2023 Vancouver Transportation Fall Survey

REPORT

AUGUST 2024

Prepared for:

CITY OF VANCOUVER

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This project would not be possible without the contributions of 3,302 residents of the City of Vancouver and traditional lands of the xʷməθkʷəy̓əm (Musqueam) Nation, Sḵwx̱wú7mesh (Squamish), and səlilwətaɬ (Tsleil-Waututh) Nations who completed the survey. We thank all those who responded to this survey, via phone interview or online, and told us about their daily travel and transportation habits. Your participation in the 2023 Vancouver Transportation Survey has contributed to transportation planning data that will be useful for years to come.

Executive Summary

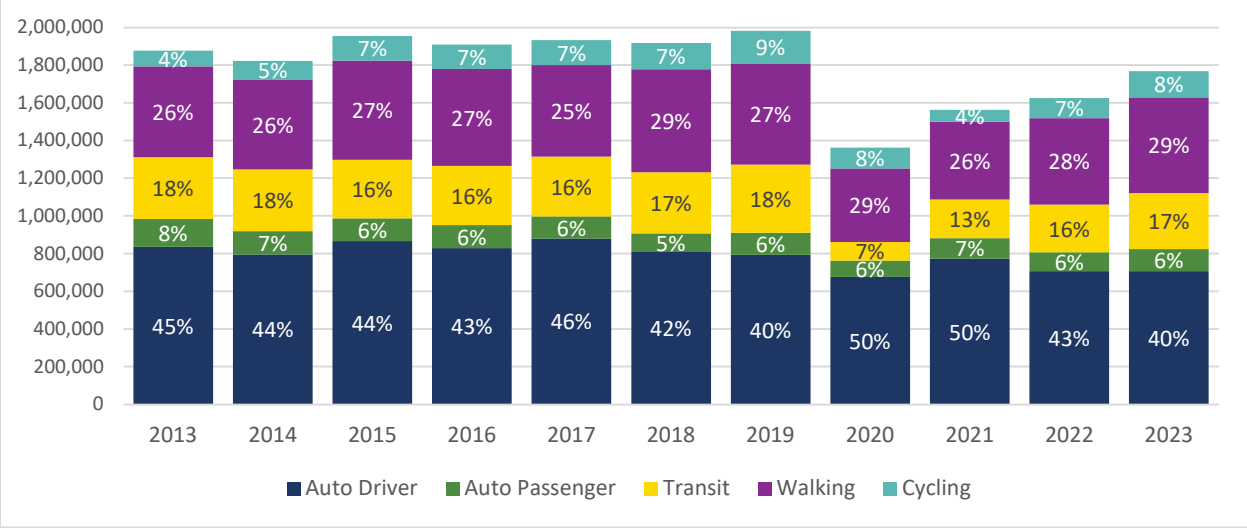
This report summarizes the findings and methodology of the City of Vancouver's (the City) eleventh panel survey conducted in 2023. The Vancouver Transportation Survey (VTS) is the annual data collection program that seeks real-world trip-generation and travel pattern data of residents throughout the city. This survey will help the City understand travel behaviour and preferences and will help guide and inform transportation investments. The survey is intended to track trip rates, mode shares, vehicle kilometres travelled and other key metrics that helps policy makers, programmers, and researchers assess the impact of transportation initiatives and plan for future investments.

This executive summary highlights and summarizes some of the key takeaways of the 2023 survey report.

The overall daily trip rate increased slightly from 2.9 trips per person in 2022 to 3.0 trips per person in 2023, accounting for an additional 144,000 daily trips in 2023 compared to 2022. This is down from an average of 3.7 trips per person in 2019 before telecommuting became popular during 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 2023. Auto trips (driver and passenger combined) account for 46% of all daily trips, which is a slight decrease from 2022 (49%). All transit, walk and bicycle mode shares have increased by small amounts. Transit has increased to 17%, walk has increased to 29% and bicycle has increased to 8% in 2023.

In 2023, the quantity of all trips, for all mode shares, has increased by 9% above 2022 levels and is still 11% 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.

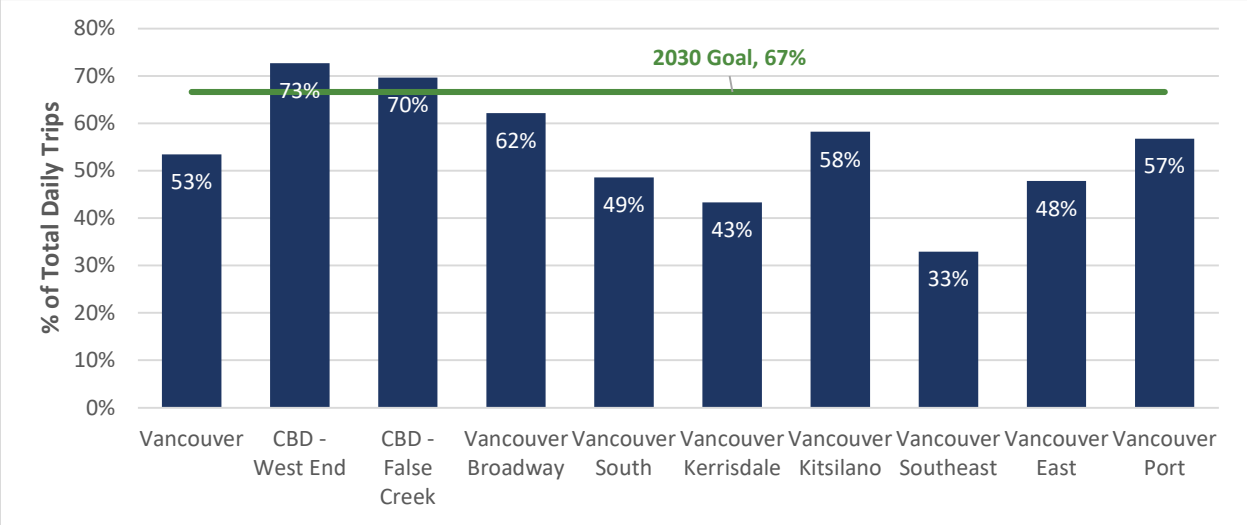
Figure E1. Trip Mode Share and Daily Volume by Year[1]



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Auto Driver	836,300	795,300	865,800	829,600	880,300	811,600	792,900	676,400	773,300	706,200	706,200
Auto Passenger	147,200	122,900	120,600	121,200	116,000	94,600	117,100	86,200	108,600	100,600	118,000
Transit	328,500	328,600	311,400	314,800	317,600	325,400	362,900	98,200	204,900	253,200	296,200
Walking	480,600	477,200	525,500	514,600	485,500	547,000	535,000	391,600	412,800	458,300	509,000
Cycling	83,300	99,100	131,000	128,100	133,300	139,300	174,600	109,400	63,000	106,400	139,400

