1. Trip Mode Share and Daily Volume by Year

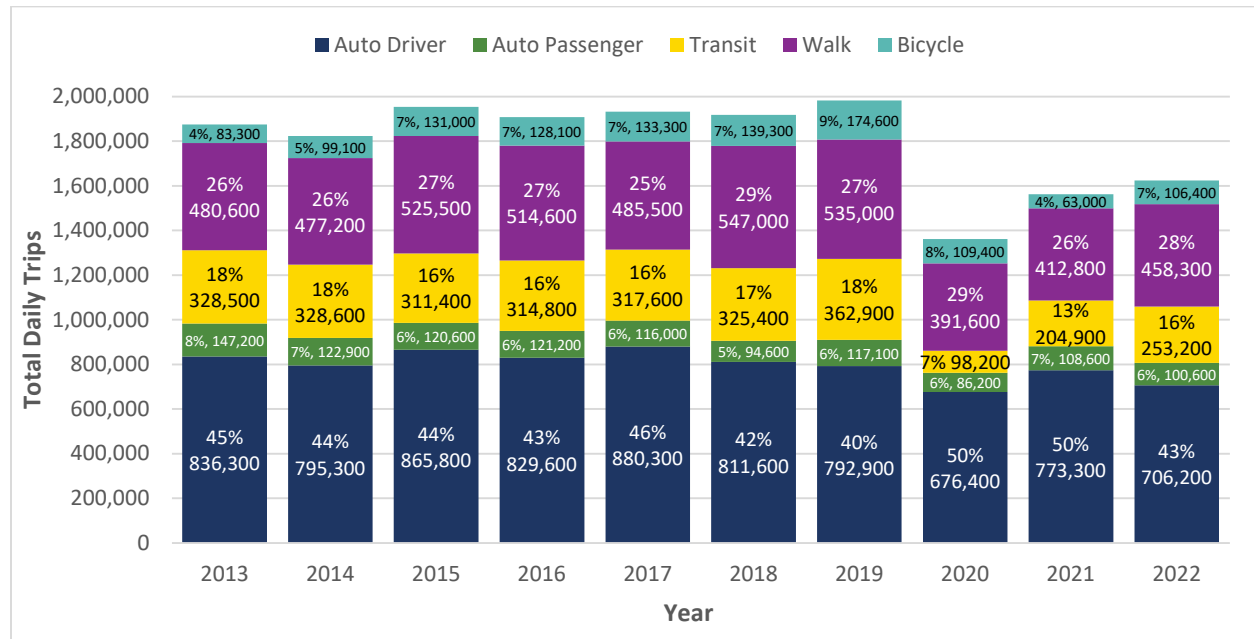


Figure E2 provides a bar chart of sustainable transportation mode by zone to help measure the City’s sustainable mode share goal and to highlight the variation across zones. CBD West End is the only zone exceeding this target and CBD False Creek is nearly meeting it. Other zones are not yet meeting the target.

Figure E2. Sustainable Mode Share by Zone

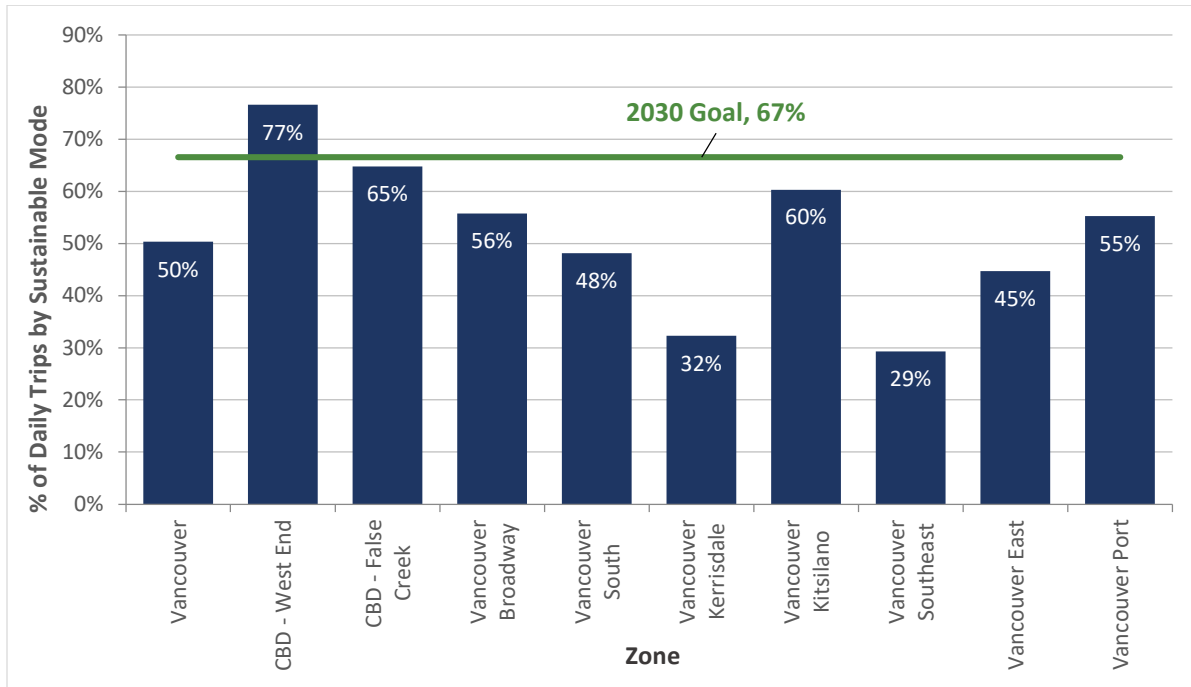
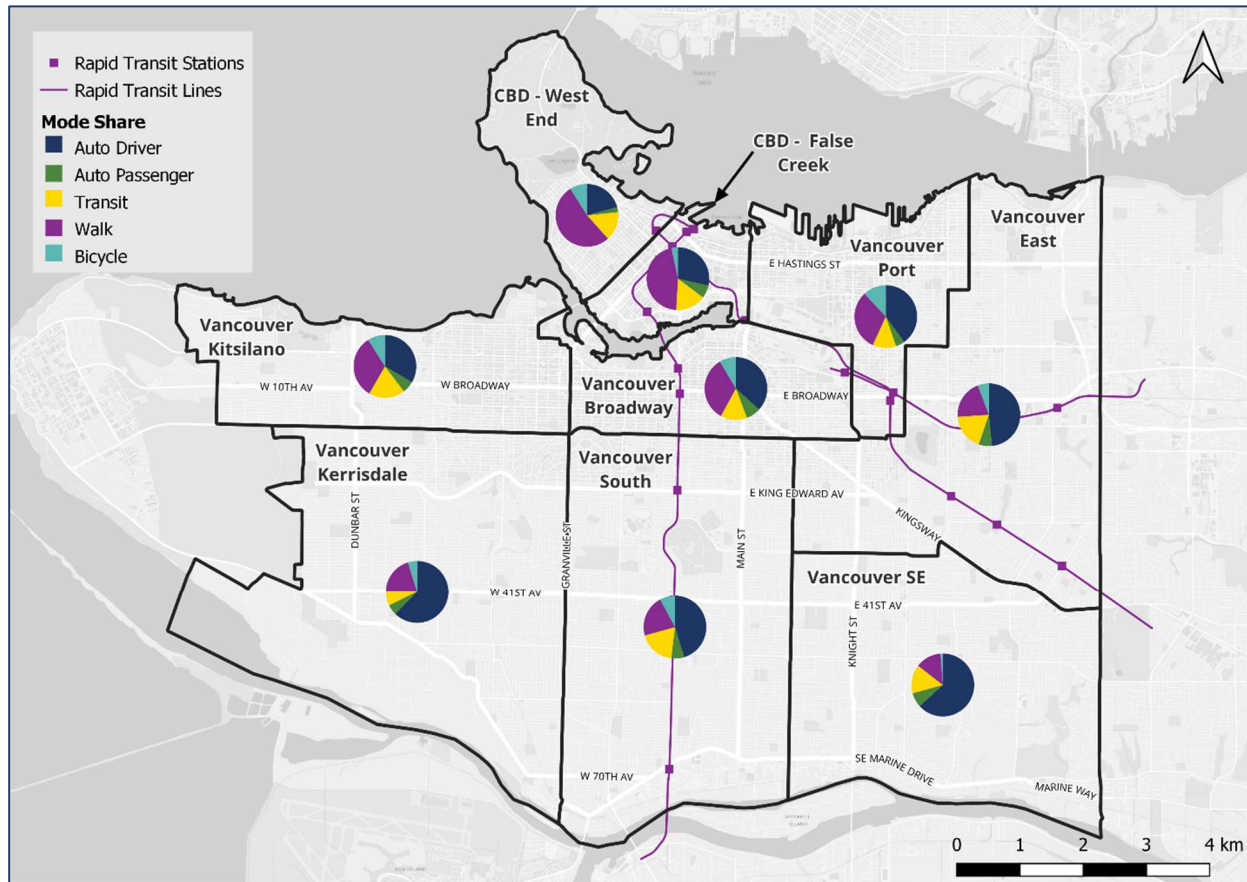


Figure E3 provides a map showing the significant variation in the mode share by zone. Same as 2021, the zones with a high population density, high transit access, young age demography, and close proximity to employment have the highest sustainable mode share. On the other hand, the zones with low population density and no access to transit services have higher dependency on the auto mode for transportation.

Figure E3. Map of Mode Share by Zone



Estimates of annual Vehicle Kilometers Travelled (VKT) per vehicle, derived from survey participants' odometer readings, suggest no significant change from 2021 to 2022 from 8,800 km per vehicle, with the total annual VKT for the entire fleet of passenger vehicles estimated at 2.85 billion km which is 8% more than in 2021. On a per capita basis, the average VKT per person is about 3,930 km, which is 3% more than 2021.

Other interesting results from the survey are as follows:

- Residents of Vancouver own an average of 1.26 adult bicycles per household. While 8% of bicycles are e-bikes, survey data on daily weekday trips suggest that 18% of bicycle trips are made with e-bikes.
- 10% of Vancouver residents are members of a bike share service.
- 34% of Vancouver residents are members of a car share service.
- Electric vehicles account for 5% of all vehicles while 27% of residents have access to electric vehicle charging at home or close to home.

Figure E4 highlights commuting and telecommuting patterns reported in the week previous to survey participation. These figures are for workers with a usual workplace outside the home that they sometimes or regularly commute to and excludes workers who work exclusively from home and those

with no fixed workplace address. Averaged across all weekdays, 60% of total workers commute to work and 24% telecommute rather than travelling to work, with the other 16% not working on the given day. For part-time workers, just over half of those surveyed work on an average weekday, with 42% travelling to work and only 11% telecommuting. Telecommuting is less of an option for part-time workers with a usual workplace outside the home, which may be, in part, due to the nature of some part-time jobs. In total, 86% of workers commuted and 45% of workers telecommuted at least one weekday.

Figure E4. Commute and Telecommute Patterns by Work Type for Workers with Usual Workplace Outside the Home

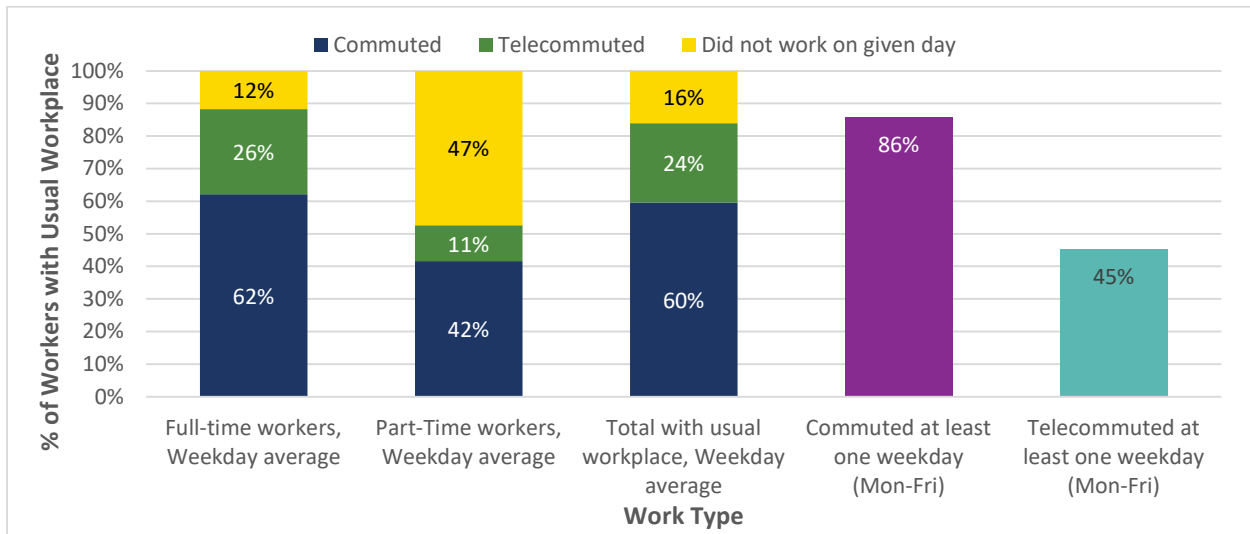


Figure E5 shows the change in telecommuting patterns between 2019 and 2022. There was a substantial increase in telecommuting between 2019 and 2022, likely in part due to evolving trends in work arrangements that were accelerated by disruptions associated with the COVID-19 pandemic. Among workers with a usual workplace, 45% reported an increase in telecommuting compared to 2019. This includes 12% who started telecommuting for the first time and 33% who reported telecommuting more frequently now compared to 2019.

Survey participants were also asked to indicate if they expect their telecommuting patterns to change in the future. About one-in-ten (11%) of participants reported that they expect to telecommute more often; of these participants, 5% of workers with a usual workplace expecting to start telecommuting for the first time and 6% expecting to telecommute more frequently (whether due to employer changes in policy, increased privileges with longer tenure in new jobs, position changes, or other reasons).

Figure E5. Telecommuting Patterns, Including Trend Analysis (Examining Changes since 2019 and Expected Changes in Future)

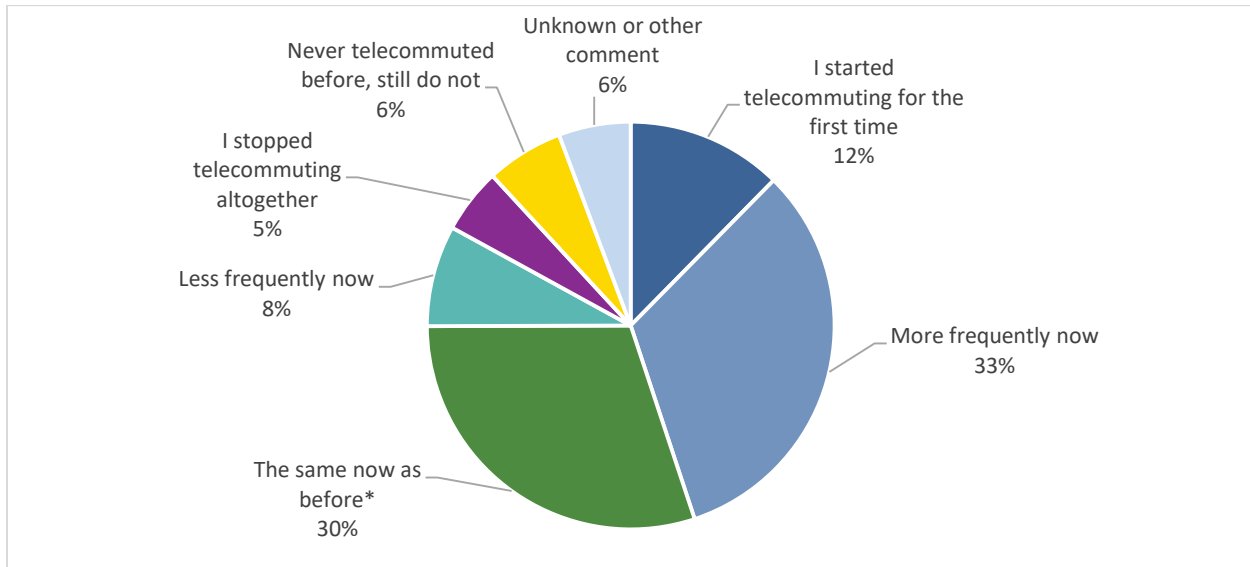


Figure E6 summarizes children’s usual mode of travel for school commutes (for children 12 years old and younger). Survey participants (i.e., parents) reported that their children most often commute to school by walking (39%) or as auto passengers (36%). Overall, 64% of children use sustainable transportation modes to travel to school. In addition to walking, 17% reported their children commute to school by transit and 8% reported that their children bike or use e-mobility devices to commute school. Participants who reported that their children commute to school as auto passengers were also asked to indicate the reason(s) why their usual mode is auto. The most commonly reported reason was that the school is too far away to walk or bike (46%), followed by not having the time to walk or cycle with their children when taking them to school (42%), and the lack of school buses (39%). About one-quarter (22%) of participants highlighted safety concerns as the reason their children commute to school as auto passengers.

Figure E6. Children’s Commutes to School

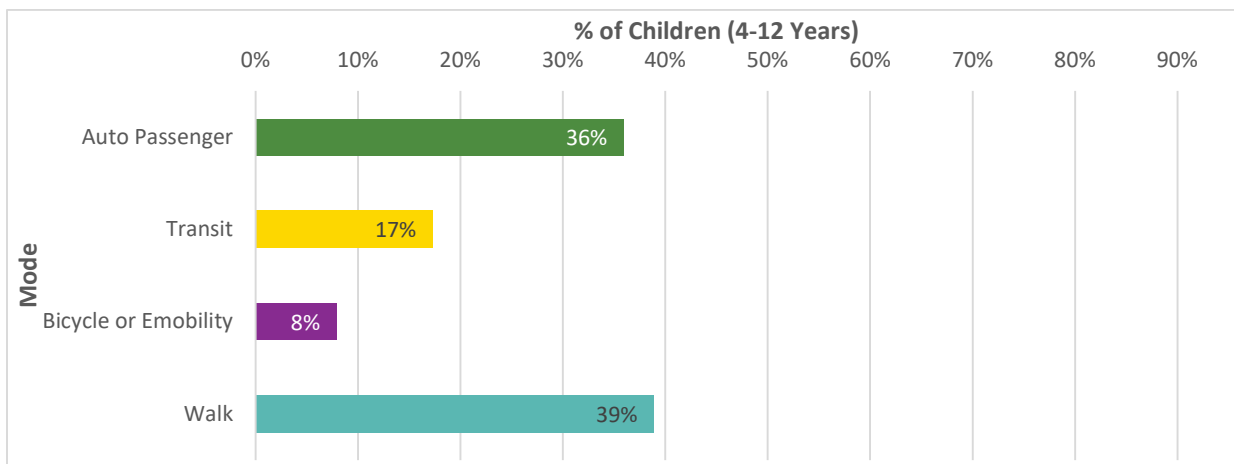


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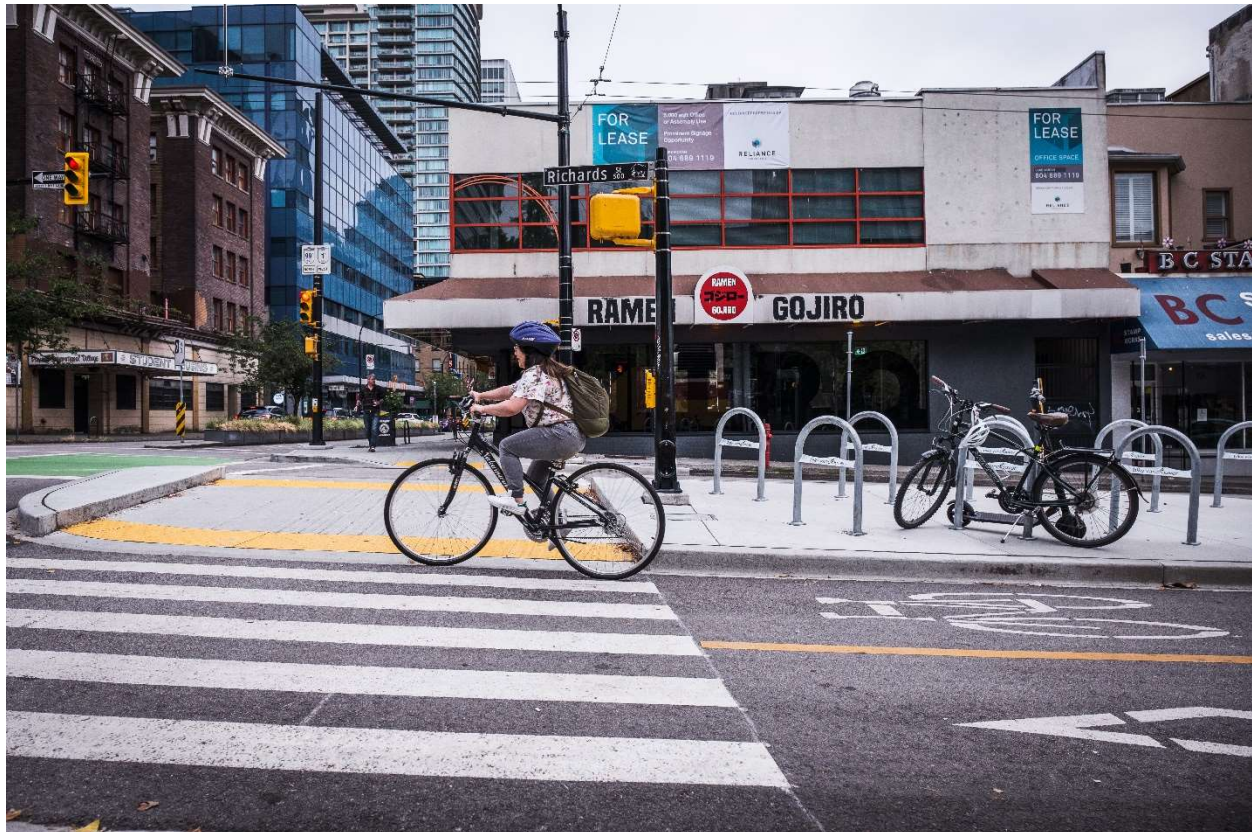
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1 Introduction

1.1 Project Overview

1.1.1 Background and Objectives

The Vancouver Transportation Survey (VTS) is an annual survey of residents of the City of Vancouver (the City) that identifies and tracks trends in sustainable transportation. The City has a number of policies and long-term initiatives that work towards an overarching vision of a more sustainable and integrated transportation system that impacts and shapes the future of how people live and move around. The Greenest City 2020 Action Plan, Transportation 2040, and Climate Emergency Action Plan will help the City make progress toward their long-term goals, including that by 2030 the City aims to reduce overall carbon pollution by 50% and have two-thirds of all trips in Vancouver made via sustainable mode (i.e., walking, biking, transit).



The VTS is intended to track trip rates, mode shares, vehicle kilometres travelled, and other key metrics that will help the City assess the impact of transportation initiatives and plan for future investments. The 2022 VTS survey was the tenth wave of this survey.

1.1.2 COVID-19 Context

The 2022 survey responses were impacted by the ongoing COVID-19 global pandemic. At the time of the survey, most isolation restrictions had been lifted and we can expect that people's travel habits and

usual behaviour have started to develop a “new normal”. This survey provides an opportunity to compare pre-pandemic travel patterns with new and emerging trends, like hybrid work-from-home and in-office models that impact travel habits and related behaviour. The early years of the pandemic had significant impacts on people’s travel habits and usual behaviour, as many people were limiting outings, working-from-home, and making different decisions regarding transportation modes, such as avoiding public transit. The 2020 travel cycle of the survey collected information that illustrated a drop in daily trip rates, shifts in mode shares and trip purposes, and decreased annual Vehicle Kilometers Travelled (VKT) as a result of widespread restrictions as well as changes in human activity brought about by the pandemic and prior to the rollout of COVID-19 vaccines. In 2021, a slight rebound, or increase, in daily trip rates was observed, but overall, still lower than pre-2020 trip rates. Of particular note is the impact of COVID-19 on transit both in terms of ridership and service levels. System-wide boardings were at about 71% of pre-pandemic levels in September 2022.¹

1.1.3 Design and Administration of the 2022 Vancouver Transportation Survey

The 2022 VTS was conducted between October 5, 2022, and December 9, 2022, with residents of the City of Vancouver. The survey was open to residents 18 years of age or older. The survey was a voluntary 24-hour recall travel survey that captured residents’ household characteristics, demographics, and trips undertaken by the survey participant on the most recent previous weekday. The questionnaire also included some



attitudinal questions and reporting of usual transportation-related habits. The core survey questions tracking key transportation indicators have remained largely unchanged compared to previous cycles of the VTS, with a few refinements in 2022. Specifically, the 2022 survey was revised to include new questions related to the travel behaviours of school-aged children (4-12 years old). Changes were also made to include questions about telecommuting behaviour to better understand how telecommuting patterns have changed in the past three years, and whether incentive programs at the workplace or school impacted a person’s mode choice. The survey questionnaire can be found in Appendix A: Survey Instrument of this report.

Survey participants could complete the survey online or over the telephone. Survey completion targets were set for each of the City’s nine transportation planning zones in order to ensure a geographically representative sample and, in each region, sub-targets were set for existing survey panel members (participants from previous survey cycles) and new recruits. An address-based sampling approach was

¹ TransLink ridership data (<https://www.translink.ca/plans-and-projects/data-and-information/accountability-centre/ridership#boardings-and-journeys>, last accessed May 08, 2022)

used to randomly select new participants from across the City, who were invited to participate via an invitation letter (included in Appendix B: Survey Invitations of this report). Those with a corresponding phone number were also contacted by phone. Existing survey panel members were invited to participate this year via email invitation and/or follow-up phone call. A small number of supplementary surveys (to obtain better representation of younger demographics) were also collected by way of asking participants to invite other members of their household under the age of 25 years old to participate, with 27 such surveys obtained. In 2022, social media advertisements were also used to recruit 104 younger individuals under the age of 30. Several content pieces were developed using images and videos aimed at engaging the target audience. The ads were run online from November 24 to 26, 2022, via the tools in Meta Business Suite (which allows the display of digital advertisements on Facebook, Instagram, Messenger and Facebook/Instagram stories). Organic posts (i.e., not paid ads) featuring the ad images and videos were also posted to Malatest's Facebook and Twitter pages.

Over 90% of the surveys were completed between October 2 and November 14, 2021, with the survey kept open until December 9, 2022, to target a few sampling zones with low response rates. The 2022 VTS gathered information from a total of 3,382 Vancouver residents after data validation, extensive trip logic checks, and rejection of surveys with data issues (with 2,414 surveys with previous panel participants and 968 being with new recruits to the survey). The survey captured 9,995 trips made by survey participants on a prior weekday.

The survey data set was weighted to compensate for non-response bias and expanded to represent the target population. Weighting controls for household-level information included dwelling counts, dwelling type, and household size for nine geographic expansion zones. Weighting controls for person- and trip-level information included population counts by dwelling type and population counts by age and gender for the same data expansion zones. The expansion was based on Census 2021 population data.

When weighted and expanded, the survey data represent approximately 569,180 adult residents from 310,190 private households in the study area, for a sampling rate of 1.1% of households or 0.6% of the population 18+ years of age living in private residences. The trip data captured by the survey provides a snapshot of the 24-hour travel patterns of residents of the study area over the course of a typical fall weekday. The weighted and expanded trip records represent an estimated total of 1,624,830 trips made each day by residents 18+ years of age.

2 Analysis of the Survey Results

The survey results are analysed for the City of Vancouver as a whole, and for nine transportation planning zones. Overall, the survey results are subject to a margin of sampling error of $\pm 2.5\%$ at a 95% confidence level, taking into account the effects of data weighting. The margins of sampling error may be considered reasonable for reporting survey results for the City and by zone (with the understanding that the zone-level samples are smaller and subject to a higher sampling error). That is, the weighted survey data should be an accurate enough reflection of the population from which the survey sample was drawn that the survey results will provide a good understanding of the population's characteristics and travel habits and will allow us to identify differences in travel patterns between zones. It should be noted that the expanded survey counts are estimates and not exact counts, and the weighted survey results may differ somewhat from the true results for the total population (if it could be known). The survey results could also differ from the results of another random sample of the population or if travel was captured on a different day of the week for the same survey participants. In addition, sampling error is not the only possible source of error. There may be errors or biases in the data that could not be corrected in the data processing or data weighting, although every attempt has been made to reduce other sources of error (e.g., sample frame under-coverage, participant reporting error, data handling, etc.).

True trends should become apparent in the survey measurements over time despite the 'noise' from cycle-to-cycle variations due to sampling errors, minor methodological differences, or other sources of error. Given that this is the tenth cycle of VTS, we can expect that the meaningful differences in the results from year-to-year signal actual changes in the population and/or their travel patterns.²

2.1.1 Transportation Modes

To provide an overview of trends in transportation mode shares, this report usually breaks out modes by five broad groups: Auto Driver, Auto Passenger, Transit, Walk, and Bicycle. Within these mode groups, a number of specific modes are often used. They are organized as outlined below. Micromobility and e-micromobility devices are grouped with bicycles because of commonalities in terms of range, usage, portability, and technology. Other modes not classifiable in the groups below, such as intercity bus, airplane, VIA rail, etc., are excluded from the analysis (with very few such modes reported). See **Figure 1** for a detailed breakdown of the classification of modes.

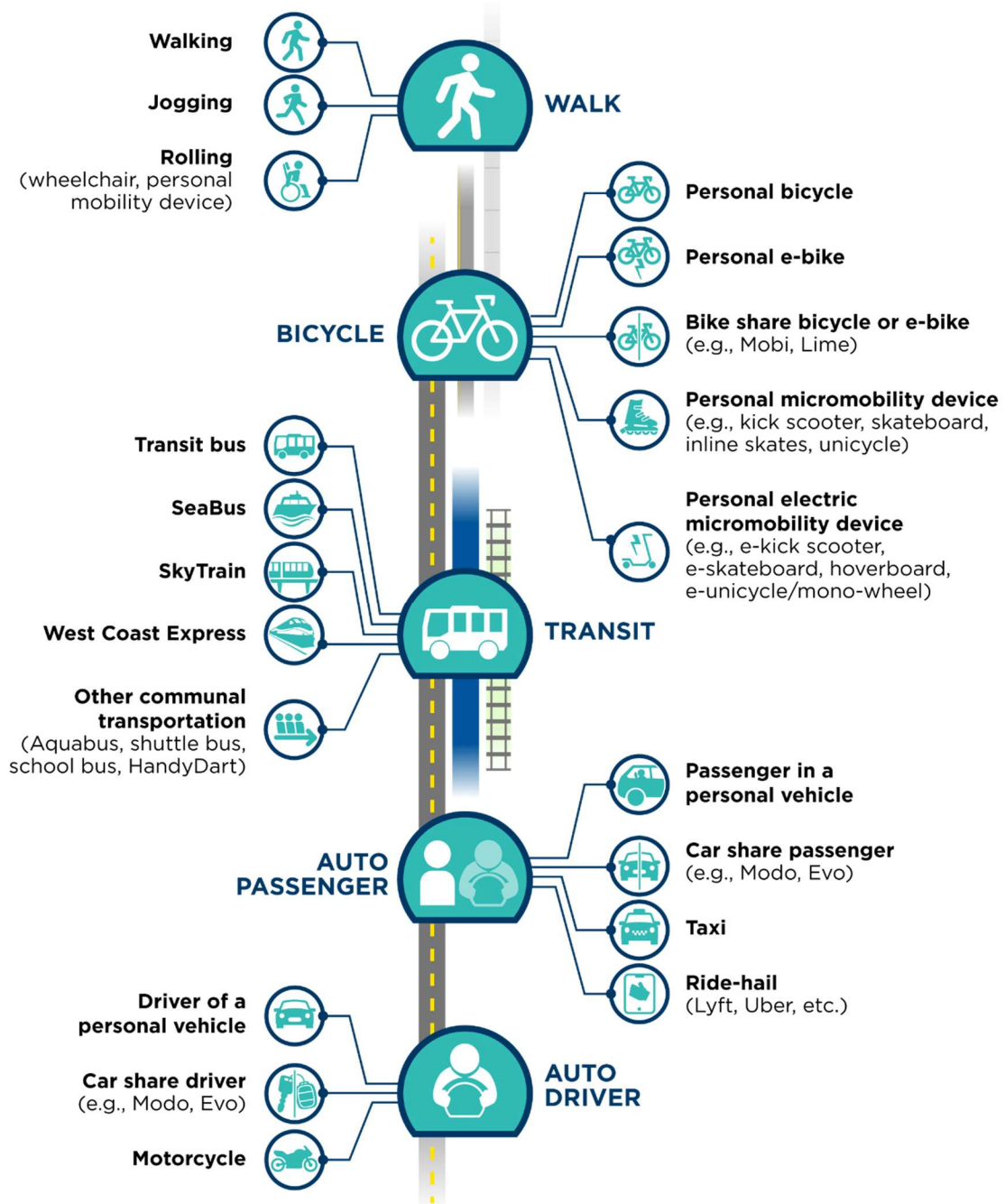
² 19 times out of 20, for a given survey question, the survey response percentage should be somewhere within the margin of error of the survey results. The margin of error has been corrected to take into account the increase in error associated with data weighting to correct for over-/under-sampling and/or non-response bias. The formula for margin of error is

$$E = \pm z \sqrt{\frac{\bar{p}(1 - \bar{p})}{n}} \times \sqrt{\frac{N - n}{N - 1}} \times \sqrt{deff},$$

where N is the size of the sample universe, n is the size of the survey

sample, p is the proportion being assessed (in this case $p=0.50$ to obtain the maximum sample error), $z=1.96$, the z-score associated with a 95% confidence level, and $deff$ is the design effect associated with the weighting of the sample (with $deff$ computed as the sample size times the sum of the squares of the weights divided by the square of the sum of the weights).

Figure 1. Classification of Survey Modes for Analysis³



³ The grouping of modes is generally consistent with treatments in previous cycles (e.g., motorcycle grouped with Auto Driver; taxi and ride-hail grouped with Auto Passenger; micromobility grouped with Bicycle), with one exception: as of the 2021 survey, communal transportation modes such as Aquabus, school bus, and Handy Dart are now grouped with Transit, but in previous surveys these modes were excluded from analysis. As the number of trips reported by such modes was very few, this in itself should not affect the comparability of results. However, it may also be noted that in 2021 and 2022, 'other, specify' responses that corresponded to codes already on the list of modes were recoded to the list of modes as appropriate, whereas treatment of 'others, specify' responses may not have been the same in 2020 or earlier surveys.

2.2 Report Organization

The remainder of this report is organized into the following sections:

Section 1: Introduction

Section 2: Analysis of the Survey Results

Section 3: Survey Geography

Section 4: Participant Characteristics

Section 5: Access to Transportation

Section 6: Daily Trip Characteristics

Section 7: Travel Patterns

Section 8: Factors Contributing to Changes in Trip Demand

2.3 Interpreting the Survey Results

Readers should keep the following in mind when interpreting the survey results presented in this report:

- The survey results are based on a 0.6% sample of the population of the City of Vancouver. **All figures should be understood to be estimates.**
- **Expanded household, person, and trip counts presented in this report have been rounded to the closest 10** but the actual margin of error is usually considerably greater than units of 10.
- **Figures presented for individual categories may not always sum to exactly the reported total across those categories due to rounding.**
- Survey response proportions have either been rounded to the nearest percent or one-tenth of a percent. **Individual percentages may not always add to exactly 100% or 100.0% due to rounding.**

3 Survey Geography

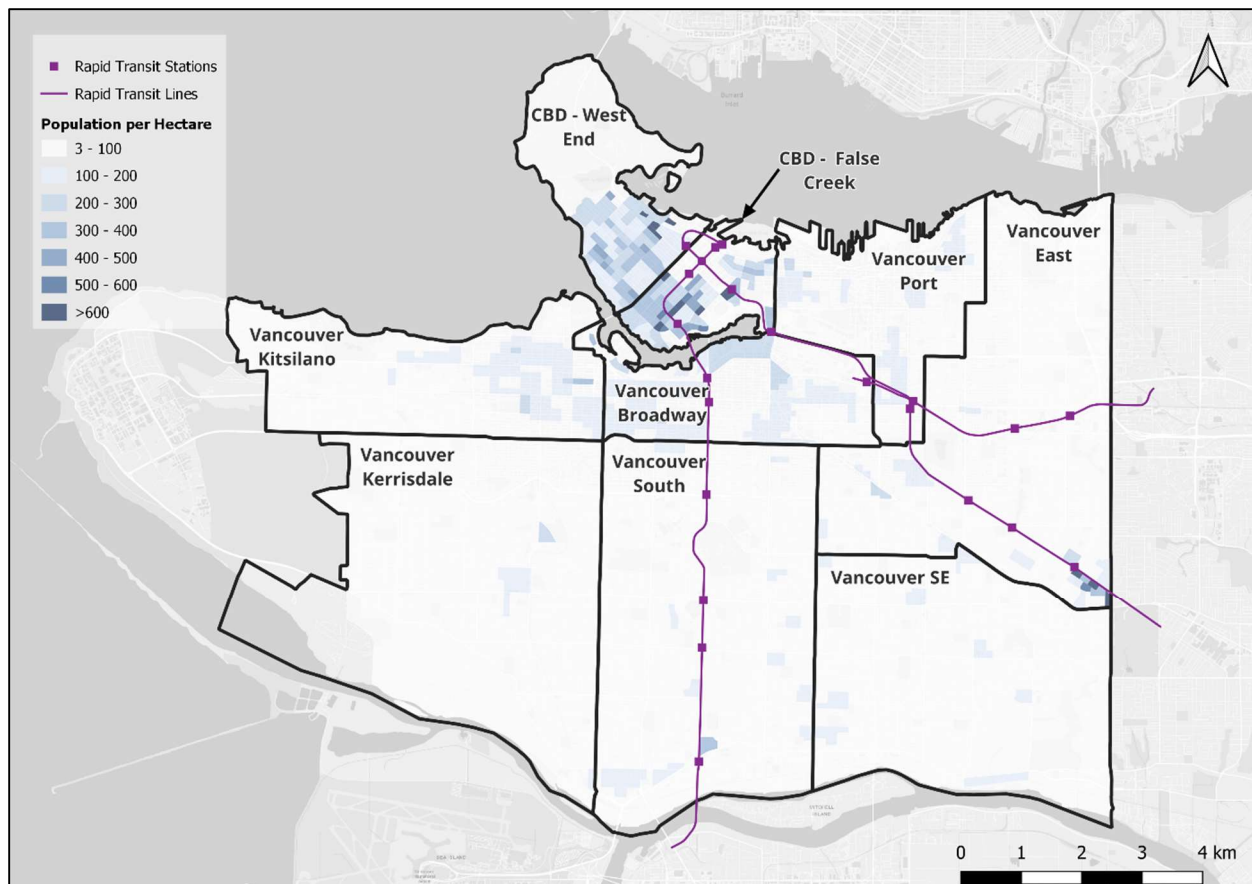
3.1 Survey Scope

The 2022 Vancouver Transportation Survey study area is the City of Vancouver, situated on the unceded traditional territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səliłwətał (Tsleil-Waututh) Nations.

The study area is presented in **Figure 2** below, shown with the nine transportation planning zones used for analysis. The map shows population density, SkyTrain routes and stations, and major roads. This map has been added because of the influence population density has on mode share as well as other factors such as location of employment, infrastructure provided, as well as participant characteristics. The higher density areas are in the Central Business District (CBD) and surrounding areas which, as discussed later in the report, is where the highest sustainable transportation mode shares occur.

For the purposes of defining trips external to the study area, a wider geographical ‘travel area’ was developed that includes the rest of the Lower Mainland. Locations captured by the survey within the City of Vancouver were geocoded to the nine zones within the city, while locations external to the city were geocoded to TransLink’s transportation model subregions, aggregated as appropriate for analysis of external work locations and trip destinations.

Figure 2. Map of Study Area with Population Density by Dissemination Area (Population per Hectare)



3.2 Survey Geographies

Table 1 provides information on the population represented by the survey results in each of transportation planning zones.

*Table 1. Zones with Estimated 2022 Population represented by the survey*⁴

District	Land area (sq km)	Total private dwellings	Total Population	Private Dwellings Occupied by Usual Residents (Households)	Population 18+ Years of Age in Private Dwellings	2022 VTS Survey Completions
CBD - West End	6.50	39,300	57,300	35,800	52,900	330
CBD - False Creek	3.34	37,900	60,200	34,500	53,300	279
Vancouver Broadway	7.16	38,900	65,400	36,500	56,700	366
Vancouver South	21.32	42,100	96,400	39,300	79,100	492
Vancouver Kerrisdale	22.19	26,300	62,600	24,600	50,900	278
Vancouver Kitsilano	10.85	36,700	66,900	34,300	57,500	365
Vancouver Southeast	17.58	39,700	103,000	37,200	84,300	463
Vancouver East	20.10	48,600	117,500	45,500	96,800	583
Vancouver Port	8.08	24,100	44,800	22,600	37,600	226
Vancouver Total	117.12	333,500	674,100	310,200	569,200	3,382

Note: All expanded population estimates are rounded to the closest 100 to avoid implying a higher level of precision than is actually present in the expanded survey sample. Individual cells may not always add to the row or column totals due to rounding.

⁴ 2021 Census data scaled up for 2022 population forecasts growth factors from BC Stats by Local Health Area within Vancouver.

4 Participant Characteristics

This section describes the characteristics of residents of the City of Vancouver and their households, as captured by the survey, including age, gender, household income, lifestyle/level of physical activity, occupation, bike access, and vehicle access characteristics. The purpose of capturing these characteristics is to better understand travellers' needs, challenges, and patterns. The results are based on the survey sample with selected information from the 2021 census.

4.1 Age and Gender Distribution Using Census Data

Table 2 provides a comparison of the Census distributions against the weighted and expanded survey data, using total population of all ages as the base for percentages for comparability. The survey data slightly under-represents male residents 18-24 years of age and slightly over-represents males 25 to 34 years of age, due to collapsing of certain age categories in certain zones with smaller sample sizes and limits placed on extreme weights. Overall, however, the weighted survey frame is a good match in terms of the actual population of the studied region. A picture of the age distribution for the complete population is presented in **Figure 3**. Of particular interest is the large proportion of the Vancouver population between the ages of 25 and 34 (totalling 21.1%, compared to 15.8% for 35-44 and 13.5% for 45-54), reflecting the City's status as a locus of employment and attractor of younger people.

Table 2. City of Vancouver Population Distribution vs. Survey Age and Gender Distributions

Age Range	Census		Survey	
	Men	Women	Men	Women
0-17	6.2%	5.7%	not surveyed	not surveyed
18-24	3.6%	3.8%	3.8%	4.2%
25-34	10.4%	10.7%	10.0%	10.5%
35-44	7.9%	7.9%	7.8%	8.1%
45-54	6.5%	7.0%	6.4%	6.9%
55-64	6.4%	6.6%	6.3%	6.7%
65-74	4.7%	5.3%	4.7%	5.3%
75+	3.1%	4.1%	3.0%	3.7%

Figure 3. City of Vancouver Population Distribution by Age and Gender

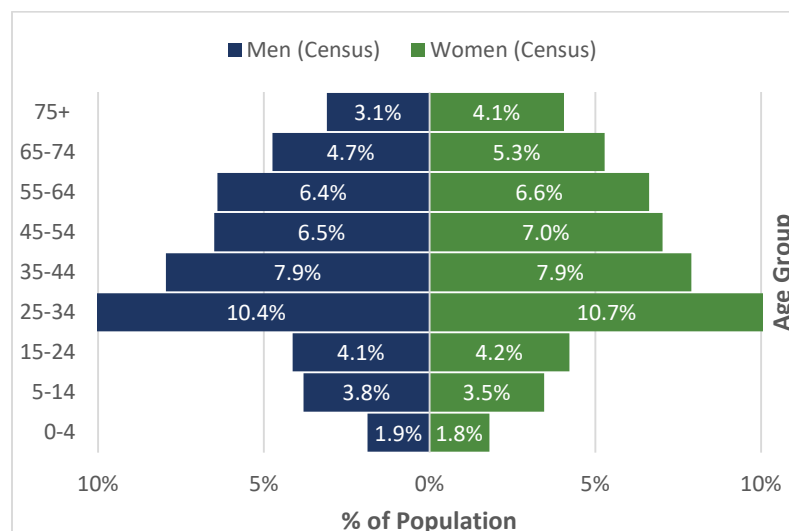


Table 3 illustrates the age distributions of the Vancouver population by zone. Most notable are the higher concentrations of residents ages between 25 and 34 years in the West End and False Creek CBD zones and Vancouver Broadway (between 28% and 30%). Similarly, Vancouver Kitsilano and Vancouver Port have slightly higher than average proportions of residents in this age group (22%-23%). The high proportion of young people in the aforementioned zones could be a contributing factor to the high active and sustainable mode choices observed in these zones, as discussed in **Section 6.3.4** of this report.

Table 3. City of Vancouver Population Distribution by Age by Zone

	Van-couver	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
0-17	12%	6%	7%	10%	14%	15%	11%	14%	14%	12%
18-24	7%	5%	6%	5%	8%	10%	8%	9%	8%	5%
25-34	21%	28%	30%	28%	19%	12%	23%	16%	19%	22%
35-44	16%	20%	20%	20%	14%	10%	15%	13%	15%	19%
45-54	14%	12%	13%	13%	14%	16%	14%	13%	13%	14%
55-64	13%	12%	11%	10%	13%	15%	13%	15%	14%	13%
65-74	10%	10%	8%	9%	10%	12%	11%	11%	10%	10%
75+	7%	6%	4%	6%	8%	10%	7%	8%	8%	6%

4.2 Household Characteristics

The previous section used data from Statistics Canada for all ages. This section and all remaining sections use the results of the Vancouver Transportation Panel Survey for residents 18 years of age or older.

4.2.1 Dwelling Type

Figure 4 shows the distributions of dwelling units by type for the City of Vancouver, while **Figure 5** provides a different perspective, the distribution of the survey target population (adults 18+ years of



age) by dwelling type. Overall, 62% of dwellings are mid-rise to high-rise apartments or condominiums of five or more stories and apartments or condominiums in one to four storey buildings, 31% each. Single-detached houses account for only 15% of dwellings and house 20% of survey participants.

Figure 6 presents this information by zone. The CBD primarily has apartments with the majority having >5 stories (99% for CBD – False Creek and 98% for CBD – West End). Areas surrounding the CBD also have significant numbers of higher-density dwellings with apartments accounting for 90% of dwellings in Vancouver Broadway, 69% in Vancouver Kitsilano and 69% in Vancouver Port. These numbers are significantly lower in the areas further out with significantly more single detached and ground-oriented dwellings. The areas with the least number of apartments are Vancouver Kerrisdale (29%), Vancouver Southeast (26%) and Vancouver East (32%). The weighted survey data closely match the Census distributions. 2021 Census data on household size were not yet released at the time of this analysis.

Figure 4. Dwelling Units by Dwelling Type

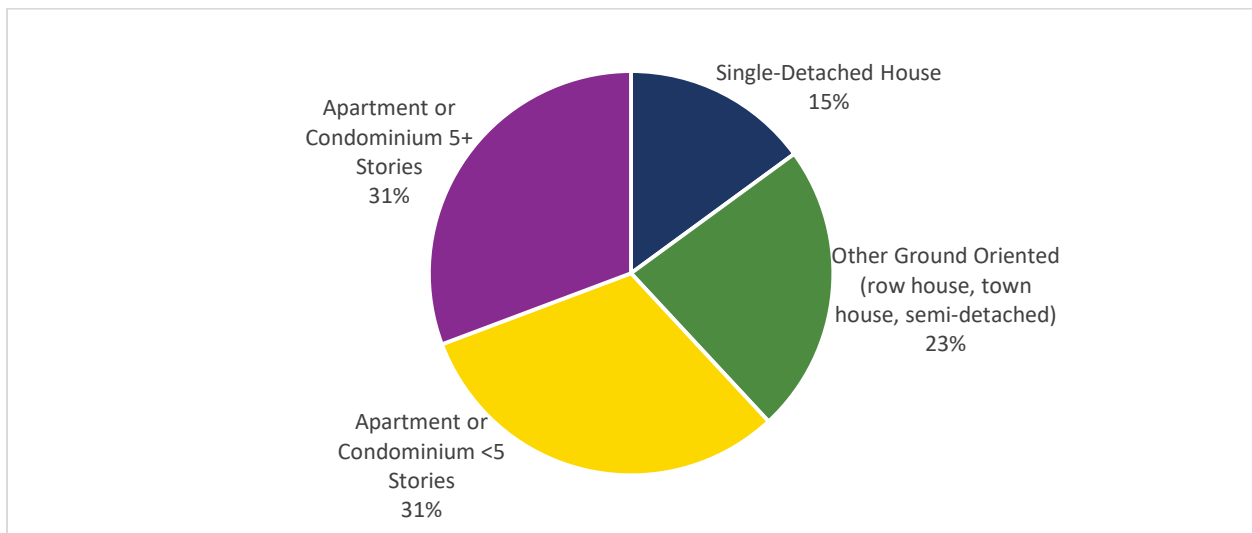


Figure 5. Survey Target Population by Dwelling Type

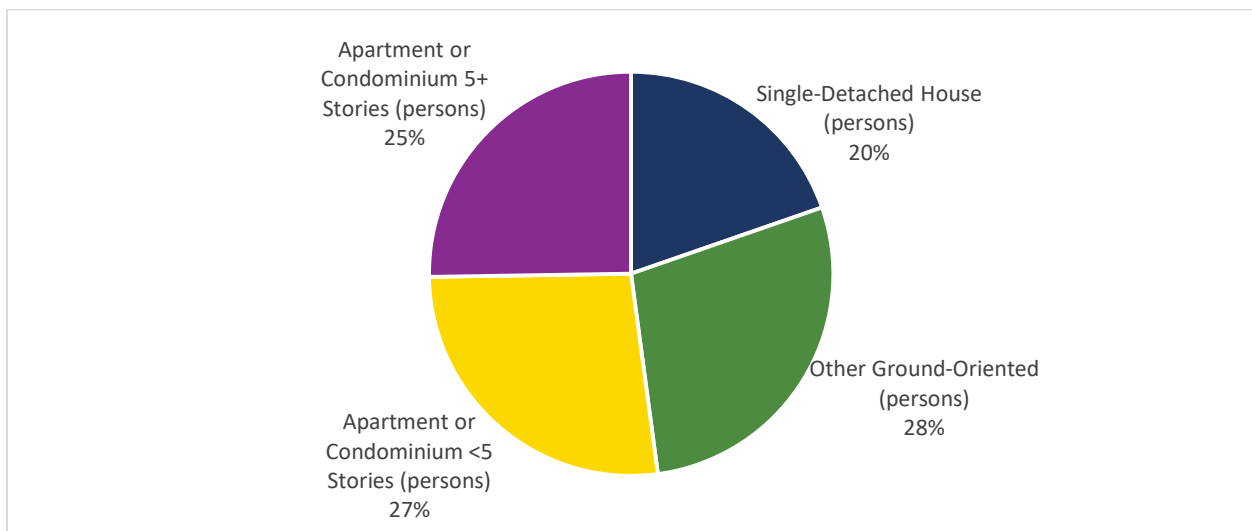
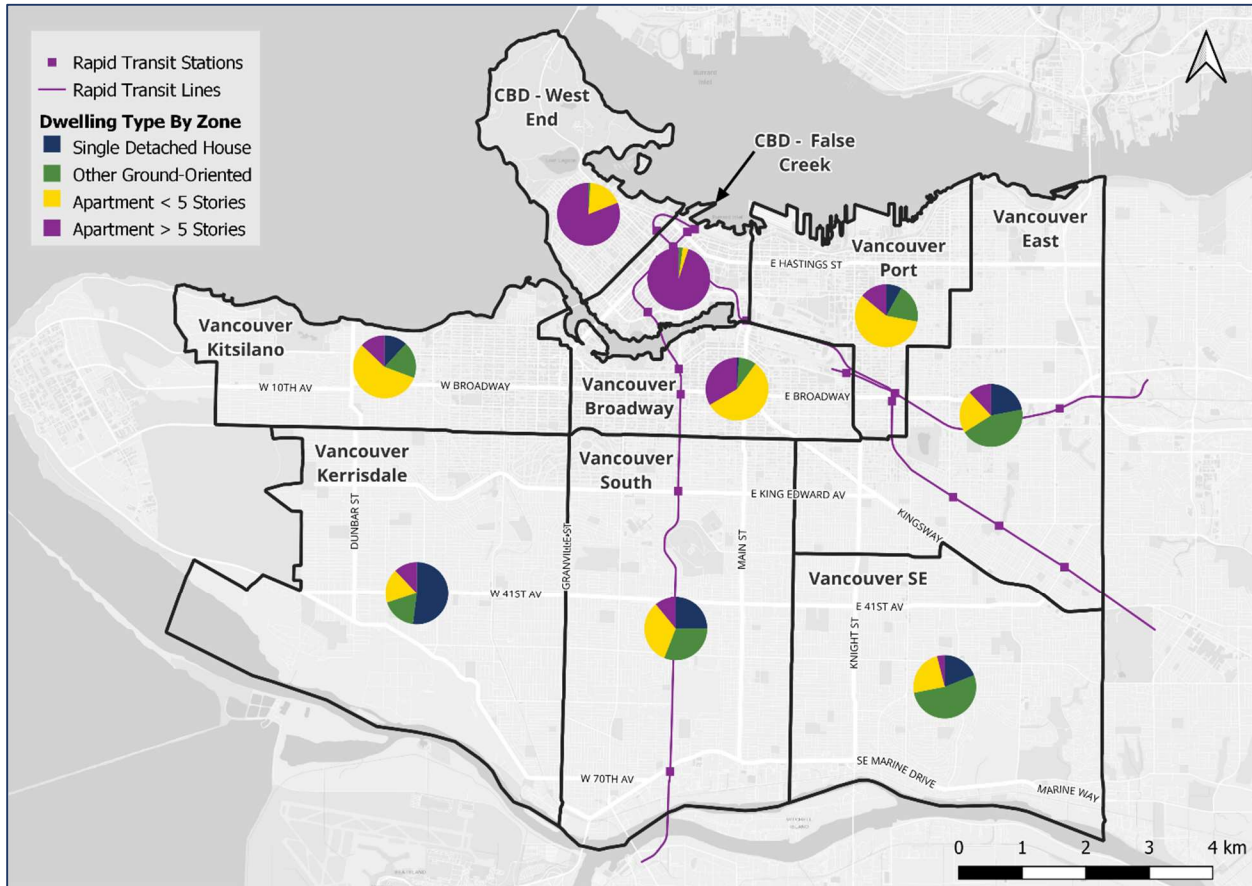


Figure 6. Map of Dwelling Type by Zone



4.2.2 Household Size

Figure 7 and Table 4 show the distribution of household size overall and by zone. About four in ten households in the City are Vancouver are single-person households. Areas with a higher proportion of single-person households, West End, False Creek, Vancouver Broadway, Vancouver Kitsilano, and Vancouver Port (ranging from 43% to 56%), are also those which have above-average proportions of young people and lower automobile ownership. Vancouver South, Vancouver Kerrisdale, Vancouver Southeast, and Vancouver East have higher proportions of larger households (ranging from between 37% to 46% of households having at least three people). The weighted survey data closely matched the 2021 Census distributions.

Figure 7. Household Size

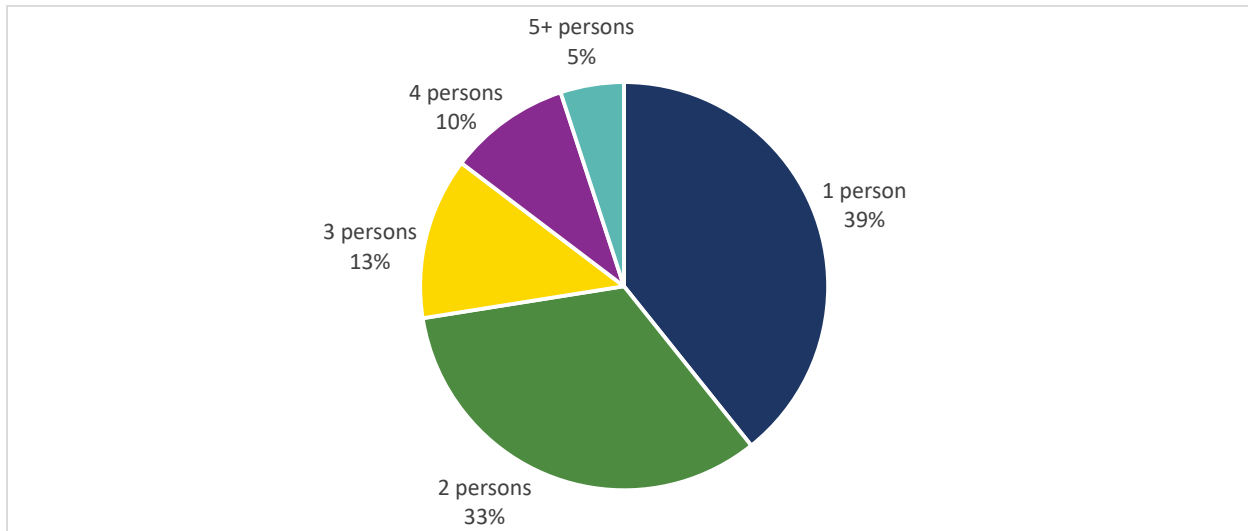


Table 4. Distribution of Households by Household Size, by Zone

	Vancouver	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
Dwellings	310,200	35,700	34,500	36,500	39,300	24,600	34,300	37,200	45,500	22,600
1 person	39%	56%	53%	49%	31%	27%	43%	24%	27%	49%
2 persons	33%	34%	35%	36%	32%	32%	36%	30%	32%	31%
3 persons	13%	7%	8%	9%	16%	17%	11%	19%	18%	10%
4 persons	10%	3%	3%	5%	13%	16%	8%	16%	15%	7%
5+ persons	5%	1%	1%	1%	8%	8%	2%	11%	8%	3%

4.2.3 Household Income

Income is highly correlated to vehicle ownership, mode choice, and daily trip rates. **Figure 8** and **Table 5** show the distribution of survey participants' households by income overall and by zone. As is common with surveys of the general population, households with lower income levels are underrepresented in the survey data. 2021 Census data suggests that 14% of households had an annual income of less than \$25,000 per year, compared to only 7% of survey respondents. Similarly, higher income households are somewhat overrepresented, accounting for 21% of survey respondent households compared to only 13% of Vancouver residents based on 2021 Census data.

Figure 8. Annual Household Income of Survey Participants

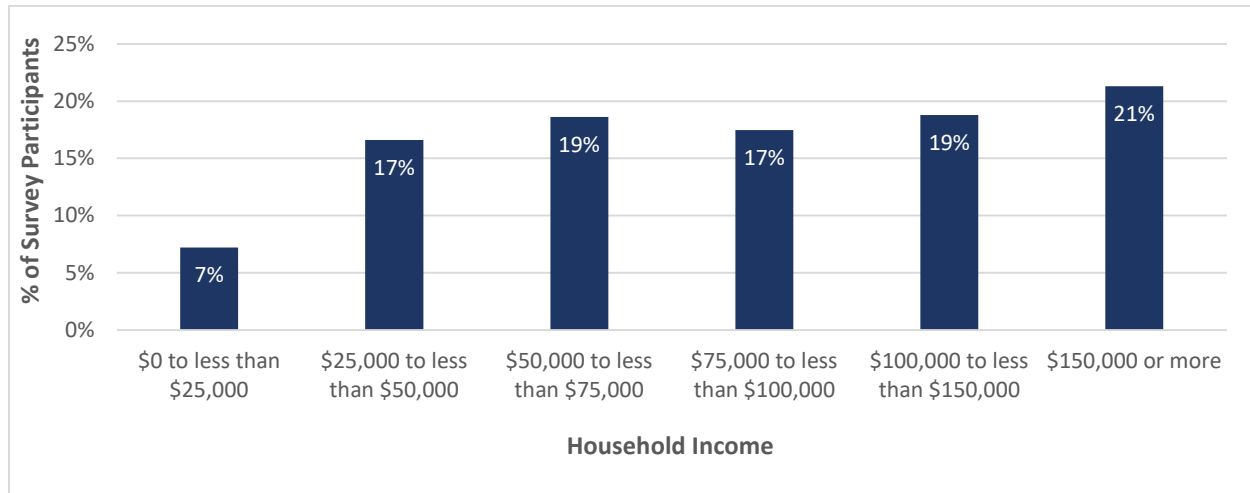


Table 5. Distribution of Households by Annual Household Income, by Zone

	Van-couver	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
\$0 to less than \$25,000	7%	9%	8%	7%	9%	2%	4%	11%	6%	7%
\$25,000 to less than \$50,000	17%	18%	13%	18%	17%	15%	15%	18%	13%	25%
\$50,000 to less than \$75,000	19%	25%	19%	16%	18%	13%	20%	19%	17%	22%
\$75,000 to less than \$100,000	17%	12%	20%	18%	19%	18%	13%	17%	21%	17%
\$100,000 to less than \$150,000	19%	22%	19%	16%	18%	22%	21%	20%	18%	11%
\$150,000 or more	21%	14%	21%	24%	18%	30%	26%	16%	26%	17%

4.3 Equity Demographics

The City has been working towards better incorporating equity into its transportation system including a citywide equity framework, a climate and equity working group and demographic equity analysis, with equity being set out as an important guiding consideration in the City's Climate Emergency Action Plan (CEAP). In 2021, the survey was revised to include new questions related to equity demographics to determine patterns that may help inform the City's initiatives.

It is important to note that race is a social construct with no biological or scientific basis and is often used to establish and justify systemic/societal systems of power, privilege, and oppression. Survey participants were asked how they would classify their own racial identity. For the analysis of the survey responses, based on Census population group categories, non-white respondents may be referred to as visible minorities.

The survey also included questions on when immigrants arrived in Canada, what their family situation is, and their highest level of education. This is in addition to other equity-related demographic questions such as age, gender, household income, and mobility challenges. The analysis of the responses to these survey questions allows for equity-based analysis to be conducted that recognizes that people in different population groups may have different lived experiences, with those experiences extending to their interaction with available transportation options.

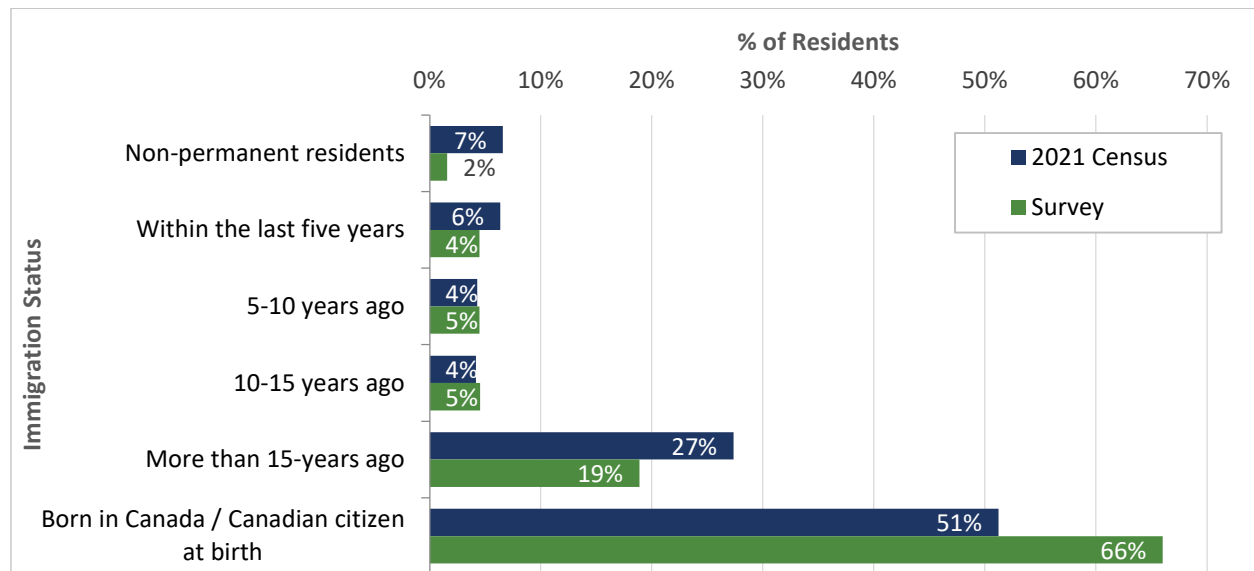
Figure 9 and **Figure 10** on the following pages provide an overview of the year of immigration and racial identity demographics of the 2022 survey participants relative to the 2021 Census statistics for the City of Vancouver. The following observations can be made about the representativeness of the weighted survey data:

- The overall profile of survey participants by year of immigration is similar to that described by the Census data, with some under-representation of non-permanent residents, recent immigrants within the past five years and immigrants who have been in the country more than 15 years, and over-representation of people born in Canada.
- The survey data appears to under-represent people who may be considered to be part of visible minority populations, who in 2021 made up 57% of Vancouver’s population, but only represent 35% of survey participants. East Asians are most under-represented (29% of the population in 2021 and 20% of survey participants) but nevertheless provide a large sample for analysis.

Notwithstanding that the survey data may somewhat over- or under-represent some groups, with implications for possible bias in the survey results due to the non-response of certain groups, the data may still be used to explore whether there are differences in travel patterns for different groups.

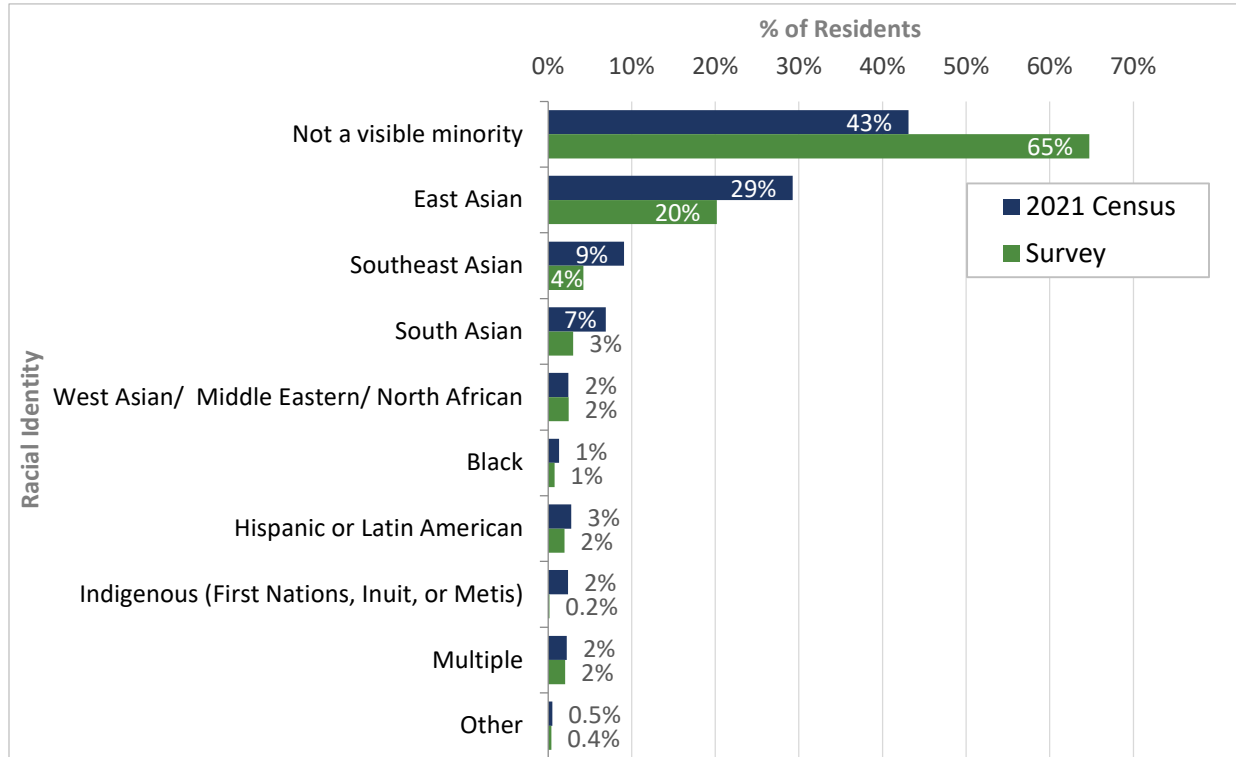
Detailed analysis of these equity variables by geographic zone or in relation to other demographic variables, such as income, are not explored here, however, this report does provide high-level analysis of mode shares for different demographics and household characteristics in **Section 6.3** of this report. It may be of interest for the City to explore these variables further in the context of a deeper analysis of transportation equity as it relates to access to transportation, mode choice, and other travel patterns.

Figure 9. Immigration Status⁵



⁵ Excludes 1.5% of survey respondents who declined to say. Caution should be exercised when making comparison to the Census data, as the Census data include children 0 to 17 years of age, whereas the survey results include only adults 18+ years of age.

Figure 10. Self-reported Racial Identity⁶



4.4 Lifestyle/Level of Physical Activity

Taking into account work, recreation, and activities around the home, survey participants were asked to provide a self-assessment of their level of physical activity. These results are reported in **Figure 11** and show that nearly one-half (49%) of participants indicated a moderately active lifestyle. About one in ten participants indicated a sedentary lifestyle, about one-third reported light physical activity, and a small percentage reported being very active (9%).

When looking at reported level of physical activity by age, **Figure 12**, we see a similar pattern to that observed in 2021. Survey participants between 18 to 24 were least likely to report being moderately or very active (35%) with this percentage increasing with age to 66% amongst those 55 to 64 years old and dropping to 59% for those ages 75 years or more. It is difficult to know the extent to which people of different age groups may interpret the categories somewhat differently, but the results do seem to suggest that nearly two-thirds of younger people do not see themselves as very active.

⁶ Excludes 4% of survey respondents who declined to say. Caution should be exercised when making comparison to the Census data, as the Census data include 0- to 17-year-olds, whereas the survey data only include participants 18+ years of age.

Figure 11. Level of Physical Activity

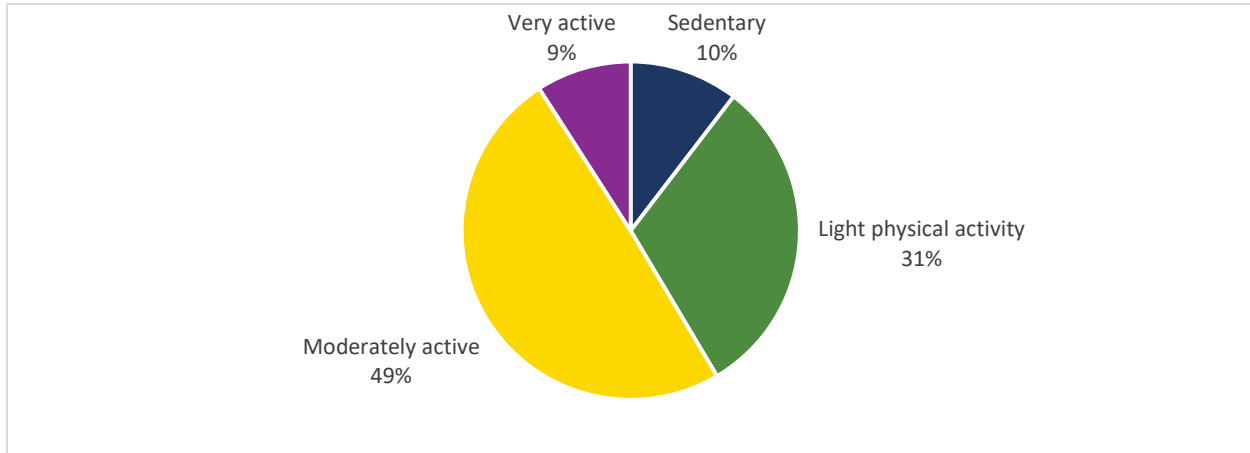
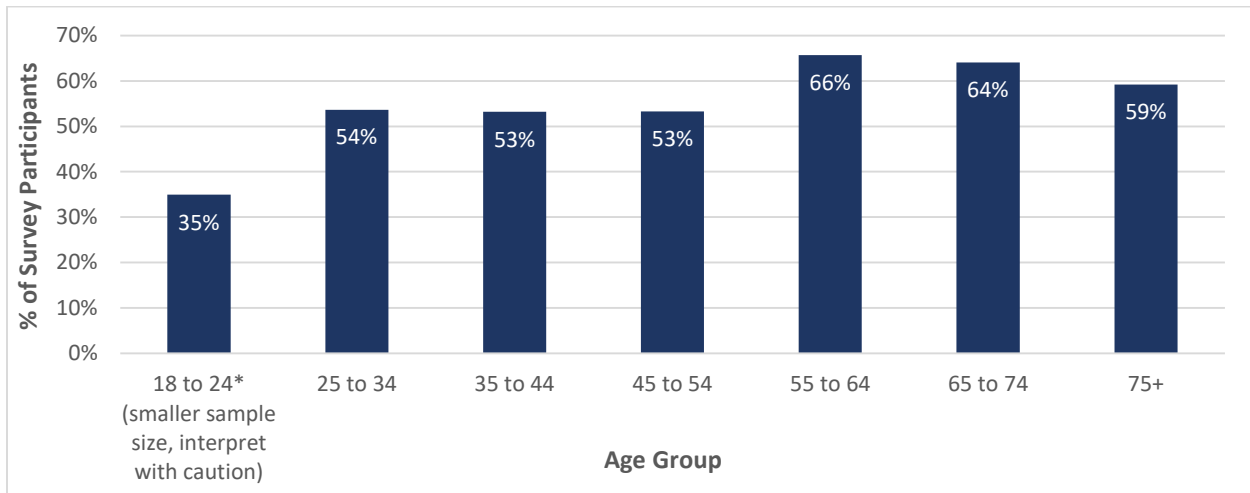


Figure 12. Moderately or Very Active Physical Activity by Age Group⁷



4.5 Occupational Characteristics

This section describes the survey participants' occupational characteristics which include employment and/or student status, employment type, and employer or school support for sustainable transportation programs (e.g., company carpool or car share, subsidized transit pass, etc.). The survey results are based on the population sample of age 18 years or more.

4.5.1 Occupational Status

Figure 13 illustrates the employment statuses of survey participants while **Figure 14** illustrates student status, with both charts illustrating the overlap between employment and school. The survey results show that two-thirds (66%) of the City's adult residents are employed, most of whom report working full-time (55%). Retired people account for the next-largest group, representing 20% of the adult population. Note that these results exclude the small proportion of the total population living in

⁷ Interpret results for 18- to 24-year-olds with caution due to small sample sizes.

collective dwellings such as assisted living and long-term care facilities which were not within scope to survey.

Overall, 8% of adults who participated in the survey are students, with 6% being full-time students and 2% part-time students. More than one-half (60%) of all students are also employed.

Figure 13. Employment Status⁸

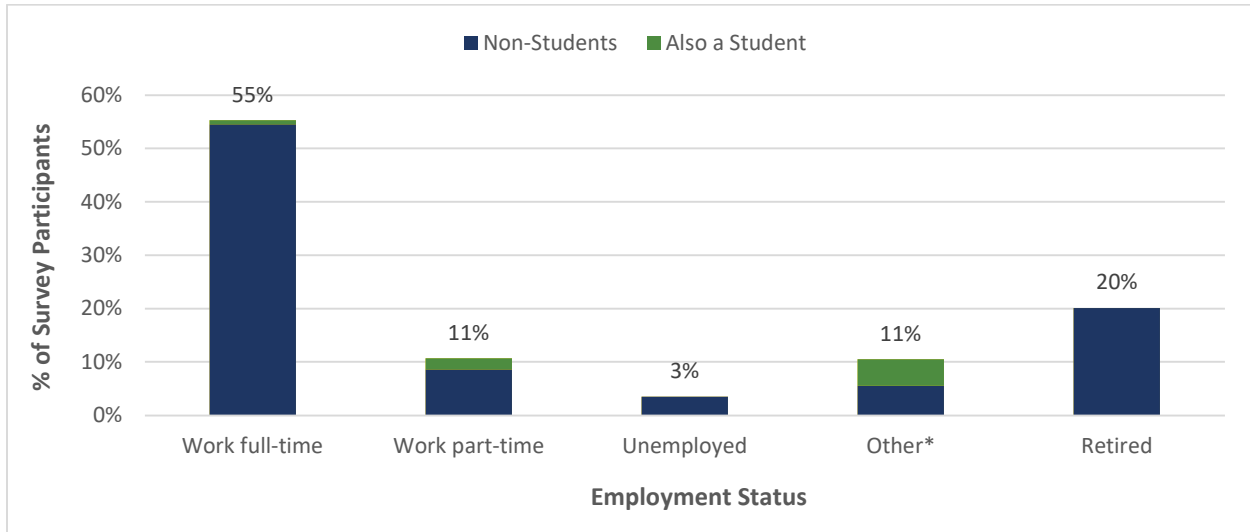


Figure 14. Student Status⁹

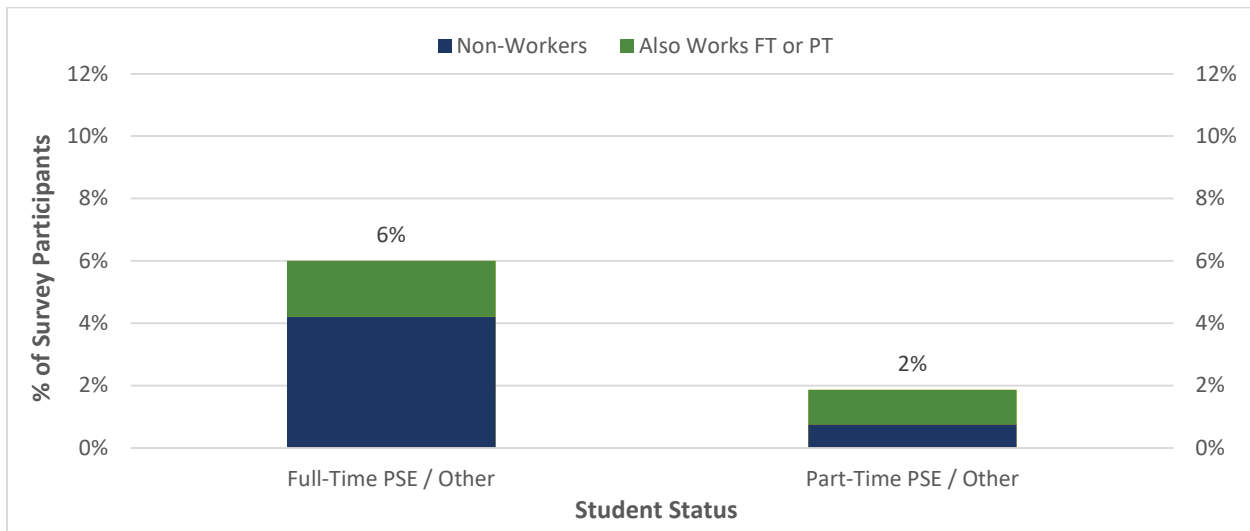


Figure 15 shows employment status and student status by zone. Vancouver Kerrisdale has the lowest percentage of full-time workers (45%) and the most retired people (30%) and “other” statuses (14%). The two CBD zones and Vancouver Broadway have the greatest number of full-time workers ranging from 61% to 64%. Table 6, following, provides the employment status of all participants of the survey

⁸ *Other statuses: on disability, on leave from work, homemaker, volunteer and not a worker, or student but not employed.

⁹ PSE = Post-Secondary Education; Other may include Adult Basic Education, high school upgrading or equivalency, or other types of courses or programs.

and it indicates how many of the participants are students. Vancouver South, Vancouver Southeast, and Vancouver East have the highest proportions of adult students, ranging from 9% to 11% of survey participants.

Figure 15. Map of Employment Status by Zone

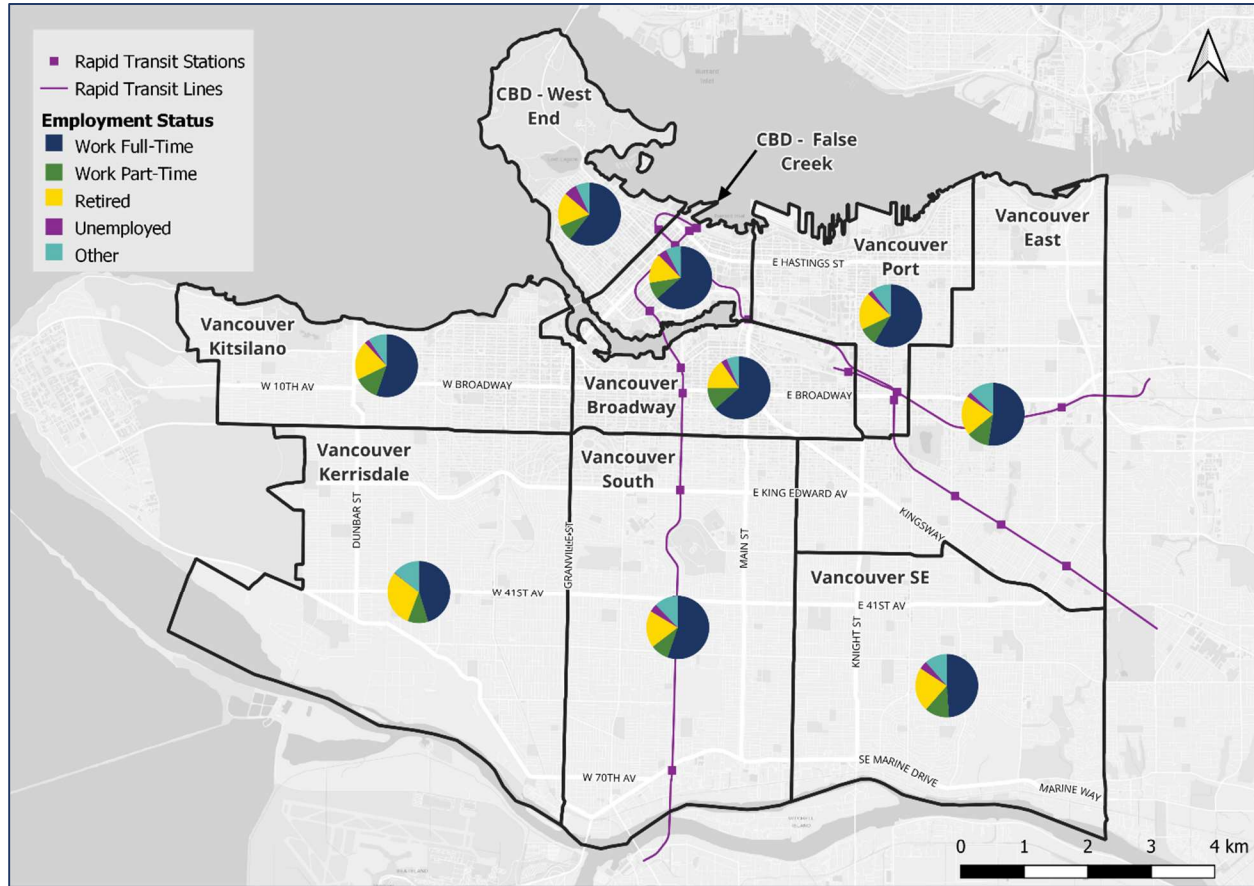


Table 6. Employment and Student Status, by Zone¹⁰

	Van-couver	CBD – West End	CBD – False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
Employment Status										
Work Full-Time	55%	61%	64%	64%	55%	45%	55%	49%	53%	59%
Work Part-Time	11%	8%	9%	11%	9%	11%	13%	13%	12%	9%
Retired	20%	17%	15%	16%	19%	30%	20%	23%	21%	19%
Unemployed	3%	7%	5%	3%	4%	0%	3%	4%	3%	3%
Other*	11%	7%	8%	6%	12%	14%	10%	12%	13%	10%
Student Status										
Full-Time	6%	4%	7%	5%	9%	5%	5%	7%	6%	2%
Part-Time	2%	0%	0%	3%	2%	0%	1%	2%	3%	4%
Total students	8%	5%	7%	8%	11%	6%	6%	9%	9%	6%

¹⁰ *Other statuses: on disability, on leave from work, homemaker, volunteer and not a worker, or student but not employed.

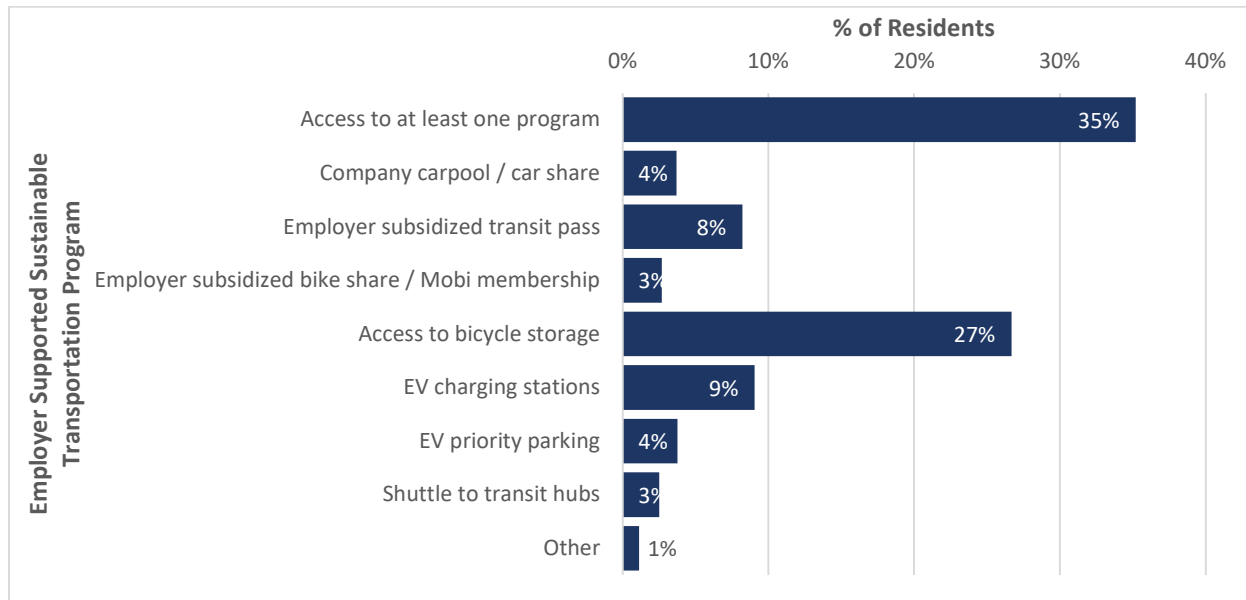
4.5.2 Employer Support for Sustainable Transportation Programs

Sustainable transportation programs range from providing electric vehicle charging infrastructure to having a company carpool/car share program to employer-subsidized transit passes. **Figure 16** below summarizes the proportion of workers living in Vancouver whose employers support various sustainable transportation programs. The results show that about one-third (35%) of workers have access to at least one program. Secure lock-up for bicycles is the most common support offered, with more than one-quarter (27%) of workers having access to bicycle storage and 3% of employers offering subsidized bike share membership.

Looking at programs that support modes other than bike (i.e., auto and transit), we see that just under one in ten (9%) workers have access to EV charging stations at their place of employment, with 4% working somewhere with priority parking for EVs, and another 4% having access to a company carpool or car share program. Regarding transit, 8% of workers reported having access to transit subsidies through their employer and 3% work somewhere with shuttles to and from transit hubs.

Table 7 highlights that access to such programs varies by zone, with employer support of programs being highest for jobs located in the CBD, Vancouver Port, Vancouver Broadway, and CBD-West End.

Figure 16. Access to Employer Supported Sustainable Transportation Programs¹¹



¹¹ Percentages add to greater than 100% due to multiple responses.

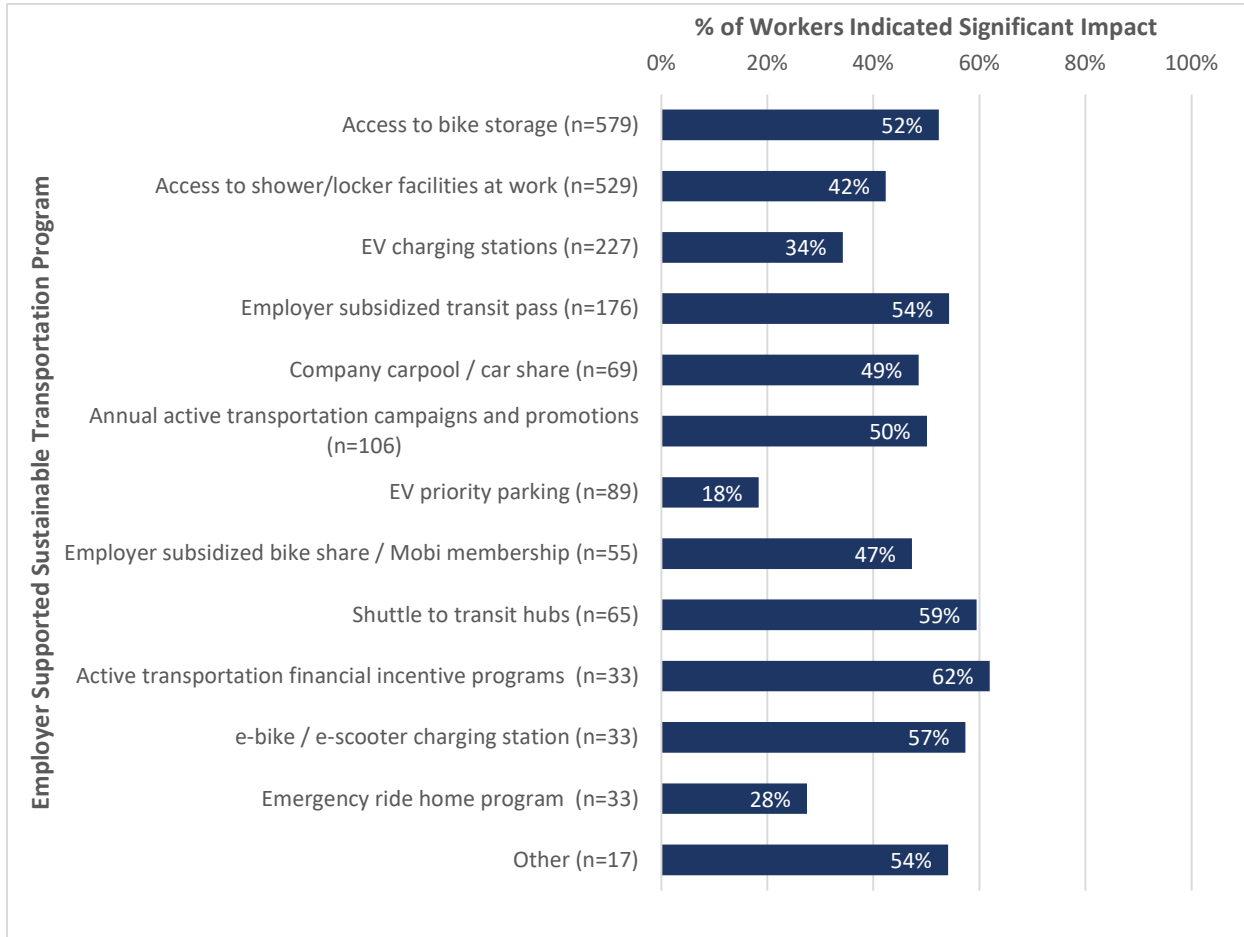
Table 7. Access to Employer Supported Sustainable Transportation Programs by Zone of Workplace¹²

	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. SE	Van. East	Van. Port
Jobs Held by Vancouver Residents	38,700	72,100	49,100	30,600	13,600	24,200	20,400	20,400	21,500
Access to at least one program	43%	38%	43%	36%	5%	17%	13%	11%	46%
Company carpool/Car share	3%	1%	7%	1%	2%	0%	4%	0%	8%
Employer subsidized transit pass	4%	12%	11%	12%	2%	1%	2%	1%	11%
Employer subsidized bike share	5%	2%	4%	5%	1%	1%	-	2%	12%
Access to bike storage	36%	31%	37%	28%	3%	17%	7%	9%	28%
EV charging stations	8%	4%	7%	12%	-	1%	2%	2%	13%
EV priority parking	5%	2%	2%	4%	-	1%	0%	1%	9%
Shuttle to transit hubs	1%	1%	4%	5%	1%	-	-	-	0%
Other	-	1%	1%	3%	1%	2%	-	2%	1%

Participants with access to employer supported programs were also asked to indicate to what extent access to these programs impacted their commute mode choice (on a five-point scale where one indicates no impact at all and five indicates a significant impact). **Figure 17** shows the percentage of participants who indicated a significant impact (score of 4 or 5). Survey participants were most likely to report that access to active transportation financial incentive programs had a significant impact on their mode choice, with 62% of workers who had access to at least one program reporting this. Nearly 60% of survey participants with access to at least one program indicated that having a shuttle to transit hubs (59%) and access to e-bike/e-scooter charging stations (57%) significantly impacted their mode choice. However, it should be noted that the number of survey participants reporting access to these programs is small. Larger numbers of participants reported having access to bike storage and employer subsidized transit pass programs, and more than half of participants indicated that these programs had a significant impact on their mode choice.

¹² Percentages add to greater than 100% due to multiple responses.

Figure 17. Impact of Employer Programs Supporting Sustainable Transportation¹³

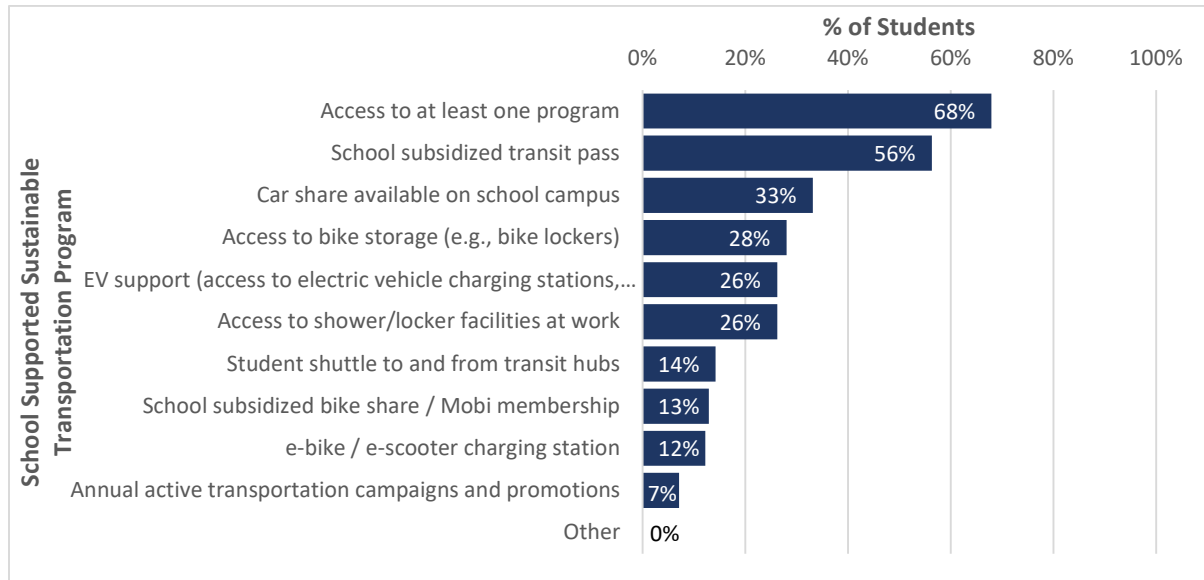


4.5.3 School Support for Transportation Programs

Figure 18 shows the proportion of students in Vancouver who have access to school supported transportation programs. The results show that about two-thirds (68%) of students have access to at least one program. School subsidized transit passes are most common, with more than half of students (56%) reporting access. About one-third reported having access to car share on school campuses and more than one-quarter (28%) reported access to bike storage.

¹³ Percentages add to greater than 100% due to multiple responses.

Figure 18. Access to School Supported Sustainable Transportation Programs¹⁴



¹⁴ Percentages add to greater than 100% due to multiple responses.

5 Access to Transportation

This section presents findings related to access to transportation, including bicycle and micromobility device access, vehicle access, and car share membership.

5.1 Bicycle and Micromobility Access

5.1.1 Bicycle Availability

The expanded survey results suggest that residents own over 329,000 bicycles. **Table 8** shows that most Vancouver households have at least one adult bicycle, with 64% of the adult population having access to a bicycle. E-bikes account for 8% of all adult bikes owned by residents, or about 31,700 e-bikes. While only 8% of bicycles are e-bikes the survey data suggest that 18% of bicycle trips on weekdays are made with e-bikes. Compared to 2021 results, there has been a significant increase in e-bike ownership, from around 19,000 e-bikes accounting for 5% of all adult bikes in 2021 to 31,700 e-bikes accounting for 8% of all bikes in 2022. Some people who own an e-bike may have purchased to facilitate more frequent cycling than was possible or comfortable for them with a pedal bike. It may also be possible that some people who already cycled frequently with pedal bikes may have purchased an e-bike to increase their range, cargo carrying capacity or comfort (without necessarily increasing their cycling frequency).¹⁵

Bicycle ownership is lowest in the areas with the most apartments (the two CBD zones), likely related to bicycle storage availability and also the easier walking access to amenities. Bicycle ownership is also lower in the Vancouver Southeast zone compared to other zones. For this zone, dwelling type may be less of a factor since it has few apartments and more ground oriented dwellings. Additional reasons for this lower bicycle ownership rate may be related to travel distance to employment and other non-residential destinations, topography, number of people per household, or lack of cycling facilities.

Table 8. Bicycles and Bicycle Access by Zone

	Vancouver	CBD West End	CBD False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
Estimated total adult bicycles (incl. e-bikes)	392,300	31,600	33,300	44,500	52,800	38,400	52,600	44,500	63,900	30,700
% of households with at least one adult bicycle	61%	51%	55%	65%	61%	62%	69%	54%	65%	66%
Avg. adult bicycles per household	1.26	0.88	0.97	1.22	1.34	1.56	1.53	1.20	1.40	1.36
Estimated no. of e-bikes	31,700	1,700	2,300	3,800	5,200	3,300	3,200	4,000	5,800	2,400
% of adult bicycles that are e-bikes	8%	5%	7%	8%	10%	9%	6%	9%	9%	8%
% of population 18+ with access to an adult bicycle	64%	54%	60%	74%	61%	70%	76%	53%	65%	72%

¹⁵ While figures for the Canadian market are not readily available, in the U.S. market, e-bikes revenue grew 47% in the 12 months ending October 2021, compared to the same period in 2020 (<https://www.npd.com/news/blog/2021/the-potential-for-a-second-bike-boom-in-2022/>)

5.1.2 Bike Share Member

About 10% of respondents are a “member” of bike share including 9% for Mobi and a very small percentage (1%) for the Lime e-bike share service, currently operating in its second year in North Vancouver, or in another bike share service in another city they travel to. The number of bike share “members” have increased from 5% in 2020 and 4% in 2021.

The City has provided residents with a cycling option by supporting the Mobi bike share service which has been available to Vancouver residents since 2016. The program offers a convenient cycling choice for residents and visitors to the city. About 9% of respondents selected Mobi in response to the question: “Are you a member of any bike share services”. Mobi is available by purchasing a pay-per-ride, 24-hour, 30-day, or 365-day annual membership. Mobi sells approximately 5,000 annual memberships which is <1% of the population. It’s likely that respondents interpreted the word “member” to mean that they signed up on the Mobi app and used their services in the past, rather than just an annual membership.

Coverage of Mobi bike share services at the time of the survey roughly included downtown Vancouver and extends east to Commercial Drive, south to 16th Avenue, and west to Jericho Beach Park, as well as stations along the Arbutus Greenway to 41st Avenue, a portion of Mount Pleasant to 31st Avenue and to Nanaimo Street north of Hastings Street. Mobi coverage fully encompasses the CBD West End, CBD False Creek and Vancouver Broadway zones and partially encompasses the Vancouver Port, Vancouver Kitsilano, Vancouver Kerrisdale, and Vancouver South zones. **Table 9** details bike share member by zone. The number of members is highest in the CBD False Creek, Vancouver Broadway, Vancouver Port, and CBD West End which coincides with the zones that have the most bike share service.

These results are consistent with **Section 6.3.3** Mode Share details which indicates approximately 9% of all weekday cycling trips made by Vancouver residents are made via bike share bicycles.

Table 9. Bicycle Share Members by Zone

	Vancouver	CBD West End	CBD False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
At least one bike share Participation	10%	11%	26%	14%	6%	8%	10%	2%	5%	13%

5.2 Electric Micromobility Device Access

As shown in **Table 10** below, the use of electric micromobility devices such as e-kick scooters, e-skateboards, or hoverboards is still relatively uncommon in Vancouver, with only 5% of households in the city owning a micromobility device; this is a slight increase from only 3% in 2021. Ownership appears to be highest amongst residents of Vancouver South (8%) and CBD False Creek (7%). The survey results suggest that residents of Vancouver own about 20,200 such devices (compared to only 11,700 in 2021). The survey results also suggest that relative to total weekday bicycle and micromobility trips combined, e-micromobility devices account for approximately 2% of all such trips, although this finding should be interpreted with caution due to the small sample size of survey participants who use such devices.

It should be noted that in the 2020 survey, 16% of residents indicated they are interested in using an electric micromobility device. Intentions and behaviours do not always align, but there may be another reason for the difference: these devices have limits on where they can be used. The City of Vancouver is one of six municipalities in B.C. that are participating in a three-year electric kick scooter pilot program allowing them on local streets and protected cycle lanes. The Vancouver pilot began in July 2021.

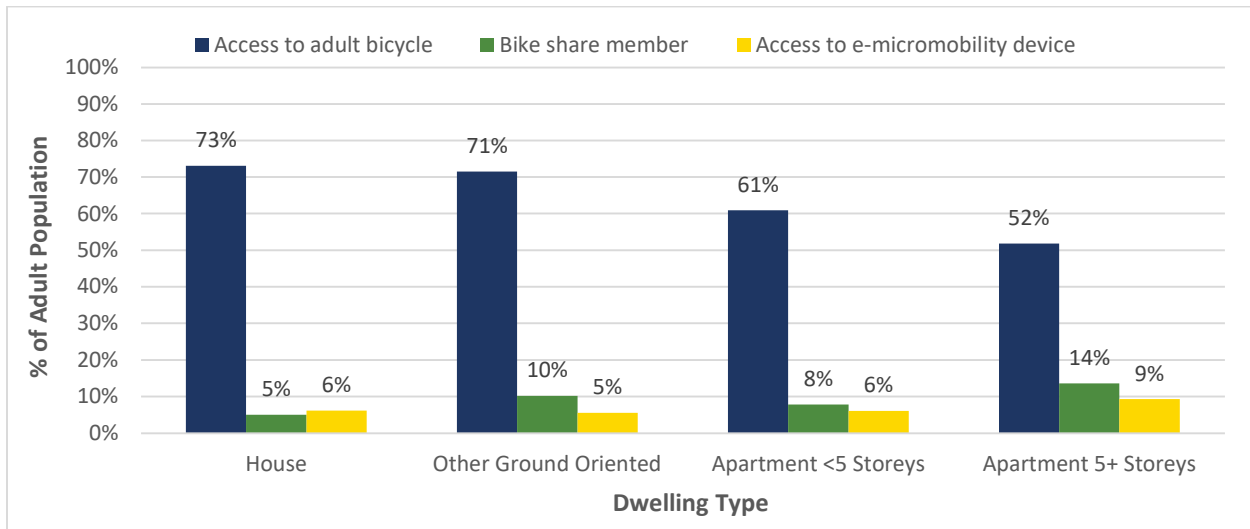
Table 10. Electric Micromobility Device Access by Zone

	Van-couver	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
Estimated total micromobility devices	20,200	1,200	3,900	1,400	4,800	1,500	2,000	1,600	2,800	1,200
% of households with at least one micromobility device	5%	3%	7%	3%	8%	5%	3%	3%	5%	4%
Average micromobility devices per household	0.07	0.03	0.11	0.04	0.12	0.06	0.06	0.04	0.06	0.05

5.2.1 Demographic Trends in Access to Bicycles, Bike Share, and Electric Micromobility Devices

Figure 19 and Figure 20 illustrate trends in access to bicycles and micromobility devices by dwelling type and by age. As shown in Figure 19, bicycle ownership is highest amongst those living in houses and other ground-oriented units, at 73% and 71% respectively. Reflecting that most households own at least one bike; it can also be seen that more than one-half of people living in apartment buildings report owning a bike (61% of those in apartments under 5 stories and 52% of those in higher-rise apartments). Bikeshare “member” is highest amongst those living in high-rise apartments, at 14%, and lowest amongst those living in houses (5%). Micromobility device ownership followed a similar pattern.

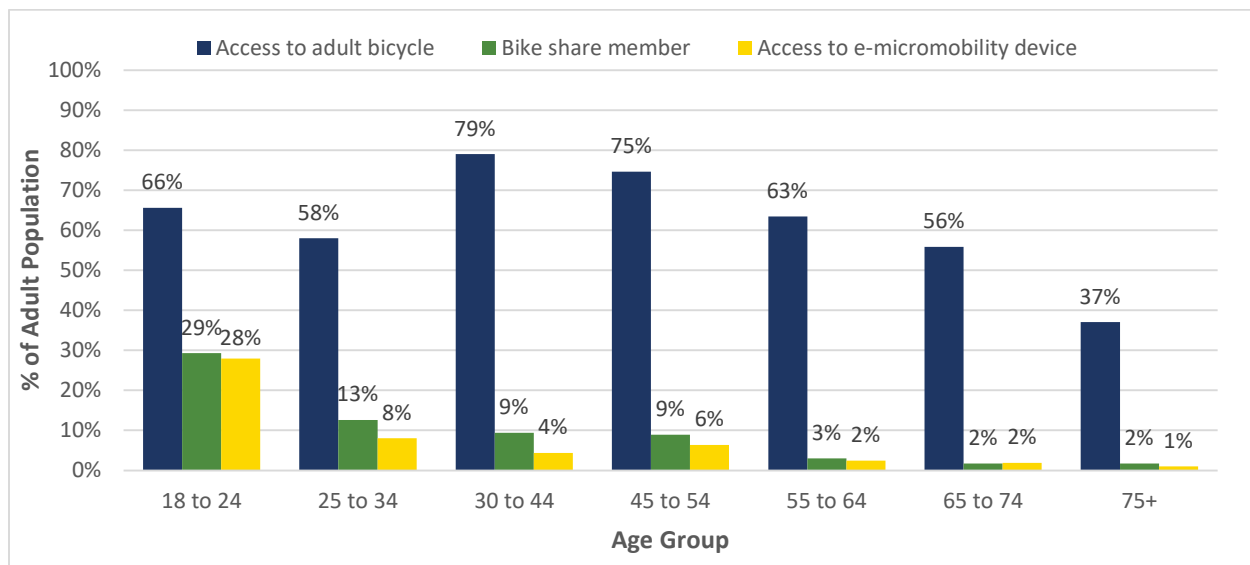
Figure 19. Access to Bicycles, Bike Share “Member”, and Micromobility Devices by Dwelling Type



By age group, access to an adult bicycle is highest amongst people ages 30 to 44 and 45 to 54 (79% and 75% respectively), with access declining as age increases. While fewer younger adults have access to a personal bicycle, at 66% for ages 18 to 24 and 58% for ages 25 to 34, it appears that many younger people make up for this by using bike share services, at about one-third in these age groups (35% and

31% respectively), and over one-quarter (28%) of youth ages 18 to 24 reporting access to an e-micromobility device. While bike share “member” declines to 13% for ages 25 to 34, it is steady at 9% for those in the 30 to 44 and 45 to 54 age groups, indicating that bike shares are beneficial for a wide range of ages. As bike share programs and e-micromobility become more mainstream, it will be interesting to observe if a generational change will occur. Specifically, it raises the question of whether younger people who now use these options will continue to do so as they move through the various stages of life with changes in lifestyle, family status, income and mobility. A key difference compared with previous generations is that the number of choices and quality of sustainable transportation modes has improved considerably in recent years.

Figure 20. Access to Bicycles, Bike Share, and Micromobility Devices by Age



5.3 Vehicle Access

This section describes survey participants' access to private vehicles, including the percentage of licensed drivers, private vehicle availability, vehicle types, and parking availability.

5.3.1 Licensed Drivers

Table 11 highlights the prevalence of driver's licences by zone. Overall, almost nine in ten adults (87%) has a driver's licence. Incidence varied only slightly by zone, being highest in Kerrisdale (91%) and lowest in Vancouver Southeast (82%), and Vancouver South (84%). Examination of the data by age range revealed that 87% of survey participants 25 to 34 years old have a driver's licence, with this proportion rising to 94% for 35 to 44 years, then dropping only slightly to 92% for 65 to 74 years, and 84% for those 75+ years of age.¹⁶

¹⁶ Results for 18- to 24-year-olds are not cited due to small sample size (n=131).

Table 11. Licensed Drivers by Zone

	Van-couver	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerrisdale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
% of population 18+ with driver's licence	87%	88%	88%	89%	84%	91%	90%	82%	88%	85%

5.3.2 Private Vehicle Availability

Table 12 summarizes vehicle-related statistics, while **Figure 21** depicts the percentage of the adult population with access to a vehicle by zone. As shown, the survey results suggest that, overall, 77% of Vancouver residents currently have access to a household vehicle. This compares similarly to the result of 80% in 2021 and 74% in 2020. This variability by year may be the product of a sampling error associated with random sampling, differences in the survey sample composition, and/or differences in how the data sets were weighted, processed, or reported.