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

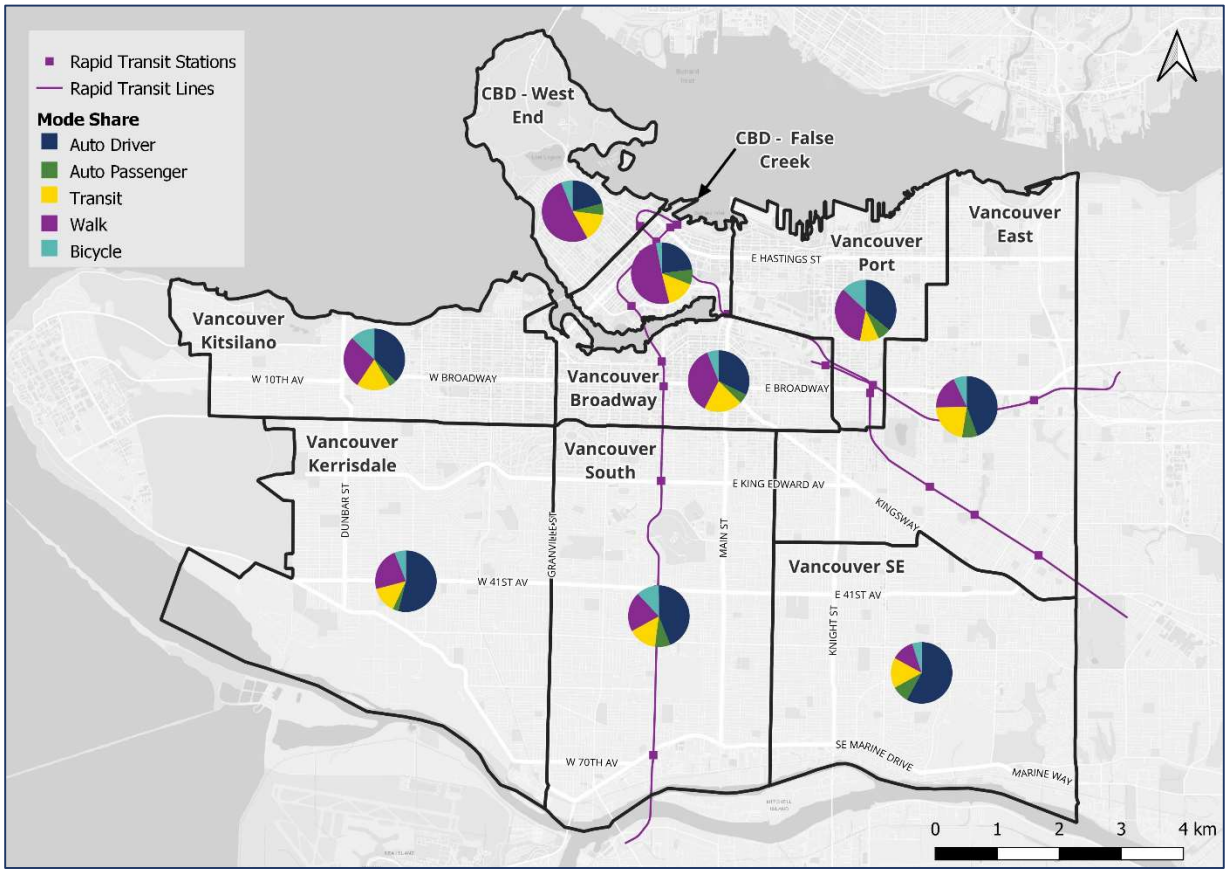
Figure E2. Sustainable Mode Share by Zone



[1] The figures for the 2022 and 2023 auto driver volumes coincidentally appear to be identical when rounded to the closest 100.

Figure E3 provides a map showing the significant variation in the mode share by zone. The most significant variation by zone is in the walk mode which could be related to dwelling type, population density, and proximity to employment and amenities within walking distance. Variations in transit mode may be related to proximity to the fast and frequent transit network and accessibility to employment by transit and age demography. Cycling may also be related to dwelling type, demographics, topography, and proximity to employment and amenities within cycling distance.

Figure E3. Map of Mode Share by Zone



Estimates of annual vehicle kilometres travelled (VKT) per vehicle, derived from survey participants' odometer readings, suggest a 5% increase from 2022 to 2023 at 9,200 km per vehicle, but since the number of vehicles has not increased as greatly, the total annual VKT for the entire fleet of passenger vehicles estimated at 2.93 billion km is only 3% more than in 2022. On a per capita basis, the average VKT per person is about 3,920 km, which is similar to 2022.

Other interesting results from the survey are as follows:

- Residents of Vancouver own an average of 1.38 adult bicycles per household. While 9% of bicycles are e-bikes, 18% of bicycle trips are made with e-bikes. A reminder that the survey is a weekday survey so this number may be different on weekends.
- 7% of Vancouver residents indicated they are a "member" of or have used bikeshare services.

- 37% of Vancouver residents are a member of car share service or used a car share service.
- Electric vehicles account for 6% of all vehicles while 30% 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, 64% of total workers commute to work and 22% telecommute rather than travelling to work, with the other 14% not working on the given day. For part-time workers, just over half of those surveyed work on an average weekday, with 43% travelling to work and only 14% 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, 91% of workers commuted and 46% of workers telecommuted at least one weekday.

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

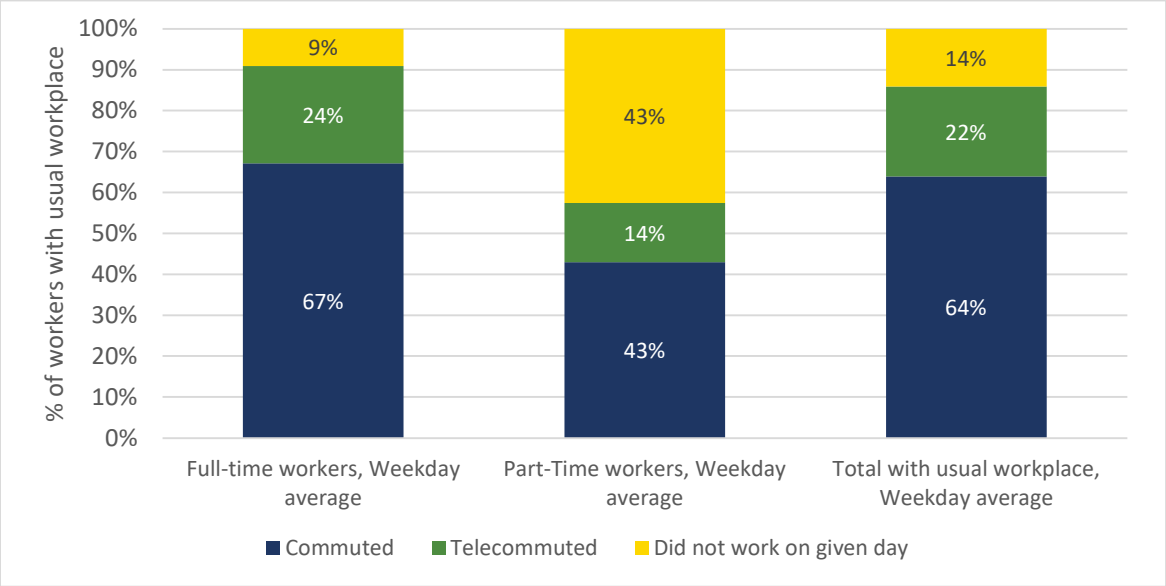
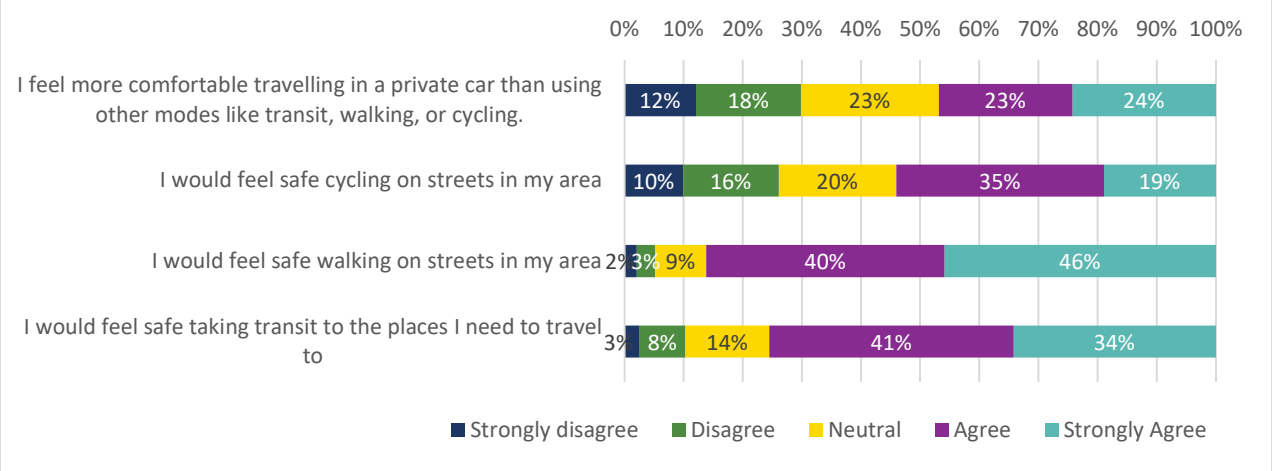


Figure E4 summarizes the responses of survey participants when asked questions related to perception of comfort and safety on travelling by various modes. Respondents reported a high perception of safety while walking (86%) or using transit (75%) in their area. The majority of residents feel safe cycling on a street in their area (54%) and about half of the residents reported feeling more comfortable in their private vehicles rather than using other modes.

Figure E5. Survey Participants' Perceptions of Safety and Attitudes



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1 Project Overview

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 2023 VTS survey was the eleventh wave of this survey.

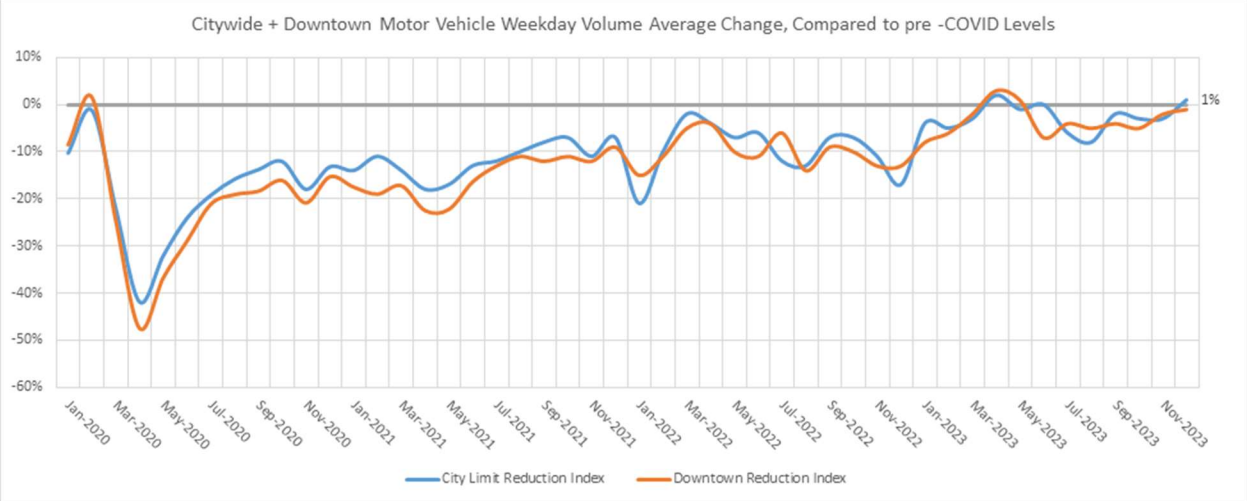
1.2 2023 Transportation Context

The year 2023 continued to be a time of change in the transportation sector not only because of a change in telecommuting patterns that started at the onset of the COVID-19 global pandemic, but also because of increasing trends toward door-to-door deliveries and use of electric vehicles, e-bikes, and electric micromobility devices. During this time there has been more concern over the climate impacts associated with single occupancy vehicles, and a focus on encouraging higher density development near the fast and frequent transit system.