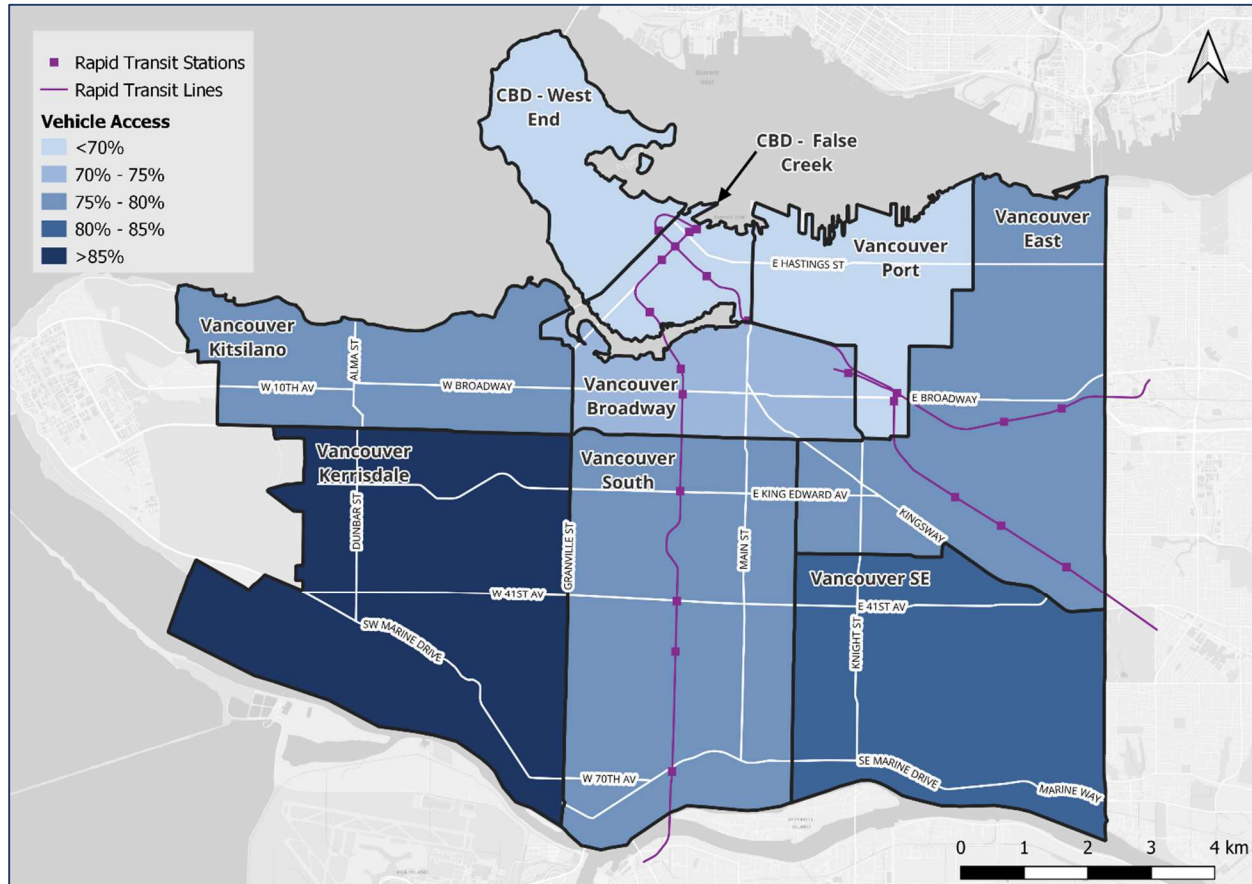
By zone, private vehicle access is lowest downtown (CBD West End, 60%, and CBD False Creek, 66%) and in the Vancouver Port area (65%). Vehicle access is highest in the Kerrisdale zone, with 96% of adults having access to at least one vehicle.

Table 12. Private Vehicle Availability by Zone

	Van-couver	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerrisdale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
Average vehicles per household*	1.02	0.70	0.82	0.88	1.13	1.37	1.07	1.30	1.09	0.78
Average vehicles per adult	0.55	0.47	0.53	0.56	0.56	0.66	0.64	0.57	0.51	0.47
% population 18+ with access to at least one vehicle	77%	59%	69%	72%	76%	96%	80%	84%	79%	69%
% of households with vehicles	76%	60%	66%	73%	78%	93%	82%	83%	80%	65%

*denominator includes all households, including those without vehicles.

Figure 21. Map of Private Vehicle Availability by Zone (% of Residents 18+ with Access to a Vehicle)



The following charts (**Figure 22** through **Figure 27**) highlight private vehicle availability for various demographic characteristics.

- Age shows a predictable profile, with lower access amongst young adults up to age 34 (71%-74%), with just over 80% having access from ages 35 through 84, and the peak at 86% between 45 to 54 years old.
- Vehicle availability is equal by gender, at 80% for both women and men. Further analysis would be required to explore parity/difference for women and men with different characteristics.
- By dwelling type, vehicle availability is highest amongst those living in houses and lowest amongst those living in apartments of fewer than five storeys.
- By income, vehicle ownership increases steadily, starting from 52% amongst people with annual incomes of less than \$25,000 per annum and increasing to 91% amongst those above \$150,000.
- By immigration status, there is also a clear trend as immigrants become more established. The survey results suggest that only 68% of Vancouver residents who immigrated to Canada within the last five years have access to a vehicle, rising to 85% for those established in Canada more than 15 years, eclipsing the rate for Canadian-born citizens (80%).
- There appears to be some variance by visual minority population group, with East, Southeast, and South Asians all having high vehicle availability (ranging from 86% to 88%), West

Asians/Middle Eastern/North African residents, Hispanic/Latin American residents, and Multiple/Mixed race residents vehicle availability ranging between 62% to 65% while white residents have about 78% vehicle availability.

Figure 22. Private Vehicle Availability by Age Range

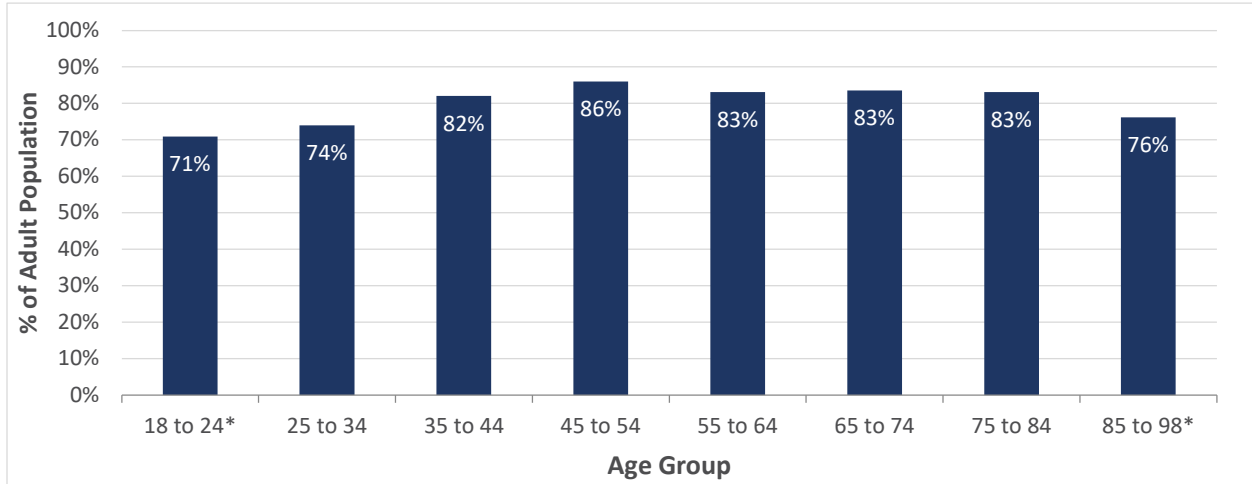


Figure 23. Private Vehicle Availability by Gender

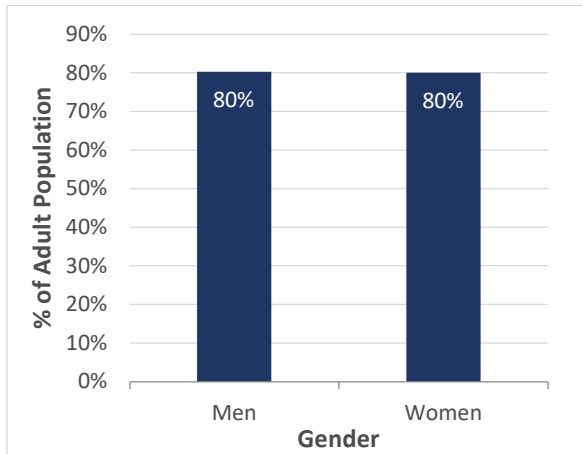


Figure 24. Private Vehicle Availability by Dwelling Type

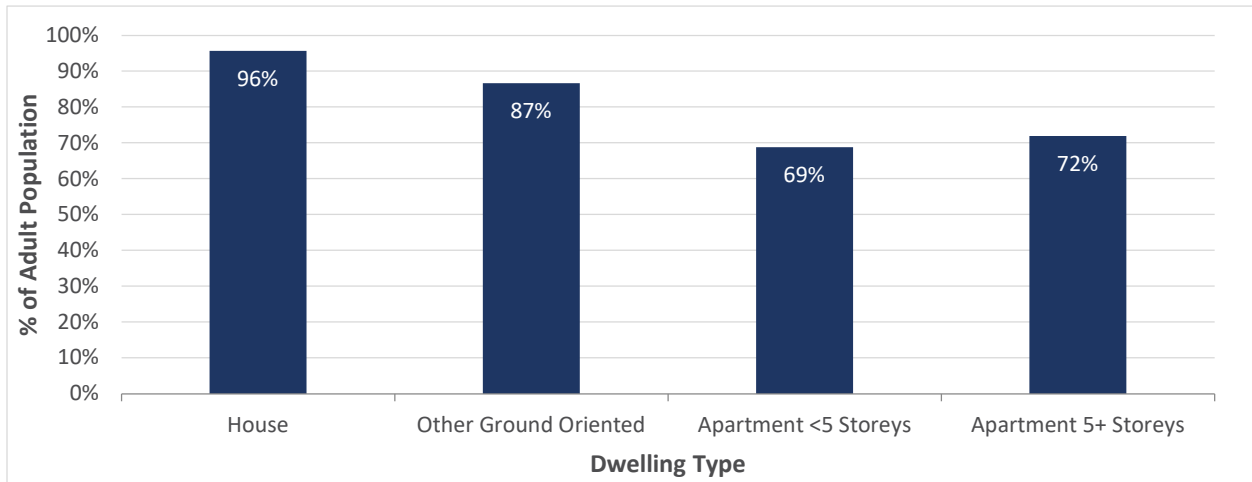


Figure 25. Private Vehicle Availability by Household Income

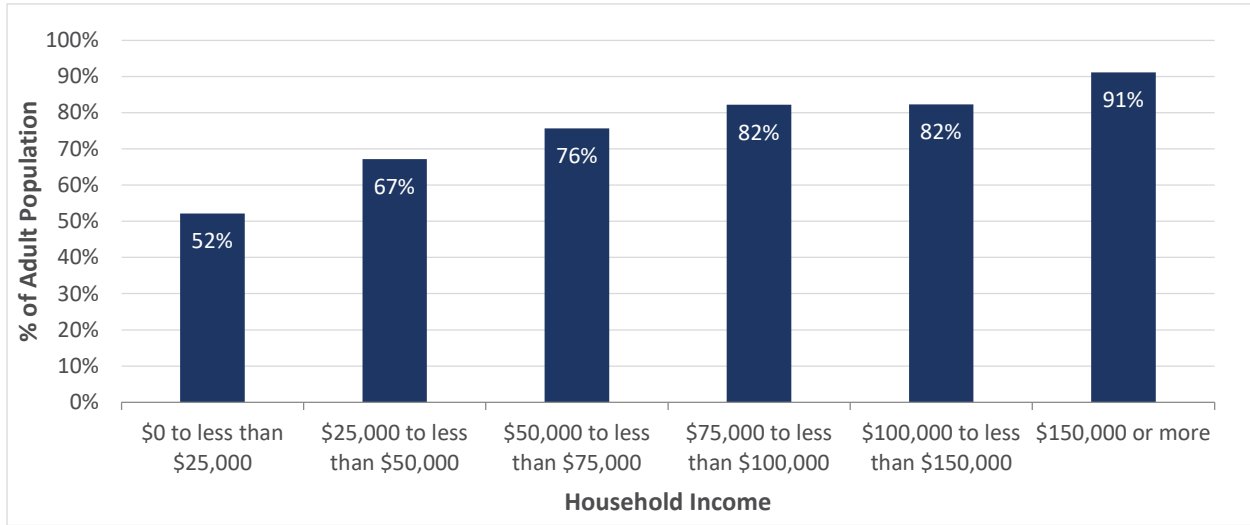


Figure 26. Private Vehicle Availability by Immigration Status

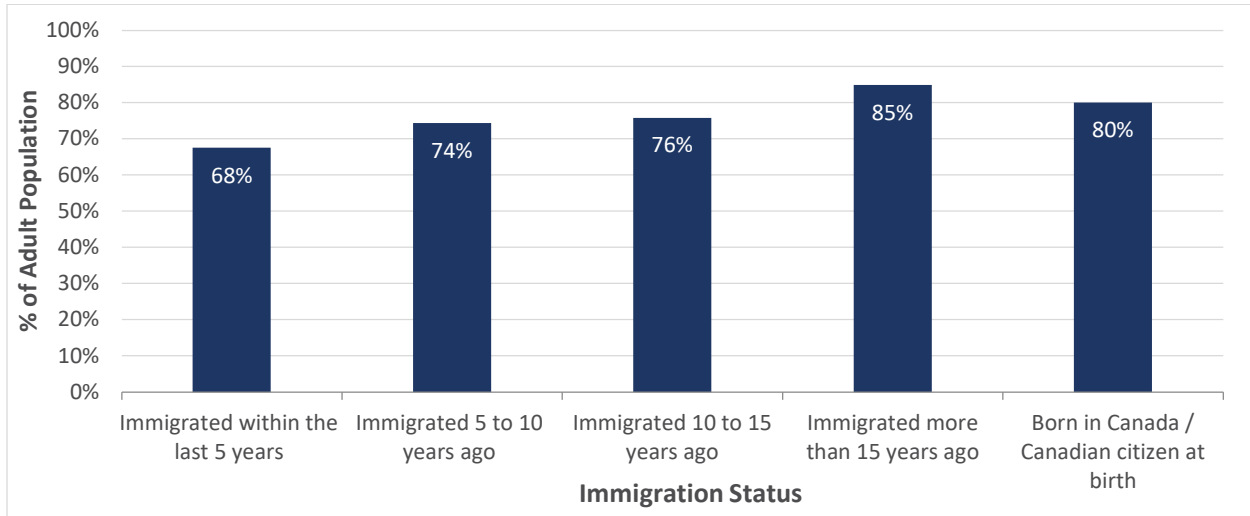
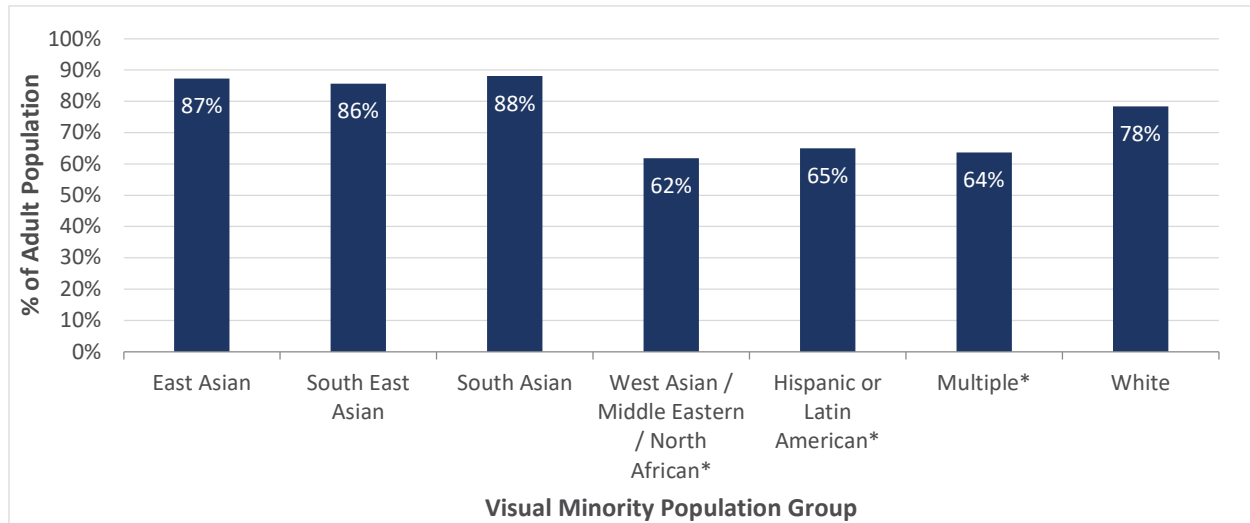


Figure 27. Private Vehicle Availability by Visual Minority Population Groups¹⁷

5.3.3 Vehicle Fuel Type

One of the City's Climate Emergency goals is: By 2030, 50% of the kilometers driven on Vancouver's roads will be by zero-emissions vehicles. The City is working towards this goal to shift to renewably powered transportation by improving and expanding its public electric vehicle (EV) charging network, implementing policy to support home charging, increasing the number of EVs in its fleet, and working with businesses and other levels of government to make switching to an EV as easy as possible.

The 2021 survey asked about vehicle fuel type to help measure EV ownership as an indicator for progress with this initiative. **Figure 28** shows the fuel type for household vehicles. Conventional gasoline vehicles are the majority (85%), showing a small decline (-3%) from 2021, as EV's market share has increased. EVs account for 5% of all vehicles, up from 2% in 2021. Interestingly, the hybrid share of all household vehicles is up only slightly from 5% in 2021 to 6% (combining both regular hybrids and plug-in hybrids),¹⁸ again suggesting that EVs maybe generating more sales amongst drivers making the shift to greener modes. During the height of the COVID-19 pandemic, the manufacturing challenges and supply chain challenges constrained the adoption of EVs. While availability may still be somewhat constrained, with there being wait lists to purchase many EV models, more manufacturers are increasing their manufacturing capacity and bringing more models to the market, and we may expect to see the supply of EVs increase, barring new supply-chain challenges.

As shown in **Table 13**, the zone with the highest EV ownership is Vancouver Kerrisdale at 6%, while those with the lowest EV ownership are CBD False Creek and Vancouver Broadway, both at 3% (although Vancouver Broadway survey participants reported a higher-than-average share of hybrids and hybrid plug-ins).

¹⁷ *small sample size, interpret with caution. Excludes Indigenous, Black, and Other due to very small sample sizes.

¹⁸ In 2022, the survey asked about two categories of hybrids: hybrid and hybrid plug-in. In 2021, there was only one category on the survey: hybrid, which would have captured both kinds.

Figure 28. Vehicle Fuel Type

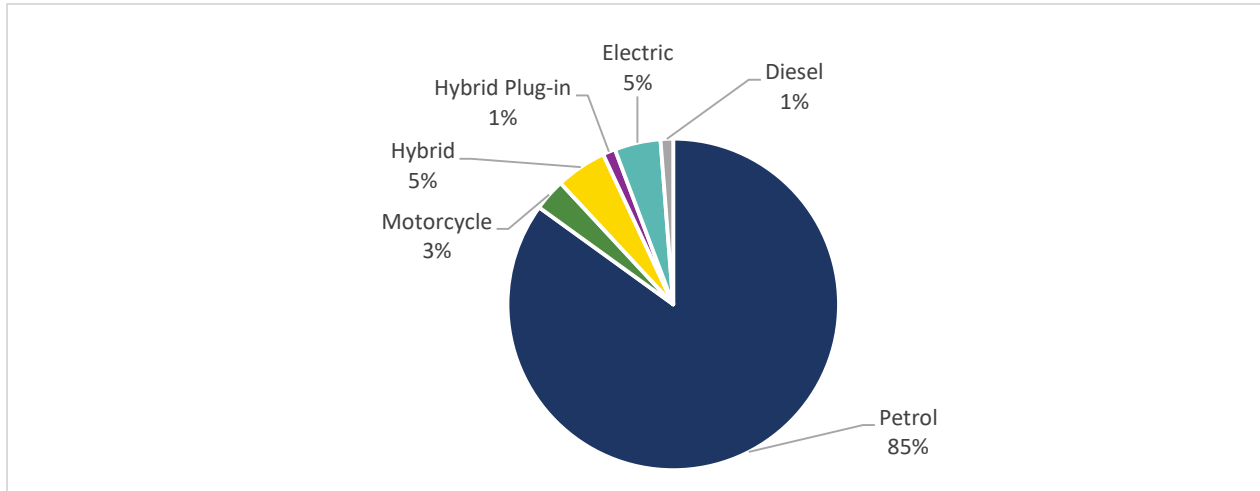


Table 13. Vehicle Fuel Type by Zone

	Vancouver	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
Petrol	85%	87%	87%	83%	85%	84%	85%	84%	85%	84%
Motorcycle	3%	3%	6%	3%	4%	1%	3%	3%	2%	4%
Hybrid	5%	4%	4%	7%	5%	4%	6%	4%	6%	4%
Hybrid Plug-in	1%	0%	1%	2%	1%	2%	0%	2%	2%	1%
Electric (EV)	5%	5%	3%	3%	5%	6%	5%	5%	4%	5%
Diesel	1%	1%	0%	1%	1%	2%	1%	3%	1%	2%
Biodiesel	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other/Unknown Alternative Fuel Type	0.2%	0.4%	0.0%	0.3%	0.0%	0.3%	0.5%	0.3%	0.0%	0.0%

5.3.4 Electric Vehicle Charging Availability at Home

Electric vehicle charging availability at home or close by is another new data element being collected as an indicator of support for the Climate Emergency Action Plan. The overall average reported by survey participants is 27% availability (**Figure 29**). This is much higher than the electric vehicle availability at home, although the availability of charging does not take into account how busy non-home charging points may be. The results suggest that availability and/or awareness of local charging points is on the rise, compared to the 20% survey result in 2021.

To help Vancouverites access home charging as easily as possible, the city has required growing amounts of EV infrastructure as part of new residential construction since 2011. As of January 1, 2019, all new development permit applications require that 100% of residential parking stalls, except visitor stalls, must be EV-ready. The City estimates that these requirements create over 9,000 new residential charging circuits each year. In addition, it has adopted several initiatives to improve access to EV charging, including:

- Conducting a curbside electric vehicle pilot program for installing EV charging stations on the city boulevard in front of the applicant’s home or business;
- Discounting business licence fees for gas stations and commercial parking lots that install EV chargers;
- Granting an electric vehicle cord cover licence to allow charging for vehicles parked on the street; and
- Providing grants for installing EV chargers in existing multi-unit rental buildings.

As shown in **Table 14**, access to EV charging at home varied significantly by zone. Of particular note is that apartments with 5+ storeys (39%, up from 34% in 2021) had significantly more occurrences than the other dwelling types. Of the two zones with the most apartments with 5+ storeys, one had a much higher availability than the other: CBD – False Creek had 55% of households reporting access to EV charging at home or close by while this number was only 21% of households for CBD – West End. Vancouver Kerrisdale also stands out as having a higher-than-average proportion of households reporting access to EV charging (33%).

Figure 29. Percentage of Households with Access to EV Charging at Home or Nearby, by Dwelling Type

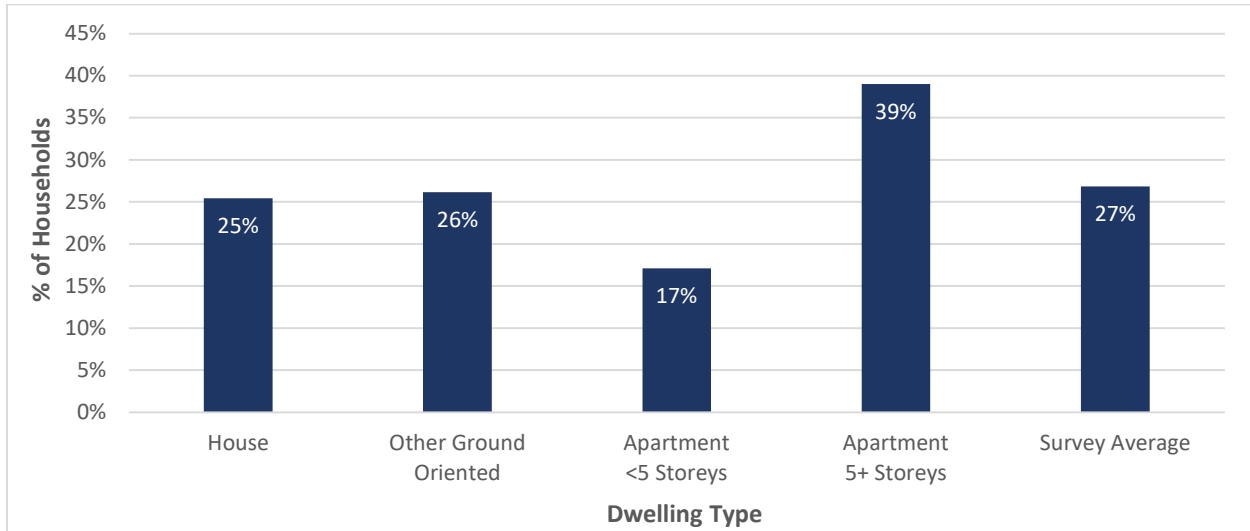


Table 14. Percentage of Households with Access to EV Charging at Home or Nearby, by Zone

	Vancouver	CBD – West End	CBD – False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
% of households with access to EV charging at home or close by	27%	21%	55%	26%	23%	33%	22%	25%	23%	17%

5.3.5 Car Share Membership

Table 15 shows the percentage of survey participants, by zone, who had a membership to at least one car share service at the time of the survey in Fall 2022. The percentage of residents with at least one car share service shows a slight rebound, at 34% of Vancouver residents, compared to a pattern of decline observed from 2019 to 2021. Car share membership fell from a high of 37% in 2019 to a low of 30% in 2021. Of note, of the one-fifth of survey participants with no access to a household vehicle, 37% are car share members. This compares to 29% amongst survey participants with access to a household vehicle.



The zones with the highest number of respondents who indicated membership of at least one car share service are Vancouver Port (47%), Broadway (45%), and Vancouver Kitsilano (41%) which is similar to 2021. Vancouver Southeast (16%) continues to have the lowest car share membership, with a slight increase from 2021 (11%).

Table 15. Car Share Membership¹⁹

	Vancouver	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
Member of at least one car share service	34%	39%	39%	45%	32%	30%	41%	16%	35%	47%
'A-to-A' (Two-Way) Car Share Services	8%	8%	12%	11%	7%	9%	7%	3%	9%	15%
'A-to-B' (One-Way) Car Share Services	31%	36%	32%	42%	29%	28%	36%	14%	32%	42%
Other	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%

¹⁹ A-to-A services include Modo, while A-to-B services include Evo. 'Other' car share services include those not included in these categories, such as ZeroCar in Richmond.

6 Daily Trip Characteristics

This section provides a snapshot of daily (24-hour) travel patterns from the trips reported by survey participants by reporting on trip demand, purpose, mode share, and distribution.

6.1 Trip Demand

Trip demand characteristics which include daily trips, trip volumes by time of the day, and annual vehicle kilometres travelled (VKT) are reported in this section.

6.1.1 Daily Trips

The overall daily trip rate increased slightly from 2.8 trips per person in 2021 to 2.9 trips per person in 2022, accounting for an additional 63,000 daily trips in 2022 compared to 2021 (**Figure 30**). This is down from an average of 3.7 trips per person in 2019 prior to the onset of the COVID-19 global pandemic. The increase from 2021 to 2022 likely reflects the continued rebound in daily trips from the low number in 2020. At the onset of the pandemic in 2020, many people were working from home and limiting social interactions or trips for personal business. At the time of the 2022 survey, COVID-19 daily case counts were relatively low and many of the work restrictions were lifted and, in general, most residents likely increased other, non-work trips compared to previous years when the pandemic was less stabilized. The main difference from pre-pandemic is that many companies permitted their employees to continue to work from home, primarily office workers. This reduction in trips is the most effective way to improve sustainable transportation because a non-trip does not require any transportation facilities or directly generate any transportation-related carbon emissions.

The average daily trips by zone is presented in

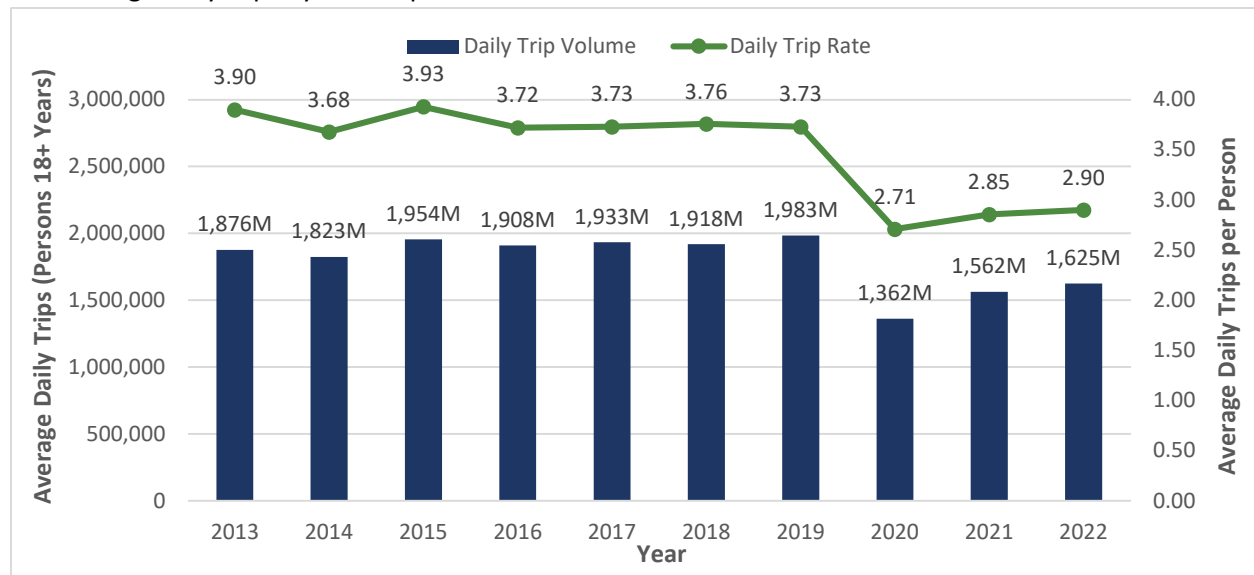


Figure 31. Daily trips rates are highest for residents of the Vancouver Kitsilano (3.12 trips per person), Vancouver Port (3.08 trips per person), and Vancouver Broadway (3.01 trips per person) zones. All other zones had trip rates between 2.5 and 2.9 trips per person.

Figure 30. Daily Trip Volumes and Average Daily Trips per Person, 2013-2022 (Persons 18+ Years)

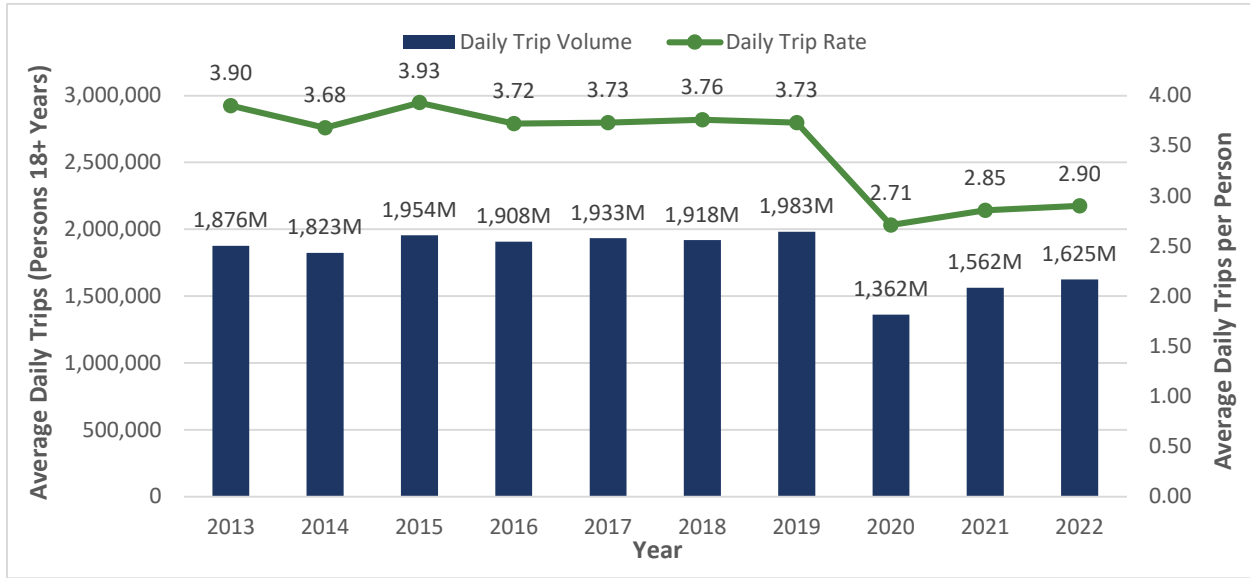
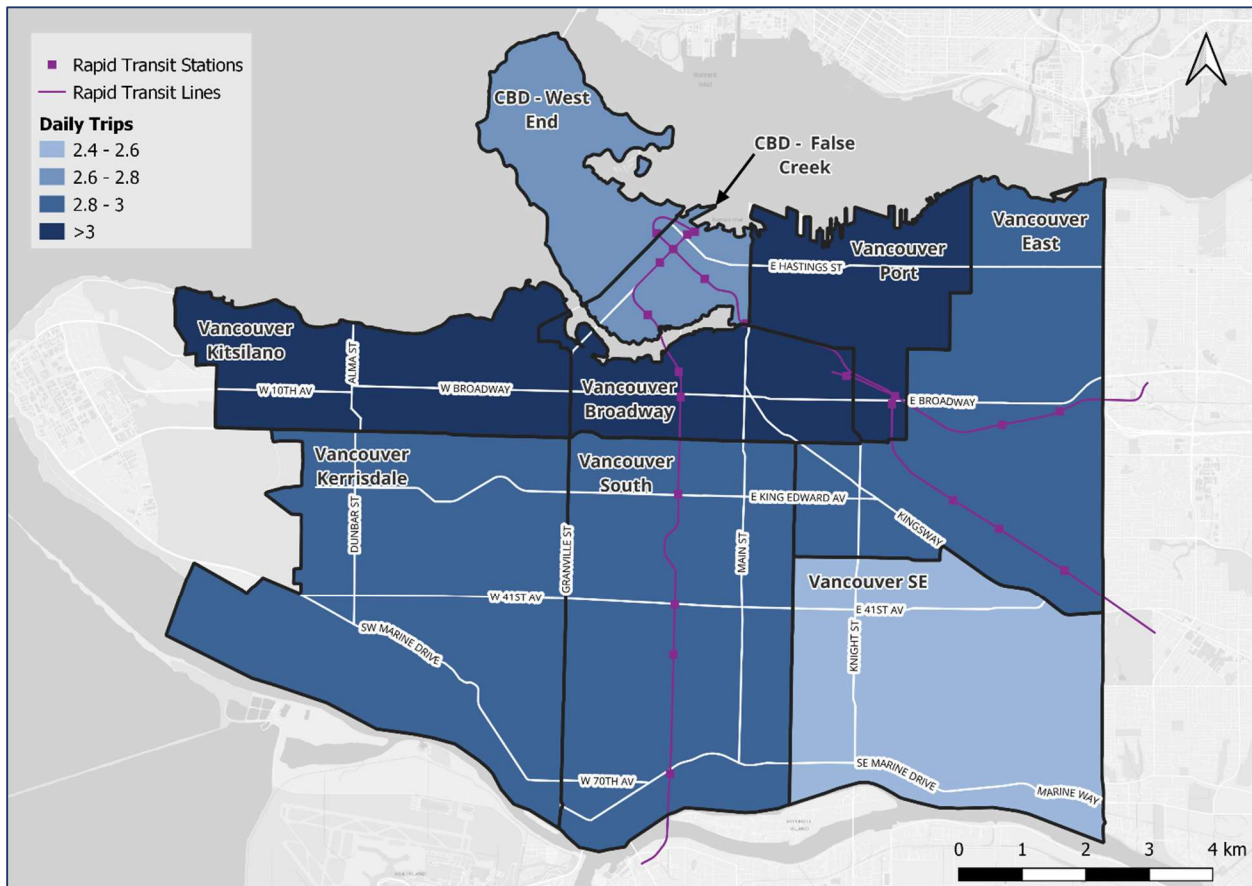


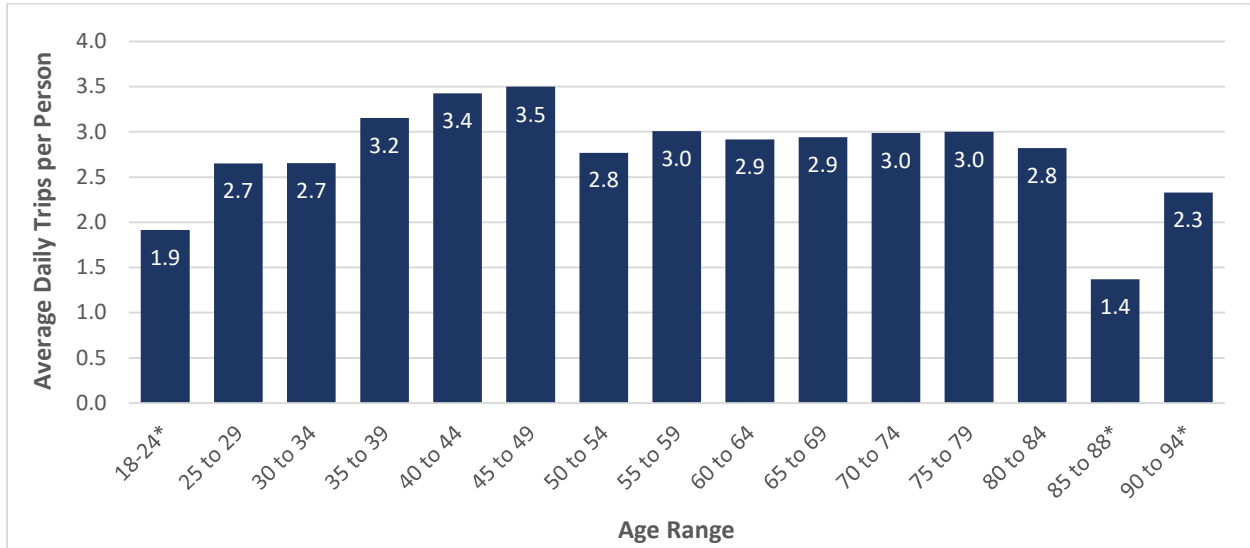
Figure 31. Map of Average Daily Trips by Zone



Average daily trip rates by age are shown in **Figure 32**. Residents between the ages of 35 to 49 years old have the highest average trips rates, at over 3 trips per day. This is likely because it is the most common

age that people have additional trips to accommodate their children’s needs. The lowest average daily trip rate is for residents over the age of 84, with residents between the ages of 85 and 89 having an average trip rate of 1.4 trips per day. The figure notes the age ranges with a low sample size therefore a higher sampling error for the smaller population. For the variation of those 90 to 94, it is also possible that those who are capable of responding to the survey are living a healthy active lifestyle resulting in a higher number of trips for the category.

Figure 32. Average Daily Trips per Person, by Age Range²⁰

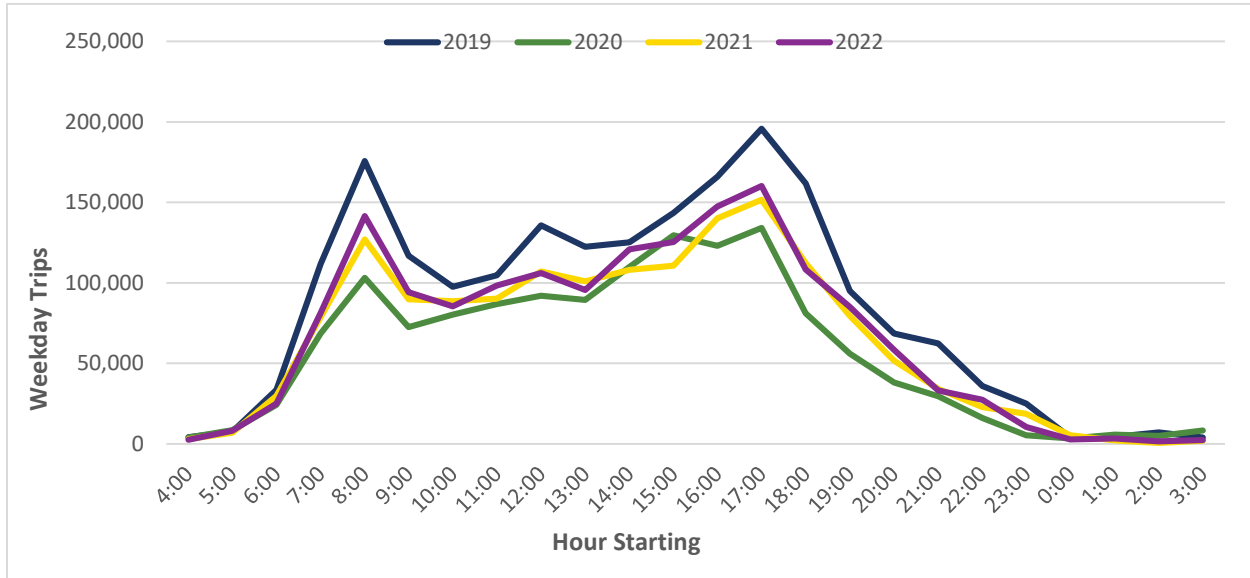


6.1.2 Trip Volumes by Time of Day

Figure 33 shows the percentage of weekday trip volumes by time of day of departure for four years: 2019 through 2022. As shown, trip volumes by time of day are similar in 2022 compared to 2021, with a slight increase at the 8 a.m. peak hour (+11%) and 5 p.m. peak hour (+6%) in 2022. Trip rates have not returned to 2019 levels but have rebounded from the low in 2020, particularly at peak hours (8a.m. and 5 p.m.)

²⁰ Asterisk (*) indicates an age range with smaller sample size (18-24, n=131; 85-88, n=77, 90+, n=16)

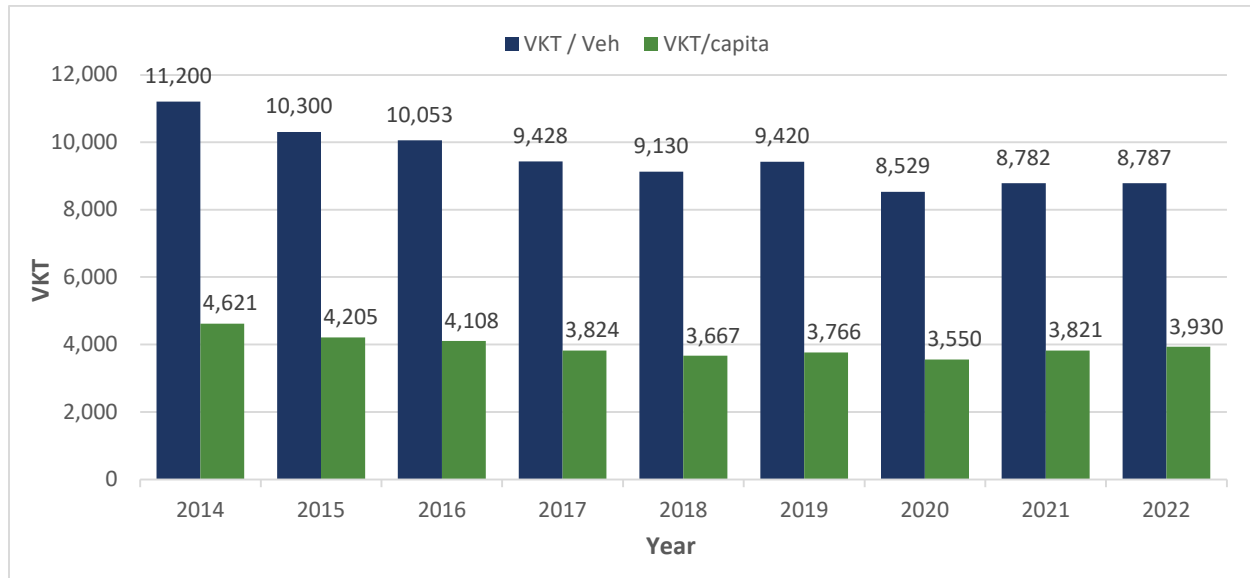
Figure 33. Weekday Trips by Time of Day, 2019-2022



6.1.3 Vehicle Kilometers Travelled (VKT)

The Greenest City action plan and Transportation 2040 set a goal to reduce the average distance driven per resident, by 20% compared to 2007 levels. **Figure 34** illustrates the annual vehicle kilometers travelled, or VKT, estimates for 2014 through 2022. The estimates are derived from the Vancouver Transportation Survey results based on odometer readings provided by survey participants in consecutive survey cycles, with alternate estimations used for the odometer readings of new vehicles not surveyed in the previous cycle.

The survey results show a pattern of declining VKT per vehicle from 2015 through 2018, declining from about 12,700 km travelled annually per vehicle to a low of 9,150 km, followed by a slight increase in 2019 to 9,400 km. The advent of the COVID-19 pandemic in mid-March of 2020 brought about a 10% drop in annual VKT per vehicle to about 8,550 km per vehicle, followed by an increase in 2021 to about 8,800 km per vehicle, with the most recent 2022 survey estimate being comparable at about 8,800 km per vehicle. Based on Insurance Corporation of British Columbia (ICBC) statistics on insured vehicle policies in Vancouver, which suggest that there were about 323,800 passenger vehicles registered to Vancouver residents in December 2022, the total annual VKT for the entire fleet is about 2.85 billion kilometers per year. This is about 9% below the 3.01 billion kilometers estimated for 2014, but 10% above pre-pandemic levels in 2019, given population growth and increases in vehicle ownership. On a per capita basis, the average VKT per person is about 3,930 km, which is 15% below 2014 estimates.

Figure 34. Trend in VKT per Capita and VKT per Vehicle, 2014-2022 ²¹

6.2 Trip Purpose

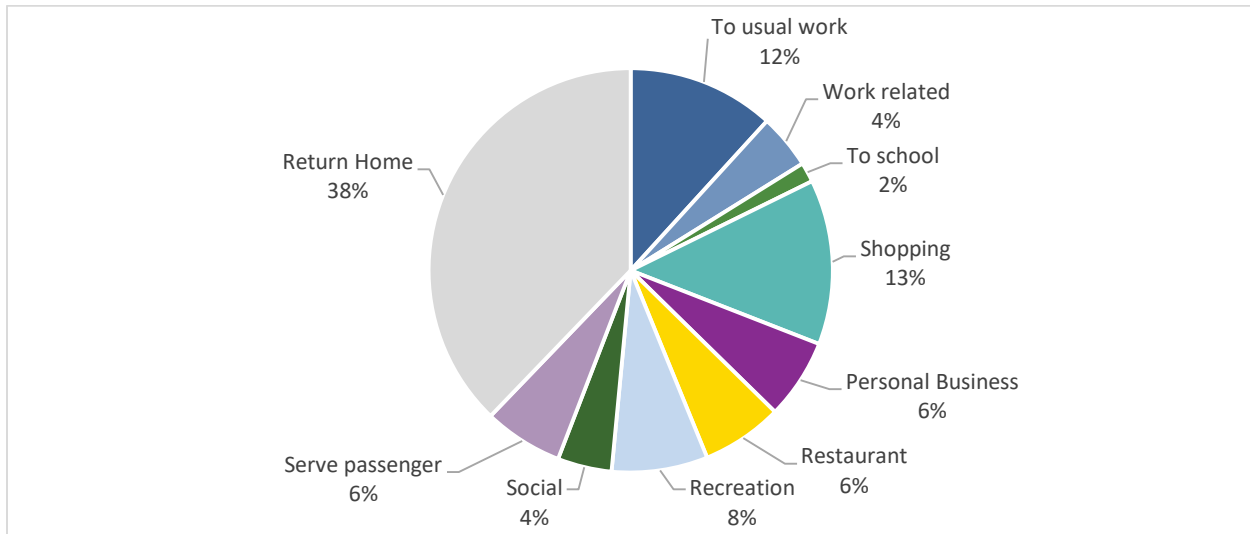
For this survey, a trip was defined as a journey from one place (origin) to another (destination) with a single purpose that may involve more than one mode of travel. Travel to work with a stop at a coffee shop is two separate trips: one with a purpose of restaurant/dining, another with a purpose of work. Travel to work which involved driving to a park & ride location then taking transit the rest of the way is considered a single trip with a primary mode of transit and a transit access mode of driving. It may also be noted that the survey allowed survey participants to enter trips for exercise or leisure that return to the trip origin without stopping at a destination along the way. This includes trips for taking a dog for a walk around the block, going for a jog or bicycle ride for exercise only (not to get somewhere), or going for a scenic drive (without stopping at a destination).

Figure 35 shows the distribution of trip purposes for weekday trips in 2022. **Figure 36** presents trip volumes by trip purpose for weekday trips in four years: 2019 through 2022. This data shows which types of trips have changed the most significantly since 2019 and which ones are trending back to pre-pandemic levels. Trips to usual work increased by about 13% or 21,900 trips in 2022 compared to 2021 and are still well below 2019 trips. Trips for school purposes also increased substantially from its 2021 levels, by about 30% or 5,900 trips and are still half the 2019 levels. This likely reflects that 2022 was the first year since 2019 that all school returned to in-class room instruction, rather than exclusively virtual

²¹ The 2014 estimates were based on estimates from a variety of sources including AirCare, Insurance Corporation of British Columbia (ICBC), the regional transportation mode, and survey odometer readings. The AirCare program was discontinued in December 2014. Estimates from 2015 onwards are based on survey data (odometer readings provided by survey participants who participated in consecutive survey cycles) for estimates of VKT per vehicle, vehicle fleet estimates based on 2015 data for expansion of the 2015 to 2019 results to the total household vehicle population, ICBC vehicle insurance policy counts for passenger vehicles (excluding fleet vehicles) for expansion of the 2020 and 2021 survey data to the total vehicle population, and BC Statistics Agency (BC Stats) population estimates for computation of per capita VKT. It may be noted that passenger.

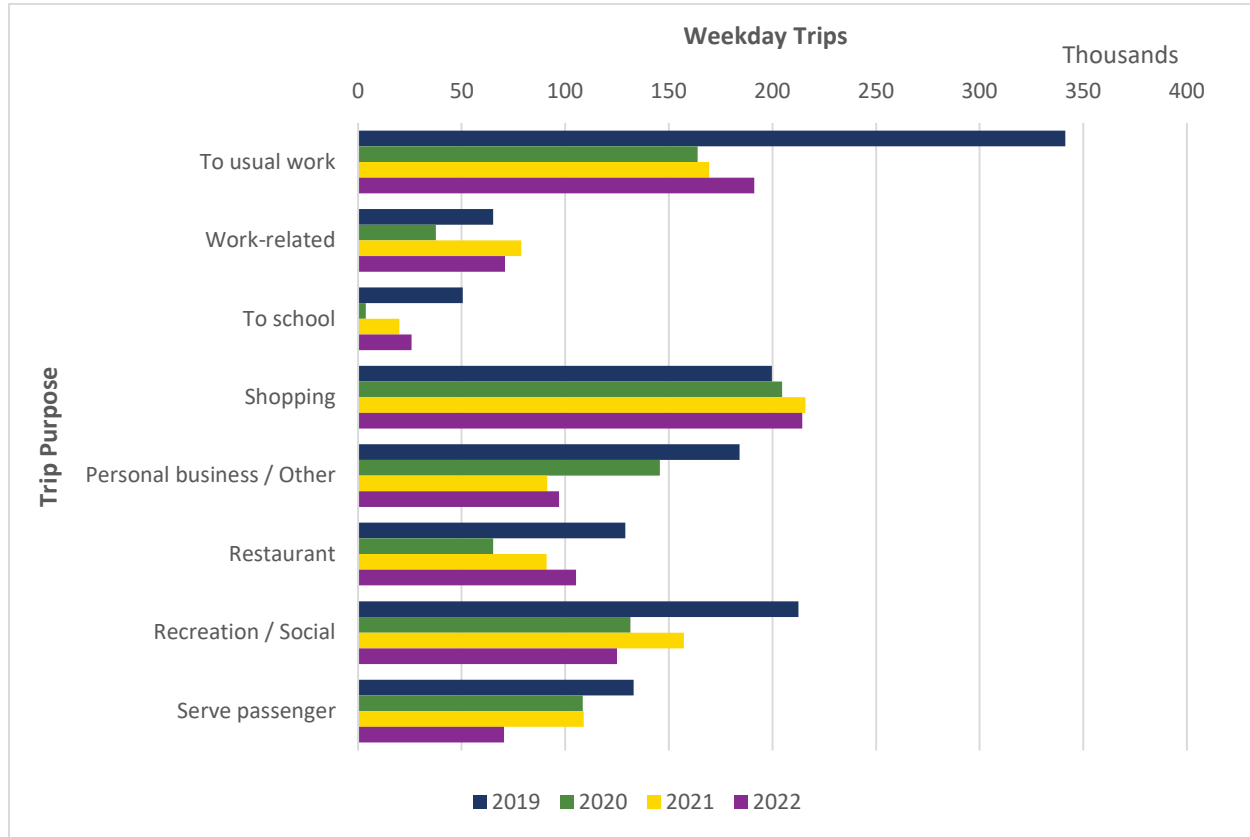
instruction. Shopping trips and work-related trips are the two trip types that have exceeded 2019 levels, both of which are slightly lower than in 2021.

Figure 35. Weekday Daily Trip Purpose²²



²² Vehicle estimates may not fully capture all household vehicles (as some commercial vehicle types may be kept at home) and that BC Stats population estimates are higher than Census counts. For consistency, the 2021 and 2022 surveys use the same methodology as in the 2020 survey cycle.

Figure 36. Trip Purpose Volumes, 2019-2022



6.2.1 Trip Purpose by Peak Hours

Figure 37, Figure 38 and Figure 39 below provide the breakdowns of trip purpose for three different peak periods:

- the AM peak period (two hours from 7:00 a.m. to 8:59 p.m.), 222,800 expanded trips;
- the PM Pre-Peak Period (two hours from 2:00 p.m. to 3:59 p.m.), 246,200 expanded trips; and
- the PM Peak Period (two hours from 4:00 p.m. to 5:59 p.m.), 307,700 expanded trips.

The PM Pre-Peak Period has been included because the volume of trips during this two-hour period is quite high, and, even if the total volume is lower than the following PM Peak period, the proportion and volume of serve-passenger trips is higher than in the PM Peak period. The 'serve passenger' trips are dropping off or picking up passengers, a great many of which would be drop-offs or pick-ups of children at schools. The trip departure times are used to determine the periods used for analysis.

The following observations can be made:

- During the AM peak period, 47% of all the trips are headed to the usual work. The proportion of serve passenger trips was second highest at 14%, with an estimated 30,100 serve-passenger trips in this period. Examining the data more closely reveals that 96% of the serve passenger trips are drop-offs rather than pick-ups, which stands to reason at the start of the day. The survey was not set up to differentiate whether the drop-offs were at specific schools or other

types of destination, however these serve-passenger trips correspond to the time of day when parents would typically drop children off at school, and likely also including a small proportion of trips of residents dropping other adults off at work or other destinations. It is also likely that the school drop-offs are more likely to be for younger children, as older children are more likely to be able to travel unaccompanied.

- During the PM Pre-Peak period, shopping trips (17%) are highest after return home trips (43%). On third place, 10% of all trips were serve-passenger trips, with an estimated 25,000 such trips. Of these, 77% were pick-ups and 23% were drop-offs.
- During the PM Peak period, shopping trips (14%) remain highest after return home trips (56%). Recreational trips take the third place at 7%. 6% of all trips were serve-passenger trips, with an estimated 19,900 such trips, a lower volume than that observed in the preceding two hours. Of these, 65% were pick-ups and 35% were drop-offs.