The City of Vancouver, Province of B.C., and Government of Canada have all established emission reduction targets. One of the most recent changes that have occurred as a result is the Government of Canada regulations establishing annual zero-emission vehicle (ZEV) regulated sales targets beginning with the 2026 model year. These regulations help to reduce emissions from transportation and are a key component of the 2030 Emissions Reduction Plan, which puts Canada on a path to achieve at least a 40% reduction in emissions below 2005 levels by 2030.[2]

The early years of the COVID-19 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 City has been monitoring traffic count data as shown in **Figure 1** and has found that traffic volumes have re-stabilized as of March 2023. Despite that, while the number of system-wide transit boardings continued to increase, they were at about 86% of pre-pandemic levels in 2023.[3]

Figure 1. Average Weekday Travel Volumes January 2020 – November 2023[4]

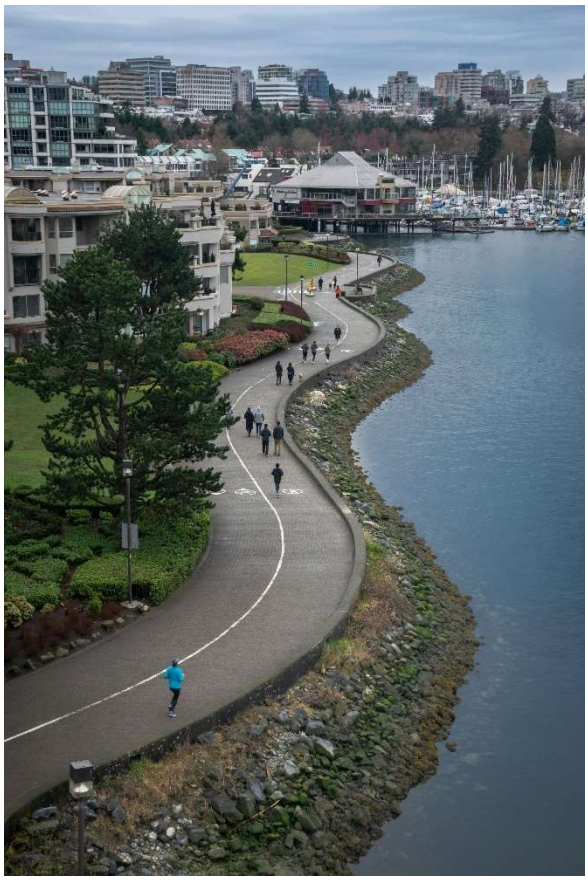


[2] Canada's Electric Vehicle Availability Standard (regulated targets for zero-emission vehicles) - Canada.ca

[3] TransLink ridership data (https://www.translink.ca/plans-and-projects/data-and-information/accountability-centre/ridership#boardings-and-journeys, last accessed May 09, 2023)

[4] Source: City of Vancouver traffic count program; City Limit = counters near the City boundaries. For example, Boundary Rd, Lions Gate, etc.and Downtown = downtown peninsula locations only

1.3 Design and Administration of the 2023 Vancouver Transportation Survey



The 2023 VTS was conducted between October 2, 2023, and December 21, 2023, 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 2023. Specifically, the 2023 survey was revised to remove some additional questions asked in 2022 related to children's transit use and whether people had started telecommuting more or less since last year. In 2023 we just ask about telecommuting patterns and habits (not expected changes). The questions about perceptions of neighbourhoods and transportation infrastructure that were asked in 2021 were added to the survey for 2023. 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 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 40 years old to participate, with 35 such surveys obtained. Social media advertisements were also used to recruit 53 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 throughout November, 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 page.

Over 90% of the surveys were completed between October 2 and November 20, 2023, with the survey kept open until December 21, 2023, to target a few sampling zones with low response rates. The 2023 VTS gathered information from a total of 3,302 Vancouver residents after data validation, extensive trip logic checks, and rejection of surveys with data issues (with 2,363 surveys with previous panel participants and 939 being with new recruits to the survey). The survey captured 10,049 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 adjusted to 2023 population.

When weighted and expanded, the survey data represent approximately 584,700 adult residents from 316,900 private households in the study area, for a sampling rate of 1.0% of households or 0.5% 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 1,769,000 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[5] of ±2.2% 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, although one should keep in mind that the margin of error will be larger for smaller sample sizes at the zone level or when examining other demographic subpopulations. That is, the weighted survey data should be an approximate reflection of the population from which the survey sample was drawn and that the survey results will provide a good understanding of the population's characteristics and travel habits that 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.).

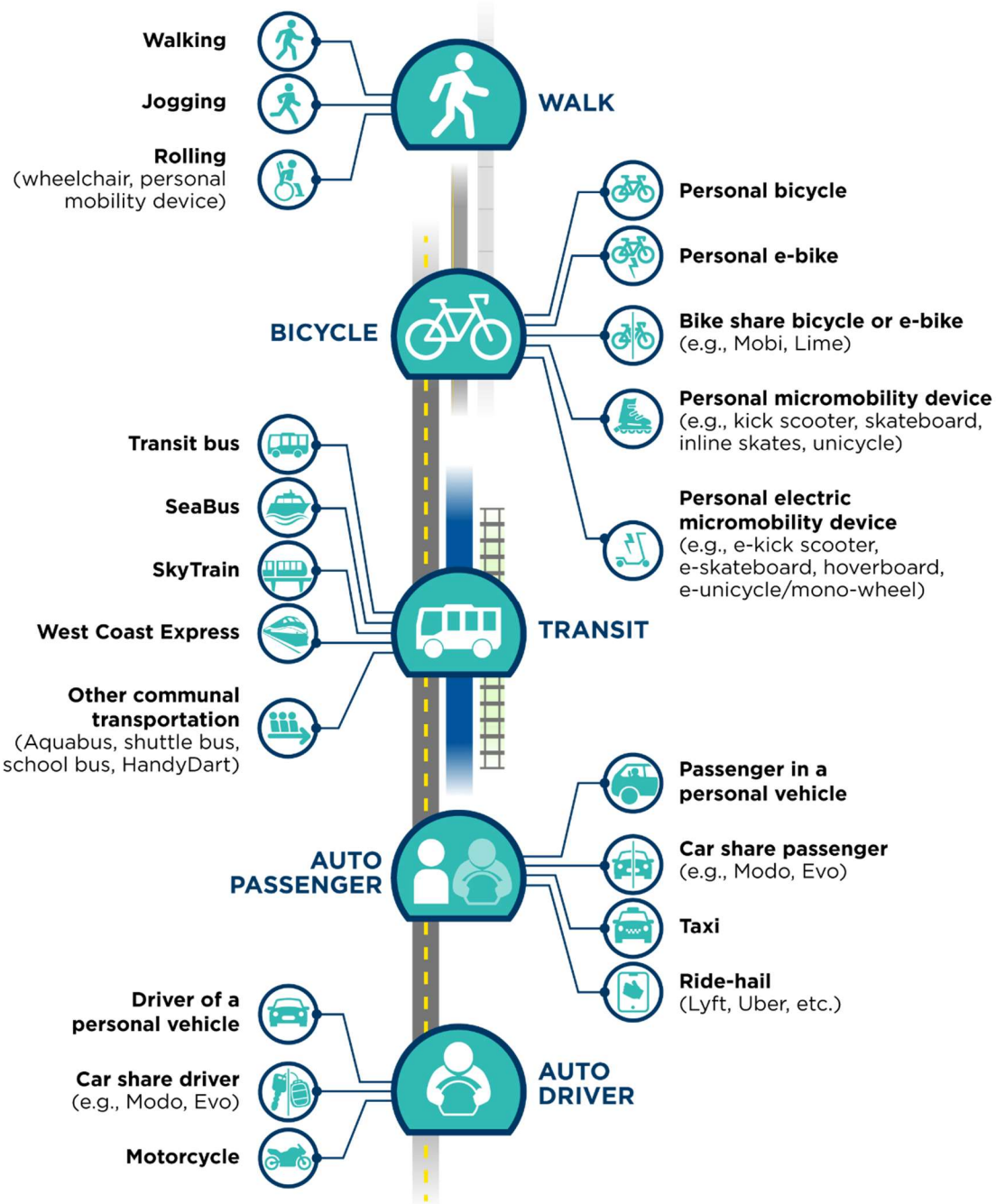
True trends should become apparent in the survey measurements over time despite the 'noise' from cycle-to-cycle variations due to sampling errors, minor methodological differences, or other sources of error. Given that this is the eleventh cycle of VTS, we can expect that the meaningful differences in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

2.1 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 2** for a detailed breakdown of the classification of modes.

[5] 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 2. Classification of Survey Modes for Analysis [6]



[6] 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: Project Overview
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: Perceptions
Section 9: 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 0.5% 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. In some cases, more than two significant figures have been presented to improve readability.
- **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.

3 Survey Geography

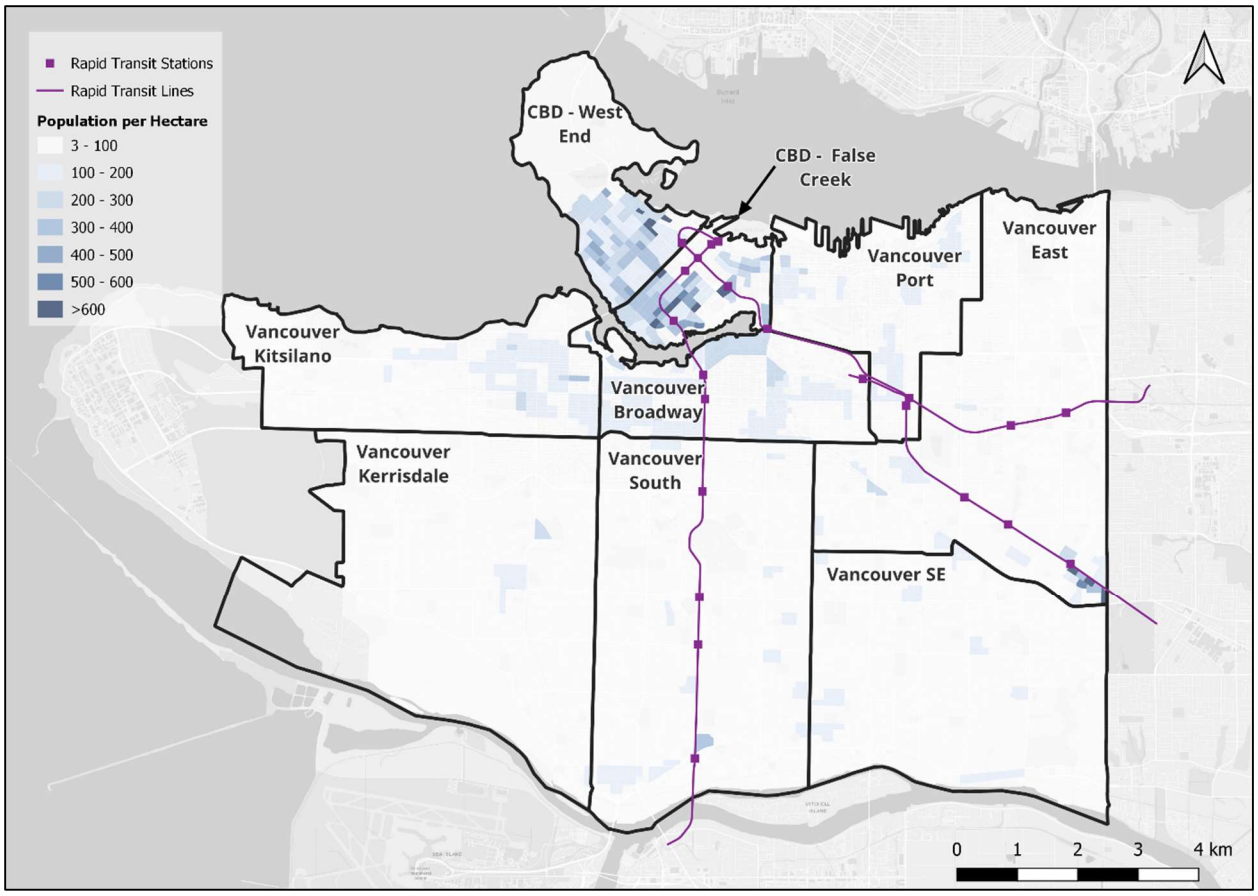
3.1 Survey Scope

The 2023 Vancouver Transportation Survey study area is the City of Vancouver, situated on the unceded traditional territories of the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh (Squamish), and səlilwətaɬ (Tsleil-Waututh) Nations.

The study area is presented in **Figure 3** 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 3. 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 2023 Population represented by the survey [7]

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	2023 VTS Survey Completions
CBD - West End	6.50	39,300	59,400	37,000	54,800	339
CBD - False Creek	3.34	37,800	62,200	35,700	55,200	274
Vancouver Broadway	7.16	38,600	67,400	37,700	58,600	366
Vancouver South	21.32	41,400	98,200	40,000	81,600	415
Vancouver Kerrisdale	22.19	25,400	62,600	24,600	50,900	275
Vancouver Kitsilano	10.85	35,500	67,000	34,400	57,800	344
Vancouver Southeast	17.58	39,000	104,800	37,800	86,900	444
Vancouver East	20.10	47,900	119,900	46,400	100,000	600
Vancouver Port	8.08	24,000	46,200	23,300	39,000	245
Vancouver Total	**117.12**	**328,900**	**687,700**	**316,900**	**584,700**	**3,302**