The large number of serve-passenger trips in the PM Pre-Peak period (2:00 p.m. to 3:59 p.m.) may be associated in part with the fact that young children often get out of school prior to 4:00 p.m. Of course, not all of these trips will be associated with picking up children from school, and they will include other pick-up and drop-off trips for other people and other reasons, and some of those trips may including dropping children off at after-school activities. Combining the total number of PM Pre-Peak and PM Peak trips yields an expanded survey estimate of 44,900 serve-passenger trips, which is much larger than the AM Peak volume of 30,100, which is consistent with the idea that afternoon serve-passenger trips may include a mix of pick-ups and drop-offs and more varied types of destinations than in the AM Peak.

Figure 37. AM Peak Trip Purposes

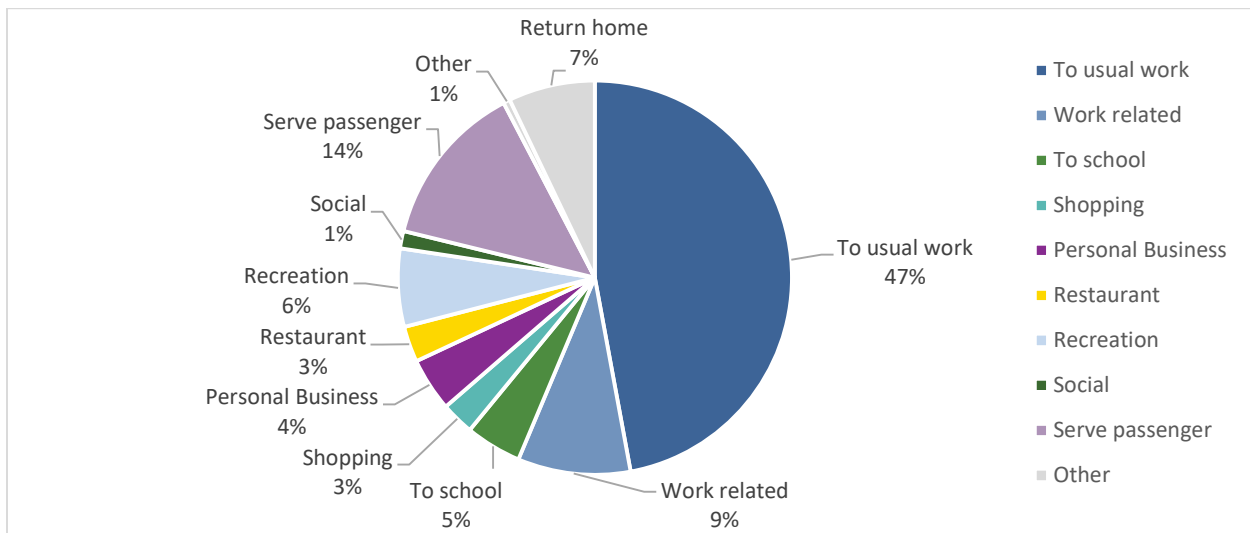


Figure 38. PM Pre-Peak Trip Purposes

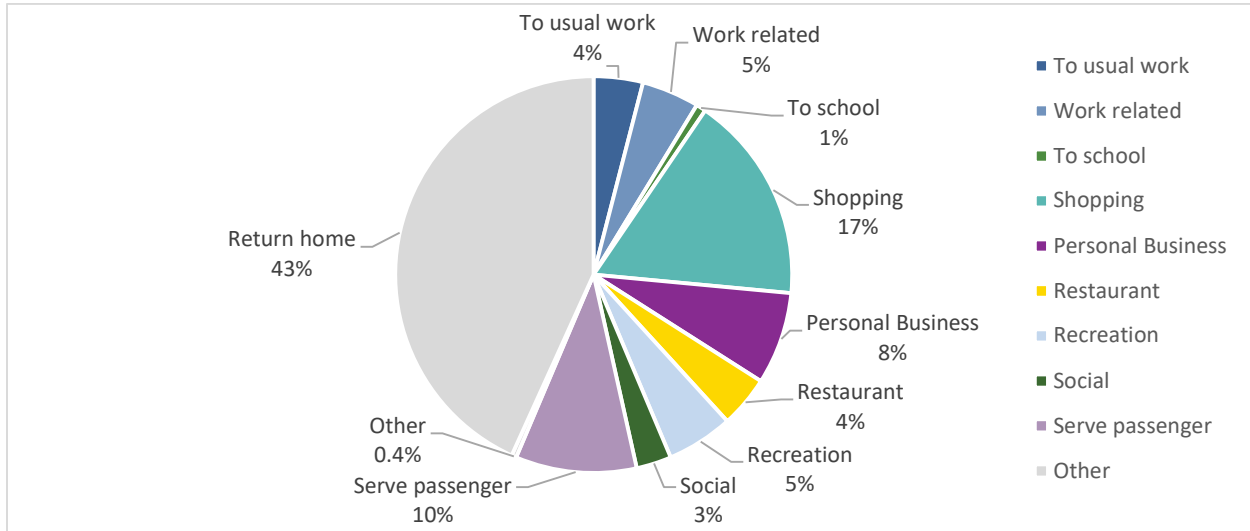
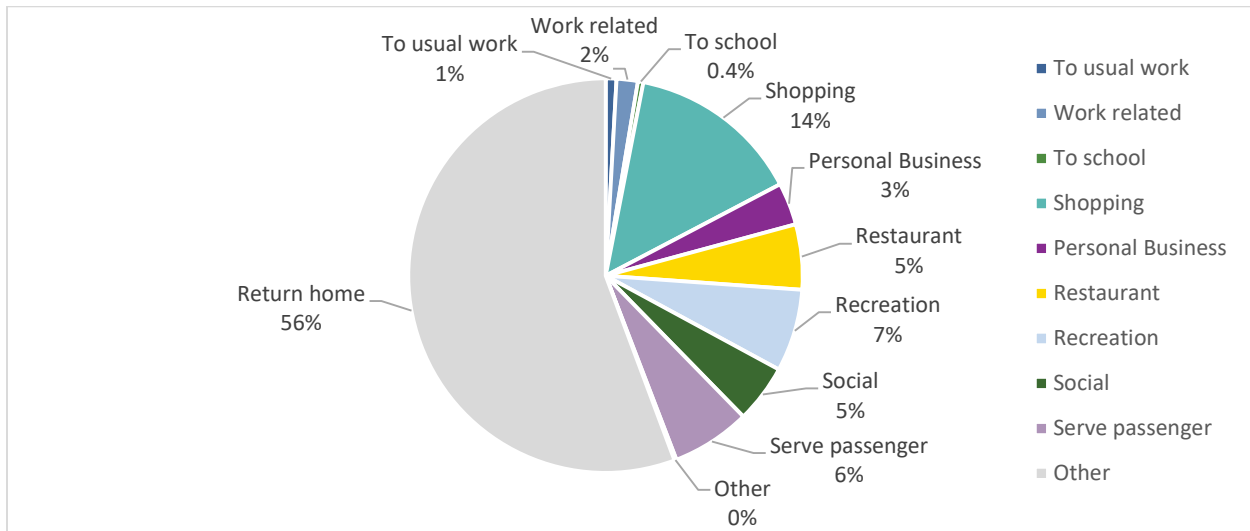


Figure 39. PM Peak Trip Purposes



6.3 Trip Mode Share

For this survey, a trip may have more than one mode of travel. In the case of multiple modes, a ‘primary mode’ is assigned to each trip. A trip is a journey with a single purpose (e.g., get to work) that may have multiple modes. Only one mode is counted as the primary mode. There is a hierarchy of how mode is assigned as follows, and generally corresponds to what mode is used to travel the furthest distance.

1. Transit (and within this, Sky Train is primary over Bus)
2. Auto driver
3. Auto passenger
4. Bicycle
5. Taxi
6. Uber
7. Motorcycle

8. Other Mode (e.g., other communal mode, school bus, etc.)
9. Walk (as the only mode, i.e., walked the entire way)

For example, if someone drove to transit then boarded transit then walked the rest of the way, transit would be the primary mode.

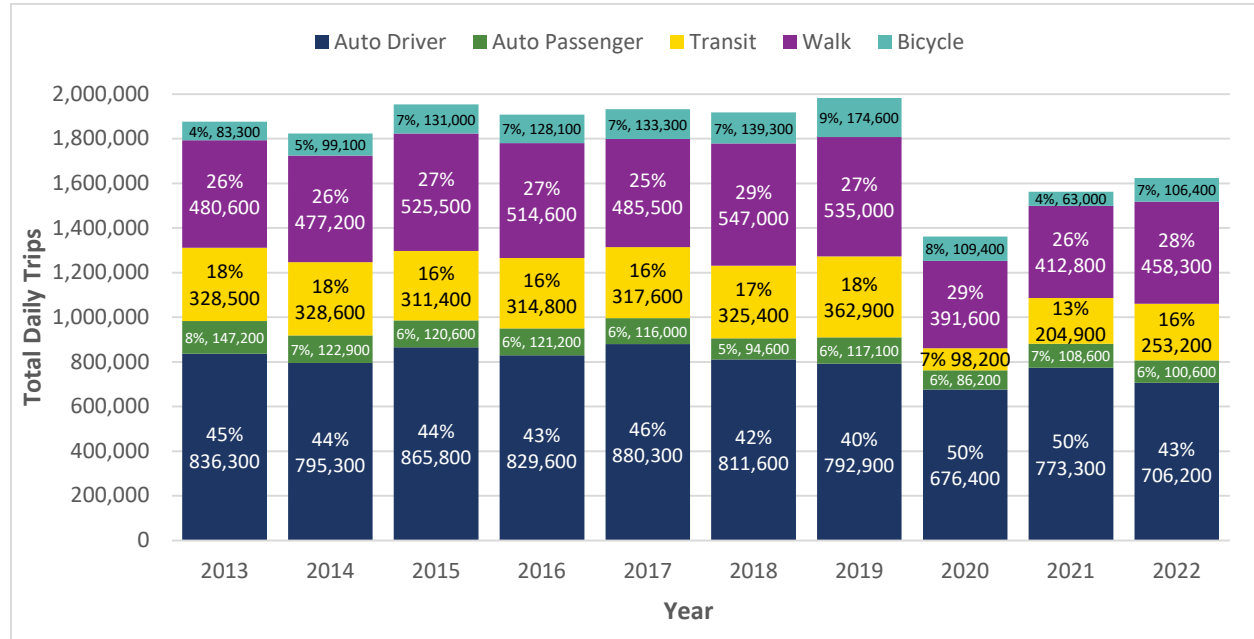
6.3.1 Mode Share

Figure 40 shows the mode shares of the 1,624,700 daily trips made by residents of Vancouver in 2022 and for daily trips made in 2013 through 2021, for comparison. Auto trips (driver and passenger combined) account for 49% of all daily trips, which is a decrease from 2021 (57%) and is similar to 2019 patterns (46%). Prior to 2019 and the onset of the COVID-19 pandemic, a pattern of decreasing auto mode shares was beginning to emerge, and it will be interesting to monitor how volumes and mode shares will stabilize as COVID-19 moves from pandemic to endemic. Compared to before the onset of the COVID-19 pandemic in 2019, the number of daily trips has decreased by 18%; and the mode shares are relatively similar to 2019 mode shares. This likely indicates that Vancouverites have reduced trips compared with pre-pandemic levels regardless of which mode they use for travel.

Walk mode share has remained relatively stable since 2021, at 28%. Small increases in transit and cycling were observed in 2022. Transit has increased to 16% in 2022 compared to 13% in 2021 and only 7% in 2020. This likely reflects increased comfort using transit compared to 2020 when COVID-19 case counts and transmission rates were highest and vaccines were not yet readily available. Cycling mode has increased to 7% in 2022 compared to 4% in 2021. It may also be noted that the 2022 survey was administered about three weeks earlier than the 2021 survey, and the weather was warmer and less rainy during the 2022 survey compared with the 2021 survey period. The 2021 survey period was also challenged by multiple instances of prolonged, unusually poor weather (i.e., large amounts of rain and high winds). The better, more seasonable weather in 2022 likely had a significant impact on people's mode share choices as many individuals who rely on active transportation in fair weather turn to other modes (that are more protected from the elements) in poor or winter weather. The later timing of the 2021 survey was an anomaly due to processes related to the change in consultants and COVID-19 related delays with the mail house. We can expect to see further change in mode shares and trip volumes in 2023 as the COVID-19 situation continues to evolve.



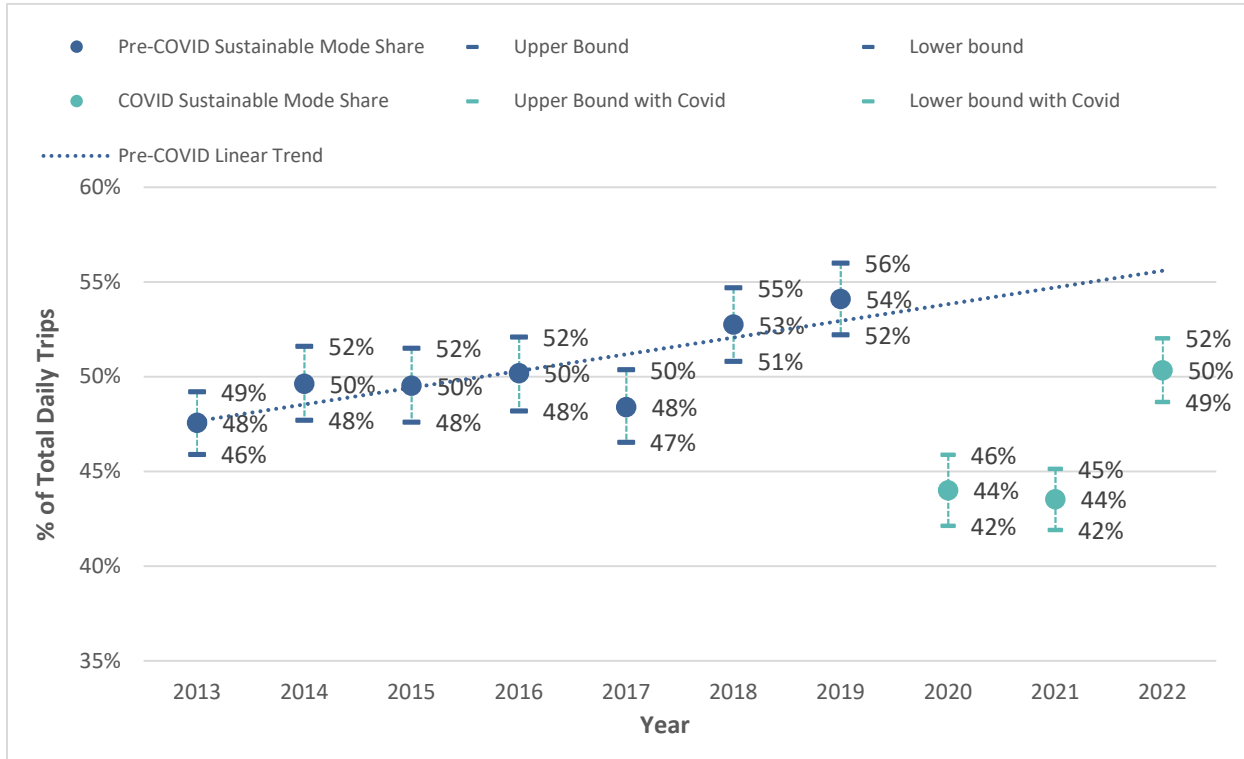
Figure 40. Trip Mode Share and Daily Volumes by Year



6.3.2 Trend in Sustainable Mode Share

Sustainable transportation refers to modes of travel that are sustainable in terms of environmental and social impacts. For the analysis of the Vancouver Transportation Survey data, transit, walking, and cycling are considered sustainable modes. Walking and cycling have the additional benefit of also being active transportation modes. The City of Vancouver has a sustainable mode share goal of two-thirds of trips in Vancouver to be by active transportation and transit by 2030. **Figure 41** shows the trend in sustainable mode share since the survey’s inception in 2013 with the 95% confidence interval for each data point. The survey results show progressive increases in sustainable mode use between 2013 and 2019, when sustainable mode share reached a peak of 54% of all daily trips. With the onset of the COVID-19 pandemic in 2020 and extreme weather events during the 2021 survey, sustainable mode share dropped to about 44% in 2020 and 2021 but has rebounded slightly to 50% in 2022. The absolute number of automobile trips is still below pre-pandemic levels, which suggests that the increase in auto mode share does not necessarily mean that residents’ daily travel is having a greater environmental impact than pre-pandemic daily travel.

Figure 41. Sustainable Mode Share by Year with High and Low Ranges ²³



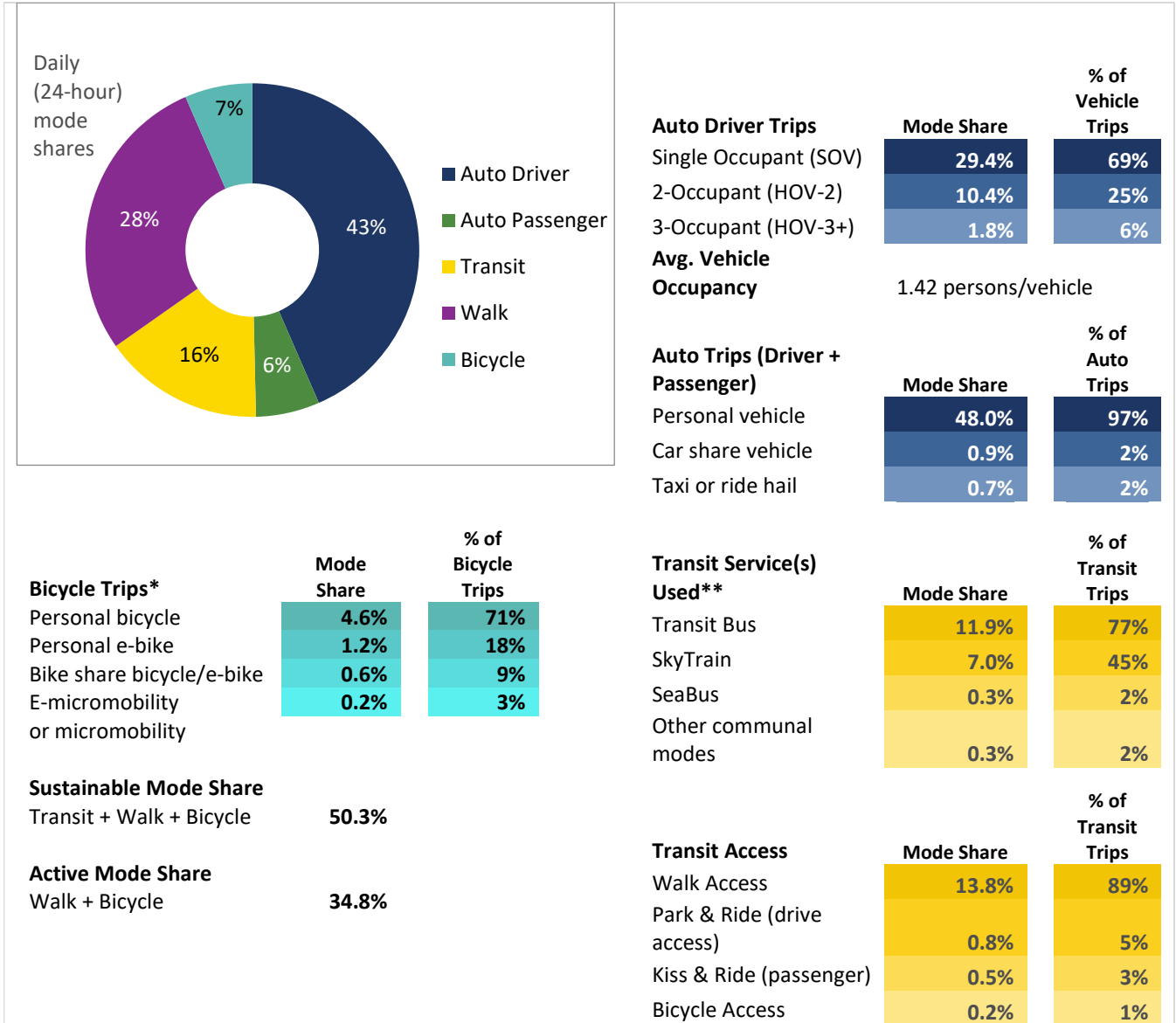
6.3.3 Mode Details (Vehicle Occupancy, Car Share, Transit Access Mode, Bike Share)

Figure 42 provides further categorization for auto trips, transit trips, and cycling trips.

- High Occupancy Vehicle (HOV) auto driver trips represent 12% of all daily trips made by residents of the city (or 31% of all trips made by vehicle) and Single Occupant Vehicle (SOV) trips account for 30% of all trips. Most vehicle trips (97%) are made by personal vehicles.
- While transit trips account for 16% of all trips, many of them involve a mix of bus, SkyTrain, and walking. Transit trips that involve a bus account for 12% of all trips and 77% of all transit trips. SkyTrain is used for 7% of all trips or 45% of all transit trips. Transit trips are most often accessed by walking (89%).
- Personal e-bikes accounts for 18% of all bicycle trips, or 1.2% of all trips. Just under three-quarters (71%) of bicycle trips are taken by non-electric personal bicycles.
- Sustainable mode shares account for 50% of all trips and active mode shares account for 35% of all trips.

²³ High and low are from the theoretical 95% confidence interval computed on the basis of the sustainable mode share and sample size (number of persons surveyed), without factoring in the effects of data weighting on effective sample size.

Figure 42. Detailed Examination of Trip Mode Share



* The Bicycle Trips mode group includes e-micromobility and micromobility devices due to the similarity of use, range, and technology.

** Sum of Bus + SeaBus + SkyTrain may add to greater than total Transit mode share as more than one transit service may be used in a single trip. 'Other communal modes' include school bus, shuttle bus, Aquabus, HandyDart, etc.

6.3.4 Mode Share by Zone

Figure 43 presents sustainable mode share by zone and

Table 16 presents the same data along with a sub-total for sustainable transportation mode and population density to highlight the relationship between population density, sustainable mode share, and access to rapid transit as well as other factors not shown in the table such as family situation, income, proximity to employment, and access to sustainable infrastructure.

The CBD West End zone has the highest sustainable mode share (i.e., transit, walk, and bike) and has exceeded the City's target, with 77% of daily trips being made by active transportation or transit. CBD – False Creek zone has the next highest sustainable transportation mode share and nearly meets the target, at 65%. The CBD zones have a high population density, high transit access, young age demography, and close proximity to employment.

Vancouver Broadway (56%) and Vancouver Kitsilano (60%) also have higher percentages of sustainable mode shares and population density with high rates of employment, proximity to UBC, and the Commercial-Broadway/UBC B-Line rapid transit service (the highest ridership line in the region). Despite below-average population density, Vancouver Port (55%) also has a high sustainable share. In 2021, the survey asked residents about their perceptions of the walkability of their neighbourhood, residents gave this zone high scores for walkability (proximity to amenities and services) and it has high active mode shares for work commutes, reflecting proximity to jobs within the zone and the CBD.



The lowest sustainable mode share is seen in Vancouver Southeast, with 29% of all trips being made by sustainable mode. This zone has an average population density and no rapid transit or SkyTrain service. It is also furthest from any employment or post-secondary institution and has significant changes in elevation. The second lowest sustainable mode share is in Vancouver Kerrisdale, at 32%. Vancouver Kerrisdale has the lowest population density and no rapid transit or SkyTrain service.

Vancouver East (45%) and Vancouver South (48%) have modest sustainable mode shares with transit being higher and active transportation being lower. These zones have lower population densities along with SkyTrain stations throughout the zone. The lack of active transportation mode share can be

attributed to the scattered developments, low densities and the land topography making walking and cycling less viable options.

Figure 43. Map of Mode Share by Zone

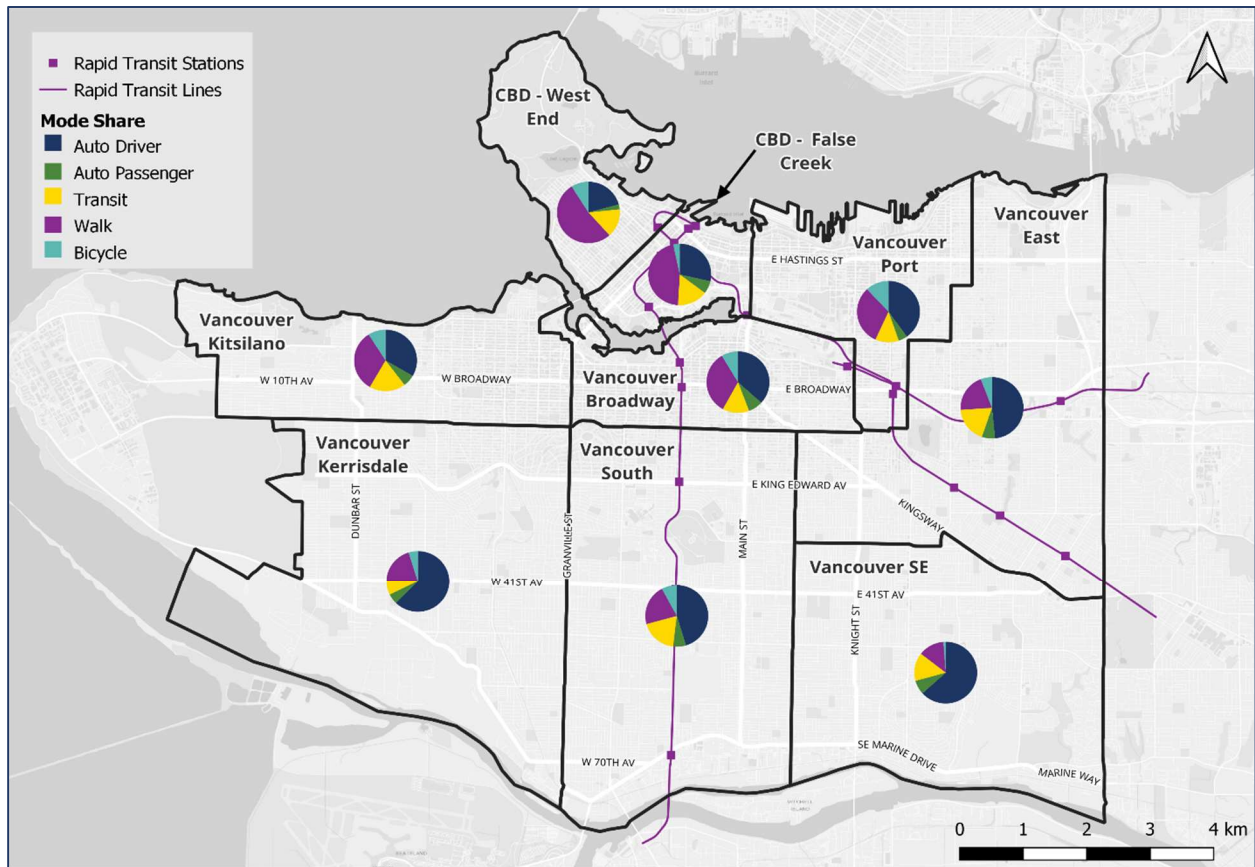


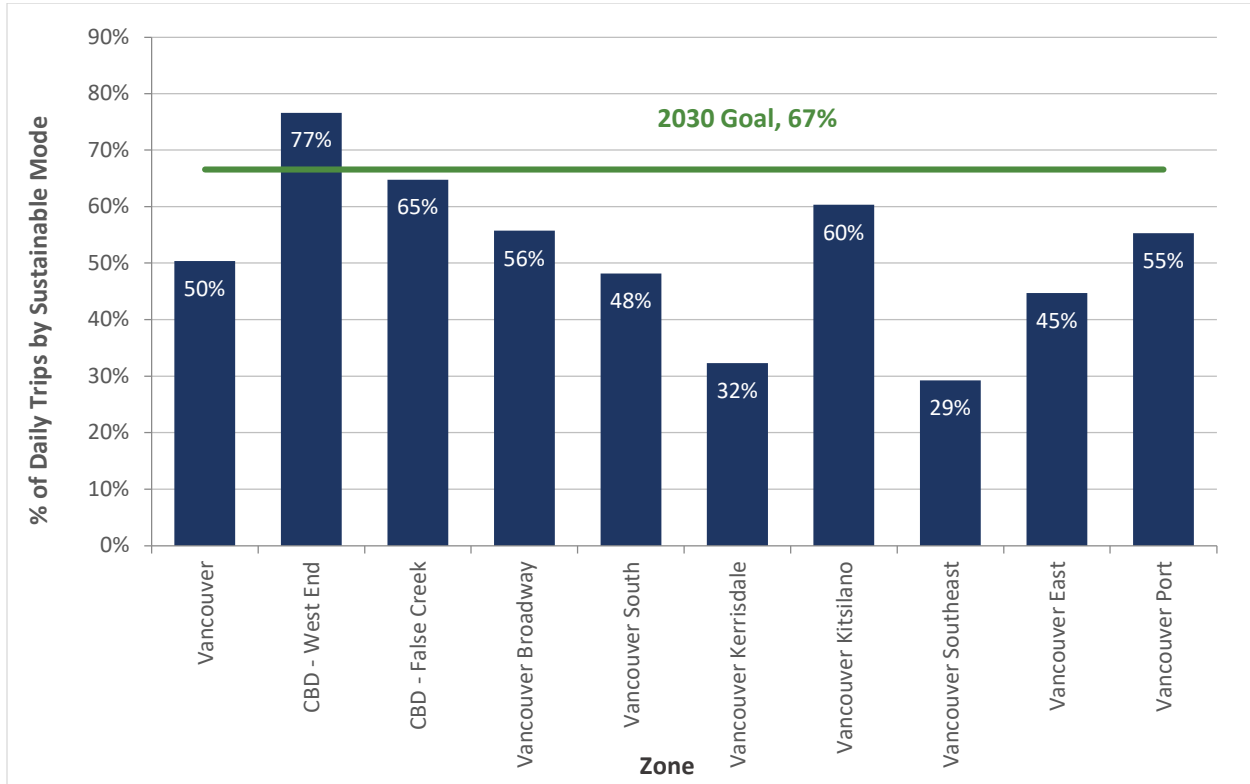
Table 16. Mode Share by Zone

Mode Shares	Vancouver	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
Population density (per ha)	58	86	169	92	45	30	61	59	59	56
Auto Driver	43%	21%	29%	37%	45%	62%	33%	63%	48%	40%
Auto Passenger	6%	3%	7%	8%	7%	5%	6%	7%	7%	5%
Transit	16%	15%	16%	14%	19%	7%	19%	15%	19%	12%
Walk	28%	53%	46%	33%	21%	20%	33%	13%	20%	31%
Bicycle	7%	9%	3%	9%	8%	5%	9%	1%	6%	12%
Sustainable Mode Share (Transit + Walk + Bike) ²⁴	50%	77%	65%	56%	48%	32%	60%	29%	45%	55%
Active Mode Share (Walk + Bike)	35%	62%	49%	42%	29%	25%	42%	14%	26%	43%

²⁴ Due to rounding, the percentage of sustainable mode share reported in the text may differ from the percentage resulting from summing transit, walk, and bicycle mode shares from the table.

Figure 44 provides a bar chart of sustainable transportation modes by zone to help measure the City’s sustainable mode share goal and to highlight the variation across zones. CBD West End is the only zone exceeding this target and CBD False Creek is nearly meeting it. Other zones are not yet meeting the target.

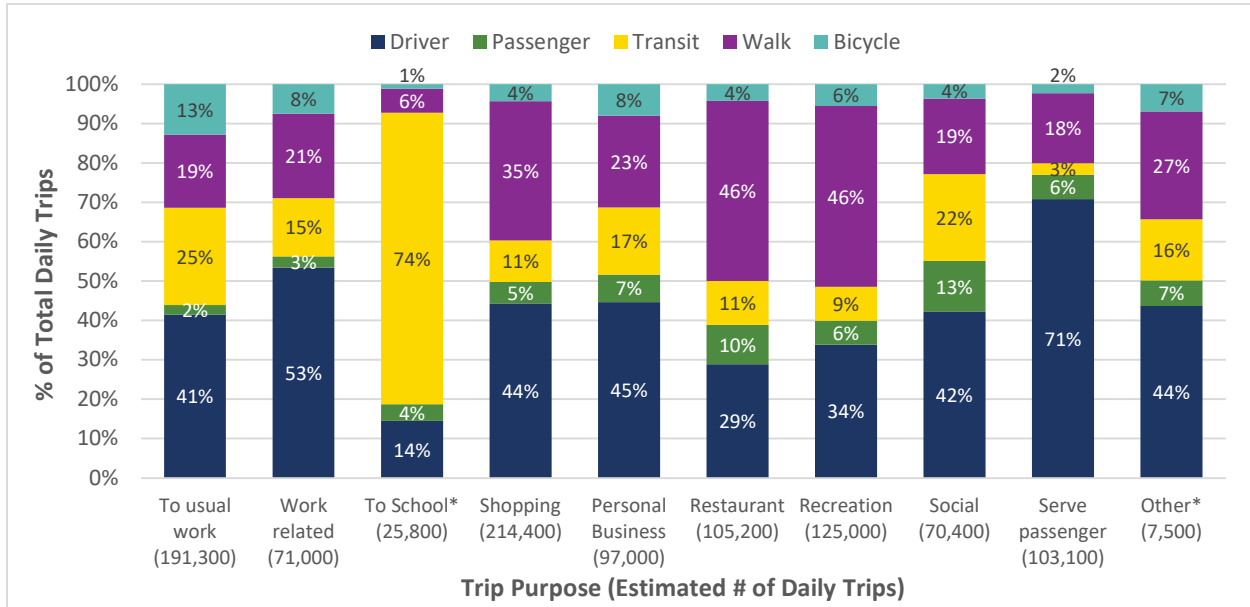
Figure 44. Sustainable Mode Share by Zone



6.3.5 Mode Share by Trip Purpose

Figure 45 shows weekday mode shares by trip purpose. The highest auto driver mode shares are for the purpose of serving passengers (71%) or work-related trips (53%). Passenger auto trips are most often for social purposes (13%) or trips to restaurants (10%). Similarly, walk mode shares are highest for trips to restaurants (46%) and trips for recreational purposes (46%). The largest percentage of transit trips are trips to school (74%), followed by trips to work (25%). Finally, cycling mode shares are highest for work commutes (13%), work related trips (8%), personal business (8%) and trips for recreational purposes (5%).

Figure 45. Weekday Mode Share by Trip Purpose ²⁵



6.3.6 Mode Share by Personal Demographics

This section discusses mode share by personal demographics, such as age group, gender, ethnicity, and year of immigration to look for any patterns specific to these data elements. This helps to identify issues related to equity that may help develop policies and programs to improve equity of access to transportation for marginalized groups.

Figure 46 shows mode shares by age group.

- Auto driver mode shares are highest for survey participants over the age of 35, ranging from 44% to 51%, and lowest for participants under the age of 24 (25%).
- Participants aged 18 to 24 years old or over the age of 75 had the highest auto passenger mode share (9% and 12% respectively) while participants aged 25 to 44 years old had the lowest passenger mode share (5% to 6%).
- Transit mode shares are highest for the 18- to 24-year-old age group, at 57%*, decreases with age, from 19% for 25- to 34-year-olds, and is a more consistent range of 7% to 13% for ages 35 and older.
- Walk mode share is highest amongst those 65 to 74 years old (31%) and those 25 to 34 years old (30%).
- Cycling mode shares are highest amongst those between the ages of 25 and 74, ranging from 6% to 8%, and lowest for those 18 to 24 years old (0%*).

²⁵ *Mode shares ‘to school’ and ‘other’ purposes are based on a small sample size (n=77, n=52), interpret with caution.

Figure 46. Trip Mode Share by Respondent Age Group²⁶

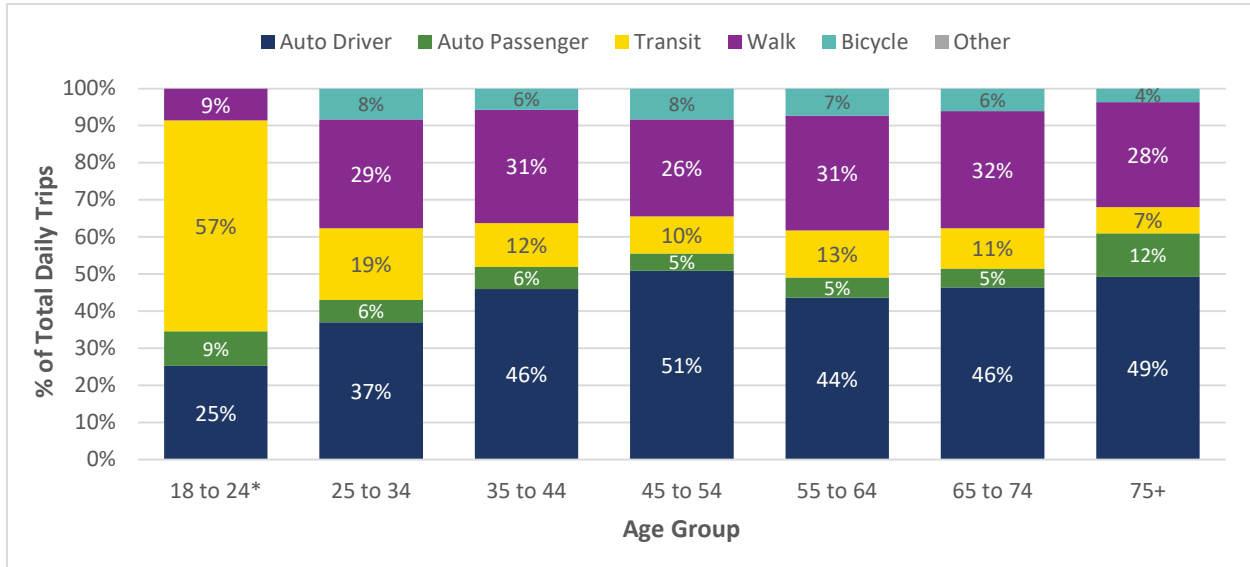
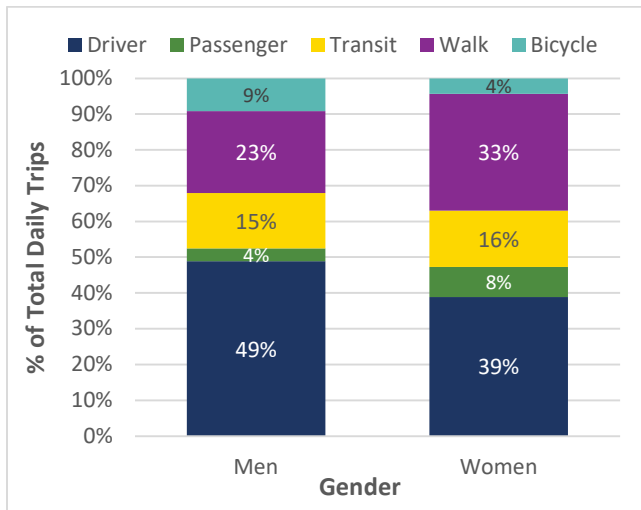


Figure 47 shows mode share by gender. Women are slightly less likely to be auto drivers (39%) or cyclists (4%) and more likely to be auto passengers (8%) or walk (33%) compared to men (49%, 9%, 4%, and 23%, respectively).

Figure 47. Trip Mode Share by Gender²⁷



As shown in Figure 48, survey participants who self-identified in a visible minority population group are more likely to rely on transit (21% mode share compared to 13% to non-minorities). They have a greater walk mode share (22%) than non-minorities (31%). White participants are twice as likely to cycle (8%) than participants who identified in a visible minority population group (4%).

²⁶ Asterisk (*) indicates that the breakdown of active/sustainable modes may warrant being suppressed due to small sample size.

²⁷ Persons with non-binary gender, those who prefer to self-describe, and those who declined to say are not analysed separately due to small sample sizes.

Figure 48. Trip Mode Share by Respondent Visible Minority Population Group

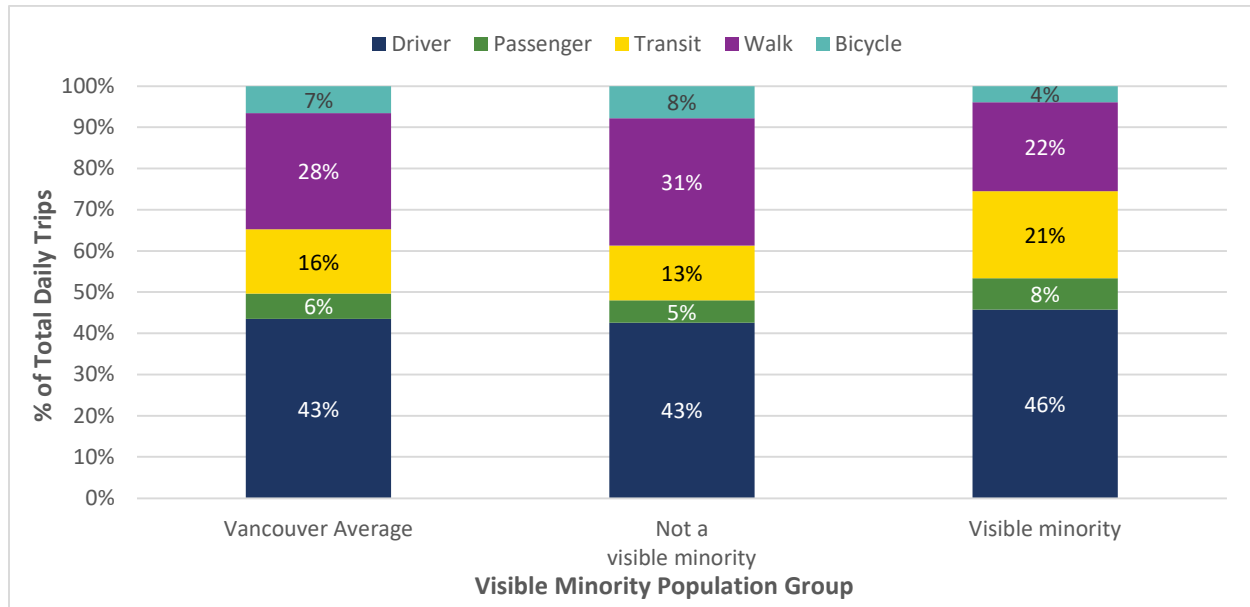


Figure 49 highlights mode shares for specific visible minority population groups. Some caution should be exercised in interpreting the results for Hispanic/Latin American, West Asian/MENA, Multiple, and South East Asian due to modest sample sizes ($n=140$, $n=139$, $n=140$, and $n=277$ trips respectively), while the results for East Asian and white can be viewed with more confidence ($n=1,520$ and $n=6,960$, respectively). The results suggest that mode shares vary within the range of visible minority population groups, with Southeast Asian and East Asian survey participants more likely than other groups to report travelling via automobile, and less likely to report cycling. West Asian/Middle Eastern/North African survey participants are most likely to report walking and least likely to report travelling by automobile. Readers are reminded that mode choices are correlated to a variety of factors including income, dwelling type, family situation, occupational status, and proximity to transit. Although the results below speak to the experience different population groups in travelling via different modes, a deeper analysis of the data would be required to explore the extent to which the observed patterns may be related to the variety of factors that influence mode choice.

Figure 49. Trip Mode Share for Specific Population Groups²⁸

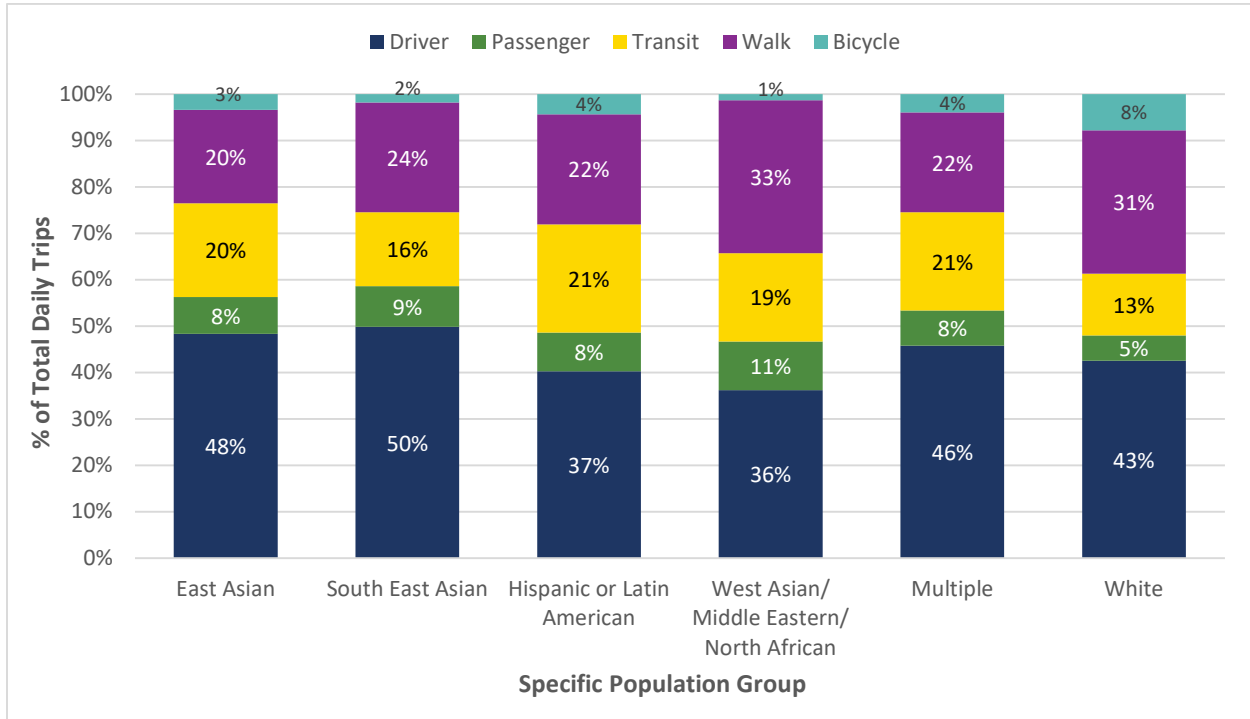
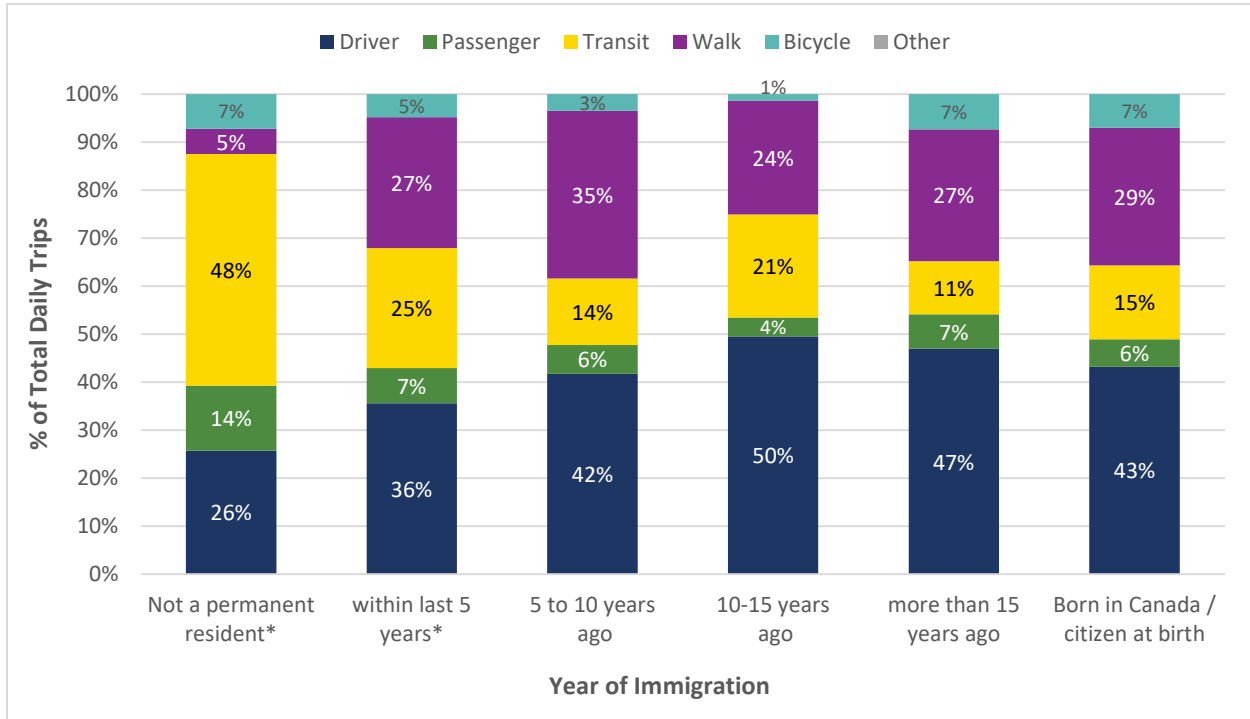


Figure 50 shows that recent immigrants to Canada (within the last 5 years) and survey participants who are not permanent residents are more likely to be reliant on transit (25% and 48%, respectively). Auto driver mode share was lowest amongst participants who are not permanent residents (26%) and those that have lived in Canada less than five years (36%). Cycling mode share was similar for participants who were not permanent residents and those who had lived in Canada for more than 15 years or been born in Canada (7%). These findings should be interpreted with some caution as the group sizes for participants who recently immigrated to Canada or who are not permanent residents are small.

²⁸ Chart excludes Black and South Asian due to small sample sizes as well as Unknown / Prefer not to Say.

Figure 50. Trip Mode Share by Respondent Year of Immigration²⁹



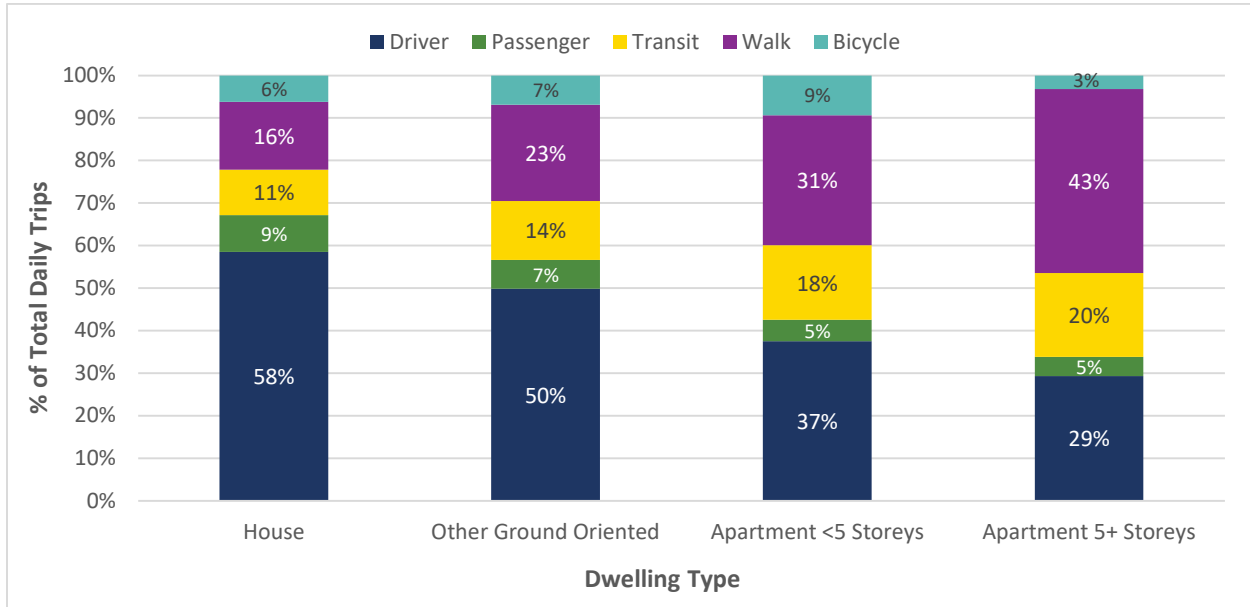
6.3.7 Mode Share by Household Characteristics

This section includes a breakdown of mode shares by household characteristics, including dwelling type, dwelling tenure, private vehicle access, and annual household income.

Figure 51 shows mode share by dwelling type, it shows an interesting but not surprising pattern of higher walk mode share associated with apartment buildings and higher auto driver mode shares associated with houses or other ground-oriented dwellings. This likely reflects a few things, including limited access to parking if living in an apartment building and the increased ease of accessing amenities and services that is usually associated with higher density living that comes with apartment buildings. Single family dwellings are most commonly the housing form for households with children which, as indicated in **Section 6.3.6**, has a higher auto mode share.

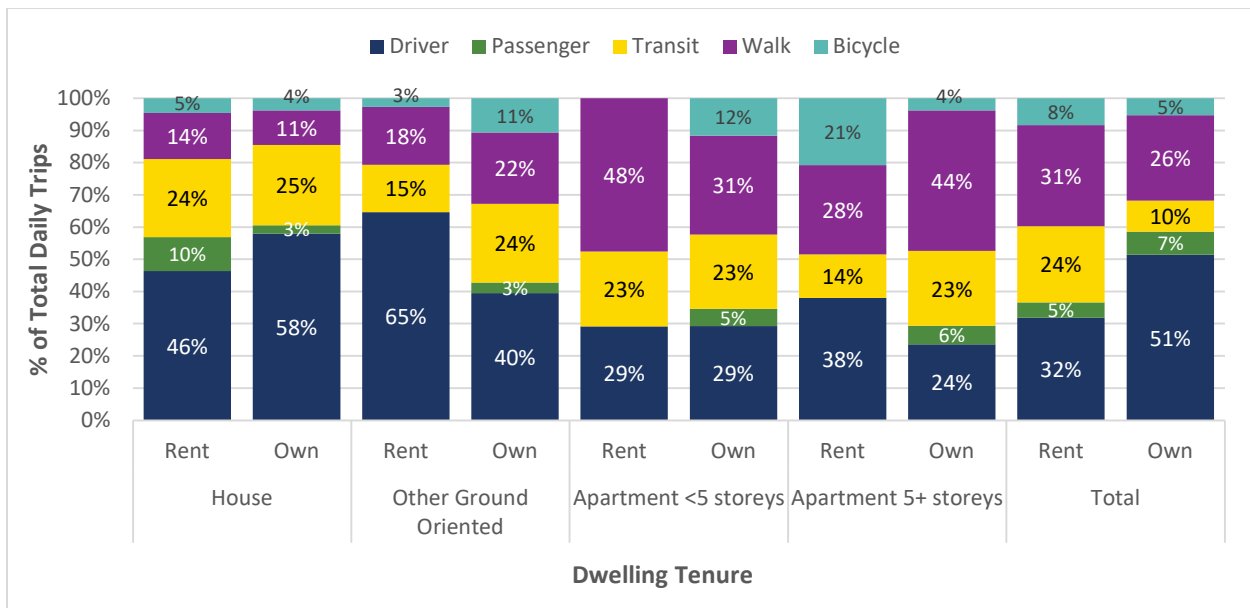
²⁹ Interpret results for non-permanent residents and immigrants within the last 5 years due to smaller sample sizes (n=46, n=142).

Figure 51. Trip Mode Share by Dwelling Type



Mode share distribution shows interesting patterns by dwelling type for those who rent versus those who own. As shown in **Figure 52**, the difference for all dwelling types combined is that those who own have a higher auto driver mode share (51% versus 32%) and lower transit mode share (10% versus 24%). Participants in houses were more likely to be auto drivers, regardless of whether they rent or own. It is notable that participants who rent in apartments that are 5+ storeys have the highest bicycle mode share at 21%, compared to only 4% for those who own and 8% of those who rent regardless of dwelling type.