[7] 2021 Census data scaled up for 2023 population forecasts growth factors from BC Stats by Local Health Area within Vancouver.
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 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 residents 18-24 years of age and slightly over-represents most of the other age categories by a small amount. Overall, 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 4**. Of particular interest is the large proportion of the Vancouver population between the ages of 25 and 34 (totalling 20.7%, compared to 15.5% for 35-44 and 13.3% 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

	Census		Survey	
Age Range	Men	Women	Men	Women
0-17	6.7%	6.2%	not surveyed	not surveyed
18-24	4.0%	4.1%	3.0%	3.7%
25-34	10.2%	10.5%	10.6%	10.2%
35-44	7.8%	7.7%	8.0%	8.0%
45-54	6.4%	6.9%	6.5%	7.1%
55-64	6.3%	6.5%	6.3%	6.7%
65-74	4.6%	5.2%	4.7%	5.4%
75+	3.0%	3.9%	3.0%	3.7%

Figure 4. City of Vancouver Population Distribution

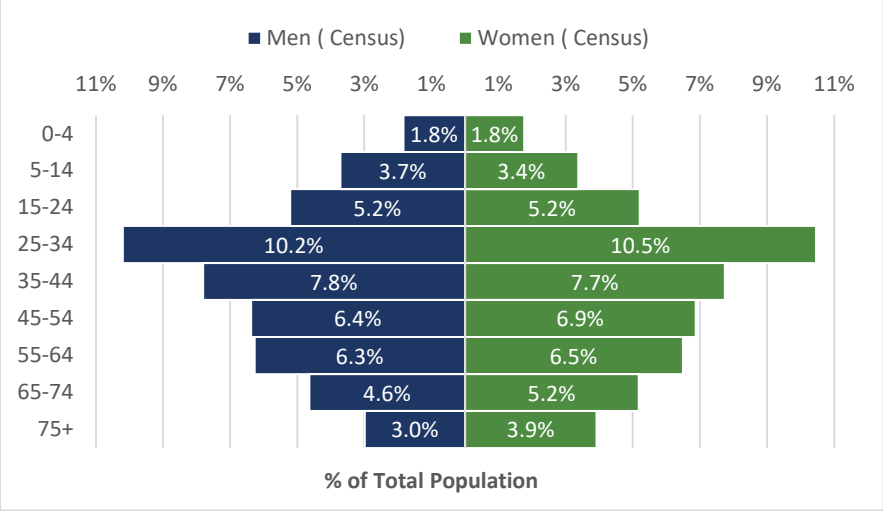


Table 3 illustrates the age distributions of the Vancouver population by zone. Most notable are the higher concentrations (indicated with darker blue shading) of residents ages between 25 and 34 years in the West End and False Creek CBD zones and Vancouver Broadway (between 28% and 30%). Similarly, Vancouver Kitsilano and Vancouver Port have slightly higher than average proportions of residents in this age group (21%-22%). 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 3**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	13%	6%	8%	10%	15%	17%	12%	16%	15%	12%
18-24	8%	5%	7%	5%	9%	11%	8%	9%	9%	6%
25-34	21%	28%	30%	28%	18%	12%	22%	16%	19%	21%
35-44	16%	19%	20%	20%	14%	9%	15%	13%	14%	19%
45-54	13%	12%	13%	13%	13%	15%	13%	13%	13%	14%
55-64	13%	12%	11%	10%	13%	14%	12%	14%	14%	13%
65-74	10%	10%	8%	8%	10%	12%	10%	11%	10%	10%
75+	7%	6%	4%	5%	7%	10%	7%	8%	7%	6%

Source: 2021 Census projected to 2023 based on overall population growth by sub-municipal local health area.

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 except where otherwise noted.

4.2.1 Dwelling Type

Figure 5 shows the distributions of dwelling units by type for the City of Vancouver, while **Figure 6** 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 20% of survey participants.

Figure 7 presents this information by zone. The CBD primarily has apartments stories (99% for CBD – False Creek and 98% for CBD – West End) with the majority having 5 or more stories. 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.

Figure 5. Dwelling Units by Dwelling Type

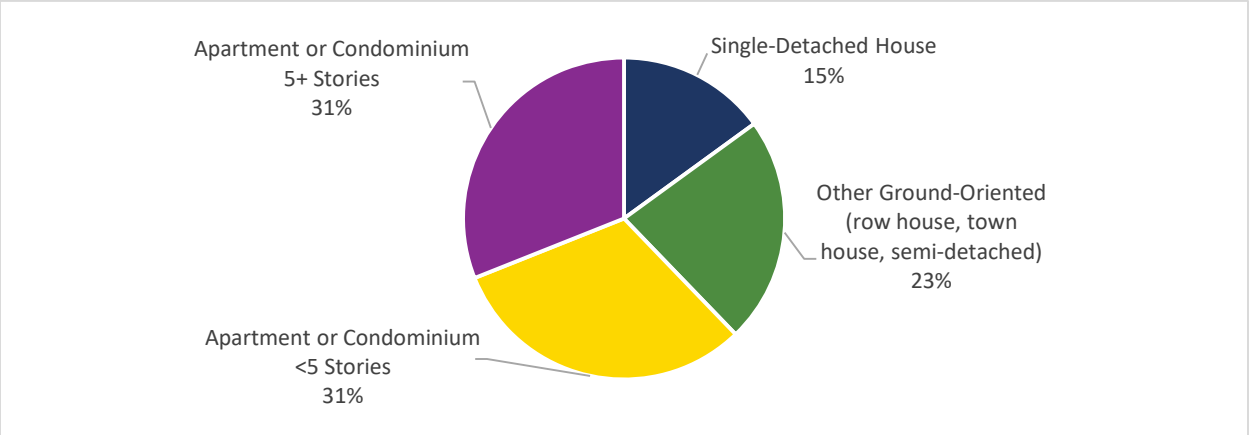


Figure 6. Survey Target Population by Dwelling Type

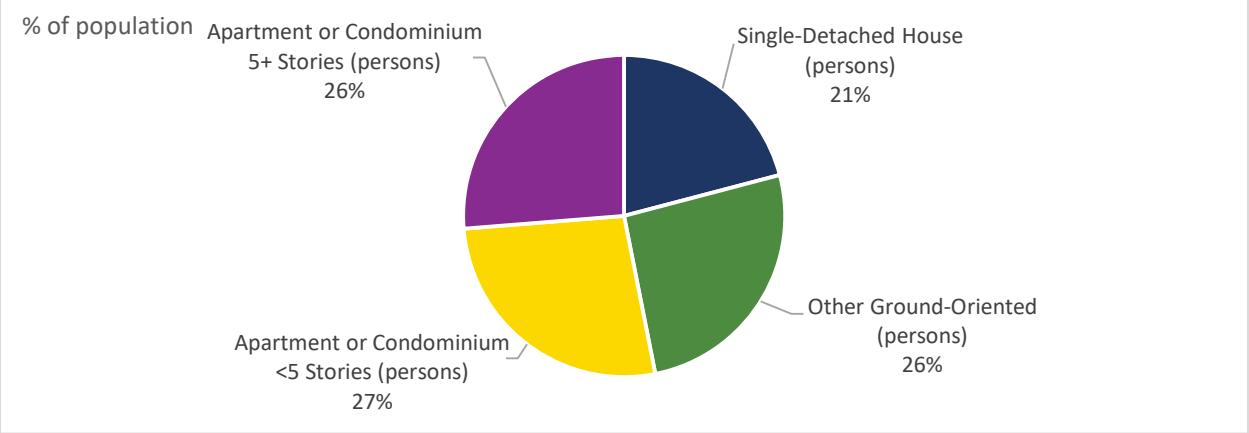
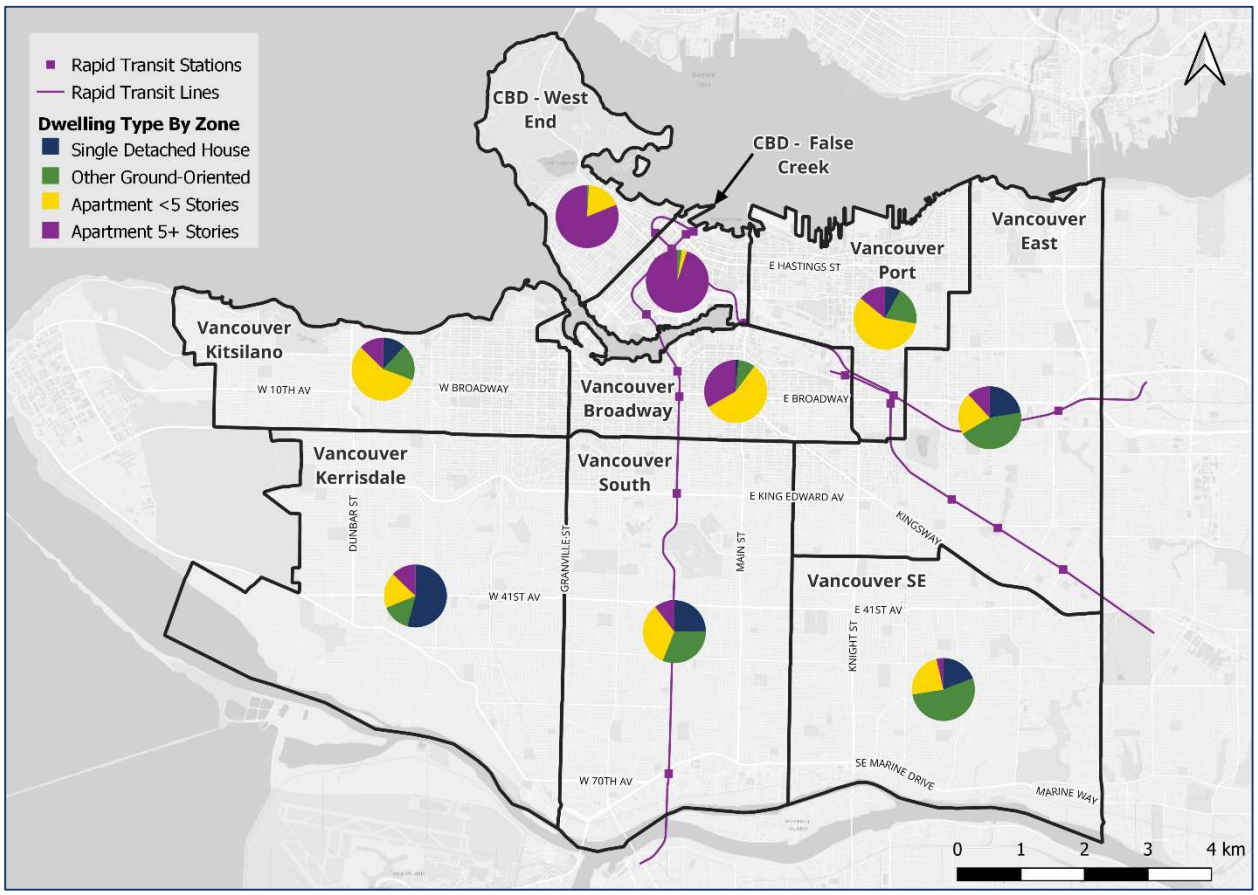


Figure 7. Map of Dwelling Type by Zone



4.2.2 Household Size

Figure 8. and **Table 4** show the distribution of household size overall and by zone. About four in ten households in the City of 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 8. Household Size

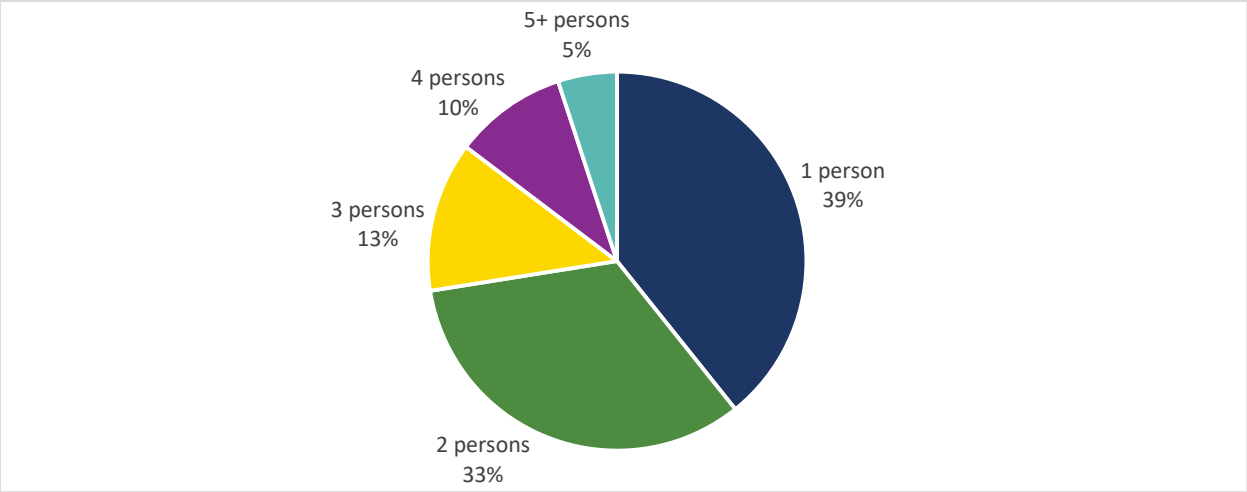


Table 4. Distribution of Households by Household Size, by Zone

	Vancouver	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
Dwellings	316,900	37,000	35,700	37,700	40,000	24,600	34,400	37,800	46,500	23,300
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%	17%	10%
4 persons	10%	3%	3%	5%	13%	15%	8%	16%	15%	7%
5+ persons	5%	1%	1%	1%	8%	9%	2%	11%	9%	3%

4.2.3 Household Income

Income is highly correlated to vehicle ownership, mode choice, and daily trip rates. **Figure 9** 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 11% of households had an annual income of less than $25,000 per year, compared to only 6% of survey respondents. Similarly, higher income households are somewhat overrepresented, accounting for 26% of survey respondent households compared to 23% of Vancouver residents based on 2021 Census data.