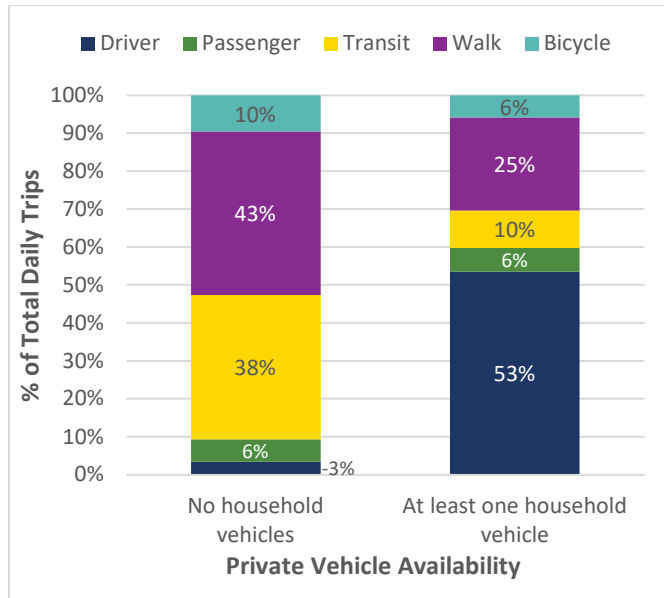
Figure 52. Trip Mode Share by Dwelling Tenure



As shown in **Figure 53**, auto driver mode share is substantially higher amongst survey participants who have at least one household vehicle, at 53% compared to only 3% amongst those with no household

vehicles. Those with no household vehicles had higher transit (38%) and walk (43%) mode shares than those with at least one household vehicle (10% and 25%). To put these figures in context, it may be noted that 20% of the adult population does not have access to a household vehicle, while the daily trips they make represent 16% of all daily trips.³⁰

Figure 53. Weekday Mode Share by Private Vehicle Availability

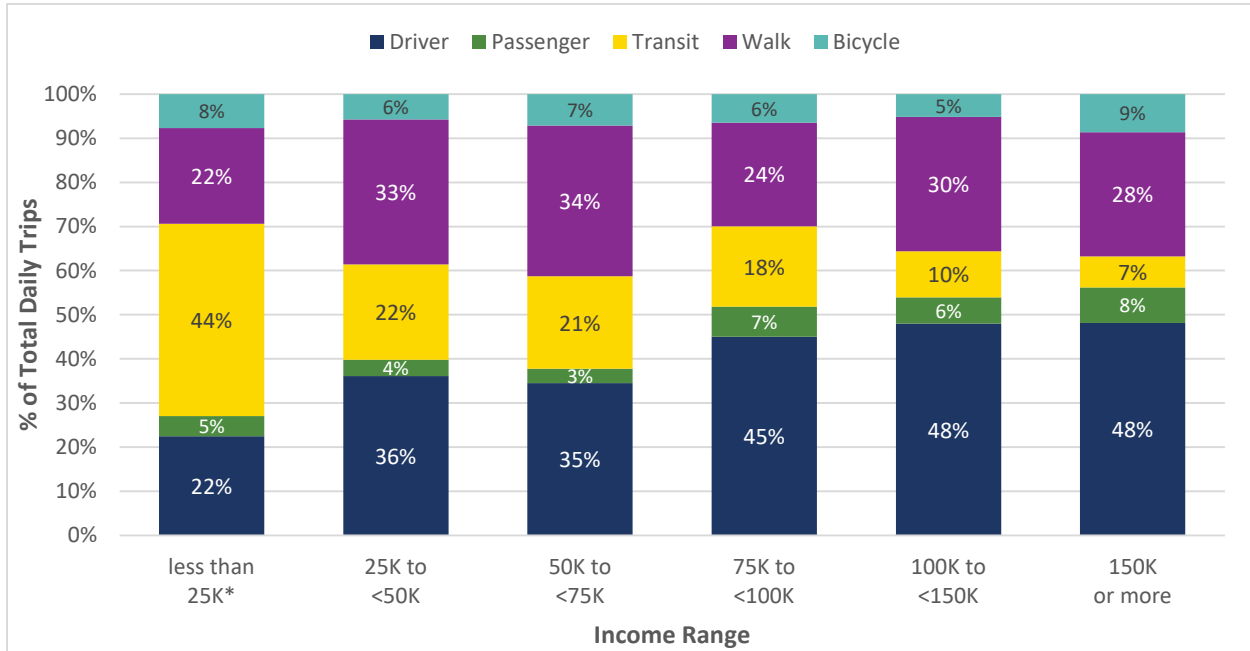


- **Figure 54** shows mode shares by household income. Auto driver mode shares increase as household income range increases, with auto driver trips accounting for 22% of trips for the lowest income bracket and increasing to 48% of trips for the highest income bracket. This is less variable for incomes that are \$75,000 and higher.
- Transit use is highest amongst the lowest income households, representing 44% of all trips from residents with a household income below \$25,000. Transit use decreases as household income range increases, with a low of 7% amongst residents with household incomes of \$150,000 or more.
- Walking mode varied slightly by income but no clear pattern emerged. Walking is lower amongst the lowest income households and highest for those with incomes ranging from \$50,000 to \$75,000. Cycling mode shares are highest amongst the highest income households (9%) and lowest income households (8%).

It may be noted that household income may be closely correlated with the other household characteristics of dwelling type, dwelling tenure, and private vehicle availability explored above, although it is beyond the scope of the current analysis to explore this in more depth.

³⁰ The survey results suggest that about 322,443 daily trips are made by adult population without access to a household vehicle, compared to 1,300,021 made by those with access to a household vehicle.

Figure 54. Trip Mode Share by Household Income Range



6.4 Trip Distributions

This section describes the trip distributions for trips reported by survey participants, including the trip origin and destinations and internal capture of trips.

6.4.1 Origin-Destination Matrix

Table 17 on the following page shows the Origin-Destination flow by zone. The O-D matrix is generally balanced between the O-D zones.

Of the estimated 1,624,700 total daily trips made by residents of the city, 76% (1,227,500) are made within the City of Vancouver. One in five daily trips (20%, or 329,500 trips) are between the City of Vancouver and places external to the city (10% each leaving and returning to the city). Finally, about 4% of all daily trips made by City of Vancouver residents are made entirely outside of the city 67,800 trips with both the origin and destination being external to the City that are made in the course of the resident’s travel outside of the City).

Table 17. Origin-Destination Flows by Zone

Destination	Within City of Vancouver									External Destinations								Total Daily Trips
	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port	North Shore	UEL	Burnaby / New West	NE Sector / Maple Ridge / Pitt Mead.	Richmond / S. Delta	N. Delta / Surrey / White Rock / Langley	Langley	Other Metro Vancouver	
Origin																		
CBD - West End	70,200	27,500	7,900	4,900	500	8,300	3,100	4,700	3,300	2,800	3,400	2,100	200	300	100	-	100	139,400
CBD - False Creek	27,600	63,100	17,200	13,600	2,900	9,800	7,100	11,300	10,600	2,700	300	4,100	700	5,200	900	-	1,100	178,100
Vancouver Broadway	7,300	16,600	87,500	21,200	8,200	17,700	4,700	11,900	9,600	2,400	3,100	5,300	500	3,200	1,500	-	200	201,000
Vancouver South	5,600	12,900	19,000	73,100	11,400	9,400	13,800	10,400	3,900	1,400	5,800	5,100	700	9,100	1,500	-	700	183,900
Vancouver Kerrisdale	600	3,900	6,800	10,200	49,200	13,400	3,300	2,200	2,200	500	3,900	1,900	800	6,500	200	100	200	105,900
Vancouver Kitsilano	8,000	7,500	21,600	10,000	11,200	70,400	2,800	5,400	1,900	900	7,200	2,300	700	2,400	200	600	400	153,500
Vancouver Southeast	2,100	6,900	5,100	13,700	4,300	2,400	49,700	13,400	3,800	800	1,600	15,800	900	7,200	100	100	1,700	129,700
Vancouver East	5,200	10,900	11,300	10,800	3,300	5,100	12,500	81,900	20,700	3,400	3,000	20,100	1,900	5,400	1,200	500	1,200	198,400
Vancouver Port	3,600	12,900	8,400	2,700	1,800	2,300	3,900	20,100	40,300	3,000	2,000	3,200	200	1,300	500	200	-	106,300
North Shore	2,700	2,100	1,900	1,600	600	900	800	4,200	2,300	7,900	-	300	-	200	-	-	600	26,300
UEL	3,300	500	5,900	4,100	5,000	4,700	2,100	2,800	1,200	-	8,700	-	-	-	-	-	-	38,200
Burnaby / New West.	2,100	4,900	3,800	3,800	1,400	2,000	16,200	20,100	3,900	100	-	21,300	200	1,000	800	100	-	81,600
NE Sector / Maple Ridge / Pitt Meadows	300	1,200	1,100	600	-	800	600	2,400	200	-	-	100	4,000	-	100	-	-	11,300
Richmond / S. Delta	700	5,500	2,300	10,600	5,100	1,100	7,000	4,500	900	-	1,100	500	-	15,500	800	-	-	55,400
N. Delta / Surrey / White Rock / Langley	-	200	1,200	1,900	200	300	400	1,700	100	200	-	400	500	100	2,500	-	-	9,700
Langley	-	-	100	100	100	-	100	200	400	-	-	-	-	-	-	600	-	1,600
External to Metro Vancouver	-	100	200	900	200	800	1,500	300	-	100	-	-	100	-	-	-	200	4,400
Total Daily Trips	139,200	176,700	201,300	183,800	105,400	149,400	129,500	197,500	105,500	26,300	40,000	82,500	11,300	57,300	10,500	2,300	6,400	1,624,800

Note: All expanded trip estimates are rounded to the closest 100 to avoid implying a higher level of precision than is actually present in the expanded survey sample. Individual cells may not always add to the row or column totals due to rounding.

6.4.2 Internalization of Trips

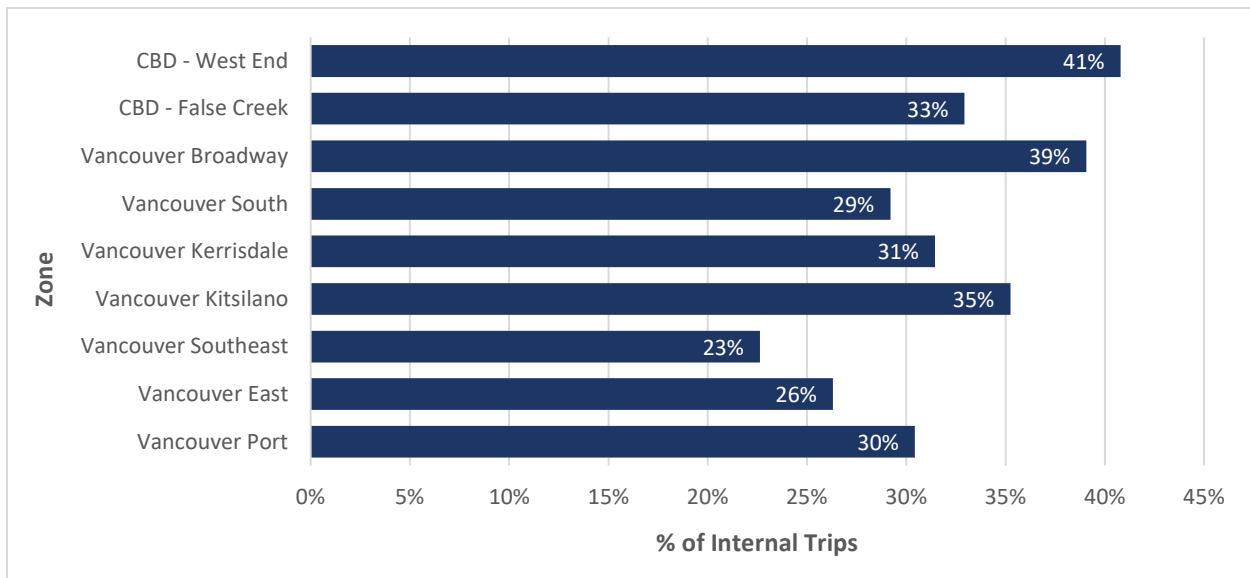
The internal trip capture, or the proportion of trips made by residents of the zone that are within the zone, provides an indication of the extent to which shopping, services, work, and other trip purposes are met locally.

Figure 55 highlights that CBD – West End and Vancouver Broadway zones have the highest percentage of internalized trips, at 41% and 39%, respectively. These zones have high population densities and high proportions of residents living in apartments along with



employment areas and amenities, likely contributing to these results due to ease of accessing amenities. The Vancouver East zone and Vancouver Southeast zones have the lowest percentage of internalized trips, at 26% and 23%. These zones would have the least amenities and employment, causing a greater need to travel outside the zone to access amenities. **Table 17** can be used to see the next most common destinations for any particular zone. For example, the next most common destinations for Vancouver Southeast zone are the Burnaby/New West Zone, Vancouver South and Vancouver East which are the adjacent zones.

Figure 55. Percentage of Internal Trips by Zone



For internal trips capture, both the origin and destination need to be in a single zone. **Table 18** shows the internalization of trips for three types of trips. The term home-base work (HBW) refers to any trip that was either from home to work or from work to home. The term home-based other (HBO) refers to any trips that involved home as an origin or destination and any other purpose besides work as the destination or origin. The non home-based (NHB) involves an origin-destination pair that did not have home as a location at all. For CDB – False Creek, 13% of its HBW trips are within its own zone and 46% of its HBO trips are within the zone. In the case of NHB trips, only 27% of these trips are made within the

zone. The NHB trips are typically part of a trip chain. This category generally has lower numbers for all zones. Once a person leaves a zone, they make a number of stops outside the zone for the sake of convenience and efficiency before heading home.

Table 18. Internalization of Trips by Home-based Purpose- by Zone³¹

	Average across all trip purposes	Home-based work (HBW)	Home-based other (HBO)	Non home-based (NHB)
CBD - West End	41%	13%	62%	30%
CBD - False Creek	33%	13%	46%	27%
Vancouver Broadway	39%	22%	52%	22%
Vancouver South	29%	14%	44%	12%
Vancouver Kerrisdale	31%	14%	46%	10%
Vancouver Kitsilano	35%	13%	54%	17%
Vancouver Southeast	23%	7%	38%	6%
Vancouver East	26%	9%	39%	11%
Vancouver Port	30%	11%	41%	25%

6.4.3 Trip Locations by Mode

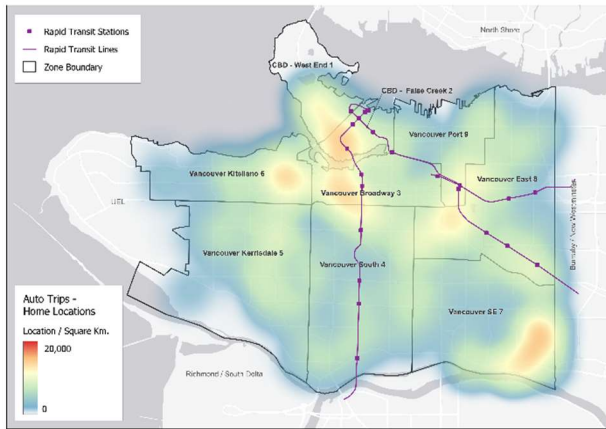
Figure 56, Figure 58, and Figure 60 show heat maps of the home locations of home-based trips, including both work related and other home-based trips by car, transit, and cycling respectively. **Figure 57, Figure 59, and Figure 61** show similar heat maps but for non home-based trip ends (whether origin or destination). The heat scales (based on density of trip origins/destinations per square kilometer) are different from each of the modes, but the same for the home-based and non home-based variations of each map, which serves to show the dispersion of home-based trip ends and the concentration of non home-based trip ends where people travel to and from.

Geographically, the downtown core generates the most auto trips in the city. This correlates closely with population density as the downtown core has the highest population density in the city.

The hot spots on the transit heat map for home-based trips, shown in **Figure 58**, reflect locations with both access to rapid transit, such as the SkyTrain or Canada Line, as well as high rise development. Outside of high population density areas, the heat map may indicate communities where public transit or other active modes are not competitive with the private vehicle and thus more auto trips are generated. The heat map in **Figure 59**, illustrates the fact that the CBD is an attractor of transit trips, and also highlights the importance of transit for travel to UBC.

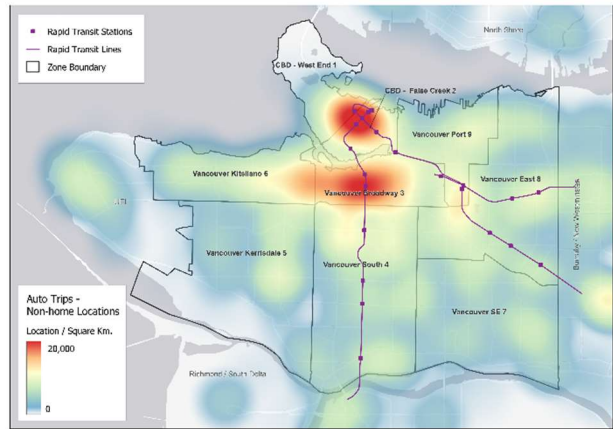
³¹ Note: Excludes home-based school (HBS) due to small samples sizes.

Figure 56. Heat Map for Home-Based Locations of Auto Trips



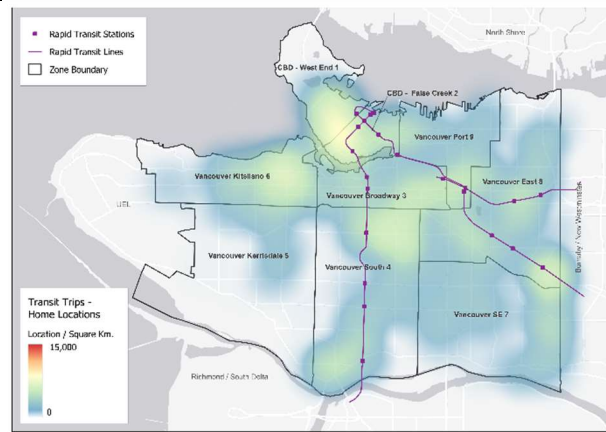
Home origins/destinations for home-based auto trips

Figure 57. Heat Map for Non Home-Based Locations by Auto



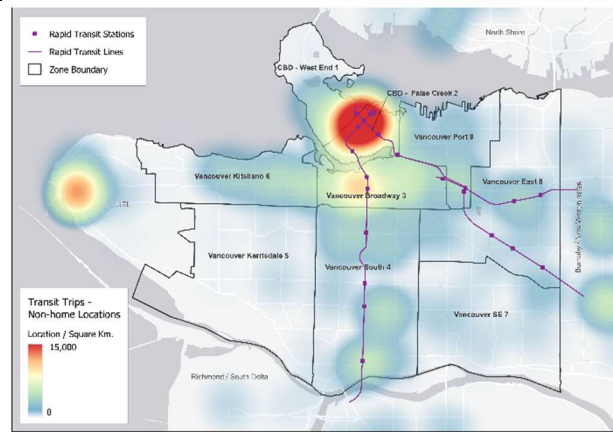
Trip origins/destinations other than home associated with car trips

Figure 58. Heat Map for Home-Based Locations of Transit Trips



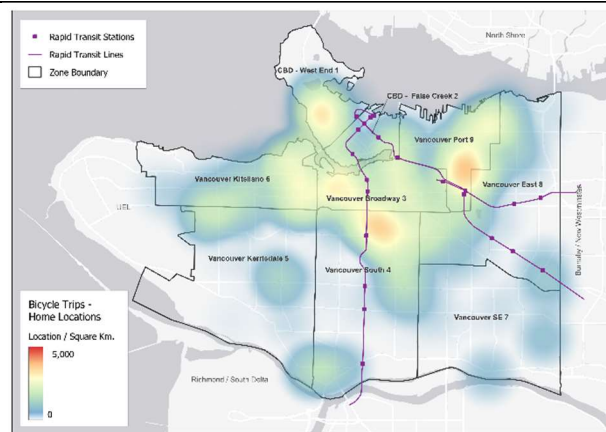
Home origins/destinations for home-based transit trips

Figure 59. Heat Map for Non Home-Based Locations by Transit



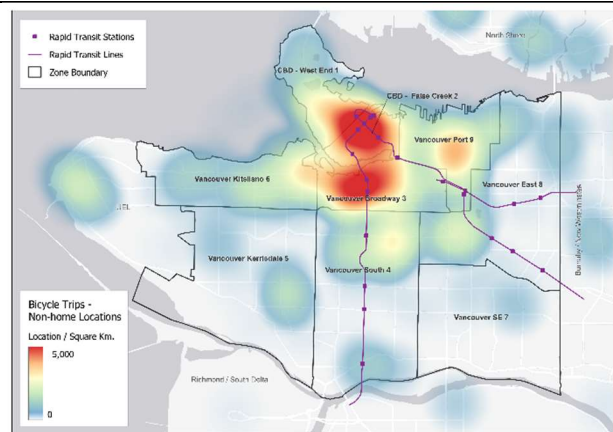
Trip origins/destinations other than home associated with transit trips

Figure 60. Heat Map for Home-Based Locations of Cycling Trips



Home origins/destinations for home-based cycling trips

Figure 61. Heat Map for Non Home-Based Locations by Cycling



Trip origins/destinations for non home-based cycling trips

6.5 Trip Distance and Duration

Trip distances and durations have been estimated for the most efficient route available based on the trip origin, destination, mode of travel, and time of day of travel.³² These results cannot be compared to results prior to 2020 as the method used to estimate the trip distance and duration was changed for the 2021 survey. As such, results from previous survey cycles are not included.

Figure 62 shows the average trip distance for home-based work trips and all trips. Auto drivers tend to have the longest trip distances for home-based work trips at 11.2 km. Transit users, on average, report the longest trip distances for all trips, at 8.1 km. Looking at all trips, walking trips are the shortest distance, at 1.0km, bike trips are longer at 4.9km, followed by transit trips at 8.1km. Home-based trips to work follow a similar pattern with walking trips being shortest (1.5km), followed by bike trips (6.7km) and transit (9.6km).

Figure 62. Average Trip Distance for Home-based Work Trips and All Trips

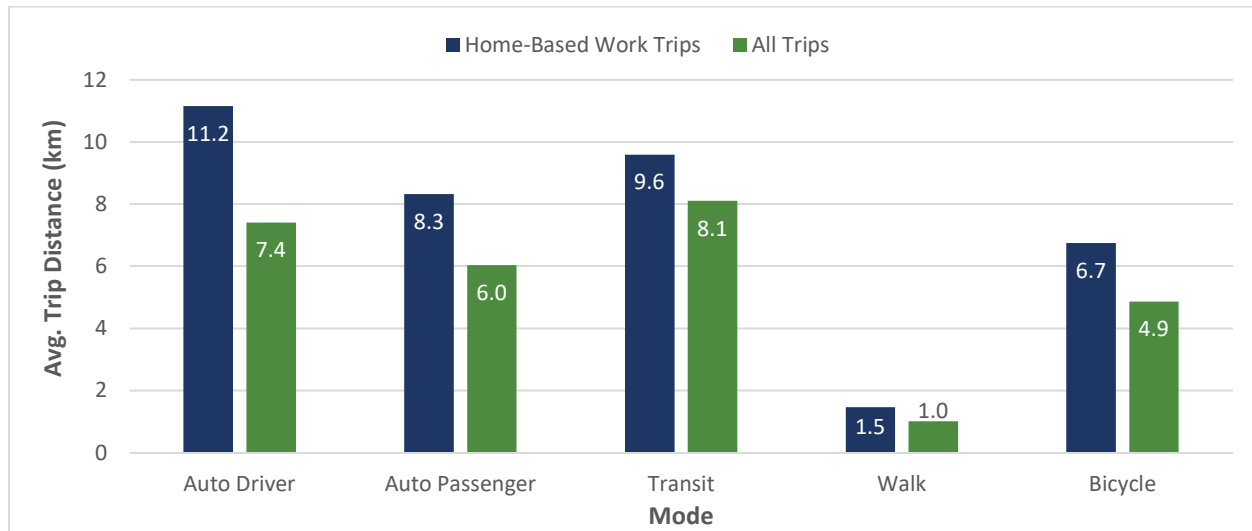


Figure 63 illustrates the average duration (in minutes) for home-based work trips and all trips. Transit users typically have the longest travel duration for home-based work trips (36.7 minutes) and all trips (32.2 minutes). Bicycle trips, while shorter in distance, have the second longest duration for work trips (32.2 minutes) and all trips (19.0 minutes). Auto driver trips, while having the longest distance, are among the shortest travel durations for home-based work trips (18.7 minutes) and all trips (13.5 minutes).

³² Trip information was processed via Google Map Directions to obtain estimates of the distance and duration of trips based on their mode and time of day for the suggested route on actual available transportation infrastructure known to Google, including walking paths and bicycle paths. Durations for cycling and walking trips are based on an average of approximately 4.7 kmph for walking trips and 15 kmph for cycling trips. The results exclude trips with multiple modes such as auto/transit trips for which the algorithm does not take into account access to transit via automobile.

Figure 63. Average Trip Duration for Home-based Work Trips and All Trips

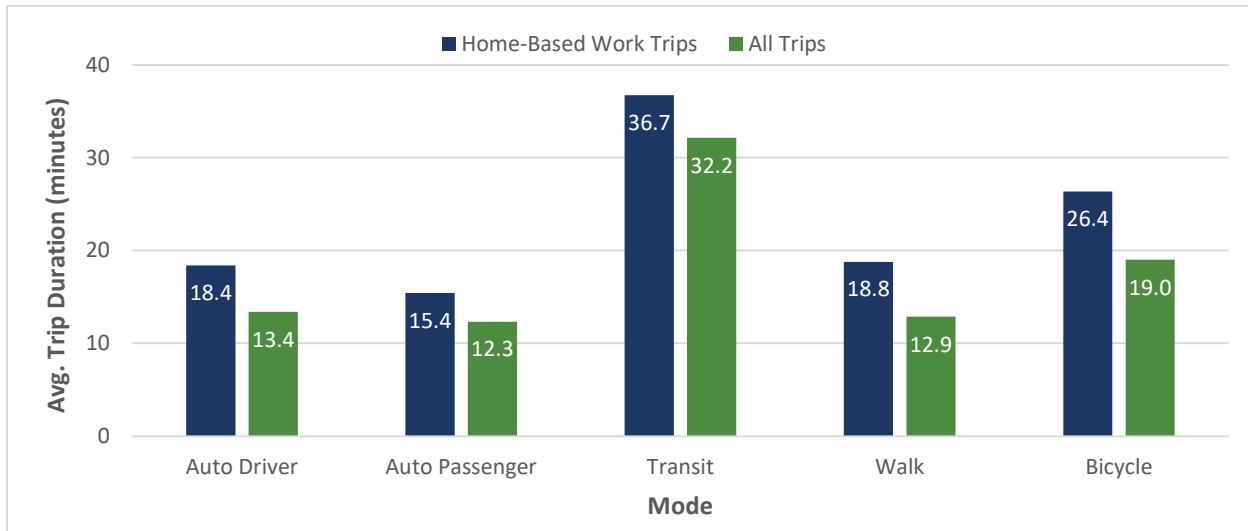


Figure 64 shows the daily person-km trips on weekdays across all modes. Auto drivers account for the largest share of total daily person-km, more than two times the total for transit.

Figure 64. Total Daily Person-KM on Weekdays

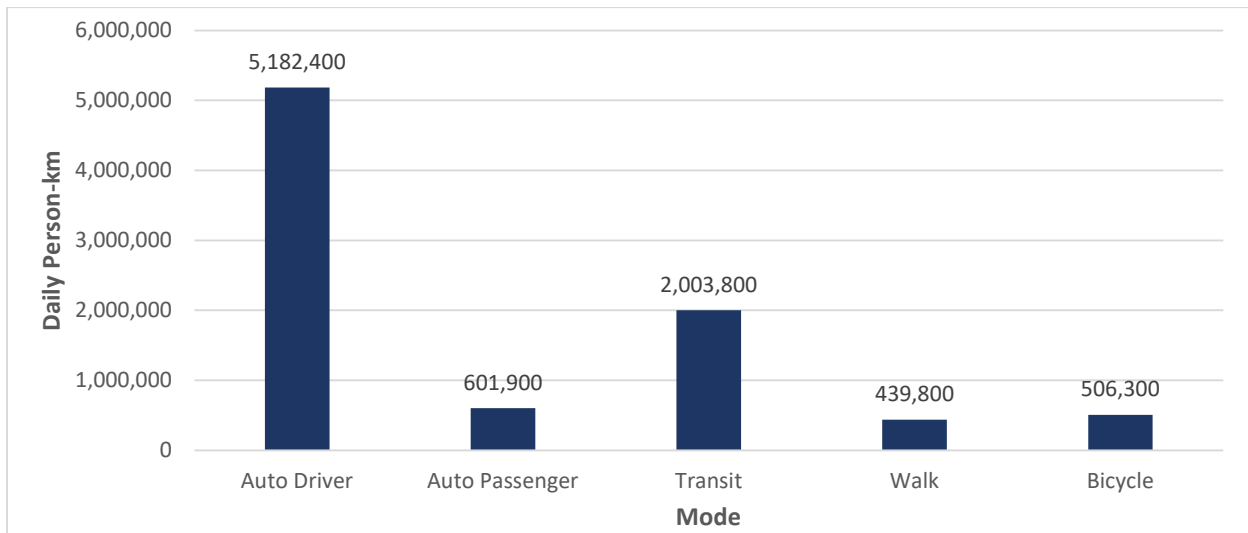


Figure 65 and Figure 66 show the distributions of the estimated trip distances and durations by different modes of travel. This breakdown reveals some interesting findings:

- About half (51%) of all auto driver trips are within a 5 km drive, 27% are a 5 to 10 km drive, while 22% are 10 km or more. Two-thirds (66%) would take less than 15 minutes to drive.
- 37% of transit trips are within 5 km (on available routes for the time of day of travel, including distance to walk to/from the transit stop), 34% are within 5 to 10 km, and 29% are 10 km or more. Taking into account time to walk to transit stops and transfers between routes or bus and SkyTrain or SeaBus, transit trips take longer for the distance travelled compared to other modes. Only 16% of transit trips take less than 15 minutes, 31% are between 15 and 30 minutes, 33% between 30 and 45 minutes, and 20% are 45 minutes or more.

- One-quarter (25%) of cycling trips are within 2 km on available bicycle routes and roads, 37% are between 2 to 5 km, 28% are within 5 to 10 km, and only 10% are greater than 10 km.
- Just over two-thirds (69%) of walking trips made on available sidewalks and walking paths are within a 1 km walk, 23% are between 1 to 2 km, and only 8% are greater than 2 km. In terms of duration, 28% are less than a 5-minute walk at average walking speed (of approximately 4.5 kmph), an equal percentage (28%) are between 5 and 10 minutes, 17% are between 10 to 15 minutes, and 27% are more than 15 minutes.

Figure 65. Distribution of Trip Distances by Mode ³³

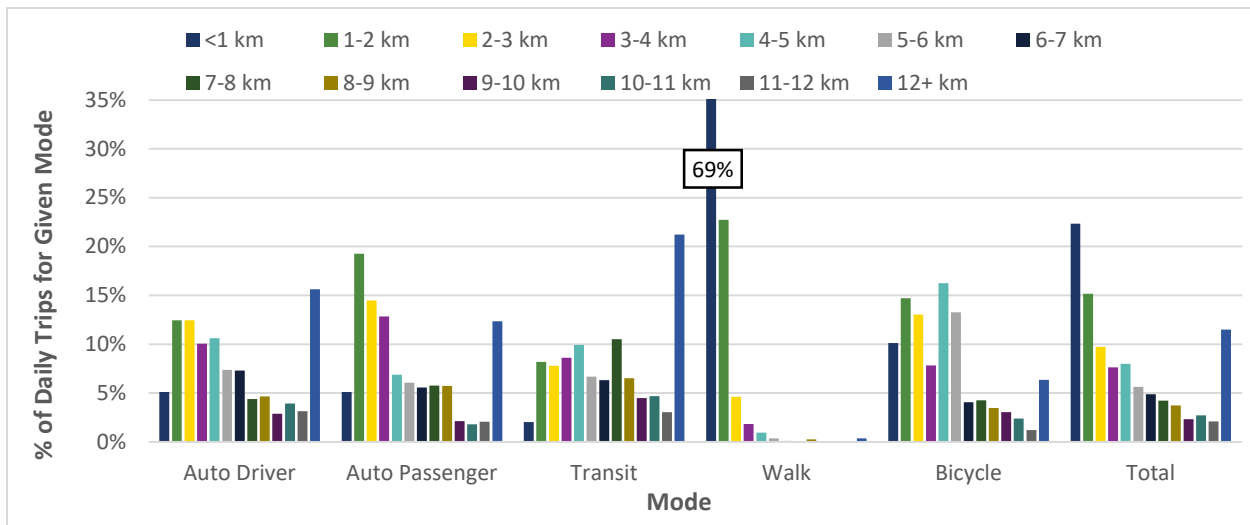
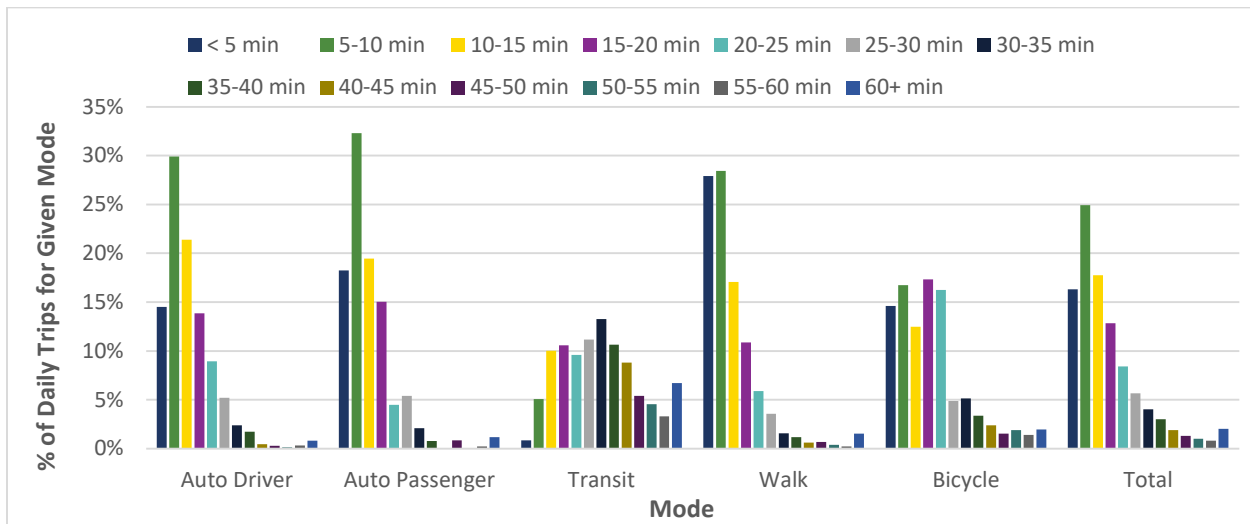


Figure 66. Distribution of Trip Durations by Mode ³⁴



³³ Excludes any walking trips that were identified by respondents as purely recreational (e.g., going for a jog, walking around the block, or walking the dog) that left and returned to the same place without an intervening destination. Excludes any trips that did not return a Google Map Directions distance.

³⁴ Excludes transit trips that employed any of the following non-walking modes to access transit: driver, passenger (including taxi and ride-hail), bicycle, as the duration algorithm does not take into account mode transfers. Excludes any walking trips that

6.6 Walkability and Bikeability of Motorized Trips



The trips captured in the 2022 survey were examined to determine the extent to which trips that were made using a motorized mode could have feasibly utilized an active mode instead (i.e., walking or cycling) based on the distance of the trip. The distance threshold for a “bikeable” trip was set at 4.6 km (actual distance travelled on available bike routes; about an 18-minute bike ride at 15 kmph). The distance threshold for a “walkable” trip was set at 1.6 km (actual distance travelled; about a 19-minute walk at 5 kmph, not accounting for stops at crosswalks or other reasons for slowdowns).³⁵ For trips taken using motorized modes, the trip origin, destination, and time of day were processed to determine the estimated actual cycling and walking distances via the most efficient available cycling and pedestrian routes. If the cycling or walking distance was found to be within the appropriate threshold, the trip was deemed bikeable or walkable for the purposes of this analysis. Identification of trips of walkable or bikeable distance was undertaken based solely on distance and does not take into consideration physical ability, access to a bicycle, or whether the trip was part of longer trip chain requiring motorized modes.

Of the 43% of trips that are auto driver trips, about one in five (20%) are bikeable but not walkable and 7% are walkable. As shown in **Figure 67**, this suggests that overall, 20% of all trips were auto driver trips within what is considered a reasonable cycling distance for potential mode-shifting from auto driver to cycling. An additional 7% of all trips were auto driver trips within a reasonable distance for potential mode-shifting to walking.

were identified by respondents as purely recreational (e.g., going for a jog, walking around the block, or walking the dog) that left and returned to the same place without an intervening destination. Excludes any trips that did not return a Google Map Directions duration.

³⁵ The walkability and bikeability thresholds were determined based on information available from a similar survey undertaken in a nearby community.; 90% of all cycling and walking trips were within these thresholds of 4.6km for biking and 1.6km for walking.

Figure 67. Walkable and Bikeable Trips from Current Mode Share Based on Trip Distance

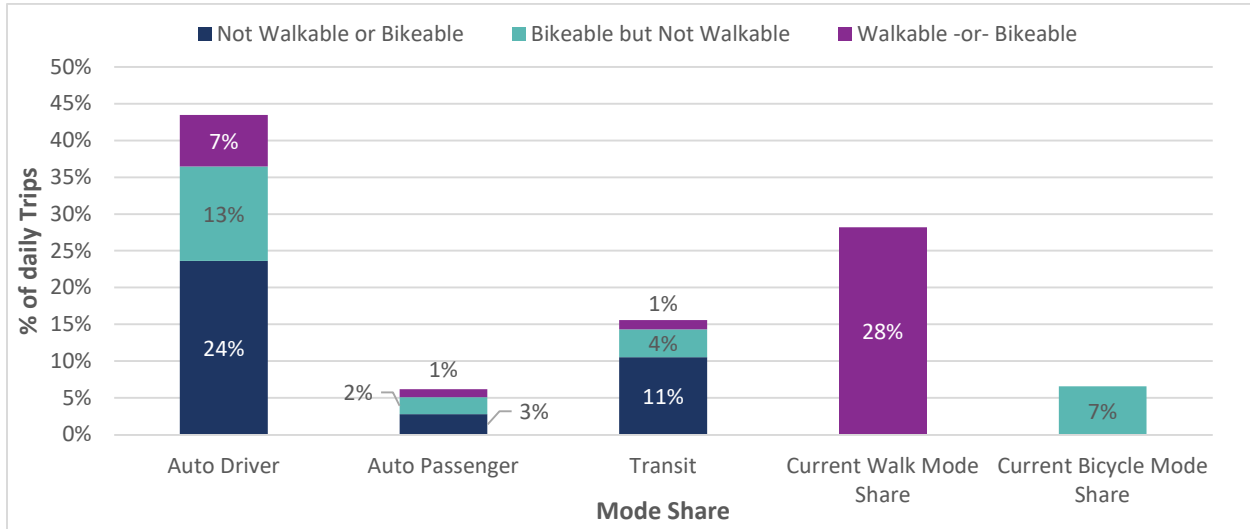


Table 19 shows mode shift potential for trips taken by auto drivers by zone. Mode shift potential (from auto driver to cycling) ranges from 9% for CBD – West End Zone to 29% for Vancouver Kerrisdale Zone. Notably, at least one in four auto trips made by residents of Vancouver East and Vancouver Kerrisdale are within what is considered a bikeable distance. About one in five trips made by residents of Vancouver Southeast, Vancouver Broadway, and Vancouver South is considered bikeable. Mode shift potential from auto driver to walking is lowest in the CBD zones at 2% to 3% and highest in Vancouver East (9%), Vancouver Broadway (9%), and Kerrisdale (10%).

Table 19. Mode Shift Potential of Auto Driver Trips Based on Trip Distance, by Zone of Residence

	Van-couver	CBD – West End	CBD – False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
Auto Driver Trips	706,200	30,800	40,300	62,700	101,900	92,600	60,000	132,700	138,800	46,500
Auto Driver Mode Share	43%	21%	29%	37%	45%	62%	33%	63%	48%	40%
Bikeable Trips	322,000	12,900	11,800	35,800	51,200	43,300	30,600	46,900	68,600	21,000
% of Auto Driver Trips	46%	42%	29%	57%	50%	47%	51%	35%	49%	45%
Mode shift potential	20%	9%	8%	21%	23%	29%	17%	22%	24%	18%
Walkable Trips	114,000	4,600	3,300	14,600	16,900	15,100	9,400	17,500	24,700	7,900
% of Auto Driver Trips	16%	15%	8%	23%	17%	16%	16%	13%	18%	17%
Mode shift potential	7%	3%	2%	9%	8%	10%	5%	8%	9%	7%

It should be noted that this analysis and discussion does not take into account real or perceived considerations that may influence actual mode shift potential for a given route or trip. This includes considerations such as whether or not there is appropriate physical infrastructure to support active transportation modes, the physical ability of the individual, the purpose of the trip (e.g., whether it involved transporting large or heavy items), and the like. Additionally, reported trips may have been part of a larger trip chain with longer travel times and/or distances that required the use of a vehicle. Therefore, the number and proportion of walkable and bikeable trips should be considered an upper limit for the potential to shift these types of trips to active modes.

7 Travel Patterns

This section discusses the overall travel patterns and habits of residents of the City of Vancouver. This section provides an understanding of the “usual” travel behaviour which is differentiated from the snapshot of a travel day presented in the survey participant responses. This section includes commute travel patterns, usual non-commute modes, and transit use.

7.1 Work Commute Patterns

Commute travel patterns discussed in this section include city resident’s reported type of workplace/work arrangement (i.e., work from home or work outside the home at a usual place of work), usual commute mode of travel to work, frequency of telecommuting, and work destinations that residents commute to.

7.1.1 Workplaces

As shown in **Figure 68**, 18% of the 375,500 workers who live in Vancouver work exclusively from home, and 8% have no fixed workplace address. Most workers (74%) have a usual place of work that they travel to at least some of the time. Compared to 2021, the percentage of workers who work exclusively from home has decreased slightly (from 21% in 2021 to 18% in 2022) and the percentage who have a usual place of work that they commute to at least some of the time has increased (64% versus 74%). Looking over the past three years, we see a slight trend towards more workers returning to work at their usual place of work and slightly fewer working exclusively from home. For example, the proportion of workers who work exclusively from home dropped from 21% in 2021 to 18% in 2022, while the proportion who reported no fixed workplace address dropped from 9% to 8%.

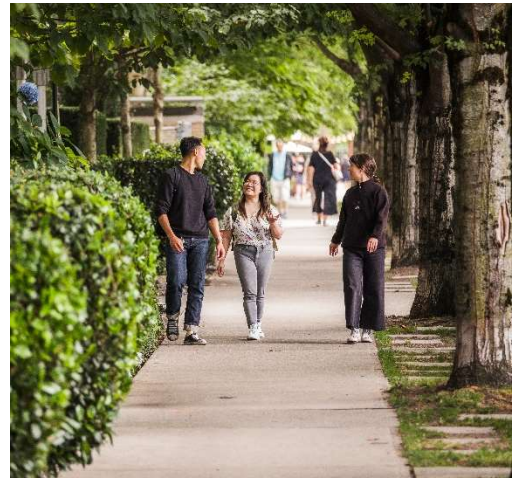
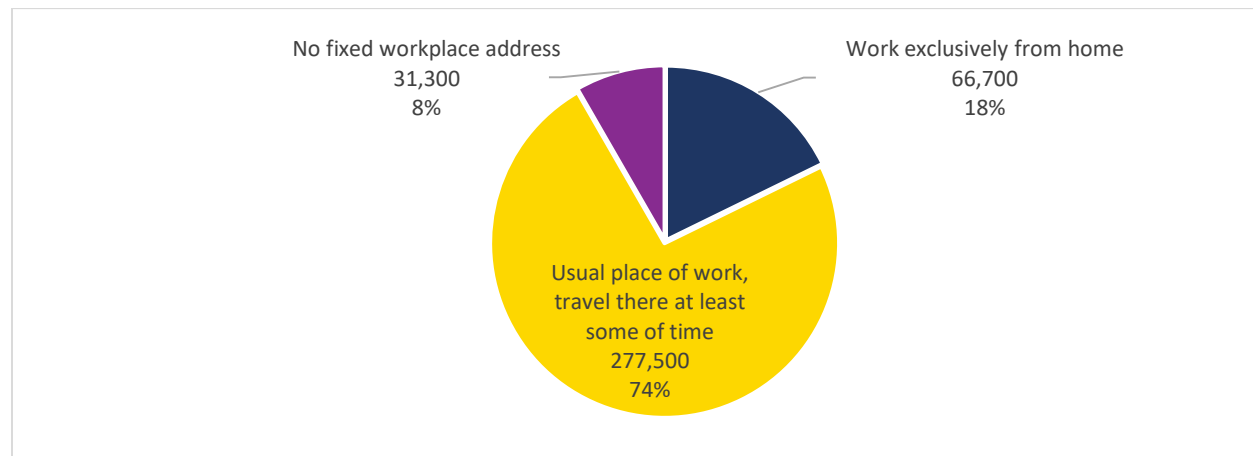


Figure 68. Type of Workplace



7.1.2 Usual Commute Mode

Figure 69 shows residents' usual mode of travel for commute purposes. Nearly half of Vancouver workers who commute to work at least some of the time, do so by automobile (44% as drivers and 2% as passengers). Just over one-quarter (28%) commute by transit, about 15% by bike, and 10% walk.

Readers are reminded that findings discussed in this section reflect usual commute mode, not actual mode choice or mode share on a given workday. Survey participants may not use their usual mode all the time. Results displayed in this section represent the usual mode choice for those who currently commute to work at least some of the time regardless of whether they commuted to work that day or not. **Section 6.3** details actual daily work commute mode shares.

Figure 69. Usual Mode of Travel for Commute

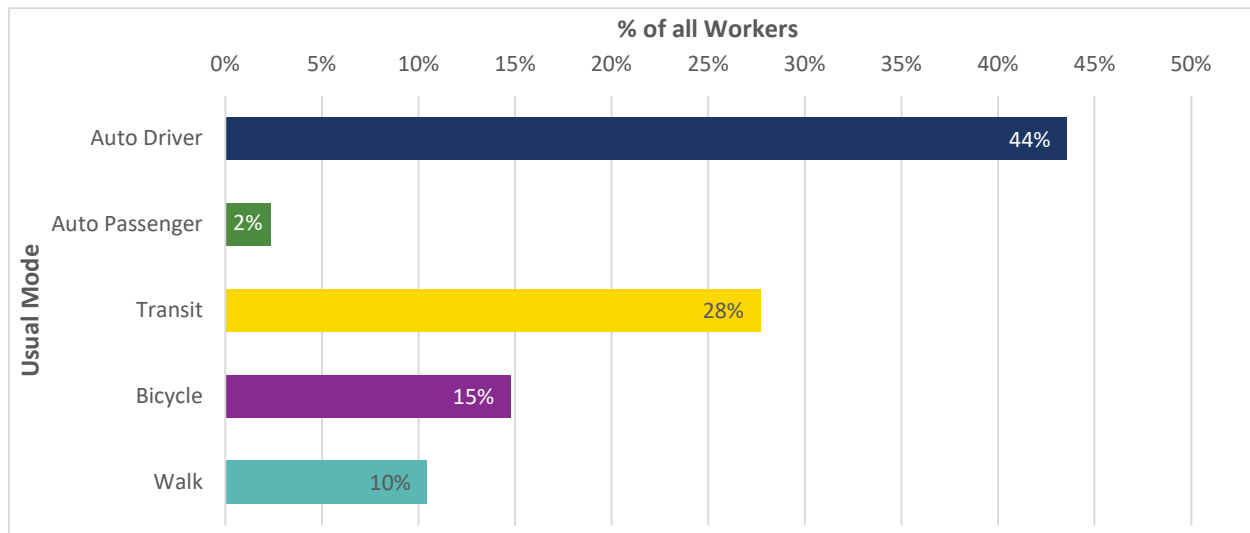
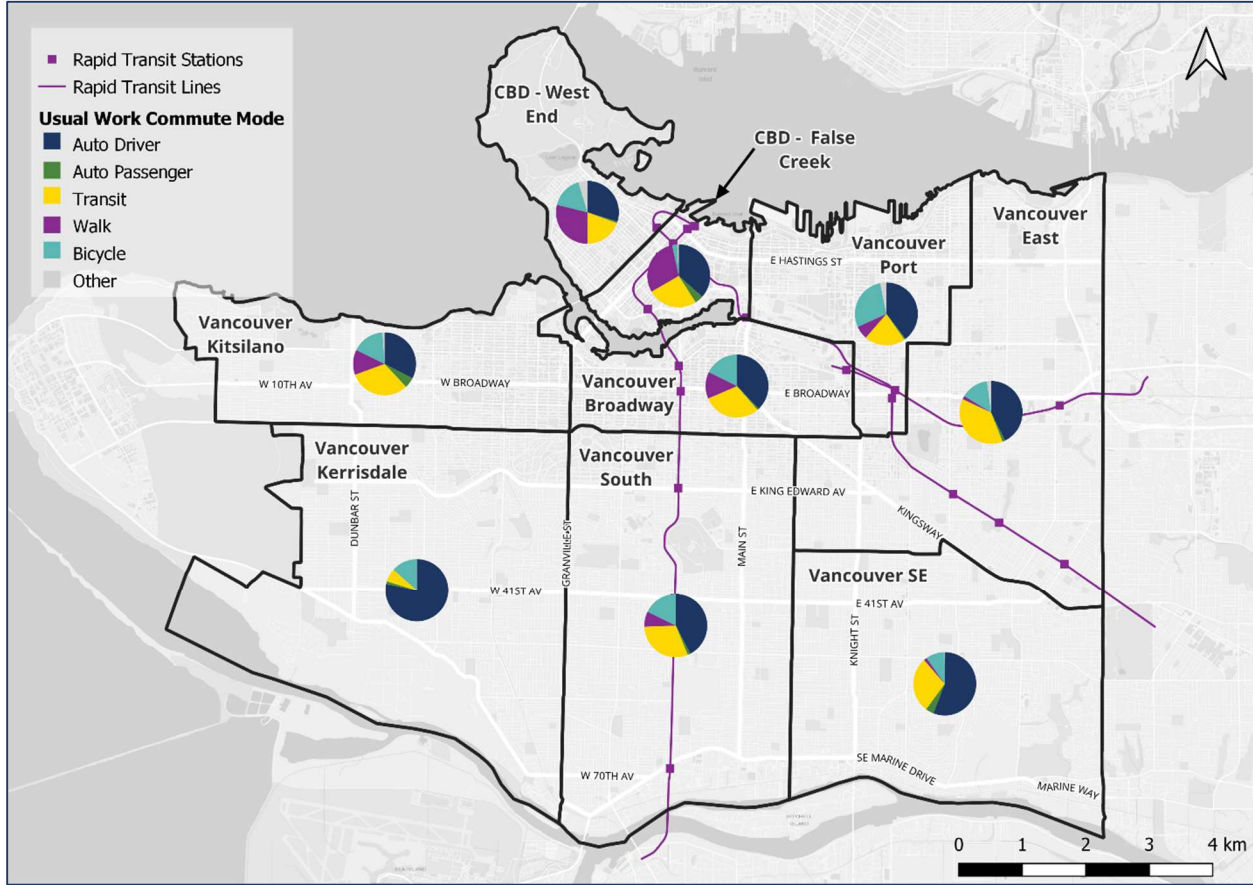


Figure 70 provides a breakdown of usual commute mode by zone. Auto driver is the most common mode across all zones ranging from 30% to 42% for most zones. Auto driver accounts for more than three-quarters (78%) of resident's usual commute mode in Vancouver Kerrisdale and over half (56%) in the Vancouver Southeast zone.

Sustainable transportation modes (Transit + Walk + Bike) account for more than half of residents' usual commute mode in all zones except those where we see the highest percentage of auto drivers: Vancouver Kerrisdale (20%) and Vancouver Southeast (40%)

Figure 70. Map of Usual Mode of Travel for Commute by Zone



7.1.3 Commuting and Telecommuting

Survey participants who have a workplace outside the home were asked how many days they commuted to work in the last week before the survey and how many days they telecommuted rather than commuted to work.³⁶ Examining telecommuting first,

³⁶ Note: Caution should be exercised when comparing to the results of the 2021 survey, as that survey asked about frequency of telecommuting and the frequency of commuting on weekdays, whereas the 2022 survey asked about telecommuting and commuting in the previous week on all days of the week. This includes some people not working that week and variations in patterns that, averaged across all workers, provide a clearer snapshot of actual behaviour.

Figure 71 presents percentages based on total workers. This includes the 18% of workers who work exclusively from home and the 8% who have no fixed workplace, who are included to provide the full picture of all workers. The data suggest that quite a few workers have hybrid work arrangements where they work from home two or more days per week (28%) but commute to the office at least one day per week. It may be noted that the telecommuting behaviours may extend to work on both weekdays and weekends.

Figure 71. Telecommuted Last Week (% of all workers)

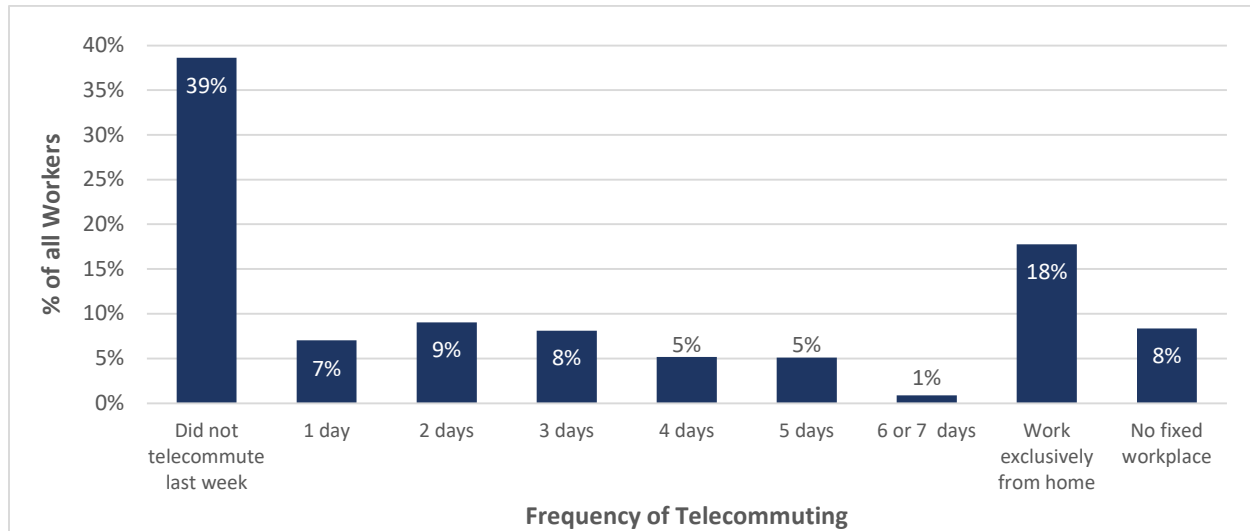


Figure 72 summarizes the frequency of commuting to work. The survey results challenge the notion that most workers have a typical Monday-to-Friday commute to work. About 26% of workers commuted to a usual workplace five or more days in the week previous to participating in the survey, 11% commuted to work on four days in the previous week, and 28% commuted to work between one to three days. Another 9% have a usual workplace outside the home but did not travel to work in the previous week, likely either because they only rarely travel to work or still telecommute much of the time due to employers' pandemic-related allowances or because of other reasons such as illness or time off. As noted earlier, another 18% of workers work exclusively from home, while another 8% have no fixed workplace. Examination of the response to the telecommuting and commuting questions revealed at least 40% of workers with a usual workplace outside the home, representing 29% of all workers, engaged in a hybrid of telecommuting and travelling to work in the last week, i.e., travel to work at least one weekday per week, and telecommute at least one day per week, which could include weekends. As more employers adjust their work-from-home and hybrid-work policies to either increase in-office days or allow for more flexibility in work-from-home days and flex days (e.g., to compete in a tight labour market), we may see commute and telecommute patterns shift further.

Figure 72. Commuted to Work Last Week (% of all workers)

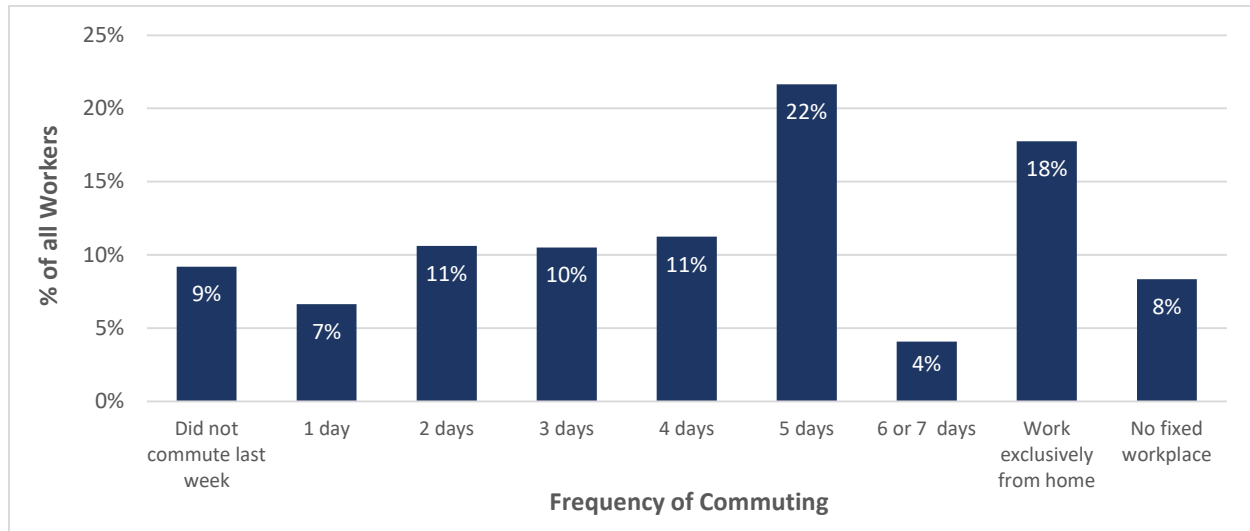


Table 20 and **Table 21** show the above data broken down by zone. In terms of telecommuting, there is some consistency across zones, with most zones having at least 30% of all survey participants who work reporting that they did not telecommute in the last week, with this percentage being highest amongst residents of Vancouver Port (42%), Vancouver South (45%) and Vancouver Southeast (52%).

Telecommuting at least two days in the last week is most common amongst residents of Vancouver Broadway (37%) followed by Vancouver East (33%), Vancouver Kitsilano (31%), and False Creek (31%).

In terms of the frequency of commuting to work in a given week, again, there is some consistency across zones, with most zones having around 27%-33% of all workers commuting to work five days per week or more, with the exception of Vancouver Kitsilano (15%), Vancouver Broadway (17%) and Vancouver East (20%)³⁷.

Table 20. Frequency of Telecommuting by Zone (% of all workers)

	Vancouver	CBD – West End	CBD – False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
Did not telecommute last week	39%	37%	33%	31%	45%	37%	30%	52%	35%	42%
1 day	7%	9%	4%	9%	7%	7%	7%	3%	8%	10%
2 days	9%	5%	13%	12%	6%	10%	8%	8%	9%	11%
3 days	8%	7%	8%	12%	9%	7%	10%	7%	8%	3%
4 days	5%	9%	2%	5%	6%	2%	5%	2%	8%	6%
5 days	5%	1%	8%	7%	4%	7%	8%	4%	5%	1%
6 or 7 days	1%	1%	0%	1%	0%	0%	0%	1%	2%	0%
Work exclusively from home	18%	24%	21%	15%	14%	25%	20%	13%	17%	16%
No fixed workplace	8%	7%	11%	7%	7%	4%	11%	10%	7%	11%
Subtotal at least 2 days/week	28%	24%	31%	37%	25%	26%	31%	22%	33%	21%
Subtotal at least 2 days/week or work exclusively from home	46%	48%	52%	52%	40%	51%	51%	35%	50%	37%

³⁷ Due to rounding, the percentage of workers commuting to work five days per week or more reported in the text may differ from the percentage resulting from summing percentages in the table.

Table 21. Frequency of Commuting to Work on Weekdays (% of all workers) – by Zone

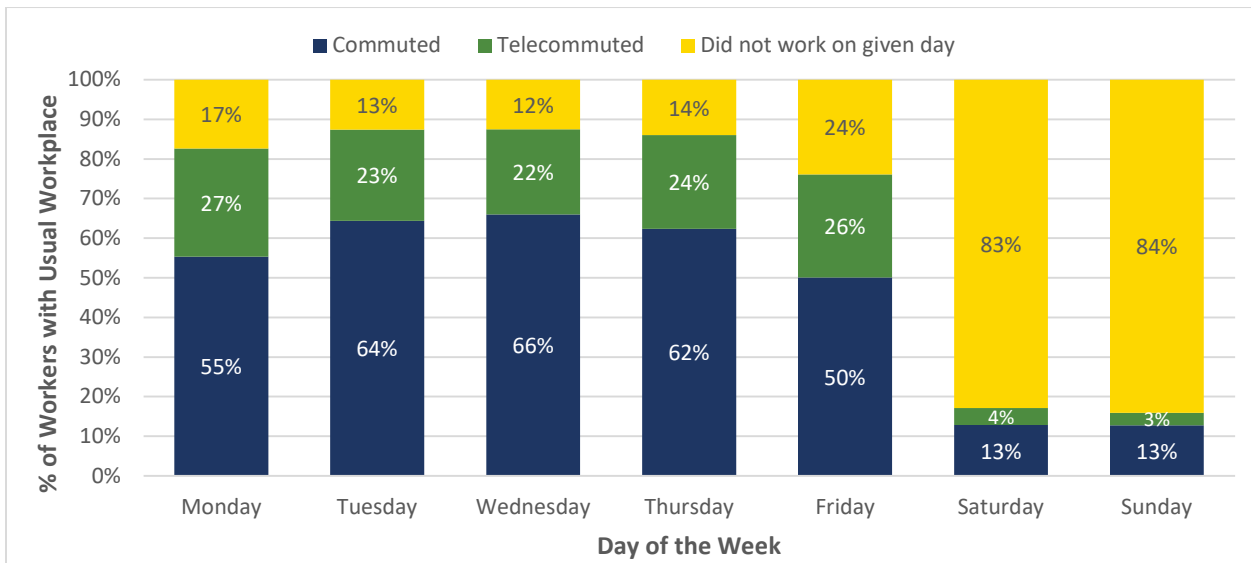
	Van-couver	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
Did not commute last week	9%	10%	11%	12%	7%	13%	8%	9%	9%	6%
1 day	7%	10%	3%	5%	6%	4%	8%	4%	11%	6%
2 days	11%	9%	7%	16%	11%	10%	12%	11%	11%	6%
3 days	10%	6%	9%	17%	9%	9%	6%	13%	12%	11%
4 days	11%	8%	9%	11%	11%	7%	19%	8%	13%	16%
5 days	22%	20%	25%	15%	28%	23%	13%	30%	17%	23%
6 or 7 days	4%	7%	4%	3%	7%	5%	3%	3%	2%	5%
Work exclusively from home	18%	24%	21%	15%	14%	25%	20%	13%	17%	16%
No fixed workplace (work travel may be variable)	8%	7%	11%	7%	7%	4%	11%	10%	7%	11%

7.1.3.1 Commuting and Telecommuting by Day of Week (for Workers with Usual Workplaces)

Figure 73 and Figure 74, below, highlight commuting and telecommuting patterns reported for each day of the week in the week previous to survey participation. These figures are for workers with a usual workplace outside the home that they sometimes or regularly commute to and excludes workers who work exclusively from home and those with no fixed workplace address. On average, on weekdays, 60% of people reported to commute and 24% people reported to telecommute to work.

As illustrated, weekday commuting to work is highest on Tuesdays and Wednesdays (with 64% and 66% travelling to their usual workplace on these days), and notably lower on Mondays and Fridays, with Monday at 55% and Friday at only 50%. Not all workers work on each weekday, and Fridays was also the weekday with the largest number of workers reporting that they did not work on that day (24%).

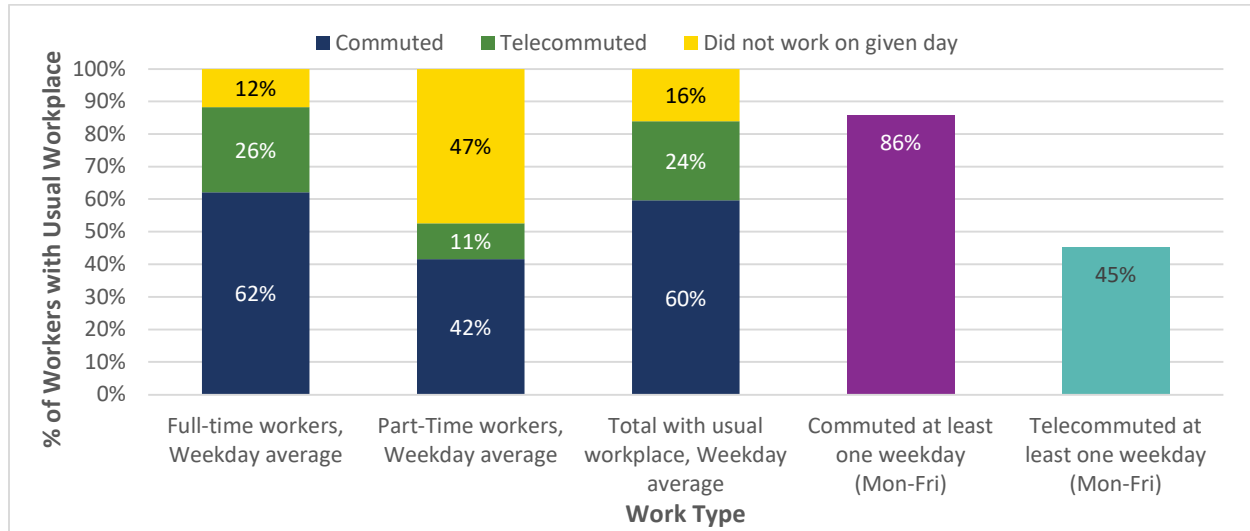
Figure 73. Commute and Telecommute Pattern by Day of the Week for Workers with Usual Workplace



Averaged across all weekdays, 60% of all workers with a usual workplace commute to work and 24% telecommute rather than going into work, with the other 16% not working on the given day. These

figures differ slightly for full time workers, with 62% going into work, 26% telecommuting, and 12% not working. For part-time workers, the survey results suggest that just over half work on an average weekday, with 42% travelling to work and only 11% telecommuting. Telecommuting is less of an option for part-time workers with a usual workplace outside the home, which may be, in part, due to the nature of some part-time jobs (e.g., part-time jobs are more common in retail and service industries, which require many of their frontline workers to be on premises). This may be a consideration from an equity perspective, in that part-time workers are typically lower income earners who have less opportunity to save on commuting costs by working from home.

Figure 74. Summary of Commute and Telecommute Patterns by Work Type for Workers with Usual Workplace



7.1.3.2 Changes in Telecommuting Patterns, 2019 to 2022

Survey participants were asked whether they telecommute more, about the same, or less than three years ago (before the pandemic). They were also asked to think ahead to the future, and whether they would telecommute for their current job more frequently, the same, or less than now. The survey results are presented in **Figure 75** and **Figure 76** below.

The results suggest the following:

- There was a marked increase in telecommuting, likely in part due to evolving trends in work arrangements that were accelerated by disruptions associated with the COVID-19 pandemic. 45% of workers with a usual workplace reported more telecommuting compared to 2019, with 12% starting telecommuting for the first time, and 33% telecommuting more frequently now.
- In the same time frame, this was only partially dampened by the proportion that began commuting less frequently (8%) or stopped altogether (5%).
- Considering the future, 11% reported the expect to telecommute or telecommute more: 5% of workers with a usual workplace expect to start telecommuting for the first time while 6% expect to telecommute more frequently (whether due to employer changes in policy, increased privileges with longer tenure in new jobs, position changes, or other reasons).
- If workers' expectations become reality, increase would be counterbalanced by the 10% who expect to telecommute less frequently (9%) or stop altogether (1%) (whether due to changes in

employer policies, position changes, or other reasons). While the results suggest that for the next year, the net effect on telecommuting patterns may stabilize, it should be noted that reality may differ from workers' current expectations as employer policies and labour market conditions evolve.

Figure 75. Workers' Telecommuting Patterns Today Compared to 2019 (% of workers with usual workplace)³⁸

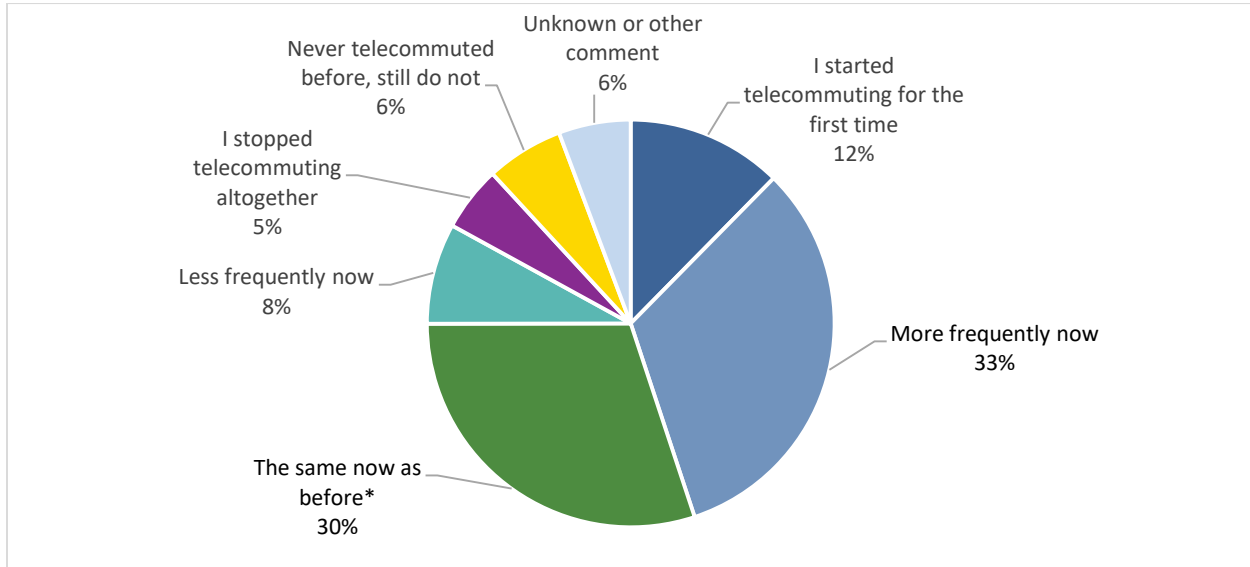
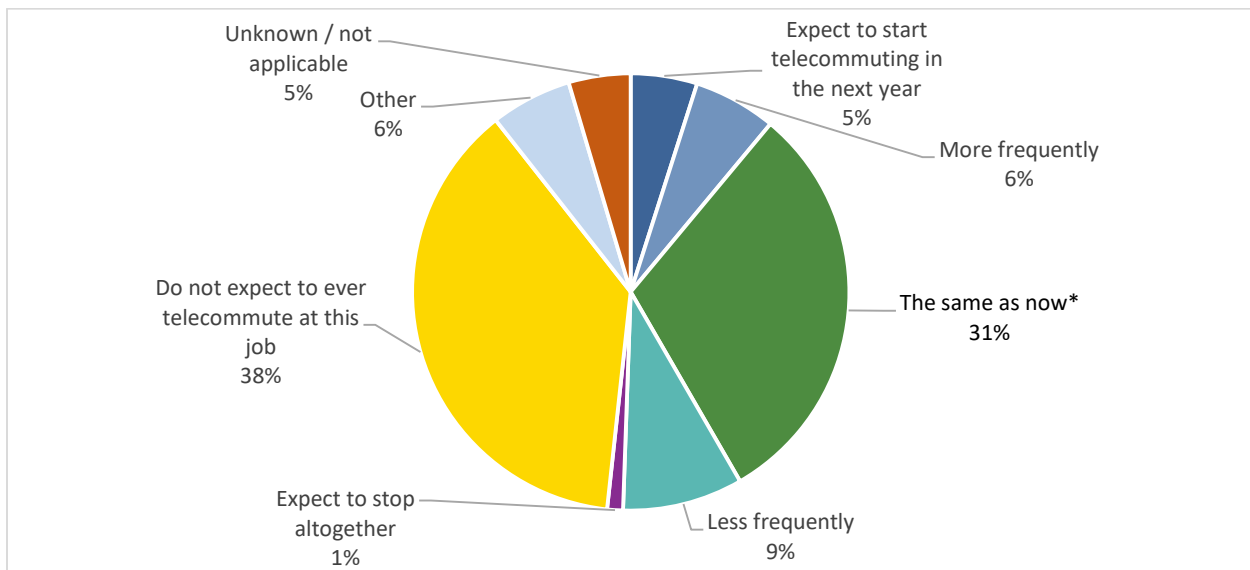


Figure 76. Workers' Expectations for Telecommuting in the Future (% of workers with usual workplace)³⁹



³⁸ "The same now as before" likely includes some who do not currently telecommute at all. Under "Unknown or other", "other" explanations included: I was not employed at that time, I was living outside the country, etc. There were very few "other" comments.

³⁹ "The same as now" likely includes some who do not currently telecommute at all. "Other" includes: will be retired, may have a different job, will move away, etc.

7.1.4 Daily Travel to Work

Work arrangements, telecommuting patterns, usual mode choice, work schedules, and daily circumstances all contribute to the daily volumes of actual work trips on a given day. **Figure 77** provides a picture of workers' activity on an average fall weekday. **Table 22** breaks these results out by workplace type. This analysis combines daily trips reported (specifically, the first work trip)⁴⁰, information on work arrangements, and answers to validation questions built into the survey. Some caution should be exercised when interpreting the results, as 6% of survey participants did not make work-related trips but did not have a clear indication in the data as to whether they worked from home.



The survey results suggest the following:

- Combining categories, at least four out of five (83%) workers work on any given day.
- More than one half (56%) either travel to their usual workplace (48%) or travel for work-related purposes (8%) (e.g., business meeting, work errand, arriving at a worksite, starting the workday as a driver, etc.). This is an increase from 52% in 2021, suggesting a modest increase in travel for work.
- At least 26% work from home, with 12% being workers with a usual workplace who are working from home instead of travelling to work, and 14% being either those who work exclusively from home or those with no fixed workplace who worked from home on the given day. These figures are very similar to those observed in 2021.

The actual behaviours reported for survey participants' travel days demonstrate the variety of work arrangements and work-related travel patterns (with only a slim majority of workers travelling to work or for work purposes on a given day). The commuting and telecommuting patterns that underly these daily activity patterns are explored in more depth in the sections that follow this one.

⁴⁰ Each worker's trip data were scanned to identify the first trip to usual work or, barring this, first work-related trip. The primary mode of the first trip was also identified. If the trip to work did not originate from home, preceding trips were scanned up to the trip leaving home to identify the most appropriate reported mode to use as the work commute mode. E.g., if someone reported three trips, first walking to a post office, then taking transit to a coffee shop, then walking from the coffee shop to work, the primary work commute mode was identified as transit (as the mode most likely to travel the longest distance in the overall multi-trip commute tour).

Figure 77. Daily Work Travel and Commute Pattern

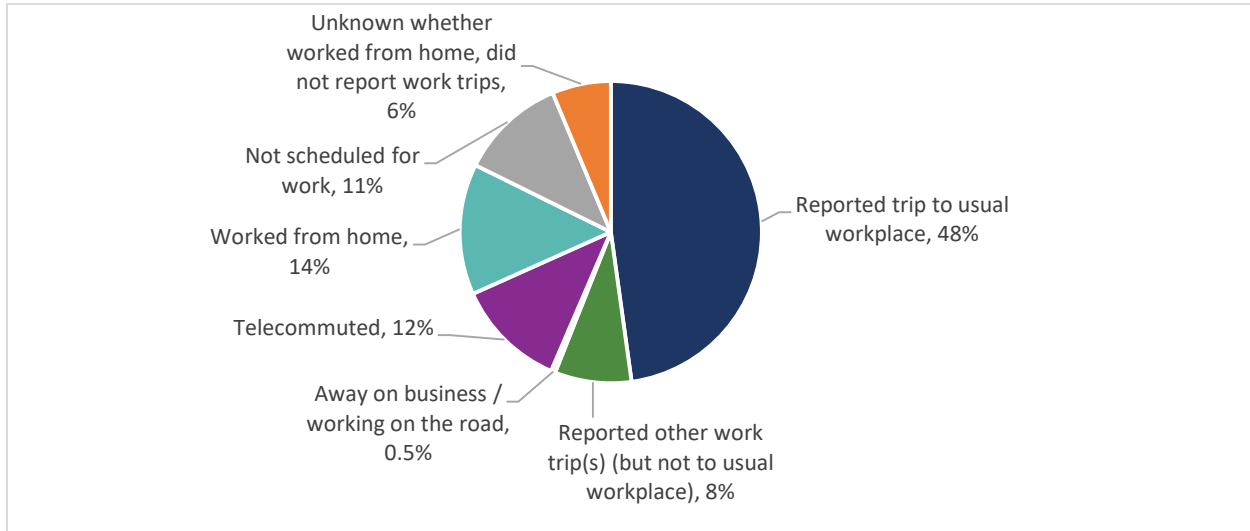
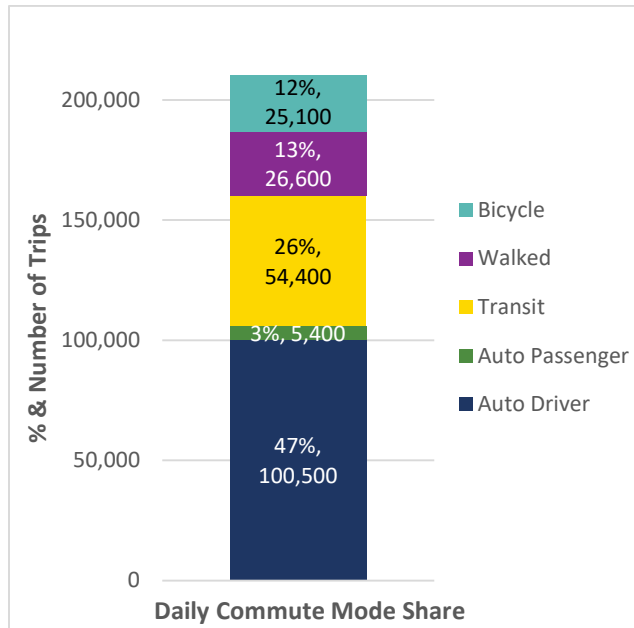


Table 22. Daily Work Travel and Commute Pattern by Type of Workplace

Commute Pattern	Works exclusively from home	No fixed workplace address	Usual workplace outside the home	Total workers
Workers	66,700	31,300	277,500	375,500
Reported trip to usual workplace	n/a	n/a	65%	48%
Reported other work trip(s) (but not to usual workplace)	7%	54%	3%	8%
Away on business/Working on the road	0%	5%	0%	0%
Telecommuted (did not travel to usual workplace)	n/a	n/a	16%	12%
Worked from home (no usual workplace outside the home)	74%	10%	n/a	14%
Not scheduled for work	9%	26%	10%	11%
Unknown whether worked from home, did not report work trips	10%	6%	5%	6%
Subtotal known to have worked (reported trips to work or working from home)*	81%	68%	84%	82%
Subtotal reported trip to usual workplace or for other work-related purposes	7%	54%	68%	56%
Subtotal worked from home/telecommuted	74%	10%	16%	26%

Figure 78 provides a different view of the mode shares for travel to work that shows the number of daily commuters and the proportions on an average weekday. As shown, in Fall 2022, 47% of all trips to work on a given day were made by auto-driver as the mode of the first trip to work or for work-related purposes. This is down slightly from 50% in 2021. Just over one-quarter (26%) of all trips to, or for, work were made via transit (a 1% increase from 2021), with an equivalent proportion reporting either cycling (12%, up from 7% in 2021) or walking (13%, up just slightly from 12% in 2021). The decrease in auto mode shares and increase in cycling mode shares for work trips likely reflect better weather during the 2022 survey administration period, demonstrating that there are commuters who may be motivated and equipped to substitute cycling for driving when weather is favourable.

Figure 78. Daily Work Commute Mode Shares (Mode of First Trip to Work on Travel Day)

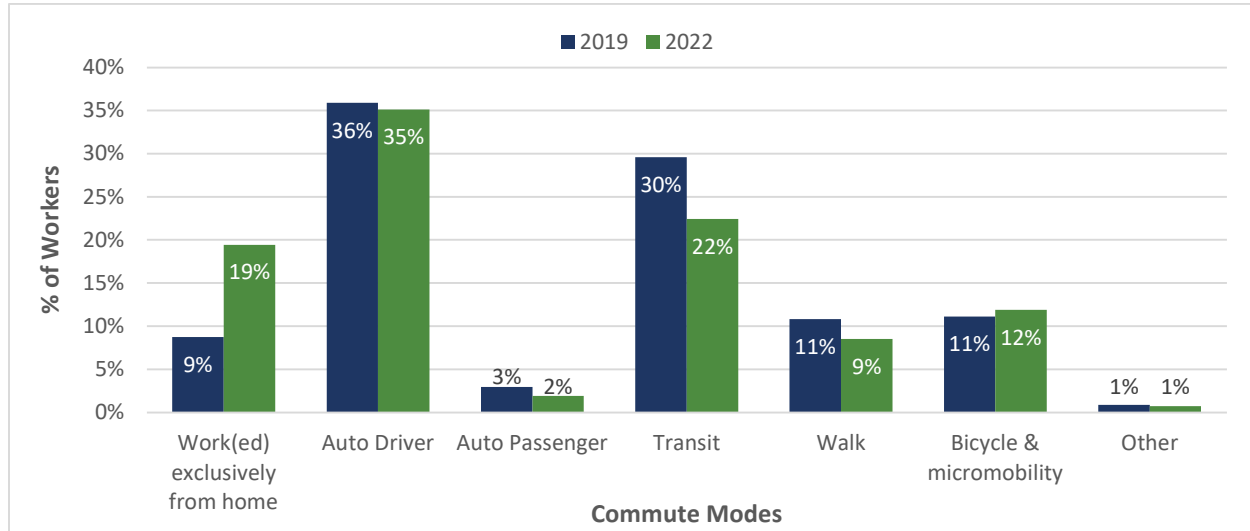


7.1.4.1 Change in Daily Travel to Work, 2019 to 2022

Workers with a usual workplace outside the home were asked whether they had changed their usual mode of transportation for their commute to work at the time of year of the survey. Workers who currently work exclusively from home were also asked whether they previously commuted to work (whether at their current job or a different one). Both groups were asked what their previous usual mode of travel to work was and the reasons why their usual mode of travel changed. The 8% of workers with no fixed workplace address were not asked this question and are excluded from this analysis.

Overall, 30% of those asked reported a change in either the usual commute mode or their work arrangements. **Figure 79** illustrates the net changes in usual commute modes and/or work arrangements (for those who shifted to or from working exclusively from home).

The results suggest a +10% net shift in working exclusively from home (from 9% of those asked these questions to 19%), which will have significantly reduced the number of people travelling for work commutes. The net change in those reporting driving or cycling as their modes is relatively small (-1% for auto driver, +1% for cycling and micromobility). Transit has seen a considerable drop (-8%), while walking had a net change of -2%. These self-reported changes in usual mode and/or work-from-home situation are generally consistent with the trends observed in the usual commute modes, when taking into account that not only have mode choices changes, so has the frequency of travel via different modes.

Figure 79. Reported Change in Commute Mode, Compared to 2019⁴¹

The **Table 23** below illustrates the changes in mode shares. It may be noted that certain response options were only relevant to certain kinds of change from a previous mode or to a new mode. Summarizing the most common themes:

- One-third of all respondents with a change reported that the transition to exclusively working from home was the reason for the change.
- Changing to a hybrid work model was also cited as reason for changing modes by 13% of respondents, while another 8% cited their new mode being cheaper.
- Concerns about catching COVID-19 on public transit was cited by 12% of all those who had a change in mode or situation, and 100% of those who shifted away from using transit.
- Of those who made a shift away from transit, other common reasons included changing jobs (80% of those with this kind of shift) and/or relocating homes (32%), concerns about personal safety (52%), while not being able to afford transit was cited by 6%.
- Of those who made a shift away from auto modes (whether driver or passenger), the cost of travel was cited by three-quarters (74%) and the cost of parking was cited by 52%, while job or home relocations were each cited by two-thirds. The categories are not mutually exclusive, so many of those who cited cost could be facing increased costs after a job change or a move, while others with no change in their job or home location would have been reacting to the cost of driving and maintaining a vehicle.
- Of those who made a shift away from walking, all cited changes to either their home or job location. Caution should be exercised in interpreting these results due to a small sample of respondents who had this kind of change.
- Of those who made a shift away from a bicycle or micromobility mode, many cited changes in work or home location that resulted in an increased distance (45% and 14% respectively), while others indicated that they do not feel safe cycling (17%) or that their new work or home location

⁴¹ Caution: As the chart includes those who work or worked exclusively from home, the percentages should not be interpreted as mode shares. Note: Bicycle groups together bicycles, e-bikes, bikeshare, micromobility, and e-micromobility.

is lacking good cycling infrastructure (6% and 5% respectively). Caution should be exercised due to a small sample of respondents who had this kind of change.

- Of those who made a shift to a bicycle or micromobility mode, all noted the health benefits and half or more mentioned access to new modes, whether buying a new e-bike or e-micromobility device (57%) or gaining access to a pedal bike or bikeshare membership (50%). Home relocations and job changes also factored significantly for 69% of those who have adopted cycling or micromobility to get to work, i.e., their new home is closer to work or their new job is closer to home. Again, caution should be exercised when interpreting the results for this subgroup due to a small sample of respondents who had this kind of change.

Table 23. Reasons for Change in Commuting or Commute Mode (% of those with a change)⁴²

Reasons for change in commuting or in commute mode choice	% of total persons with a change	subpopulation with noted mode change (% of total with a change)	% of subpopulation presented with these response categories
ASKED OF ALL WITH A CHANGE IN MODE / SITUATION			
Working from home exclusively or almost exclusively: no longer need to commute	32.5%	100%	
Changed to hybrid work model: new mode is better when commuting less often	13.1%		
My new mode of travel to work is cheaper	8.3%		
Change in financial situation	3.2%		
Change in health or physical ability to travel via previous mode	1.5%		
Other reasons	21.3%		
PREVIOUS MODE WAS TRANSIT			
Concerned about catching COVID on transit	11.9%	11.9%	100%
Changed jobs: transit is no longer convenient to get to work	9.5%		80%
Concerns about personal safety while taking or waiting for transit	6.2%		52%
Relocated home: transit is no longer convenient to get to work	3.8%		32%
Cannot afford transit: current way of getting to work is cheaper	0.7%		6%
PREVIOUS MODE WAS AUTO DRIVER OR PASSENGER			
Cannot afford driving: current way of getting to work is cheaper	7.8%	10.5%	74%
Changed jobs: travelling by automobile is no longer convenient to get to work	7.1%		67%
Relocated home: travelling by automobile is no longer convenient to get to work	6.9%		66%
Cannot afford parking or no convenient parking near work	5.7%		54%
PREVIOUS MODE WAS WALK			
Changed jobs: work is now too far away to walk	3.7%	3.7%	100%
Relocated home: work is now too far away to walk	2.2%		59%
Do not feel safe walking to work any more	0.0%		0%
PREVIOUS MODE WAS BIKE OR MICROMOBILITY			
Changed jobs: work is now too far away to cycle	1.4%	3.2%	45%
Do not feel safe cycling to work any more	0.5%		17%
Relocated home: work is now too far away to cycle	0.4%		14%
Relocated home: new home or surrounding area lacks good bike infrastructure	0.2%		6%

⁴² n=474. Caution should be exercised when examining the responses of subpopulations with low incidence (i.e., low % of all who answered the question). Percentages may add to greater than 100% due to multiple responses.

Reasons for change in commuting or in commute mode choice	% of total persons with a change	subpopulation with noted mode change (% of total with a change)	% of subpopulation presented with these response categories
Changed jobs: new workplace or surrounding area lacks good bike infrastructure	0.2%		5%
Bicycle was stolen or vandalized	0.05%		2%
No longer have access to a bicycle or bike share program	0.0%		0%
NEW MODE IS AUTO DRIVER OR PASSENGER		8.6%	
I now carpool to work	0.2%		2%
NEW MODE IS BIKE OR MICROMOBILITY		3.9%	
I like the health benefits of active transportation	3.9%		100%
Relocated home: work is now closer, so I can get to work by [my current mode]	2.7%		69%
Changed jobs: work is now closer, so I can get to work by [my current mode]	2.7%		69%
I bought an e-bike or e-micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)	2.2%		57%
I now have access to a pedal bicycle or got a bikeshare membership	2.0%		50%

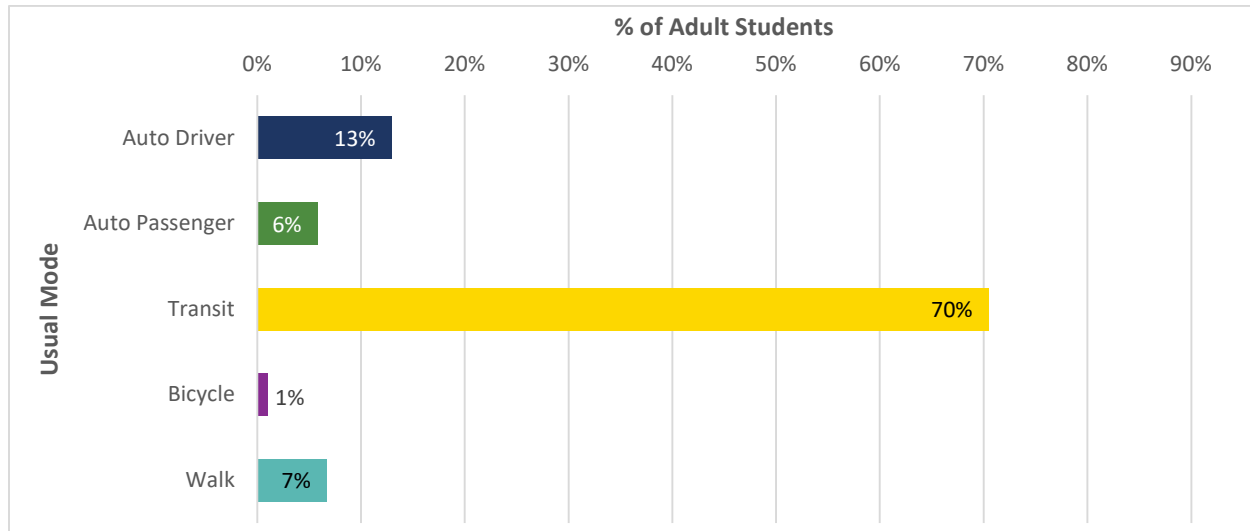
7.2 Usual School Commute Mode

7.2.1 Survey Participants

Given the small sample of survey participants who were students (n=128), the survey results for school commutes are not presented in as much detail as was provided for work commutes. The findings should be interpreted with some caution as they may not necessarily be generalizable to the entire population of post-secondary students who live in the city.

Figure 80 shows the usual mode of travel for school commutes. Students were most likely to report transit as their usual commute mode (70%), followed by auto driver (13%). Smaller percentages of students reported their usual commute mode as walking (7%) or auto passenger (6%), and about 1% reported that they cycle to school as their primary commute mode.



Figure 80. Usual mode of Travel for School Commute (Adult Students) ⁴³

7.2.2 Children of Survey Participants

Survey participants were asked to report the usual mode of travel to school for any children 12 and younger. This question was asked in the survey for the first time in Fall 2022 to gain insights into how children travel to school, and what are the barriers to travelling by sustainable transportation. Survey respondents indicated that 64% of their children use a sustainable transportation mode to travel to school with walking being the highest mode at 39% followed by transit at 17% and bicycle or e-mobility at 8% (see **Figure 81**).

Survey respondents who drive their children to school were then asked to indicate why they travel to school as an auto passenger and were allowed to provide more than one answer. As shown in **Figure 82**, the most common reasons were that school is too far away to walk or bicycle (46%), because they take their child to school but do not have the time to walk or cycle with them (42%), and because there are no school buses (39%). A concern about their children's safety accounted for 22% of responses to the question. These responses could be related to perceptions of safety related to crime or traffic safety. While it's more difficult to address long distances to travel to school, perception of safety is one that could be targeted with special programming such as traffic safety education, walking school buses, safe routes to school audits, or improved bicycle parking security.

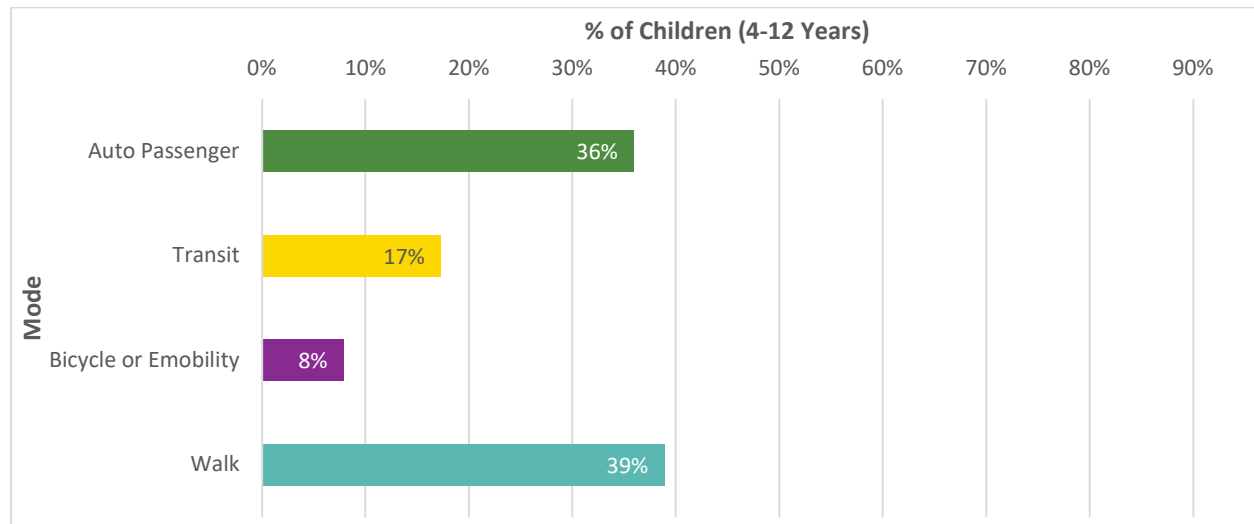
The next question asked which sustainable transportation modes parents would be willing to have their children use for the commute to and from school, with more than one answer being allowed. **Figure 83** shows the modes parents who currently drive their children to school are most willing to consider are walk (76%), peddle bike (56%), and transit (23%). One may speculate that the lower scores for e-bikes, e-scooters, and other micromobility devices could be due to concerns about costs for the electric versions, unfamiliarity with such devices, and/or concerns about possible higher safety risks for children using

⁴³ Interpret with caution due to modest sample size (n=97 students). Note that the graph excludes 3% of respondents who selected "other".

such devices (particularly younger ones). Only 9% of parents surveyed indicated they are not willing to consider other modes.

When asked what would encourage them to have their children use active transportation, the most popular answer given by over half of parents surveyed (55%) was the provision of secure or sheltered bicycle parking at school. The other side of bicycle security is that 20% of parents cited the need for secure or sheltered bicycle parking at home. Other common encouragements cited included safe bicycle lanes and pedestrian paths (31%), access to an adult bicycle or e-bike (e.g., to accompany their child to school), training on how to ride safely (15%), and route advise and maps (9%). While 17% of respondents indicated ‘other’, the majority of the comments given were with respect to reasons why active modes are not currently practical for their situation (children too young to travel unaccompanied, waiting on seismic upgrades before sending kids to their local school again, etc.). Of note, 28% indicated that they live too far away from their child’s school to consider walking or biking to the school. (See **Figure 84**)

Figure 81. Usual Mode of Travel for School Commute (Children 12 and younger)⁴⁴



⁴⁴ Data for this table are further weighted by the number of children 4 to 12 years of age reported by the survey participant.

Figure 82. Reasons Children Travel to School as Auto Passengers⁴⁵

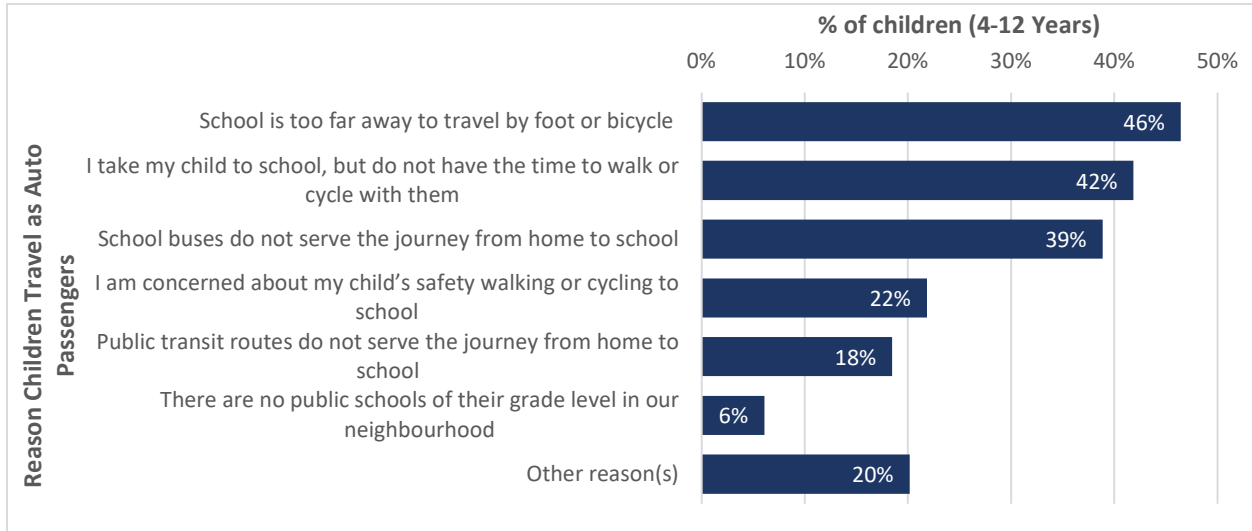
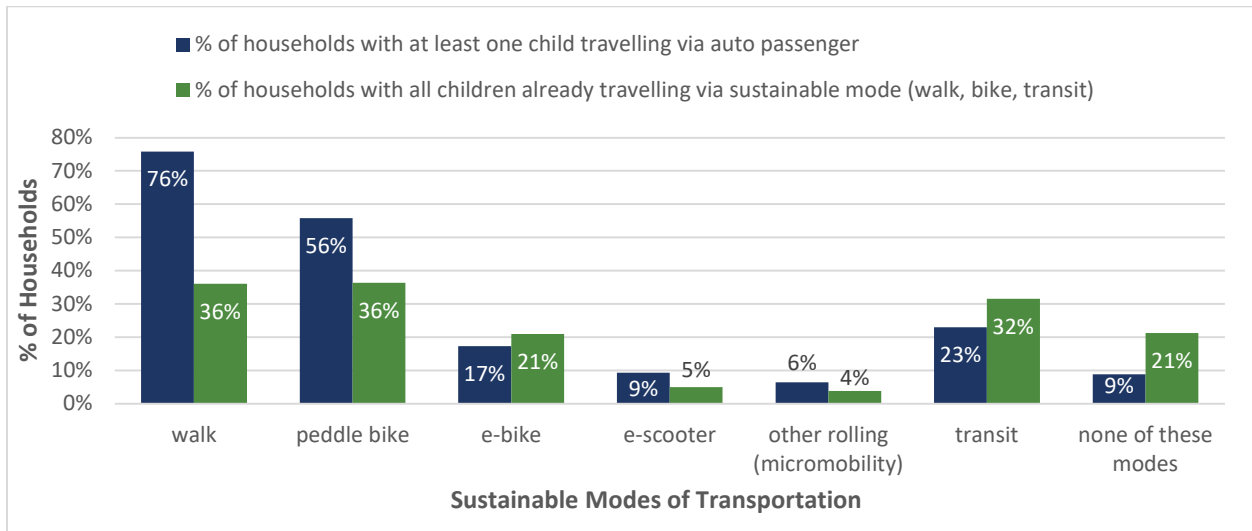
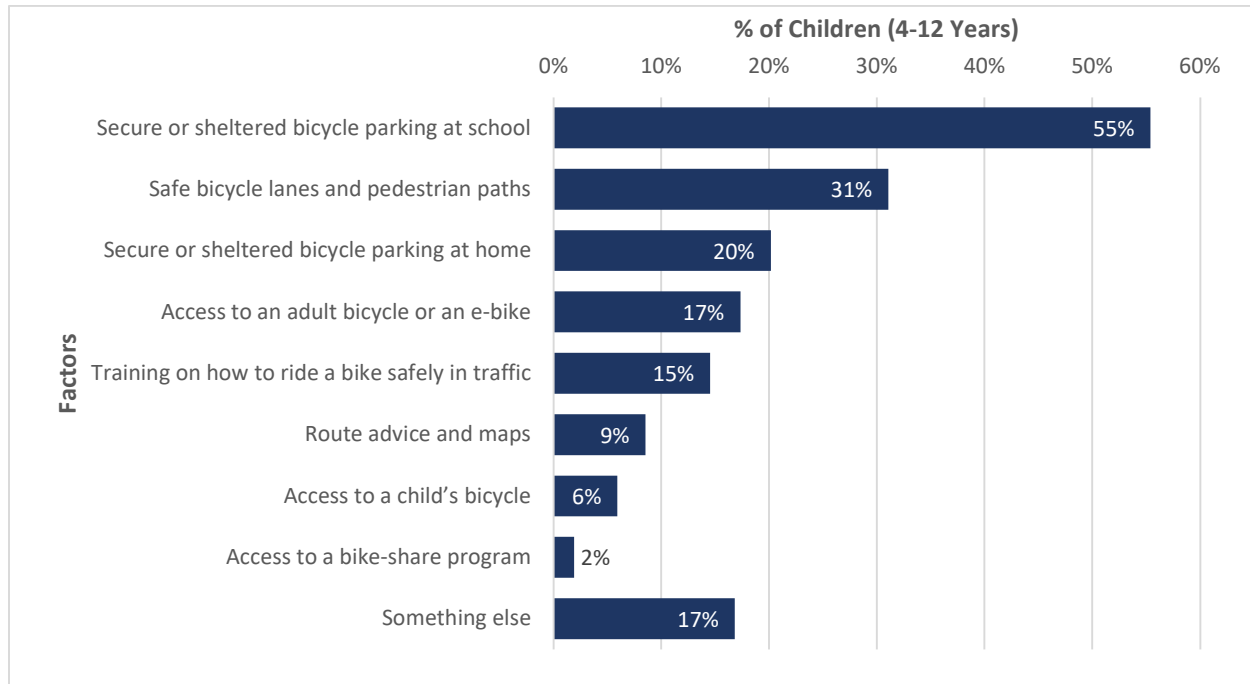


Figure 83. Willingness of Parents/Children to Use Active or Sustainable Modes of Transportation



⁴⁵ Please note, percentages add to greater than 100% due to multiple responses.

Figure 84. Factors that Would Encourage the Use of Active Transportation for School Commute⁴⁶

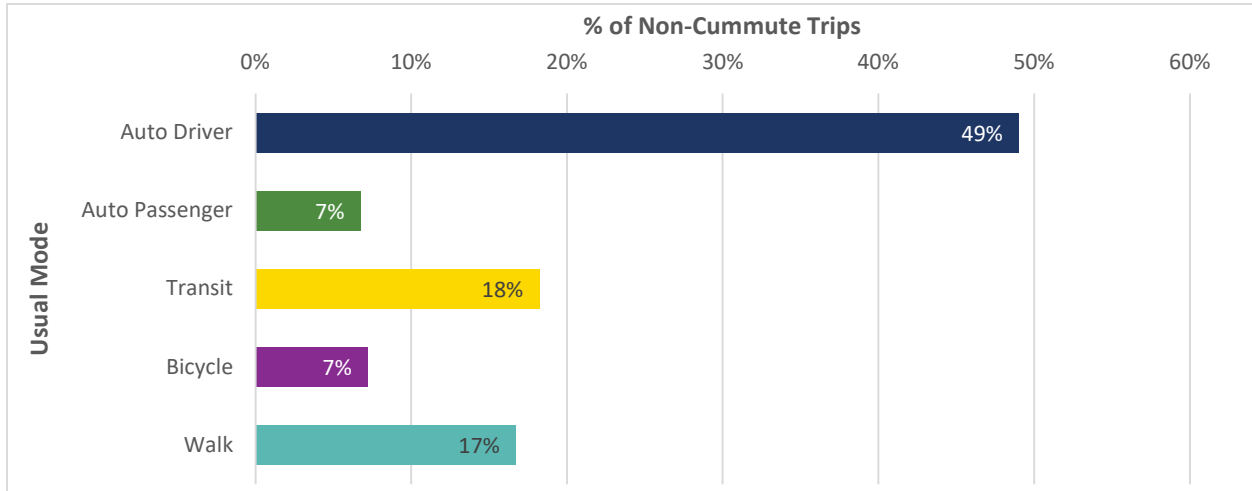
7.3 Usual Non-Commute Mode

This section describes the usual non-commute trips of which purposes include shopping, meeting friends and family, recreation and other discretionary purposes.

Figure 85 shows usual mode share for non-commute trips. Auto driver accounts for the largest mode share for non-commute purposes, at 49%. Transit is the usual mode for 18% of non-commute trips and walking for 17% of non-commute trips. Compared with the usual mode for work commute trips in **Figure 69**, auto driver and auto passenger are higher by 5%, walking is higher by 7%, transit is lower by 10%, and cycling is lower by 8%.

⁴⁶ Please note, percentages add to greater than 100% due to multiple responses.

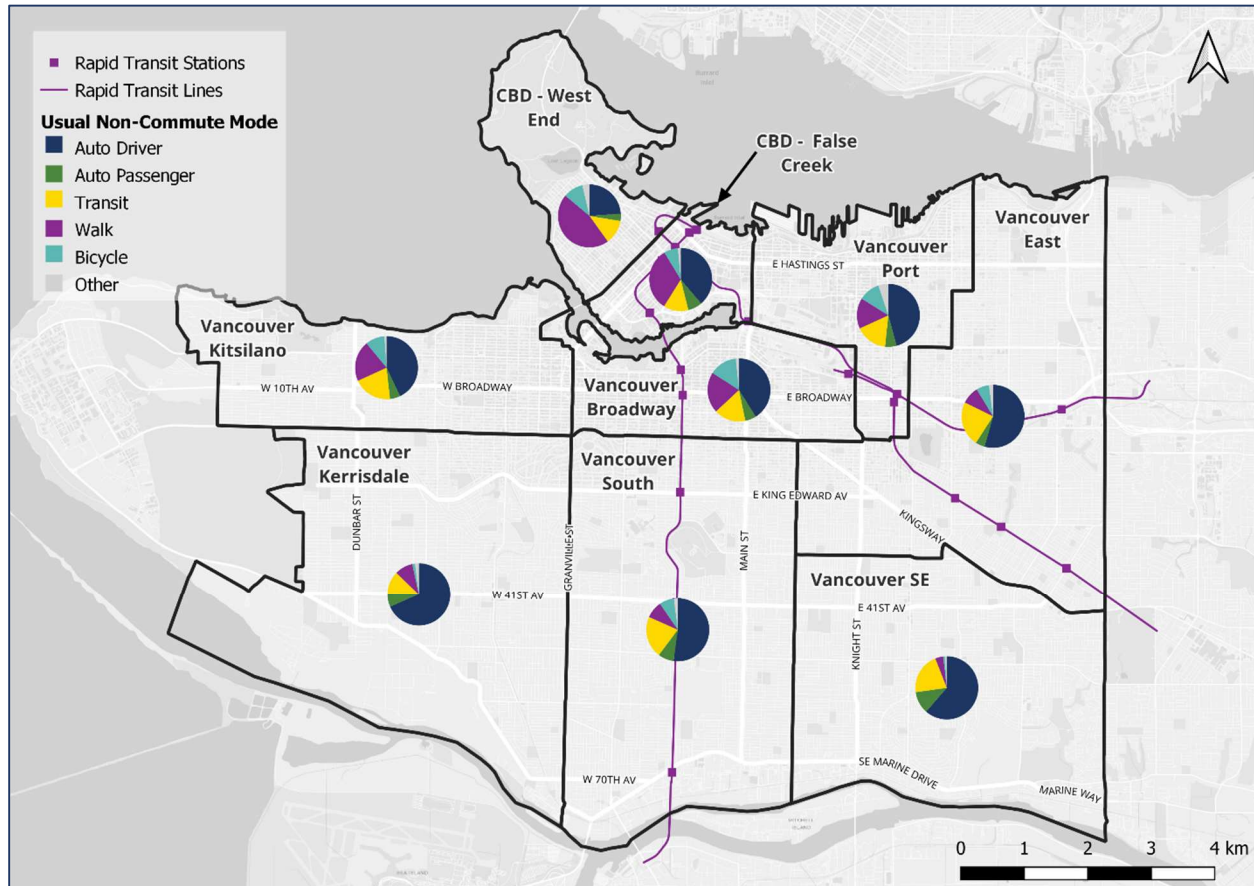
Figure 85. Usual Mode of Travel for Non-Commute Purposes⁴⁷



⁴⁷ Figure does not include the 3% of respondents who selected “Other”.

Figure 86 shows the above data broken down by zone. Across zones, generally the pattern of auto-driver being the most common mode for non-commute trips followed by transit remains consistent. One notable exception is for CBD – West End and CBD – False Creek where walking is the most common usual non-commute mode (46% and 32%, respectively), followed by auto driver (24% and 39%), and then transit (12% and 13%). Also notable is the large percentage of residents from Vancouver Kerrisdale (68%) and Vancouver Southeast (61%) who report auto driver as their usual mode for non-commute trips; over 70% of residents in these two zones rely on vehicles (either as drivers or passengers) as their usual mode for non-commute purposes.

Figure 86. Map of Usual Mode of Travel for Non-Commute Trips by Zone



7.4 Transit Use

Figure 87 shows the frequency of transit use for Vancouver residents. More than 80% of survey participants reported that they take transit at least some of the time, with 10% doing so at least five days per week.

Figure 87. Frequency of Transit Use⁴⁸

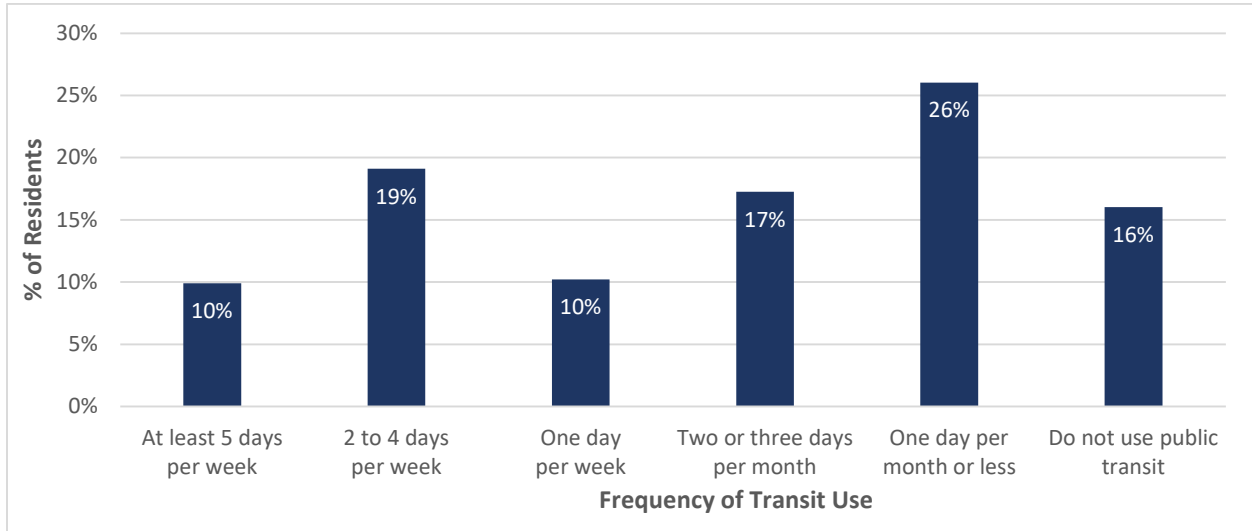


Table 24 shows transit frequency by zone in table format and Figure 88 shows a map of the same data. The data shows that Vancouver Kerrisdale has the largest percentage of residents who are less likely to use transit with 83% of its residents using transit one day per week or less. Looking only at regular transit use (i.e., use transit five times per week or more), we see that Vancouver Broadway has the highest percentage of residents that use transit on a regular basis, at 14%. Vancouver South and Vancouver East also have higher percentages of residents who report regular transit use (12% each), compared to other zones.

Table 24. Frequency of Transit Use – by Zone

	Vancouver	CBD - West End	CBD - False Creek	Van. Broadway	Van. South	Van. Kerrisdale	Van. Kitsilano	Van. Southeast	Van. East	Van. Port
At least 5 times per week	10%	8%	7%	14%	12%	6%	10%	11%	12%	8%
2-4 times per week	19%	16%	22%	16%	25%	11%	18%	18%	24%	18%
One day per week	10%	15%	13%	10%	10%	7%	14%	8%	9%	12%
Two or three days per month	18%	20%	25%	22%	16%	13%	24%	11%	14%	22%
One day per month or less	26%	30%	24%	25%	24%	28%	27%	27%	27%	28%
I do not use public transit	16%	11%	10%	14%	13%	36%	9%	26%	14%	12%
Subtotal one day per week or less often or never	71%	76%	71%	70%	63%	83%	72%	70%	64%	74%

⁴⁸ Percentages do not add to 100% due to rounding.

Figure 88. Map of Frequency of Transit Use – by Zone

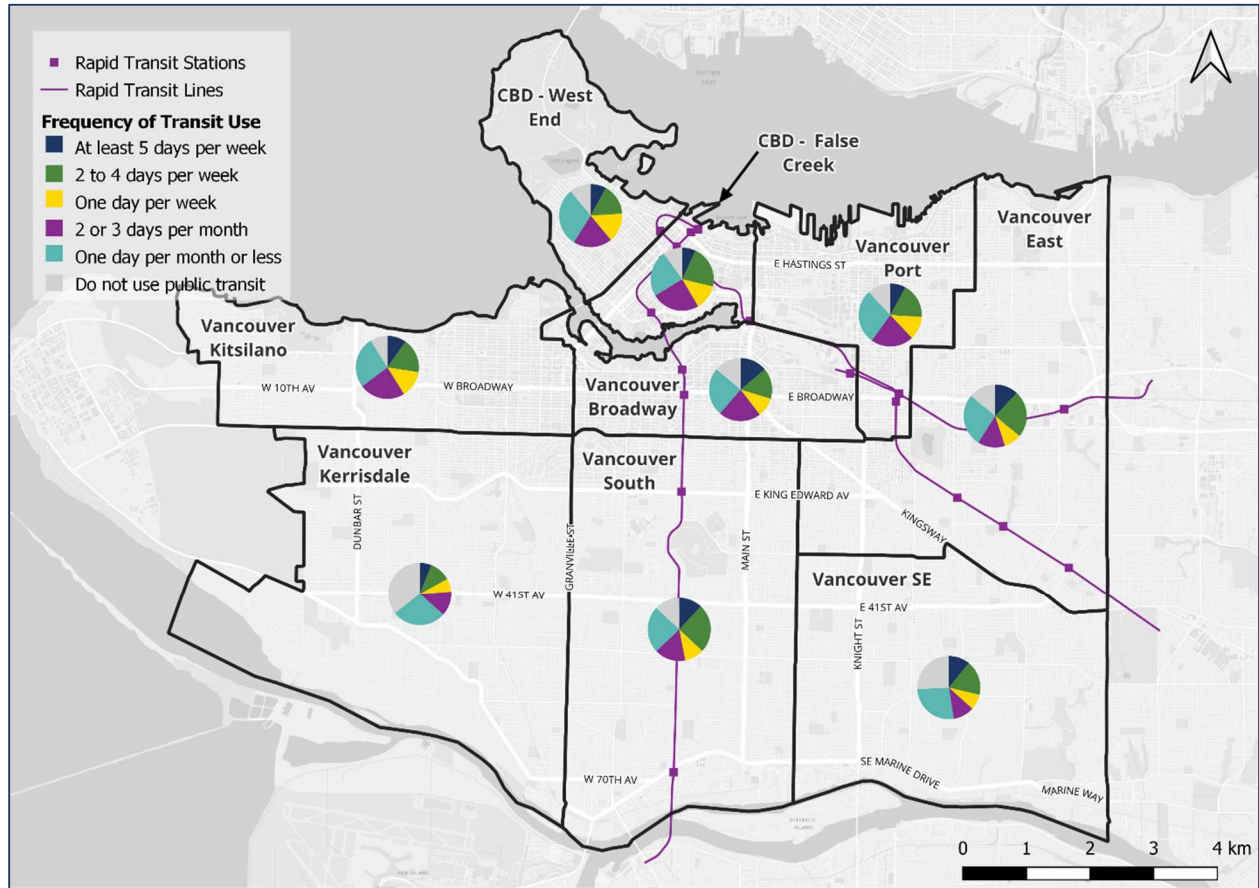
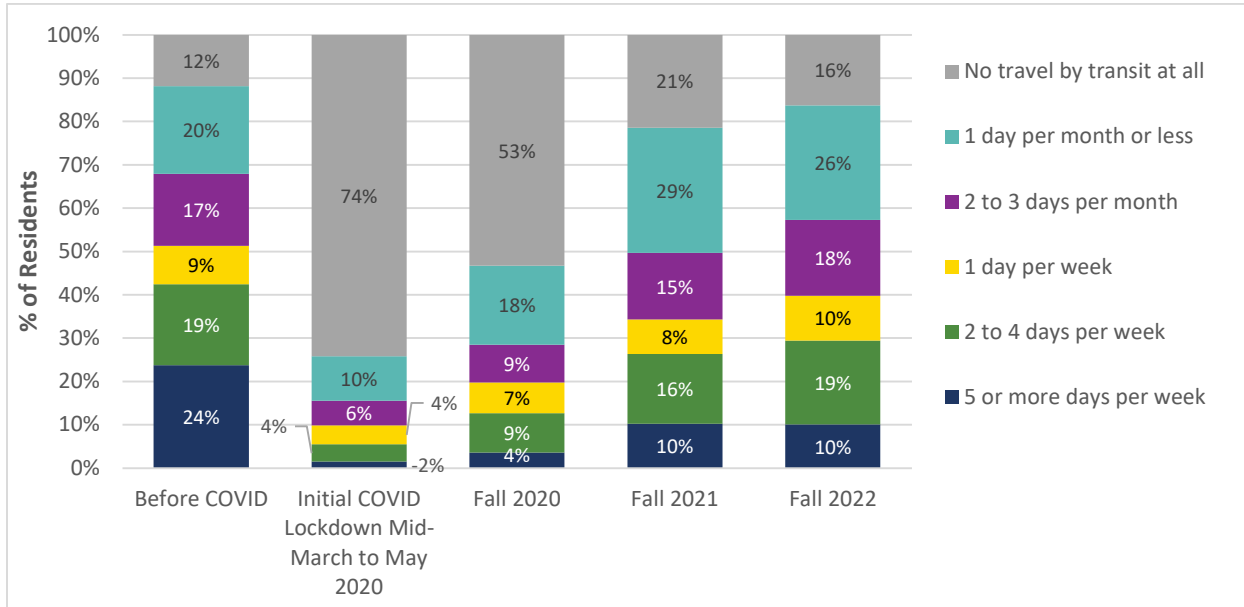


Figure 89 shows the frequency of residents' transit use between 2019 and 2022. This figure illustrates the significant reduction in transit use at the onset of the pandemic and related lockdowns/restrictions in 2019 and a pattern of a slow but steady increase in transit use in 2021 and 2022. As is shown, the percentage of residents that never take transit continues to decrease in 2022, though has not quite returned to pre-pandemic levels (16% in 2022 versus 12% in 2019). In general, transit use remains less frequent than in 2019 and residents are more likely to use transit sparingly (i.e., one day per week or less) with 29% of survey participants reporting they use transit two or more days per week in 2022 compared to 43% in 2019. With hybrid telecommuting arrangements becoming more common since the onset of the pandemic, it is likely that there will be a long-term impacts on regular transit use.

Figure 89. Change in Frequency of Transit Use, 2019 to 2022



7.4.1 Frequency of Transit Use by Personal Demographics

Transit frequency was explored by personal demographics including work status, age, and gender.

Figure 90 shows similar patterns of transit use amongst workers and non-workers, with workers being more likely to use public transit at least five days per week (11% versus 8% for non-workers). This finding is not unexpected as workers may be using transit to commute to work and/or for personal and other trips.

Figure 90. Frequency of Transit Use – Workers and Non-workers

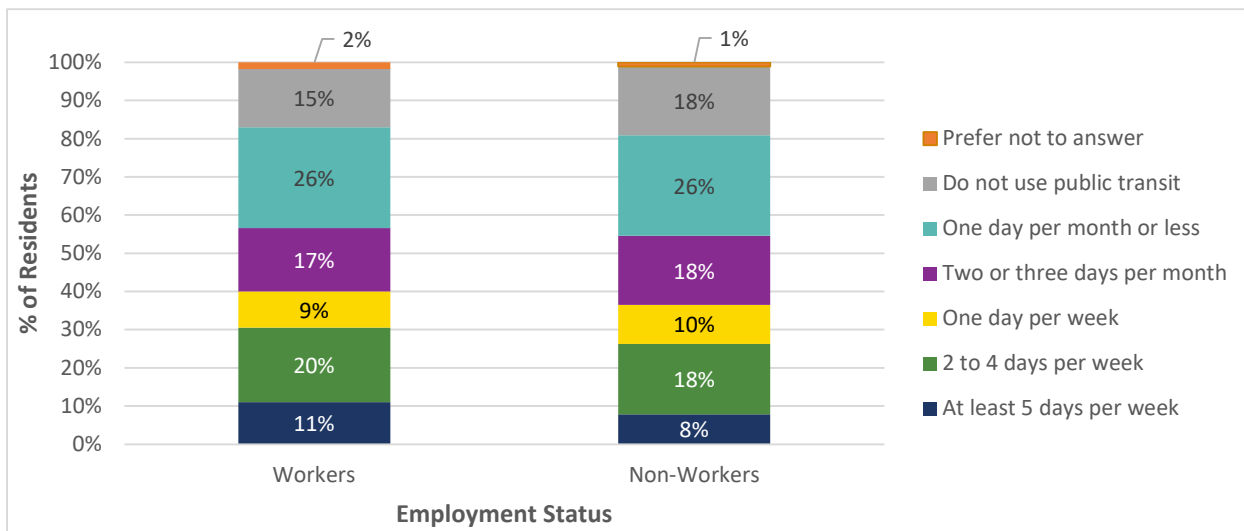
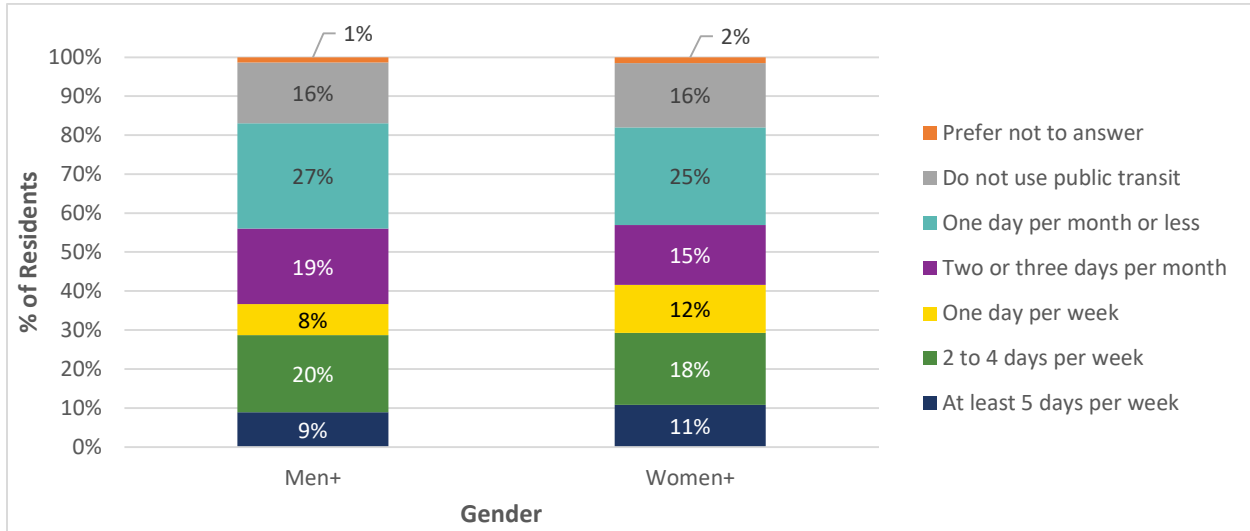


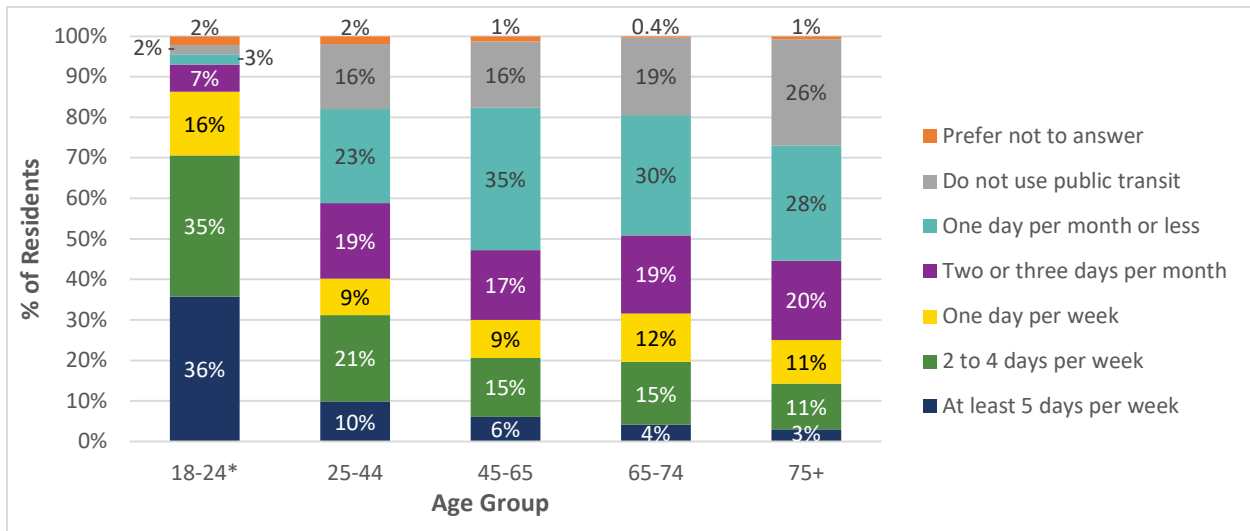
Figure 91 shows that men are slightly less likely to regularly use transit (i.e., 2 or more days per week) compared to women.

Figure 91. Frequency of Transit Use – by Gender



Finally, as shown in **Figure 92**, transit use steadily declines with age. Regular transit use (2 or more days per week) is highest amongst ages 18-24 years old and declines with each increasing age bracket until reaching a low of 14% amongst those over the age of 75 years old. The U-pass program, which gives students access to bus, SeaBus and SkyTrain services within the city may contribute to the relatively larger proportion of 18 to 24 years old who use transit two to five (or more) days per week.

Figure 92. Frequency of Transit Use – by Age Group



7.4.2 Children’s Transit Use

Figure 93 indicates the frequency of transit by children that are 12 and younger (refer to **Section 7.2.2** for a description of who participated in this survey question). Even though 17% use transit as a usual mode to commute to school, 73% use transit at least some of the time. While it is good to see children being exposed to transit, 27% do not use public transit compared with 16% for adults between the ages of 25 to 65. **Figure 94** indicates transit use by zone. The proportion of children using transit at least 5 days a week is highest in Vancouver Kerrisdale (14%), Vancouver SE (12%), and CBD – False Creek (11%).

Ironically, Vancouver Kerrisdale (46%) and Vancouver SE (43%) are also the zones with the greatest proportion of children who do not use transit.

Figure 93. Frequency of Transit Use by Children 12 and Younger

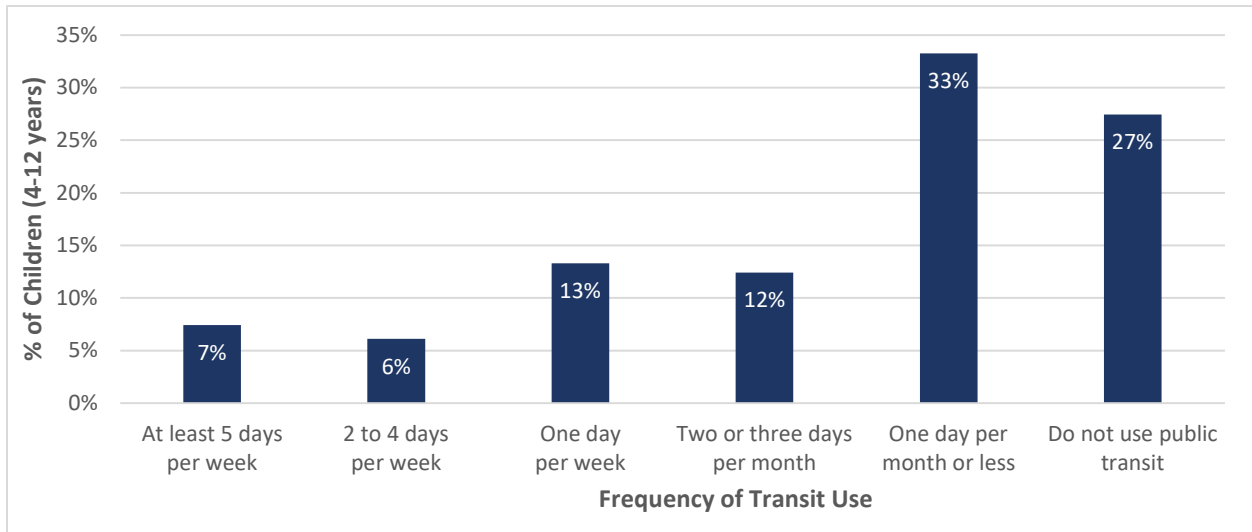
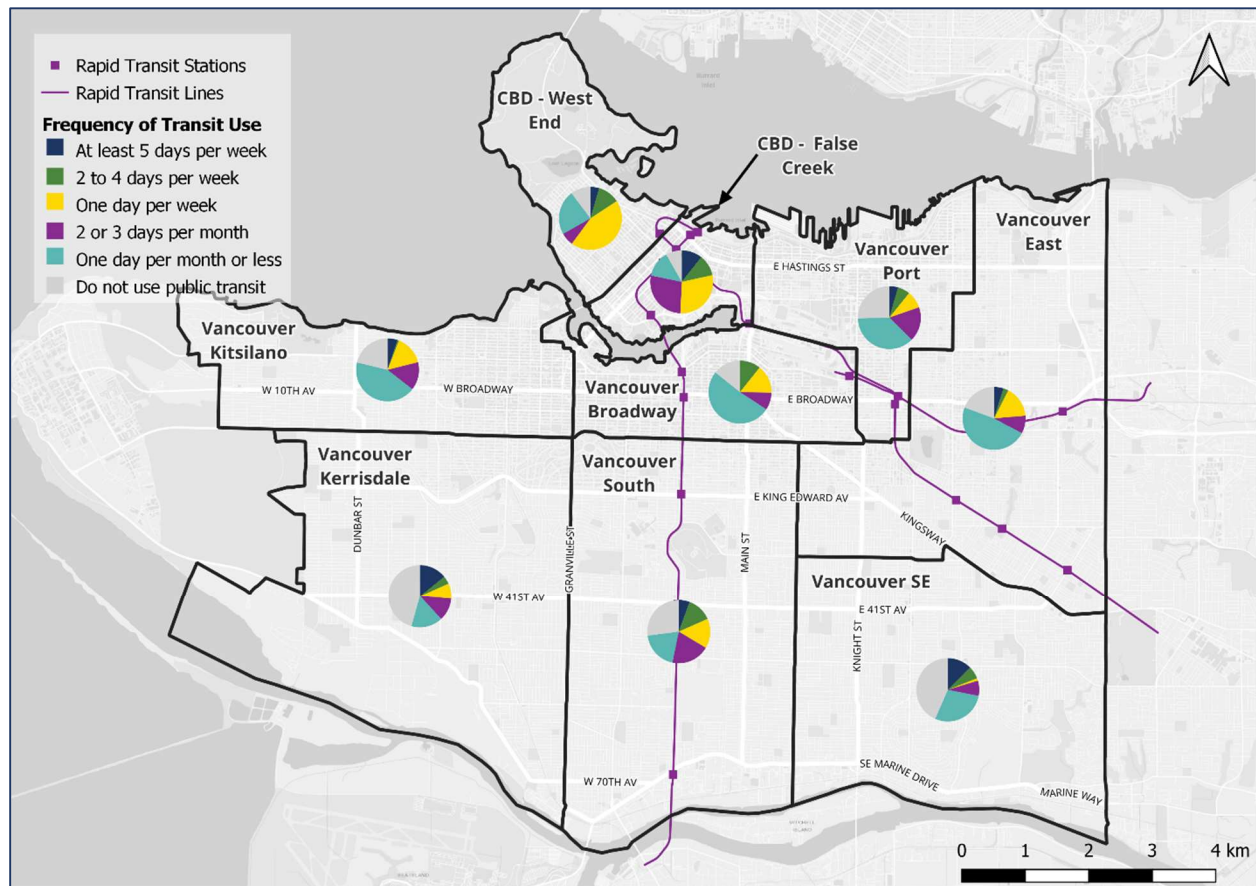


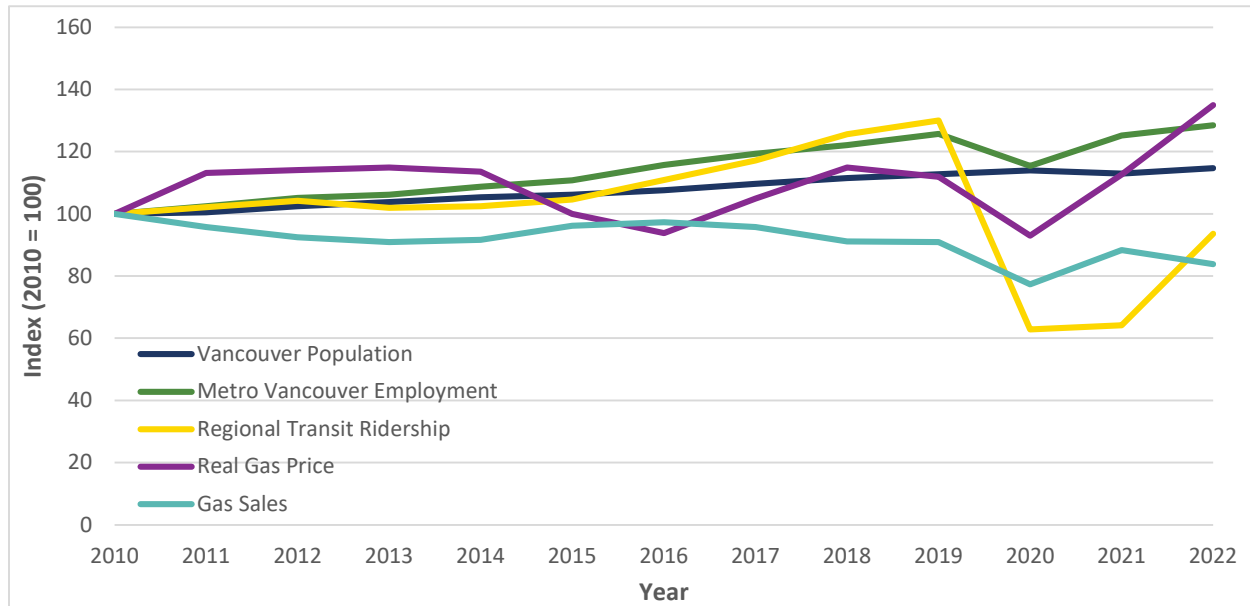
Figure 94. Map of Frequency of Transit Use by Children 12 and Younger, by zone



8 Factors Contributing to Changes in Trip Demand Over Time

This section discusses some of the trends in key factors that influence travel behaviours and patterns across the City of Vancouver and Metro Vancouver. These factors include changes in population, employment, transit use, fuel prices, and fuel sales. **Figure 95** shows the historical trends of the key factors over the last decade from 2010 to 2022.

Figure 95. Historical Trends of the Key Factors over the Last Decade ⁴⁹



The population of the city of Vancouver has continued to grow in 2022, adding 11,500 residents since 2021, or 12,197 since 2019. Employment in the city has also recovered and exceeded pre-pandemic levels after declining to 92% of 2019 levels in 2020 and recovering to 99% of 2019 levels in 2021. The population and employment numbers are expected to continue to grow going forward with continued immigration and long-term economic recovery (although in the near-term this may be tempered or retarded by the impact of inflation and interest rate increases), thus driving an increase to trip demand over time.

The impact of the pandemic on transit use has been evident since 2020 when we saw a sharp decline, with Translink annual ridership dropping to only 48% of 2019 levels in 2020 and recovering to about 72% of 2019 levels in 2022. This aligns with the survey findings highlighted above in **Section 7.4.1**. Residents reported transit usage has begun to increase after a significant decrease in 2020 but has not returned to pre-pandemic patterns. The partial recovery of transit use is mainly due to changes relating to more people returning to work at their usual location outside home (e.g., office), return to in-person schooling, and a decline of perceived risk of contracting COVID-19 in public transit. A full transit recovery to the 2019 levels is hindered by increased adoption of telecommuting and the fact that some people haven't shifted back to transit post pandemic, as discussed in **Section 7.1.4.1**.

⁴⁹ Sources: BC Statistics Agency population estimates 2010-2022; Statistics Canada Labour Force Survey; TransLink ridership figures; Statistics Canada average retail gas prices; City of Vancouver data on gas sales.

Fuel prices have increased over the past couple of years, by about 20% in both 2021 and 2022, after dropping by 83% in 2020 (compared to the previous year). This pattern differs from that of fuel sales, which dropped to 85% of 2019 levels in 2020 and have since increased in 2021 and decreased in 2022, returning to about 92% of 2019 levels in 2022. The demand for fuel aligns with the change in travel behaviour and associated trip rates observed since 2019. Time will tell whether or when fuel demand and trip rates will return to pre-pandemic levels, given the profound shifts in work arrangements for some workers (See **Section 7.1.3.2**). The modest decrease in fuel sales from 2021 to 2022 supports the idea of gradual change in travel patterns affected by multiple, often counter-balancing factors (fuel costs, cost-of-living pressures, evolving work arrangements, increases in EVs) rather than a rapid snap back to 2019 levels. It will be interesting to see how the increasing cost of fuel impacts mode share and VKT as time goes on.

Appendix A: Survey Instrument

1. INTRODUCTION – ONLINE TRAVEL SURVEY – NEW PARTICIPANTS

[CLIENT LOGO(S)]

To begin the survey, please enter the secure access code found on the top of your notification letter.

Secure Access Code: _____ **Begin Survey**

Welcome to the City of Vancouver Transportation Survey.

The City of Vancouver is undertaking a Transportation Survey that will help the City to better understand the travel behaviour and preferences of residents, and will assist the City in making informed decisions regarding future transportation plans and investments.

The goal of the survey is to understand where people are going and how they get there by collecting information on the trips made by residents of the City of Vancouver. The survey helps to identify and track trends in sustainable transportation, including daily trips made, modes of transportation used, and vehicle-kilometres travelled. Understanding how, where, and why residents travel allows the City to better plan for future transportation needs.

In appreciation of your time, you'll be entered for a chance to win one of 110 prizes ranging from \$25 to \$100 in value upon the completion of this survey.

How long does it take to complete the survey? Approximately 10-25 minutes. It is extremely important all your data is entered completely and accurately. You can also complete the survey by telephone with one of our professional interviewers by calling us toll-free at **1-855-688-1140**.

What kinds of questions are asked? The survey asks questions about your household and demographic characteristics, all trips taken on the previous weekday, as well as your opinions on some transportation-related issues in the City of Vancouver.

Will my privacy be protected? Yes. Your survey responses will be combined with others' responses before they are analyzed. Your contact information will only be used to contact you for follow up about the survey. Click here to view our [Privacy Statement](#).

How was I selected for the survey? Your household was selected at random from households across the City of Vancouver. A limited number of households receive an invitation to join the study, so the few minutes you take to participate will have a big impact. The survey is voluntary, but to truly represent the travel behaviour of all types of residents in your neighbourhood, we hope that you or a member of your household will choose to participate.

Who is being surveyed? We will be surveying randomly selected households across the City of Vancouver. Only a limited number of invitations are sent out, so your participation is important.

Who is conducting the survey? The City of Vancouver has contracted independent B.C.-based research firm R.A. Malatest & Associates Ltd. to conduct the 2022 survey.

Are there incentives for participation? Participants who complete the survey are eligible to enter a prize draw. You could win one of ten \$100 cash prizes or one of 100 \$25 e-gift certificates to local merchants. Odds of winning are 1 in 30. The prize draw is administered by R.A. Malatest & Associates Ltd. and will

be drawn once the survey administration period is completed.

What day of the week should I report on? We are interested in your travel on the most recent previous weekday. It is important that you provide a snapshot of what you actually did on that day, even if it was not a typical day, and even if you did not travel.

Who do I contact for more information or for help?

- If you would prefer to complete the survey by telephone, please call **1-855-688-1140** (toll free).
- You may also call the number above for assistance with the online survey, or email us at info@vantripsurvey.ca.
- If you wish to validate the authenticity of this survey you may contact the Traffic and Data Management Branch at the City of Vancouver (transportationdata@vancouver.ca, 604-829-9732).
- For more information about this survey, please visit vantripsurvey.ca.

Please note that your answers to the survey are saved each time you click on the Previous or Next Buttons.

R1. Are you the only person in your household who is 18 years of age or older?
1. Yes
2. No

R2. [if R1=No]
In order to obtain a representative cross-section of the population, it is important that we randomize the selection of the person in your household who completes the survey.

Of all of the people in your household who are 18 years of age or older, are you the person whose birthday comes next?

1. Yes
2. No

R3. [If R2=No]
In order to randomize the selection of the person who completes the survey, we would like to do the survey with the person in your household whose birthday comes next.

If this person is available now:

Please ask this person to complete the survey. If they will use the same computer or mobile device as you are using now, click here to **return to the Introduction**, so that this person can start from the beginning.

If this person is not available now, or will do the survey on another computer or mobile device:

Please ask this person to complete the survey. They can log in at vantripsurvey.ca with the secure access code from your household's invitation letter. Your secure access code is: [recall access code].

Or, you can send this person an email invitation. Fill out the email address below and add your own personal message, and click Send Email to have our system send a link to the survey.

Email address: _____

Personal Message: _____

Your name: _____

(please enter your name so that this person knows you sent this to them)

[SEND EMAIL BUTTON]

The email address entered will only be used to send a link with the secure access code for your household. The email address will not be used for any other purpose and will be destroyed after use.

The protection of your privacy is important to us. The secure access code is intended for your household's use only. Do not share your access code with anyone outside your household if you do not want them to have access to your survey answers. Once the survey is complete, access to the survey will be closed and your data will be secure.

Click here to [return to the Introduction](#).

R4. [when the send email button is clicked please redirect the survey to the following message:

An email has been sent to the person in your household identified as the next person who will celebrate a birthday.

The goal of the City of Vancouver Transportation Survey is to provide the City with an understanding of where people are going and how they get there by collecting information on the trips made by one member of your household. This information will be used for planning purposes and to make informed decisions on transportation infrastructure.

We ask that the person with the next birthday complete the survey in order to randomize the selection within each household and obtain a representative sample or all types of people in the City of Vancouver.

Click here to [return to the Introduction](#).

2. INTRODUCTION – TELEPHONE INTERVIEW – NEW PARTICIPANTS

Hello, my name is _____, and I am calling on behalf of the City of Vancouver to follow up on an invitation we recently sent you to participate in a major study of the travel patterns of Vancouver residents.

The data collected in this study will help inform decisions to improve transportation infrastructure and services across the region. On this survey, we will ask some questions about the trips made by one member of your household yesterday.

To randomize our interviews, may I speak to the person in your household who is 18 years of age or older and whose birthday comes next?

(INTERVIEWER: Verify 18 years of age or older. If no, ask to talk to appropriate person and restart intro. If person 18+ years with the next birthday is not available, schedule a callback.)

USE FOLLOWING SCRIPTS AS NECESSARY:

The survey will be about the transportation choices people make.

- This survey is about the transportation choices people make. The survey results will be used to help plan improvements to roads, transit infrastructure, and pedestrian and cycling facilities across the region.
- Your household has been randomly selected. The survey is voluntary, but to truly represent the travel behaviour of residents in your area, it is important that you, or someone else in your household who is 18 years of age or older, participate.
- It is important that we complete the survey with a random cross-section of the entire population that is 18 years of age or older. We ask to speak to the person who will next celebrate a birthday to randomize the choice within each household.
- The survey takes about 10-25 minutes depending on your answers.
- The survey contains questions about your household and your demographics. It also asks about the trips you made on a previous weekday, as well as a few opinion questions on transportation issues facing the City of Vancouver.
- Even if you did not make any trips yesterday, it is important that we record that information as well. The survey will be shorter for you.
- I work for R.A. Malatest & Associates Ltd, a professional B.C.-based research firm. The City of Vancouver has contracted our firm to conduct this survey on their behalf.
- If you wish to validate the authenticity of this survey you may contact the Traffic and Data Management Branch at the City of Vancouver (transportationdata@vancouver.ca, 604-829-9732).

- I can send you an email with information about the study, and a link to the website for this study. (If you prefer I can mail you information about the purpose of the survey, and call you back after you have reviewed the information.)
- Participants that complete the survey are eligible to enter a prize draw. You could win one of ten \$100 cash prizes or one of 100 \$25 e-gift certificates to a local merchant. Your chances of winning a prize are approximately 1 in 30. A total of \$3,500 in prizes will be awarded. The prize draw is administered by R.A. Malatest & Associates Ltd. and will be drawn once the survey administration period is completed.

A2. [ONLY ASKED OF TELEPHONE INTERVIEW RESPONDENTS. ASSUME ONLINE RESPONDENTS HAVE RECEIVED THE LETTER IN THE MAIL IN ORDER TO GET ACCESS CODE TO LOG ON]
Have you received the letter in the mail describing this study?

1. Yes
2. No
3. Don't know

INTERVIEWER: IF RESPONDENT DID NOT RECEIVE LETTER AND WISHES MORE INFORMATION BEFORE PROCEEDING:

I can send you an email with information about the study, and a link to the website for this study. (If you prefer I can mail you information about the purpose of the survey, and call you back after you have reviewed the information.)

3. INTRODUCTION – ONLINE – RETURNING PANELISTS

Welcome back to the City of Vancouver Annual Transportation Survey!

This series of annual surveys helps the City of Vancouver better understand residents' transportation needs and make informed decisions on planning for roads, public transit, cycling, and pedestrian infrastructure.

As a returning survey participant, you'll be entered into a prize draw for **one of ten \$100.00 cash prizes and 100 \$25.00 e-gift cards to local merchants**. Your odds of winning are approximately 1 in 30. **[IF TARGET_DEMOGRAPHIC=1: You will also receive a \$25.00 e-gift card just for completing this survey!]**

What questions will I be asked? You'll be asked to update some demographic questions you answered last year. You will also be asked about all trips taken on the previous weekday, as well as your opinions on some transportation-related issues in the City of Vancouver.

Will my privacy be protected? Yes. Your survey responses will be combined with others' responses before they are analyzed. Your contact information will only be used to contact you for follow up about the survey. Click here to view our [Privacy Statement](#).

Who is conducting the survey? The City of Vancouver has contracted independent B.C.-based research firm R.A. Malatest & Associates Ltd. to conduct the survey.

Who do I contact for more information or for help?

- If you would prefer to complete the survey by telephone, please call 1-855-688-1140 (toll free).
- You may also call the number above for assistance with the online survey, or email us at info@vantripsurvey.ca.
- Information about the survey is available on www.vantripsurvey.ca
- Survey results from previous cycles are available here: <https://vancouver.ca/streets-transportation/annual-transportation-survey.aspx>
- If you wish to validate the authenticity of this survey you may contact the Traffic and Data Management Branch at the City of Vancouver (transportationdata@vancouver.ca, 604-829-9732).

Please note that your answers to the survey are saved each time you click on the Continue buttons.

Click Continue to start the survey.

4. INTRODUCTION – TELEPHONE – RETURNING PANELISTS

Welcome back to the City of Vancouver Annual Transportation Survey!

This series of annual surveys helps the City of Vancouver better understand residents' transportation needs and make informed decisions on planning for roads, public transit, cycling, and pedestrian infrastructure.

As a returning survey participant, you'll be entered into a prize draw for **one of ten \$100.00 cash prizes and 100 \$25.00 e-gift cards to local merchants**. Your odds of winning are approximately 1 in 30. **[IF TARGET_DEMOGRAPHIC=1: You will also receive a \$25.00 e-gift card just for completing this survey!]**

INTERVIEWER: READ IF NECESSARY

What questions will I be asked? You'll also be asked to update some demographic questions you answered last year. You will also be asked about all trips taken on the previous weekday, as well as your opinions on some transportation-related issues.

Will my privacy be protected? Yes. Your survey responses will be combined with others' responses before they are analyzed. Your contact information will only be used to contact you for follow up about the survey.

Who is conducting the survey? The City of Vancouver has contracted independent B.C.-based research firm R.A. Malatest & Associates Ltd. to conduct the survey.

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- You may also call the number above for assistance with the online survey, or email us at info@vantripsurvey.ca.
- Survey results from previous cycles are available at <https://vancouver.ca/streets-transportation/annual-transportation-survey.aspx>.
- If you wish to validate the authenticity of this survey you may contact the Traffic and Data Management Branch at the City of Vancouver (transportationdata@vancouver.ca, 604-829-9732).

Please note that your answers to the survey are saved as we go and this call may be recorded for quality control purposes.

Click Continue to start the survey.

5. SURVEY PRIVACY STATEMENT

[available anywhere there is a link to the [Privacy Statement](#)]

The survey team is dedicated to protecting the privacy of its participants.

Collection of information for the survey is being undertaken in accordance with Sections 26 through 36 of BC's *Freedom of Information and Protection of Privacy Act (FOIPPA)*. The confidentiality of any information collected is protected under the provisions of the Act.

Any information obtained from each household is processed, stored, and used in a form that does not permit any particular household to be identified. Your survey answers will be aggregated with that of other households when the data are analyzed.

Canadian-based research firm R.A. Malatest & Associates Ltd. is conducting the survey data collection under the direction of the City of Vancouver with the highest standards of the protection of privacy and confidentiality. Click here for a link to the firm's Privacy Policy.

For more information, please contact 1-855-688-1140 (toll free) or email info@vantripsurvey.ca.

To contact the City of Vancouver regarding privacy questions or concerns, please send an email to the Traffic and Data Management Branch of the City of Vancouver:
transportationdata@vancouver.ca

Per FOIPPA requirements, your information will be securely retained for at least 12 months after the conclusion of data collection. If you give your permission to be contacted for a follow-up survey, your contact information and linked survey responses will be retained for the purpose of a follow up survey in one year. If after completing the survey you wish to withdraw your consent to collect or retain your information, please email info@vantripsurvey.ca.

For more information about this research study please visit vantripsurvey.ca.

6. RETURNING PANELISTS – CONFIRMATION OF PREVIOUS INFORMATION

P1. **Do you still live in the City of Vancouver?**

- 1. Yes
- 2. No

P2. [P1=no]

What city or town outside the City of Vancouver did you move to?

99. Prefer not to answer

P2X. [P1=no]

You indicated that you no longer reside in the City of Vancouver.

**This survey is intended for residents of the City of Vancouver. We have no further questions.
You will still be entered into the prize draw.**

If you do live in the City of Vancouver, click Previous to change your answers.

Click Submit to finalize your survey.

[SKIP TO PRIZE DRAW CONFIRMATION]

QCONFIRM

P3. We would like to confirm the information you provided about yourself when you participated in the 2021 City of Vancouver Annual Transportation Survey.

Please carefully review the information below and indicate if anything is different.

Contact Information

Name: [AQNEW_NAME_PREV]
 Phone Number: [AWONLINE_PHN_PREV] ext [AQONLINE_EXT_PREV]
 Email: [AQONLINE_EML_PREV]

Household Information

Address: [RECALL FROM PREVIOUS SURVEY]
 Number of people living in household: [AQNUM_HH1_PREV]

Demographics

Gender: [AQGENDER_PREV]
 Age Range: [AGE RANGE FROM AGE+1 IF AGE PREVIOUSLY KNOWN, OR PREVIOUS AGE RANGE IF SPECIFIC AGE NOT PREVIOUSLY KNOWN]
 Occupation Status: [Display all categories that applied last time: Work full-time (30+ hours/week), Work part-time (<30 hours/week), Student full-time, Student part-time, Unemployed, Retired, Other: [AQSTUDENT_EMPLOY_PREV]]
 Type of Occupation: [AQOCC_TYPE_PREV] or “Not applicable” if empty
 School Attended: [Recall QSCHOOL_NAME_PREV] or “None” if empty
 Workplace: [Recall if work from home, no fixed address QWORK_LOC_PREV]
 [Recall Workplace Address from previous survey]

Is all of the above information correct?

1. Yes, everything is correct
2. No, at least one thing is different

[If any detail is incorrect, ask the question again in the survey. If all details are correct, skip the related questions.]

7. HOUSEHOLD INFORMATION

PHONE: Before we begin, I'd like to let you know that this survey is entirely confidential.

WEB: This survey is entirely confidential and uses secure internet protocols.

Your survey responses will only be analyzed after all personal identifying information has been removed. Survey responses will be aggregated for analysis and will be used only for transportation and city planning purposes.

PHONE: I am now going to ask you some general questions concerning your household

B3. Do you or does anyone in your household work for the City of Vancouver?

1. No
2. Yes
3. Not sure

B4. [If B3=1. YES] Please note that while we can include your responses to this study, due to standard contest rules you will not be eligible for any incentives or prizes. Are you still willing to participate?

1. Yes -> proceed with survey
2. No -> Thank and terminate survey.

B1A. **Please provide a phone number and email address you may be reached for follow up about this survey.**

Name: [NAME]

Phone Number: [PHONE NUMBER] Extension: _____

Email: _____

Your contact information will be kept confidential and will not be shared with anyone. We will contact you only in the event we need to verify your responses or to invite you to complete a follow-up survey in another year (if you agree to be contacted again).

Click here to view our [Privacy Statement](#).

B2. [if address exists in sample file AND street address flag=1 (i.e., address is not a mailing address like a rural route or PO Box)]

The home address we have on file for you is listed below. Please verify the address and correct it if necessary. This information is required to identify the location of your trips.

We are interested in the physical address of your home, not your mailing address.

STREET ADDRESS

CITY / TOWN

POSTAL CODE

Confirm address is correct, or edit the fields displayed

1. Yes
2. No

9. Prefer not to answer

B2X. [IF DECLINE TO ANSWER IN B2]

Unfortunately, the survey cannot proceed without an answer to this question. Your participation is very important, and all personal information you provide will be kept strictly confidential. Click here to view our [Privacy Statement](#).

If you are uncomfortable providing us your exact street address and you live in an urban area, you may provide your postal code. If you live in a rural area, please provide your street address, or at least the closest cross-streets.

PHONE: Rather than terminating the survey, would you reconsider answering this question?

[if agree, go back to previous question]

[If still refuse:] Thank you for your time. Have a pleasant day / evening.

HomeLat, HomeLong, etc.

HOME_LOCATION

[Map the address provided using Google Maps]

[If no address in sample or if address flag indicates a mailing address such as PO Box and address page was skipped]: **Please provide the address of your place of residence. This information is required to identify the location of your trips. Please do not provide a rural route or a PO Box.**

[If confirmed address on previous page:] [display confirmed address above Google Map]

WEB: Does the map correctly show where your home address is located? If not, please move the marker to where it is located, or use the Search box to search for your correct address.

PHONE: CONFIRM WITH RESPONDENT WHAT THE MAP SHOWS: E.g., I am looking at the location on Google Maps. It looks like your home is near the intersection of [STREET] and [STREET]. Is that correct?

LOCATION CAPTURE [HOME COORDINATES]

8. LOCATION CAPTURE MODULE

The general format of the location capture screen is as follows, modified for each survey question as required. Anywhere the survey indicates **LOCATION CAPTURE** in the survey instrument this format will be used.

- LOC1
- **Home** (display confirmed address, from sample or as captured in the survey)
 - your main **work** location (display address captured in survey)
 - your **school** (display address captured in survey)
 - [previously captured destination #1]
 - [previously captured destination #2]
 - ...etc...
 - On the road / no fixed location (no fixed place of work) [Work and school location capture only]
 - Other location [Google Geocode searches and Google Maps confirmation]

Example screen shot: First page allows respondent to pick from locations already given by the household, or indicate that it is another location:

Where did you go first? (What was the destination of this trip?)

Household Work Locations

- your main work location (2400 Lucknow Dr, Mississauga, ON L5S 1T9, Canada)
- 2400 Lucknow Dr, Mississauga, ON L5S 1T9, Canada

Household School Locations

- 25 Peel Centre Dr, Brampton, ON L6T 3R5, Canada

Other Locations

- Other location

<<< Previous
Continue >>>

Progress through your Trip # 1 26 %

Example screen shot: If respondent selects 'Other location' they can provide their location by via Google search, double-clicking on the map, or dragging the marker.

To search for an address, start **typing in the searchbox**, or **double-click** on the map.

[Search tips](#)

858 Pandora Avenue, Victoria, BC, Ca ... Enter a place or address

858 Pandora Ave, Victoria, BC V8W 1P4, Canada X
Drag marker to refine search result

Google found: 858 Pandora Ave, Victoria, BC V8W 1P4, Canada.

Does the map correctly show the destination of your trip? If not, please move the marker to where it is located, or use the Search box to search for the correct address

This is correct

9. HOUSEHOLD INFORMATION (CONT'D)

DwellingType

- B3. **ONLINE: Please identify the type of dwelling you reside in:**
PHONE: What type of dwelling do you live in?
1. single-detached house (include laneway houses and detached garden suite)
 2. row house or townhouse
 3. semi-detached house (side-by-side)
 4. a secondary suite in a house (e.g., basement apartment or upstairs apartment)
 5. on-campus student residence
 6. apartment or condominium in a high rise building (5 or more storeys)
 7. apartment or condominium in a low rise building (fewer than 5 storeys)
 8. mobile home / movable dwelling
 9. residential care or long term care facility
 77. other, please specify: _____

DwellingOwnership

- B3A. **Do you rent or own your place of residence?**
1. Rent
 2. Own
 99. Prefer not to answer

NumHouseholders

- B4. **How many people are currently living in your household, including yourself?**
 (Include children only if living in your household today.
 Include roommates, housemates, live-in housekeepers, and lodgers if they share communal facilities. Exclude anyone living in a separate apartment within the building.
 Do not include visitors, even if they are staying for an extended period of time.)
___ Total # persons in household
 (confirm with respondent)
 99. Prefer not to answer [go to B5]
- B5. [IF DECLINE TO ANSWER IN B4]
Unfortunately, the survey cannot proceed without an answer to this question. Your participation is very important, and all personal information you provide will be kept strictly confidential. Click here to view our [Privacy Statement](#).
PHONE: Rather than terminating the survey, would you reconsider providing this information?
WEB: Click the Previous button to go back and provide a response, or click End Survey to quit
 [if agree, go back to previous question]
 [If still refuse, record as refusal:] Thank you for your time. Have a pleasant day / evening

Num15Plus

B4A. [NumHouseholders>1]

How many people in your household are 15 years of age or older?___ **Total # persons in household 15 years if age or older**

99. Prefer not to answer [go to B5]

NumberVehiclesB6. **How many of the following types of vehicles do you own or have regular access to?**

Please include all licensed cars, vans, or light trucks, and motorcycles that are **brought home and parked** overnight but not scooters or bicycles; Do not include car share vehicles.

___ Gas powered passenger vehicles/vans/SUVs/trucks

___ Diesel powered vehicles

___ Hybrid vehicles (gas/electric)

___ Plug-in hybrid vehicles (gas/electric, but can be run on electric only)

___ Electric vehicles

___ Biodiesel

___ Other fuel source (e.g., propane, natural gas)

___ Motorcycles

77. none

99. Don't know

[Note: previous CoV surveys excluded motorcycles, but we have included them as they speak to the transportation options available to household members.]

HomeEVCharging

B7E. I have access to EV (electric vehicle) charging where I live, whether at home or close by.

1. Yes

2. No

99. Don't know

NumtBikesAdult, NumtBikesEBike, NumBikesChildB8. **How many working bicycles and electric bicycles are available to members of your household, including yourself? Please exclude bikeshare bicycles.**

Adult bicycles: ___

Adult E-bicycles: ___

Children's bicycles: ___

99. Don't know

NumEmobility

B8A. Electric micromobility devices like e-kick scooters, e-skateboards and hoverboards are becoming more common. In total, how many of these devices does your household own?

77. None

99. Don't know

10. DEMOGRAPHICS

The next section is about your demographics. You will be asked to provide some information about yourself before moving on to recording your trips in the next section of the survey.

Your responses are entirely confidential. Your personal information will be protected, and any identifying information will be deleted from the data prior to analysis. Click here to view our [Privacy Statement](#).

[PANEL MEMBERS:] If you have confirmed your information from last year's survey as correct, you may get fewer questions in this section. You may also see some questions already filled in with your answers from the last survey you completed. If your answer is unchanged, please click Continue.

Gender

C1. **What best describes your gender?**

1. man
2. woman
3. non-binary
4. prefer to self-describe: _____
9. prefer not to say

Age

C2. **What is your age?**

- _____
9. prefer not to answer

[Note: Previous CoV surveys asked year of birth. It is easier to adapt our existing template if we can just ask age rather than year of birth. For people who opt into the panel, we can translate from age to approximate year of birth, and ask for update in subsequent cycles.]

AgeGroupOriginal

C2A. [if not provide specific age] **What age range do you belong to?**

(INTERVIEWER: Read the age ranges, starting at a relevant one)

1. 0 – 17 years
5. 18 – 24 years
6. 25 – 34 years
7. 35 – 44 years
8. 45 – 54 years
9. 55 – 64 years
10. 65 – 74 years
11. 75+ years
99. prefer not to answer

AgeGroupCollapsed

C2B. [if 99 to C2A]

Unfortunately, the survey cannot proceed without an answer to this question. Demographic information such as age is crucial to transportation research. Your participation is very

important, and all personal information you provide will be kept strictly confidential. Click [here to view our Privacy Statement](#).

PHONE: Rather than terminating the survey, would you reconsider answering this question?

If you are uncomfortable providing us your exact age, please select from the ranges below to continue the survey.

1. 0 – 17 years
3. 18-64 years
4. 65+ years

INTERVIEWER: Go back to previous question if precise range given or select from broad ranges above

[If still refuse:] Thank you for your time. Have a pleasant day / evening.

[Note: ages given in age ranges will be randomly imputed for data weighting and analysis purposes]

- C2C. [If age<18 IN C2 or C2A age range=1 or C2B age range =1]
[Cul-de-sac page with only Previous and End Survey buttons]
This survey must be completed by someone 18 years of age or older.
If you are 18 years of age or older, click the Previous button to change your answer.
If you are under the age of 18, please have a member of your household who is 18 years of age or older fill out the survey.

DriversLicence

- C3. **Do you currently have a valid driver's licence?**
[mouseover for valid driver's licence: This includes any category of motor vehicle licence, including a temporary learner's permit. Answer 'No' if the licence has expired and has not been renewed or if it has been suspended.]
1. Yes
 2. No
 99. Prefer not to answer

AttendSchool, OccEmployed, Etc.

- C4. **Which of the following apply to you? Select all that apply.**

PHONE:

INTERVIEWER: ASK ABOUT BOTH EMPLOYMENT STATUS AND STUDENT STATUS

Are you currently working (i.e., an employee or self-employed)? Is that full-time or part-time?

Do you currently attend school or another educational institution? (K-12 or post-secondary) Is that full-time or part-time?

1. Work full-time (30 or more hours per week)
2. Work part-time (less than 30 hours per week)
7. Volunteer only (not for pay)
3. Student full-time
4. Student part-time
5. Unemployed
8. Looking after home/family
6. Retired [only display if age 40 +]
77. Other, specify: _____

11. DEMOGRAPHICS – SCHOOL DETAILS

FTWorkFTSchool

- C4X. [if respondent indicated both f/t student and f/t worker, provide confirmation message:]
From your answers, it appears that you attend school full-time and also work full-time (more than 30 hours per week at your main job). Is this correct?
1. Yes, attend **school full-time** and **work full-time** (more than 30 hours/week)
 2. No, attend **school part-time** and **work full-time** (more than 30 hours/week)
 3. No, attend **school full-time** and **work part-time** (less than 30 hours/week)
 4. Unsure

SchoolType

- C4A. [if student]
What kind of school do you attend?
2. Secondary school (high school)
 5. College or university
 6. Alternate, adult basic education, or other
 7. Online / distance learning only, please specify level (high school, college, university, adult basic education: _____)
 8. Prefer not to answer

SchoolName

- C4B. [if student]
What is the name of your school?
 (you can choose from suggestions that appear as you type, or, if none of the suggestions applies, you can type the name exactly as you know it)
1. School Name: _____ [Auto-suggest as you type]
 8. Home schooled (does not attend a school outside the home)

SchoolAddress, SchoolLat, SchoolLong, etc.

- C4D. [skip location capture if SchoolType = 7. online/distance education or if SchoolName=8. home schooled]
 [If not on list] **What is the location of the school?**
 [If on list, map location:] **Does this location appear to be correct?** (If it is not correct, please drag the marker on the map, double-click, or use the search bar to find the correct location)
LOCATION CAPTURE [SCHOOL CO-ORDINATES / TAZ]

12. DEMOGRAPHICS – WORK DETAILS

WorkAddress, WorkLat, WorkLong, etc.

C6A. [if employed] **What is the address of your normal place of work (main job)? (This is the address of the workplace that you normally commute to, whether regularly or occasionally)**

(This is the address of the worksite that you normally commute to every day)

6. Work at a workplace you go to regularly or occasionally (away from home), including hybrid work models (combination of work from home and at a workplace away from home) → identify address on map

3. No fixed workplace address / no usual place of work

1. Work exclusively from home

LOCATION CAPTURE [WORK CO-ORDINATES / TAZ]

CommercialDriver

C7. Are you a commercial driver, that is do you drive or make deliveries as part of your job (e.g., bus or taxi driver, courier, etc.).

1. Yes

2. No

EmployeePrograms

C6L. [if employed]

Do you have access to employee programs that support or provide the following? Check all that apply.

1. Company carpool / car share

2. Employer subsidized transit pass

3. Employer subsidized bike share / Mobi membership

4. Access to bike storage (e.g., bike lockers)

5. EV support (access to electric vehicle charging stations, parking privileges)

7. Employee shuttle to and from transit hubs

8. Emergency ride home program

9. Access to shower / locker facilities at work

10. e-bike / e-scooter charging station

11. Annual active transportation campaigns and promotions

12. Active transportation financial incentive programs

66. Other, specify: _____

77. No, I do not have access to such programs

99. Don't know

ImpactonWorkMode

C6N. [if C6L is not 77 or 99]

To what extent did having access to these programs or supports impact your choice of commute mode to and from work?

	1 – No impact at all	2	3 - Some impact	4	5 – Significant impact
1. Company carpool / car share					
2. Employer subsidized transit pass					
3. Employer subsidized bike share / Mobi membership					
4. Access to bike storage (e.g., bike lockers)					
5. EV support (access to electric vehicle charging stations, parking privileges)					
7. Employee shuttle to and from transit hubs					
8. Emergency ride home program					
9. Access to shower / locker facilities at work					
10. e-bike / e-scooter charging station					
11. Annual active transportation campaigns and promotions					
12. Active transportation financial incentive programs					
66. Other					

SchoolPrograms

C6M. [if student]

At your school, do you have access to programs that support or provide the following? Check all that apply.

- 1. Car share available on school campus
- 2. School subsidized transit pass
- 3. School subsidized bike share / Mobi membership
- 4. Access to bike storage (e.g., bike lockers)
- 5. EV support (access to electric vehicle charging stations, parking privileges)
- 7. Student shuttle to and from transit hubs
- 9. Access to shower / locker facilities at work
- 10. e-bike / e-scooter charging station
- 11. Annual active transportation campaigns and promotions
- 66. Other, specify: _____
- 77. No, I do not have access to such programs
- 99. Don't know

ImpactonSchoolMode

C6O. [if C6M is not 77 or 99]

To what extent did having access to these programs or supports impact your choice of commute mode to and from school?

	1 – No impact at all	2	3 - Some impact	4	5 – Significant impact
1. Car share available on school campus					
2. School subsidized transit pass					

	1 – No impact at all	2	3 - Some impact	4	5 – Significant impact
3. School subsidized bike share / Mobi membership					
4. Access to bike storage (e.g., bike lockers)					
5. EV support (access to electric vehicle charging stations, parking privileges)					
7. Student shuttle to and from transit hubs					
9. Access to shower / locker facilities at work					
10. e-bike / e-scooter charging station					
11. Annual active transportation campaigns and promotions					
66. Other					

13. TRIPS INTRODUCTION

D1.

This section consists of questions about the trips you took **during a single weekday** (your Travel Day).

In order to ensure the most accurate recollection of your travel, please use [yesterday/TRAVELDAY] as your Travel Day.

We will ask you about the trips you made on [TRAVEL DAY], that is any trip during the 24-hour period between 4:00 a.m. yesterday ([TRAVEL DAY]) and 3:59 a.m. this morning, whether for work, school, shopping or any other purpose.

This section will have a series of questions for each separate trip.

What is a trip? A trip is a one-way journey from one location to a destination for a single purpose. A trip may include more than one mode of travel, such as car and transit.

- It is important to report **all trips**, even for a short distance, on foot for instance.
- If you stopped off on your way to somewhere else, such as to drop off a child at school or pick up a coffee, then that journey would have two trips. The return portion of a journey is also considered a separate trip.
- Report all trips, whether made by walking, car, truck, bicycle, transit or any other mode of travel.
- [if person is employed:] Report your trips for business meetings and work-related purposes.
- Report recreational outings that end at the same place they started, such as walking the dog or going for a jog.
- Do not report moving around between classes on campus or within the same building complex.

[Recreational trips with no destination (walking the dog, going for a jog) will be captured. However they might be reported on separately, and excluded from the reporting of mode shares, depending on how other jurisdictions do it (for comparability).]

How precise do locations need to be? We will ask you where you travelled to. Please try to describe locations as precisely as possible, to the accuracy of street address. Use the Google Map provided to search for a specific business or place, or double click on the map to set a 'pushpin' marker. You can drag the marker to the exact location. If possible, try to avoid placing markers at intersections – drag them to the actual destination you travelled to.

[if person is employed as a commercial driver (C7=1.YES):]

If you are a commercial driver (bus driver, taxi driver, courier, traveling salesman): You do not have to tell us about the all the work trips you made for commercial deliveries, or while driving a taxi or bus. But please report the following:

- Your first trip to where you started your work day (terminal, office) or your first delivery or stopping point if you started your delivery/work schedule directly from home.
- Your final work-related stopping point if it is different from the one above.
- A return trip to your home or other non-work related location at the end of your work day.
- All personal trips by any mode of travel.

(INTERVIEWER: If the person was out of town yesterday, we can capture their travel if it passed through or ended up in the City of Vancouver).

14. TRIP CAPTURE – START OF TRAVEL DAY

AnyTrip

E1. **Did you make at least one trip - by any mode of travel whether car, bus, cycling, or walking – between 4:00am [yesterday/TRAVELDAY] and 3:59am [today/TRAVELDAY +1]?**

(Note: Trips include those made via any mode of travel, including all motorized modes of transportation and any non-motorized modes of transportation such as walking, cycling, rollerblading, skateboarding, and so on)

(If SchoolType=college or university: **Do report trips to or from school campuses or any trips made off-campus. Do not report trips moving around between classes on the same campus or within the same building complex.**)

1. Yes
2. No, stayed home or was out of town for the whole day.

WhyNoTrips

E1X. [If E1=2 (no trips):]

Why did you not leave home or make any trips [yesterday/TRAVEL DAY]?

1. Out of town for entire day
2. Sick/ill or care for other sick/ill household member
3. Not scheduled for school classes or activities
4. Not scheduled for work or on extended leave from work (paternity/maternity, short-term disability)
5. Worked from home, and did not leave home for any reason
6. No need to leave home
7. Could not leave home, no transportation available
8. [if B3 dwelling type=5 on-campus residence:] I did not leave campus all day.

WhyNoWork1

E1X1. [if employed=yes AND (E1X=3 or 6 or 7 or 8 or 77), regardless of whether work from home or not]

You did not report going to work [yesterday/on TRAVEL DAY].

Were you working at home?

8. [if B3 dwelling type=5 on-campus residence:] No, worked on the same campus where I live, so did not have off-campus trips.

1. Yes, worked from home (telecommuted)
2. No, away on business / working on the road
3. No, did not work
4. No, actually I worked and did take work-related trips
5. Other, specify: _____

E1X2. [if E1X1=4 No, actually I worked and did take work-related trips]

Please report your trips to and from work, or for work-related purposes, whether you walked or used another mode of travel.

[PROCEED TO E4]

WhyNoSchool1

E1X3. [if a student AND (E1X=4 or 5 or 6 or 7 or 8 or 77), regardless of whether home-schooled or not]

You did not report going to school. Did you attend school [yesterday/on TRAVELDAY]?

8. [if B3 dwelling type=5 on-campus residence:] Yes, attended classes on the same campus where I live, so did not report trips.

1. Yes, did go to school
2. Attended school from home (home schooled, distance learning)
3. No, did not have any scheduled classes, stayed home sick, or did not attend school for another reason
4. No, away on a field trip or other travel
5. Other, specify: _____

E1X4. [if E1X3=1 Yes, did go to school]

Please report your trips to and from school, or for school related purposes, whether you walked or used another mode of travel.

[PROCEED TO E4]

OriginLat, OriginLon, etc.

E4. **Did your first trip start from home?**

1. Yes, my first trip started from home
2. No, my first trip started somewhere else

OriginNotHomeReason

E4A. [If E4 <> home]

You mentioned that your first trip of the day started at a location other than your home. Is it that you were...?

1. Working a night shift (past 4 am, the start of the travel day)
2. Staying overnight at another household? (friend's, relative's, parent's, etc.)
3. Away from home on business travel?
4. Away from home on vacation (or other personal travel)?
5. Another reason, please specify: _____

- E4B. [if E4A=3, 4 (away on business or vacation travel)]
You mentioned that you started the travel day away from home because you were away on business or vacation travel. Did you travel back to the City of Vancouver between 4:00 a.m. [yesterday/TRAVEL DAY] and 3:59 a.m. [today/TRAVELDAY +1]?
 1. Yes
 2. No
 [PROGRAMMER: In E4B above, add a modal pop up to the City of Vancouver: The boundaries of the City of Vancouver include Boundary Road to the east, Burrard Inlet and Vancouver Harbour to north, the Fraser River / Marine Drive in the South, and the edge of the UBC endowment lands in the West (i.e. does not include UBC).
- E4X. [If E4B=no]
You said that you were away the entire day due to business or vacation. Since you did not return to the survey area, you do not have to enter trips for this day.

If you did return, please click the Previous button below to change your answer to Yes, and then please report on your travel for the day.
- E4C. [If E4=another location and (E4B=yes or E4A=1,2,or 5)]
What was the starting point of your first trip [yesterday/TRAVEL DAY]?
LOCATION CAPTURE [ORIGIN CO-ORDINATES]

15. TRIP CAPTURE – LOCATION, TIME, PURPOSE, MODES

DestLat, DestLong, etc.

- E5. [if trip=1:] **Where did you go first?**
 [if trip>1:] **Where did you go next?**

If this is a recreational trip where your start and end locations are the same, please select the location you returned to. (Examples of recreational trips are dog walking, jogging, scenic drive with no destination, etc)

[if trip>1 and ORIGIN=Usual Work and CommercialDriver = 1.Yes:] If you left work at any time before the end of your work day, such as to go for coffee or a lunch outside your workplace or for a business errand, please report each trip to such a destination.

[if trip>1 and ORIGIN=Usual School:] If you left school at any time before the end of your school day, such as to go for coffee or a lunch outside or for an errand, please report each trip to such a destination.]

(Note: For trips requiring air travel: please treat the trip to the airport as a separate trip from the trip on the airplane.)

LOCATION CAPTURE [DESTINATION CO-ORDINATES / TAZ]

[WORK LOCATIONS AND SCHOOL LOCATIONS ARE INCLUDED IN LIST OF KNOWN LOCATIONS]

RecreationTrip

E5R. [if ORIGIN=DESTINATION]

It appears that your origin ([ORIGIN ADDRESS]) and destination ([DESTINATION ADDRESS]) are the same.

Was this a recreational trip such as walking the dog, or going for a jog or bike ride with the same start and end location?

1. Yes
2. No

[if ORIGIN=DESTINATION and RecreationTrip=No]

It appears that your origin ([ORIGIN ADDRESS]) and destination ([DESTINATION ADDRESS]) are the same.

If you are entering trips out of sequence, please continue. Otherwise, if you have missed reporting a stop, please go back and revise your answer.

Modal with a button label that says: *Is this a recreational trip for exercise or walking the dog?*

Modal text on click:

If you walked your dog, went jogging, cycled for exercise, or took a scenic drive with no destination:

- If your start and end locations are the same and you did not stop anywhere along the way, please enter the same destination as where you started your trip. For example, if you left home to walk the dog and returned home, enter home as your destination.
- If you stopped along the way, please enter the place you stopped at.

If you travelled to a specific place where exercise took place, such as a trip to the gym, or a drive to a park where you then went for a hike:

- Please enter the place you travelled to. Your travel to that place is one trip. Your travel leaving from that place to return home or go somewhere else will be a separate trip.

DepartE2. **At what time did you leave on this trip?**

Please enter a time between 4:00 a.m. the previous day [TRAVELDAY] and 3:59 a.m.

[TRAVELDAY+1]

Time: [Dropdown with hours and AM/PM] Minutes: _____ [0-59]

Please provide your best guess if you cannot give the exact time.

Purpose

[if destination selected above = home, assume purpose is RETURN HOME and do not ask this question]

[if RecreationTrip = Yes, assume purpose is 42 Recreational and do not ask this question]

E3. **What was the main purpose of this trip?**

10. Travel to work (usual place of work)

11. Work-related

[mouseover: Trips to attend meetings, and for other work-related purposes.

If job hunting or volunteering, please select 'Other'.]

12. Working on the road / itinerant workplace / no fixed work address

- 20. Attend post-secondary school (university, college, private post-secondary)
- 30. Attend school (K-12)
 - [mouseover: Trips made for the purpose of attending school.*
 - If driving someone to/from school, select 'Pick up a passenger' or 'drop off a passenger'.*
 - If parent attending parent-teacher meeting, select 'Other'.*
 - If work at the school, select Work.]*
- 41. Dining / restaurant (whether eat-in or take-out)
- 42. Recreational (sports, leisure activity)
- 43. Social (visiting friends, family, religious)
- 44. Shopping or household maintenance (grocery, clothing store, auto repair, gas station)
- 45. Personal business (e.g., bank, dentist, health appointments, personal care, volunteering)
- 91. Pick up a passenger (e.g., pick up child at school or daycare, pick up someone at work, etc)
- 92. Drop off a passenger (e.g., drop off child at school or daycare, drop off someone at work, etc)
- 80. RETURN HOME ([recall address])
- 888. Other, please specify: _____

- E5B. [Include probes to clarify if trip purpose = RETURN HOME but did not select home as destination]
- E5C. [Include probes to clarify if trip purpose <> RETURN HOME but select destination=home]

Mode1, Mode2, Mode3, Mode4, Mode5

- E7. **How did you get there? Please select up to 5 modes, in order of use.**

If you used more than public transit mode (bus, SkyTrain, SeaBus, West Coast Express), please list them separately in the order you took them.

INTERVIEWER: If Transit bus, Sea Bus, Sky Train or West Coast Express in first mode, probe: how did you get to the bus stop or transit station?

If only one mode, prompt: did you use another mode of transportation?

If answer of "carpooling": was that as a passenger or as a driver?

What was your first mode of transportation?

- Mode 1: [select from drop down]
- Mode 2: [select from drop down]
- Mode 3: [select from drop down]
- Mode 4: [select from drop down]
- Mode 5: [select from drop down]

- 1. Auto driver – private vehicle
- 2. Auto passenger – private vehicle
- 21. Car share driver (Modo, Evo, etc)
- 22. Car Share passenger (Modo, Evo, etc)
- 3. Transit Bus
- 4. SeaBus
- 5. SkyTrain
- 6. West Coast Express
- 7. HandyDART
- 8. School bus
- 9. Personal bicycle
- 91. Personal e-bike (pedal-assisted electric bicycle)

- 92. Bike Share bicycle or e-bike (e.g., Mobi, Lime)
- 11. Walking (incl. wheelchair, medical mobility scooter, or other assistive device)
- 12. Taxi
- 15. Ride hailing (e.g., Lyft, Uber, etc.)
- 13. Motorcycle
- 93. Personal micromobility device (e.g., kick scooter, skateboard, inline skates, unicycle)
- 94. Personal electric micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
- 17. Other (please specify): _____

16. TRIP CAPTURE – TRANSIT

TransitAccessModeCheck

E7A. [if first mode recorded was 3|4|5|6 transit]

How did you get to the bus stop or transit station?

19. Transit station or bus stop was right at or within 50m of my origin (the starting point of the trip: [previous destination])

[+ Same list of modes as above excluding public transit]

- 1. Auto driver – private vehicle
- 2. Auto passenger – private vehicle
- 21. Car share driver (Modo, Evo, etc)
- 22. Car Share passenger (Modo, Evo, etc)
- 7. HandyDART
- 8. School bus
- 9. Personal bicycle
- 91. Personal e-bike (pedal-assisted electric bicycle)
- 92. Bike Share bicycle or e-bike (e.g., Mobi, Lime)
- 11. Walking (incl. wheelchair, medical mobility scooter, or other assistive device)
- 12. Taxi
- 15. Ride hailing (e.g., Lyft, Uber, etc.)
- 13. Motorcycle
- 93. Personal micromobility device (e.g., kick scooter, skateboard, inline skates, unicycle)
- 94. Personal electric micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
- 17. Other (please specify): _____

TransitEgressModeCheck

E7B. [If last of the modes recorded was 3|4|5|6 transit (last mode could be in any of Mode2-5)]

How did you get from the bus stop or transit station to your final destination ([destination of this trip])? Or did transit drop you off right at or within 50m of your destination?

19. Transit station or bus stop was right at my destination ([recall current destination])

[+ Same list of modes as above excluding public transit]

- 1. Auto driver – private vehicle
- 2. Auto passenger – private vehicle
- 21. Car share driver (Modo, Evo, etc)
- 22. Car Share passenger (Modo, Evo, etc)

- 7. HandyDART
- 8. School bus
- 9. Personal bicycle
- 91. Personal e-bike (pedal-assisted electric bicycle)
- 92. Bike Share bicycle or e-bike (e.g., Mobi, Lime)
- 11. Walking (incl. wheelchair, medical mobility scooter, or other assistive device)
- 12. Taxi
- 15. Ride hailing (e.g., Lyft, Uber, etc.)
- 13. Motorcycle
- 93. Personal micromobility device (e.g., kick scooter, skateboard, inline skates, unicycle)
- 94. Personal electric micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
- 17. Other (please specify): _____

MinutesWalk

- E9W. [(If (E7A=11 Walk or 93 Roll) or (E7B=11 Walk or 93 Roll) or (any of Modes 1-5 is 3|4|5|6) or {(any of Modes 1-5 = 11 Walk or 93 Roll) AND (any of Modes 1-5 = a mode other than 11 Walk or 03 Roll)})]
or
{(Mode1 = 1 driver or Mode1 = 2 auto passenger} and Destination is other than home)
or
(E5R (O=D recreational trip) = 1 yes)]

If (E7A=11 Walk or 93 Roll) or (E7B=11 Walk or 93 Roll) or (any of Modes 1-5 is 3|4|5|6) or {(any of Modes 1-5 = 11 Walk or 93 Roll) AND (any of Modes 1-5 = a mode other than 11 Walk or 93 Roll)}: **In total, about how many minutes did you [AS APPROPRIATE: walk/roll] as part of this trip?**

If {Mode1 = 1 driver or Mode1 = 2 auto passenger} and Destination is other than home: **How many minutes did spend walking to and from parking as part of this trip?**

If E5R (O=D recreational trip) = 1 yes: **How many minutes was this trip?**

____ minutes [PROGRAMMER: Set upper limit = 180 min (to accommodate long hikes)]

- 99. Unknown

17. TRIP CAPTURE – AUTO DRIVER OR PASSENGER

DriverNoLicence

- E19A. [if (E7 mode or E7A or E7B = auto driver OR motorcycle OR car share driver) AND not licensed to drive]

[if auto driver:] **You reported that you were an automobile driver for this trip; however, you previously indicated that you do not have a driver's licence. Which of the following best applies...?**

[if motorcycle:] **You reported that you were traveled by motorcycle on this trip; however, you previously indicated that you do not have a driver's licence. Which of the following best applies...?**

1. I actually have a driver's licence
2. I travelled as a [if motorcycle: motorcycle] passenger, not the driver
3. I travelled as a learning driver
7. Other, please specify: _____

DriverNoHhVehicles

E19B. [If (E7 mode or E7A or E7B = auto driver OR motorcycle OR car share driver) AND no vehicles available to the household (B6=0)]

You reported that you were an automobile driver for this trip; however, you previously indicated that your household has no vehicles available for your use. Which of the following applies...?

1. I drove a work vehicle, rental, or borrowed vehicle
2. I drove a car share vehicle
3. My household actually has vehicles. Please specify how many of each of the following types of vehicles: _____
6. No, I was a passenger, not the driver

VehicleOccupants

E10. [if E7 mode or E7A or E7B = automobile driver OR auto passenger OR car share driver OR car share passenger (look at answers of all of main mode question and of access and egress mode questions)]

How many people were in the car, including yourself?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7 or more
9. Don't know

18. TRIP CAPTURE – OTHER STOPS

OtherStop

E50. [ask this question if Age>18 and {(Origin=Home and Destination=any householder's work or school) OR (Origin= any householder's work or school and Destination=Home)}. Intent is to capture missed incidental trips during commute trips without forcing respondent to go back and correct previous info.]

In your trip from [ORIGIN] to [DESTINATION], did you make any other stops along the way? (stopped for gas, went through drive-through, picked someone up, or dropped someone off)

1. Yes
2. No

OtherStopLat, OtherStopLong, etc.

E50B. [If E50=Yes]

Where did you stop?

LOCATION CATPURE

OtherStopPurpose

E50C. [If E50=Yes]

Why did you stop there?

[Repeat list of trip purposes]

OtherStopPickup

E50D. [If E50=Yes and E50C = picked someone up and Mode=Driver]

How many people did you pick up there?

—

OtherStopDropoff

E50E. [If E50=Yes and E50C = dropped someone off and Mode=Driver]

How many people did you drop off there?

OtherStopArriveE50F. **What time did you arrive at [location in E50B]?**

Please enter a time between 4:00 a.m. the previous day [TRAVELDAY] and 3:59 a.m. [TRAVELDAY+1]

Time: [Dropdown with hours and AM/PM] Minutes: _____ [0-59]

OtherStopDepartE50F. **What time did you leave [location in E50B] to go to [E5 DESTINATION]?**

Please enter a time between 4:00 a.m. the previous day [TRAVELDAY] and 3:59 a.m. [TRAVELDAY+1]

Time: [Dropdown with hours and AM/PM] Minutes: _____ [0-59]

19. TRIP CAPTURE – OTHER INFORMATION**TripNotes**

E11N.

PHONE: INTERVIEWER: If there is anything unusual about a trip (e.g., round trip from home to home) or the individual trip chains, or if useful information, please make notes here, otherwise proceed to next question without delay. Use only when necessary.

WEB: Please note any exceptions on this trips or issues/errors you may have had (e.g., clarification of location, purpose, etc.)?

For assistance, please contact 1-855-688-1140 or email us at info@vantripsurvey.ca .**OtherTrip**E12. **Prompt: Did you make another trip after that?**

1. Yes
2. No

20. TRIP CAPTURE – END OF TRAVEL DAY**NotReturnHome**

E13. [if E12 = No AND (destination <> home OR trip purpose <> home)]

From your answers, it appears you did not return home.**Just to confirm, were you at this final destination, [RECALL DESTINATION], until at least past 4 a.m. [today/TRAVEL DAY+1] (the end of the travel day)?**

1. Did not return home, was at this final destination until past 4 a.m.
2. Returned home (more trips to record) [RETURN TO E12 AND CORRECT ANSWER]

NotReturnHomeReason

E14. [if E14 = 1. yes]

Why did you not return home before the end of the day?

(Note: for this survey, the end of the Travel Day extends past midnight to 4 am the next day)

(We are only asking as a check to ensure that we captured your entire travel)

1. Worked a night shift past 4 am
2. Stayed overnight at another household (whether friend, relative, parent)?
3. Away from home on business travel
4. Away from home for vacation travel
5. Other, please specify: _____

WhyNoWork

E16. [if employed=yes AND did not make a work-related trip AND no trip destination of 'usual workplace' (E5<>main work location) AND E12=777 (No more trips)]

You did not report going to work [yesterday/on TRAVEL DAY].**Were you working at home?**

1. Yes, worked from home (telecommuted)
2. No, away on business / working on the road
3. No, did not work
4. No, actually I worked and did take work-related trips
5. Other, specify: _____

E17A. [if E16=Yes actually did work)]

Please add your trips to and from work, on the Trips Overview page whether you walked or used another mode of travel.**Please also record any other trips by modes other than walking that you may have missed.***Link to Trips Overview page.***WhyNoSchool**

E16A. [if a full time student AND did not make a school-related trip AND no trip destination of 'school' (E5<>person's own school) AND E12=777 (No more trips)]

You did not report going to school. Did you attend school [yesterday/on TRAVELDAY]?

1. Yes, did go to school
2. Attended school from home (home schooled, distance learning)
3. No, did not have any scheduled classes, stayed home sick, or did not attend school for another reason
4. No, away on a field trip or other travel
5. Other, specify: _____

E17B. [if went to school E16A=Yes and usual school location other than 'home']

Please add your trips to and from school, on the Trips Overview page whether you walked or used another mode of travel. *Link to Trips Overview Page***Please also record any other trips by modes other than walking that you may have missed.**

E20. Your trips can be reviewed and edited on this page before exiting the trip section of the survey. You can also add additional trips here that you may have missed. Can you think of any other trips you made [yesterday/TRAVEL DAY] either during the day or in the evening that we may have missed?

If so, click on Add Trips or use the Edit trip links to edit a trip you've already entered.

If you are done entering trips, click on Go to Household Summary where you can continue through the final questions of the survey once you've finished your trip entries.

21. OTHER TRAVEL HABITS

Thank you for reporting your travel information for your travel day! The next set of questions asks about your use of different modes and your usual travel habits.

CarShare

C3C. **Are you a member of any car share services? (Check all that apply)**

1. None
3. Modo
5. Evo
6. Other, specify: _____
99. Prefer not to answer

BikeShare

C3D. **Are you a member of any bike share services? (Check all that apply)**

1. None
2. Mobi (City of Vancouver's bike share system)
3. Lime (North Vancouver's e-bike share system)
77. Other, please specify: _____
99. Prefer not to answer

SchoolCommute1

C4F. [if student AND SchoolName not Home Schooled AND SchoolType not Online only]

What is your usual mode of transportation at this time of year for trips to or from school as a student? If you usually use more than one mode (such as auto and transit on the same trip), please select the one used for most of the travel distance. Select one only.

1. Auto driver – private vehicle
2. Auto passenger – private vehicle
21. Car share driver (Modo, Evo, etc)
22. Car Share passenger (Modo, Evo, etc)
3. Transit Bus
4. SeaBus
5. SkyTrain
6. West Coast Express
7. HandyDART
8. School bus
9. Personal bicycle
91. Personal e-bike (pedal-assisted electric bicycle)
92. Bike Share bicycle or e-bike (e.g., Mobi, Lime)
11. Walking (incl. wheelchair, medical mobility scooter, or other assistive device)
12. Taxi
15. Ride hailing (e.g., Lyft, Uber, etc.)
13. Motorcycle

- 93. Personal micromobility device (e.g., kick scooter, skateboard, inline skates, unicycle)
- 94. Personal electric micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
- 17. Other (please specify): _____

WorkCommute1

C6F. [if employed AND regular workplace outside the home (not home or no fixed workplace)]
What is your usual mode of transportation at this time of year for trips to or from work? If you usually use more than one mode (such as auto and transit on the same trip), please select the one used for most of the travel distance. If you alternate between modes on different days, pick the one you use most often. Select one only.

- 1. Auto driver – private vehicle
- 2. Auto passenger – private vehicle
- 21. Car share driver (Modo, Evo, etc)
- 22. Car Share passenger (Modo, Evo, etc)
- 3. Transit Bus
- 4. SeaBus
- 5. SkyTrain
- 6. West Coast Express
- 7. HandyDART
- 8. School bus
- 9. Personal bicycle
- 91. Personal e-bike (pedal-assisted electric bicycle)
- 92. Bike Share bicycle or e-bike (e.g., Mobi, Lime)
- 11. Walking (incl. wheelchair, medical mobility scooter, or other assistive device)
- 12. Taxi
- 15. Ride hailing (e.g., Lyft, Uber, etc.)
- 13. Motorcycle
- 93. Personal micromobility device (e.g., kick scooter, skateboard, inline skates, unicycle)
- 94. Personal electric micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)
- 17. Other (please specify): _____

TelecommuteFreq&CommuteFreq

C6L. [if employed AND regular workplace outside the home (not work exclusively home or no fixed workplace)]

Thinking about last week, which days did you telecommute (work from home instead of commuting to your regular workplace) and which days did you commute to work?

If you worked from home and travelled to work on the same day, you may select both.

	Telecommute	Commute to Work	N/A – did not work
1. Monday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
2. Tuesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
3. Wednesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
4. Thursday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
5. Friday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
6. Saturday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>
7. Sunday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>

99. Prefer not to answer

TelecommuteChange

C6M. Compared to three years ago, do you now telecommute more, about the same, or less?

1. [If telecommuted on any day last week:] I started telecommuting for the first time
2. More frequently now
3. The same now as before
4. Less frequently now
5. [If did not telecommute on any day last week:] I stopped telecommuting altogether
7. [If did not telecommute on any day last week:] I have never telecommuted
6. Other, please specify: _____
99. Don't know

TelecommuteFuture

C6N. [if telecommuted on any day last week / If C6L = telecommute at least once:]

You said you telecommute at least one day per week. Think ahead to the future. One year from now, do you expect you will telecommute for your current job more frequently, the same as now, or less frequently?

[if did not telecommute on any day last week/ If C6L is not "telecommute" at least once:]

You said you do not currently telecommute. Think ahead to the future. Do you expect that you will start telecommuting for your current job in the next year?

1. [if did not telecommute last week] Yes, I expect to start telecommuting in the next year
7. [if did not telecommute last week] No, I do not expect to start telecommuting in the next year
2. [if telecommuted last week] More frequently
3. [if telecommuted last week] The same as now
4. [if telecommuted last week] Less frequently
5. [if telecommuted last week] I expect to stop telecommuting altogether
6. Other, please specify: _____
99. Don't know

WorkCommChange1

C6O [if employed AND regular workplace outside the home (not home or no fixed workplace)]

In the past three years, have you changed your usual mode of transportation for your commute to work at this time of year?

The usual mode is the one that you use to travel the most distance, and if you alternate between modes, the usual mode is the one you use most often in the given season.

1. Yes
2. No

WorkCommChange2

C6P [if employed and currently work exclusively from home]

You said you currently work exclusively from home. In the past three years, did you ever commute to work (whether to your current job or a different one)?

1. Yes
2. No

WorkCommPrev

C6Q [if changed mode or changed to work from home]

[if changed mode]

What mode of transportation did you usually use to get to work before you started using [recall current usual commute mode] as your usual mode of travel for commuting?

[if changed to work from home exclusively]

What mode of transportation did you usually use to get to work before you started working exclusively from home?

[display full mode list excluding current usual mode]

WorkCommChangeReason

C6R [if changed mode]

Why did you change your usual mode of transportation from [previous usual mode] to [current usual mode]? Select all that apply

[if changed to work from home exclusively]

Why did you start working exclusively from home instead of commuting to work? Select all that apply.

if previous usual mode was bicycle, e-bike, bikeshare bicycle, micromobility, or e-micromobility, show types of reasons as below

11. Relocated home: new home or surrounding area lacks good bike infrastructure
12. Relocated home: work is now too far away to cycle
13. Changed jobs: new workplace or surrounding area lacks good bike infrastructure
14. Changed jobs: work is now too far away to cycle
15. Do not feel safe cycling to work any more
16. Bicycle was stolen or vandalized
17. No longer have access to a bicycle or bike share program

if previous usual mode was walk, different types of reasons relevant to no longer walking

22. Relocated home: work is now too far away to walk
24. Changed jobs: work is now too far away to walk
25. Do not feel safe walking to work any more

if previous usual mode was transit, different types of reasons relevant to no longer taking transit

32. Relocated home: transit is no longer convenient to get to work
34. Changed jobs: transit is no longer convenient to get to work
35. Concerns about personal safety while taking or waiting for transit
36. Concerned about catching COVID on transit
37. Cannot afford transit: current way of getting to work is cheaper

if previous mode was auto driver, auto passenger, or car share, ask different types of reasons relevant to no longer driving, e.g., moved closer to work

42. Relocated home: travelling by automobile is no longer convenient to get to work
44. Changed jobs: travelling by automobile is no longer convenient to get to work
47. Cannot afford driving: current way of getting to work is cheaper
48. Cannot afford parking or no convenient parking near work

If new mode is car driver, car passenger, carshare driver or carshare passenger)

49. I now carpool to work

If new mode is bicycle, e-bike, bike share, micromobility, e-micromobility, or walk

51. Relocated home: work is now closer, so I can get to work by [RECALL CURRENT MODE]

53. Changed jobs: work is now closer, so I can get to work by [RECALL CURRENT MODE]

55. I like the health benefits of active transportation

if new mode is e-bike or e-micromobility

56. I bought an e-bike or e-micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)

if new mode is bicycle or bike share bike/e-bike

57. I now have access to a pedal bicycle or got a bikeshare membership

show to all

61. Working from home exclusively or almost exclusively: no longer need to commute

63. Changed to hybrid work model: new mode is better when commuting less often

64. My new mode of travel to work is cheaper

65. Change in health or physical ability to travel via previous mode

66. Change in financial situation

77. Other reason, please specify:

OtherUsualMode

C15. **What is your usual mode of travel for trips for shopping, meeting friends and family, recreation, and other non-commute purposes? (i.e., trips other than travel to/from work and school). If you use more than one mode, please choose the one you use most often.**

1. Auto driver – private vehicle

2. Auto passenger – private vehicle

21. Car share driver (Modo, Evo, etc)

22. Car Share passenger (Modo, Evo, etc)

3. Transit Bus

4. SeaBus

5. SkyTrain

6. West Coast Express

7. HandyDART

8. School bus

9. Personal bicycle

91. Personal e-bike (pedal-assisted electric bicycle)

92. Bike Share bicycle or e-bike (e.g., Mobi, Lime)

11. Walking (incl. wheelchair, medical mobility scooter, or other assistive device)

12. Taxi

15. Ride hailing (e.g., Lyft, Uber, etc.)

13. Motorcycle

93. Personal micromobility device (e.g., kick scooter, skateboard, inline skates, unicycle)

94. Personal electric micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)

17. Other (please specify): _____

TransitFreq

C16. **How often do you typically travel by public transit? Public transit includes TransLink buses, SkyTrain, SeaBus, or West Coast Express.**

1. At least 5 days per week
2. 2 to 4 days per week
3. One day per week
4. Two or three days per month
5. One day per month or less
6. I do not use public transit
99. Prefer not to answer

TransitFreqReasons

C16A. [If C16=3,4,5,6]

[If C16=6] **Why do you not use transit? (Select all that apply)**

[If C16=3,4,5] **Why do you not use transit more often? (Select all that apply)**

[Programmer: Randomize list items 1-12]

1. Transit takes too long
2. Too many transfers
3. Too far to walk to transit stops
4. Transit departure times are not convenient
5. Wait times at transit stops are too long
6. I am uncomfortable/feel unsafe on transit
7. I don't find transit dependable / too many service delays
8. Cost
9. Concerns about COVID-19 on public transit
10. Poor health, disability or accessibility concerns
11. I primarily walk / the places I go are within easy walking distance
12. I prefer driving
77. Other, please specify: _____
99. Don't know / prefer not to answer

22. CHILD(REN) SECTION

C21. **How many school-aged children (4 to 12 years old) are in your household?**

1. None
2. 1
3. 2
4. 3
5. 4
6. 5
99. Prefer not to answer

[PROGRAMMING: If C21 = 1 [none] skip to C30]

C22. How does your child/or children usually get to and from school?

Please list the main mode of travel used. If your child alternates between modes on different days, please select only the one used most frequently. If your child uses more than one mode of travel on the same trip (e.g., cycle then bus), please select the mode by which they travelled the longest distance.

	Child 1	Child 2	Child 3	Child 4	Child 5
2. Auto passenger – private vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. Car Share passenger (Modo, Evo, etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Transit Bus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. SeaBus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. SkyTrain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Personal bicycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
91. Personal e-bike (pedal-assisted electric bicycle)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
92. Bike Share bicycle or e-bike (e.g., Mobi, Lime)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Walking (incl. wheelchair, medical mobility scooter, or other assistive device)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Taxi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Ride hailing (e.g., Lyft, Uber, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Motorcycle passenger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
93. Personal micromobility device (e.g., kick scooter, skateboard, inline skates, unicycle)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
94. Personal electric micromobility device (e.g., e-kick scooter, e-skateboard, hoverboard, e-unicycle/mono-wheel)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Other (please specify): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C23. [If any of children’s mode of travel is auto passenger, car share passenger, taxi, ride hailing]
[if 1 child] What are the reasons your child) travels to school as automobile passenger?
[If more than 1 child] What are the reasons your children travel to school as automobile passengers?

Select all that apply

1. School buses do not serve the journey from home to school
2. Public transit routes do not serve the journey from home to school
3. School is too far away to travel by foot or bicycle
4. There are no public schools of their grade level in our neighbourhood
5. I am concerned about my child’s safety walking or cycling to school
6. I take my child to school, but do not have the time to walk or cycle with them
77. Other, please specify: _____
99. Unsure / prefer not to say

C25. **Would you and your children be willing to use any of the following modes to commute to and from school? [Select all that you would be willing to try]**

1. Walking
2. Biking (using a traditional, peddle bike)
3. Biking using an e-bike
4. E-scooter
5. Other rolling (i.e., micro-mobility devices)

- 6. Transit
- 77. None
- 99. Unsure

C26. [Ask as C22 / = 9, 91, , 92, 11, 93, 94)

What would encourage you and your child(ren) to use active transportation (walking/biking/rolling) more often when travelling to and from school? Select all that apply.

- 1. Secure or sheltered bicycle parking at school
- 2. Secure or sheltered bicycle parking at home
- 3. Safe bicycle lanes and pedestrian paths
- 4. Access to an adult bicycle or an e-bike
- 5. Access to a child's bicycle
- 6. Route advice and maps
- 7. Training on how to ride a bike safely in traffic
- 8. Access to a bike-share program
- 9. Something else. Please explain: _____
- 10. We live too far away from the school to walk or bike
- 11. I, or my child, cannot physically walk or bike to and from school
- 12. Not applicable – me and my children use active transportation very frequently already
- 99. Unsure

C27. How often does your child / do your children typically travel by public transit? Public transit includes TransLink buses, SkyTrain, SeaBus, or West Coast Express.

- 1. At least 5 days per week
- 2. 2 to 4 days per week
- 3. One day per week
- 4. Two or three days per month
- 5. One day per month or less
- 6. My children do not use public transit
- 99. Prefer not to answer

C28. As of September 1, 2021, public transit is free for children 12 and under. Has this affected how often your child or children use public transit?

- 1. Yes
- 2. Unsure
- 3. No
- 99. Not applicable / Don't use public transit

23. FINAL DEMOGRAPHICS

We have some final demographic questions that will help us better understand the transportation needs of different populations on the City of Vancouver.

PhysicalActivity

C32. **Taking into account work, recreation, and activities around your home, which of the following best describes your lifestyle and level of physical activity?**

[PHONE: ONLY READ TEXT IN BRACKETS IF NECESSARY TO CLARIFY]

1. Sedentary (desk job and/or little or no exercise)
2. Light physical activity (on your feet some of the day or light exercise once or twice per week)
3. Moderately active (on your feet most of the day or moderate exercise 3 to 7 times per week)
4. Very active (walking most of the day or hard exercise almost every day)

99. [DISPLAY FOR BOTH ONLINE AND PHONE; BUT FOR PHONE, DISPLAY INSTRUCTION
PHONE: DO NOT READ:] Prefer not to answer

Income

B9. **WEB: Which of the following ranges best describes your household's total income last year? (Please consider all sources of income for all household members, before taxes)**

PHONE: May I ask which of the following ranges best describes your household's total income last year? (Consider all sources of income, before income taxes)? (INTERVIEWER: read answers until confirmation)

This information is useful for transportation planning purposes, to get a better understanding of the travel patterns of different types of households. Your answers will remain entirely confidential. Click here to see our [Privacy Statement](#).

1. \$0 to less than \$25,000
2. \$25,000 to less than \$50,000
3. \$50,000 to less than \$75,000
4. \$75,000 to less than \$100,000
5. \$100,000 to less than \$150,000
6. \$150,000 or more
99. Prefer not to answer

[The ranges above would have, in the 2016 Census year (5 years ago), divided City of Vancouver households into six income groups of: 19%, 20%, 20%, 13%, 15%, and 15% of all households.]

RacialIdentity

C40. **What is your racial identity? (Select all that apply)**

[Telephone:] **Which of the following best describes your racial identity? You may pick more than one.**

1. Asian - East (e.g. Chinese, Korean, Japanese)
2. Asian - South East (e.g. Vietnamese, Cambodian, Malaysian, Filipino)
3. Asian - South Asian (e.g. Indian, Pakistani, Sri Lankan, Bangladeshi)
4. Asian - West (e.g. Iranian, Afghan, Turkish)

- 5. Black (African, Caribbean/Latin America, Canadian/American)
- 6. Hispanic or Latin American (e.g. Chilean, Cuban, Brazilian, Mexican)
- 10. Indigenous, for example, First Nations, Inuit, or Metis
- 7. Middle Eastern / North African (e.g. Arab, Egyptian, Kurdish, Persian)
- 8. White (e.g. European – English, Italian, Ukrainian, French)
- 77. Other, please specify: _____
- 88. Don't know [MUTUALLY EXCLUSIVE]
- 99. Prefer not to answer [MUTUALLY EXCLUSIVE]

Why do we ask this question? This question will help us understand whether we have surveyed a representative sample of the entire population. It will help us to better understand whether access to transportation is equitable for all population groups. If you feel that your own identity is not reflected by the categories above, please select 'Other' and tell us how you would prefer to describe yourself. This question, like other questions on the survey, is entirely voluntary.

[Telephone:] INTERVIEWER: If the respondent asks more questions or is challenging: I only have the explanation I have given you. If you would like more information or have concerns, I can put you in touch with a researcher (provide project contact). If you are not comfortable with the question, we can move on to the next question.

ImmigrationStatus

C41. **Were you born in Canada? If you were born in another country, how long ago did you immigrate?**

- 1. Born in Canada / Canadian citizen at birth (even if born outside of Canada)
- 2. Immigrated within the last 5 years (2017 or after)
- 3. Immigrated 5 to 10 years ago (2011-2016)
- 4. Immigrated 10 to 15 years ago (2006-2010)
- 5. Immigrated more than 15 years ago (before 2006)
- 6. Not a permanent resident of Canada (student visa, visitor, other status)
- 99. Prefer not to say

Why do we ask this question? By comparing this question to the Census, this question will help us understand whether we have surveyed a representative sample of the entire population. It will help us better understand the different transportation needs and travel patterns of all residents of the City of Vancouver, including how easy or difficult it is for recent immigrants to travel around our region. This question, like other questions on the survey, is entirely voluntary.

[Telephone:] INTERVIEWER: If the respondent asks more questions or is challenging: I only have the explanation I have given you. If you would like more information or have concerns, I can put you in touch with a researcher (provide project contact). If you are not comfortable with the question, we can move on to the next question.

VehicleType

B7B. [if # household vehicles >= 1 and has drivers licence]
What type of motor vehicle do you usually drive for personal use?

- 1. Passenger vehicle
- 2. SUV
- 3. Pick-up truck or van
- 4. Motorcycle

5. Medium duty commercial truck or cube van
6. Heavy duty truck or tractor
7. Other, please specify: _____
8. Not applicable / I almost never drive
9. Prefer not to answer

VehicleFuelType

B7B. [if # household vehicles >=1 and has drivers licence]
What is the fuel type of the vehicle you usually drive?

1. Gasoline
2. Diesel
3. Hybrid (gas/electric)
4. Plug-in hybrid
5. Electric-only
6. Biodiesel
77. Other, please specify: _____
99. Prefer not to answer

B7C. **What is the make and model of the vehicle you usually drive?**
If you cannot find your make or model, select 'Other' then type in the answer.

Make: [drop down list of makes] _____

Model: [drop down list of models] _____

VehicleKmEntry

B21 **We would like to better understand how many kilometers residents drive in a year, as it helps to provide a measure of fuel consumption and emissions, which impact air quality and climate change.**

Would you like to enter your odometer reading right now, or send yourself a link to enter it later? We can email or text you a link, so that you can fill out the odometer reading in your car with your smartphone or tablet, if you choose.

1. Enter my odometer reading right now
2. Email me a link to enter my odometer reading later to this email address: _____
3. Text me a link to this phone number: _____
5. Schedule an appointment for a callback
4. I prefer not to provide my odometer reading

VehicleKm, VehicleYear

B22 [If VehicleKmEntry=1]
Please enter the current odometer reading for your vehicle to the nearest 100 km. If unsure, you may check the vehicle and return to enter it later.

What is the year of manufacture of your vehicle? This will help determine how many km are driven each year, on average.

VehKmEst

B23 **About how many kilometres would you estimate this vehicle is driven per year?**

_____ km

99. Unsure/cannot estimate

SurveyNotes

B10A. **Did you have any difficulty reporting your trip information? Or do you have any comments about the information you provided on your survey?**

99. No

INTERVIEWER: Do not ask the respondent if they have any final comments to make. Do not record any information here unless it pertains to potential issues in the trip data collected (e.g., you think you made an error in capturing trips, or the system did not perform as expected).

24. PRIZE DRAW

PrizeDraw

F1. **Participants in the survey are eligible to enter a prize draw. A total of \$3,500 in prizes will be awarded. Would you like to enter into the draw?**

INTERVIEWER: If more information requested

Prizes include:

- 10 \$100 cash prizes
- 100 \$25 e-gift certificates to local merchants.

Your chances of winning a prize are about 1 in 30. The prize draw is administered by R.A. Malatest & Associates Ltd. and will be drawn once the survey administration period is completed.

1. Yes
2. No

PrizeDrawName, PrizeDrawPhone, PrizeDrawEmail

F2. [If yes]

PHONE: **May I confirm your name and phone number and email address, so that we can contact you to let you know if you have won?**

WEB: **Please confirm your name and phone number, so that the survey administrator can contact you at this phone number in the event your name is selected in the prize draw.**

BOTH PHONE AND WEB: An email address is required to receive a gift card. Your contact information will be kept confidential and will be used only to contact you in the event your

name is selected in the prize draw. If you cannot provide an email address, we will attempt to contact you by phone. If we cannot reach you, we may not be able to provide you your prize.

Name: _____ [prepopulate with first name, if respondent provided their name earlier]

Phone: _____ [prepopulated with household phone number. Allow edits in case respondent wants to be contacted at another number]

Email: _____ [prepopulate with household email, allow edits]

25. PANEL ENROLMENT

[PROGRAMMER: Ask only to new recruits, SAMPLE_TYPE does not equal 7]

Panel

B11. One of the goals of this annual survey is to understand and track changes in Vancouver residents' travel patterns over time. We would like to conduct follow-up transportation surveys with you in the future. There will be a separate prize draws for each survey you participate in.

In order to do follow-up surveys with you, your contact information and linked survey responses would need to be retained by the City of Vancouver until the next transportation survey.

Your privacy is important to us. Your survey responses will be stored securely and your contact information will only be used to contact you for future transportation surveys. Click here to see our [Privacy Statement](#).

Do you agree to allow the City of Vancouver to securely store your contact information and linked survey responses for the sole purpose of conducting follow-up transportation surveys with you?

1. Yes
2. No

26. UNDER 40 INVITE

UNDER40_INVITE_1

[If HH size is >1 and R3 ≠ 1]

Is there anyone else living in your household that is between the ages of 15 and 39 years old?

- 1 --Yes
- 2 – No
- 99 – Prefer not to answer [return to survey]

UNDER40_INVITE_2 (NO EMAIL SENT)

[If UNDER40_INVITE_1 = 1]

We would like to invite one additional household member between the ages of 15 and 39 to participate in the survey. As a reward, you would receive an additional entry into the prize draw; the other household member that completes the survey would also be eligible for the prize draw if they complete the survey.

To invite another member of your household to participate please select one of the following options:

- 1 -- Send an email invitation and a link to complete the survey
- 2 -- Provide this person's contact information so that we may contact them by _____ phone
- 3 -- Create a survey access key that you can provide to this household member to access the survey via login from the project website at <https://vantripsurvey.ca>
- 99 -- No thanks; take me to the end of the survey.

UNDER40_INVITE_2

[UNDER40_INVITE_2=1]

Great! To send an email, please enter your qualifying household member's name, age and email address below and we will send them an email invitation when the 'continue' button is clicked

Your privacy is important to us. This contact information will be stored securely and will only be used to send this person a link to complete a survey. [View our privacy policy.](#)

Household member's name:

Household member's age:

Your name:

Message to the household member:

Email address:

99 – No Thanks [return to survey]

UNDER40_INVITE_3

[UNDER40_INVITE_2=2]

Great! Please enter your qualifying household member's name, age and phone number below and we will contact them to invite them to participate in the survey.

Your privacy is important to us. This contact information will be stored securely and will only be used as an invitation to complete a survey. [View our privacy policy.](#)

Household member's name:

Household member's age:

Your name:

Household member's phone number:

99 – No Thanks [return to survey]

UNDER40_INVITE_4

[UNDER40_INVITE_2=3]

Great! We have created a special access key for your household member: **TELKEY01**

Your household member may use this access key to begin their survey at: <http://www.vantripsurvey.ca>

Please click 'Continue' to finish completing the survey and enter the prize draw

27. CONCLUSION

Please click on the Submit button to submit your survey answers and conclude the survey.
After you click Submit, you will no longer be able to edit your answers.

That concludes the 2021 City of Vancouver Transportation Survey.
Thank you very much for your participation!

Your survey answers have been saved. Click here to see our [Privacy Statement](#).

[PROGRAMMER: IF HAS VEHICLE AND B22 (ODOMETER READING) IS EMPTY:
If you still need to fill in your odometer reading, you can do so here: [Link](#)]

If you wish to change any of your answers, or if you have any concerns about the survey, please contact
info@vantripsurvey.ca or 1-855-688-1140

**PHONE ONLY: That concludes the survey. Thank you very much for your cooperation.
Have a pleasant day/evening.**

For more information about the survey, please visit: vantripsurvey.ca

Appendix B: Survey Invitations

Letter Invitation to New Recruits



Engineering Services
Lon LaClaire, M. Eng., P.Eng.
City Engineer/General Manager

May 15, 2023

Resident
«Full Unit Address»
Vancouver, BC «Postal»



Log in at
www.vantripsurvey.ca
Your secure access code is
VABC12345

Dear City of Vancouver Resident:

I'm pleased to let you know that you have been randomly selected to participate in the **City of Vancouver Transportation Survey**. Your participation will go a long way in shaping how your community moves.

This is the tenth year of the City of Vancouver's Transportation Survey. As outlined in the City's Transportation 2040 plan, the goal of the survey is to identify and track trends in transportation, including daily trips made, modes of transportation used, and vehicle-kilometres travelled. By understanding how, where, and why residents travel within the City of Vancouver, we can better plan our future transportation system and services.

You can complete the survey in two ways:

- Take the survey online at www.vantripsurvey.ca using the secure access code at the top of this letter, OR
- Over the phone by calling the survey toll-free hotline at 1-877-386-1824.

You may also receive a phone call requesting your participation.

B.C.-based research firm R.A. Malatest & Associates Ltd. will be conducting the survey on behalf of the City of Vancouver. All information that you provide will be kept strictly confidential. Your personal information will not be shared with any other individual or organization, in accordance with the Freedom of Information and Protection of Privacy Act.

As a thank you for your participation, you will have a 1-in-30 chance to win one of 110 prizes ranging from \$25 to \$100! Details on the prize draw are available once you access the survey.

Thank you for your participation and contribution to ensuring an inclusive, healthy, prosperous, and livable future for Vancouver.

Sincerely,

~~Lon LaClaire, M.Eng., P.Eng.~~
City Engineer/General Manager

On mobile? Use
the QR code.



City of Vancouver, Engineering Services
320-507 West Broadway
Vancouver, British Columbia V5Z 0B4 Canada
Tel: 3-1-1, Outside Vancouver 604.873.7000, fax: 604.873.7200

Email Invitation to Returning Panelists

Email Subject line: 2022 City of Vancouver Transportation Study

Sender Email: info@vantripsurvey.ca



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

Last year, you completed a transportation survey for the City of Vancouver and agreed to be part of an ongoing panel to help the City better understand transportation needs and address transportation issues for area residents. Your input will assist the City in making informed decisions regarding future transportation plans and investments.

As a returning panelist, we are looking forward to hearing from you on the trips you make and how you travel over a one-day period. Even if your travel patterns have not changed from last year, your input as a returning panelist on the trips you make is still important. The survey runs from October until the end of November.

You can complete the survey in two ways:

- Login at www.vantripsurvey.ca using your secure access code: **N123XYZ**
- OR
- Complete the survey interview over the phone by calling the survey toll-free hotline at 1-855-688-1140.

As a thank you for your participation, you will have a chance to win one of 110 prizes ranging from \$25 to \$100! Your chances of winning are about 1 in 30. Details on the prize draw are available once you access the survey.

B.C.-based research firm R.A. Malatest & Associates Ltd. is conducting the survey on behalf of the City of Vancouver. All information that you provide will be kept strictly confidential. Your personal information will not be shared with any other individual or organization, in accordance with the Freedom of Information and Protection of Privacy Act.

If you have any questions about the survey, please reply to this email.

Thank you for your continued participation and contribution to ensuring an inclusive, healthy, prosperous, and livable future for Vancouver. Additional information and survey results from previous cycles are available here: <https://vancouver.ca/streets-transportation/annual-transportation-survey.aspx>

Need Help?

Reply to this email (info@vantripsurvey.ca) or call us at **1-855-688-1140** with your secure access code **N123XYZ**.

Your involvement in this research is critical to its overall success. Thank you for your assistance in completing this important survey.

This email has been sent to you because you agreed to receive emails about the City of Vancouver's Annual Transportation Survey. Your email address will not be used for any other purpose than contact with you regarding this survey. The protection of your privacy and your personal information is important to us. If you believe you have received this email in error, please let us know at info@vantripsurvey.ca.

To unsubscribe from receiving email reminders, please click [here](#) [hyperlink to unsubscribe page]