Figure 9. Annual Household Income of Survey Participants

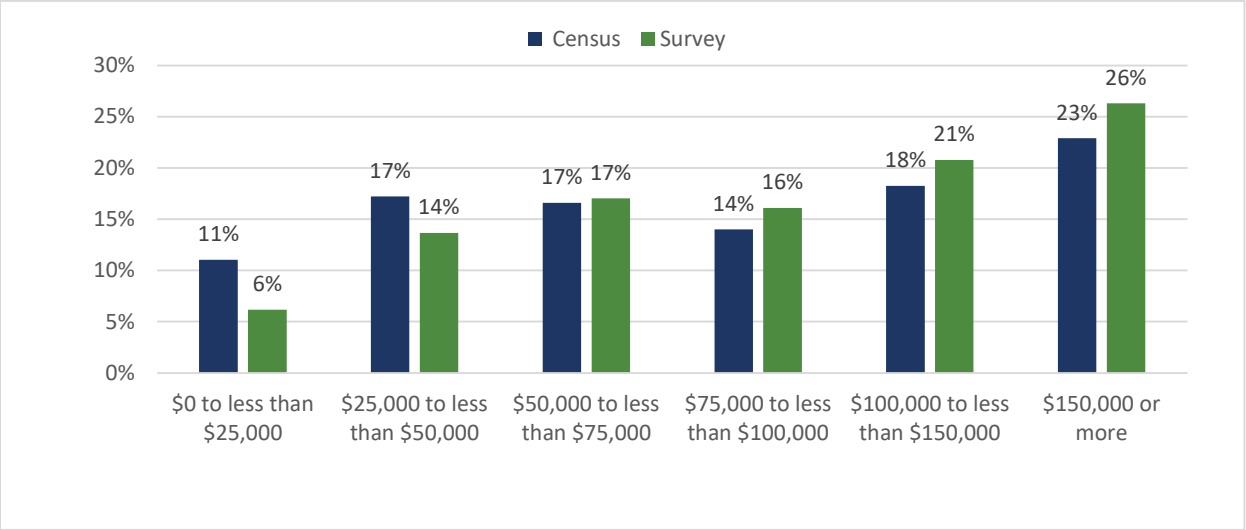


Table 5. Distribution of Households by Annual Household Income, by Zone

	Vancouver	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
$0 to less than $25,000	11%	15%	17%	10%	10%	9%	10%	7%	8%	17%
$25,000 to less than $50,000	17%	21%	17%	17%	16%	14%	15%	16%	17%	23%
$50,000 to less than $75,000	17%	19%	14%	17%	16%	13%	16%	17%	17%	17%
$75,000 to less than $100,000	14%	15%	13%	15%	14%	12%	14%	15%	15%	13%
$100,000 to less than $150,000	18%	15%	17%	19%	18%	16%	19%	21%	21%	15%
$150,000 or more	23%	14%	22%	22%	26%	36%	27%	23%	23%	16%

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 10 and **Figure 11** on the following pages provide an overview of the year of immigration and racial identity demographics of the 2023 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, immigrants who have been in the country 5-10 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 55% of Vancouver's population, but only represent 43% 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 10. Immigration Status[8]

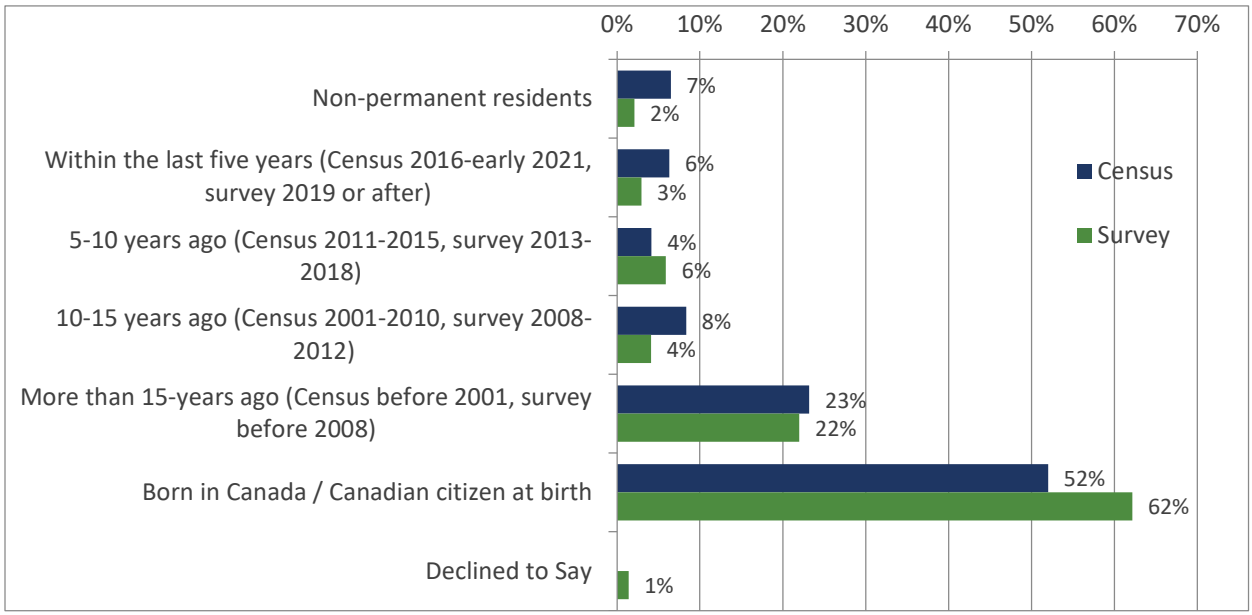
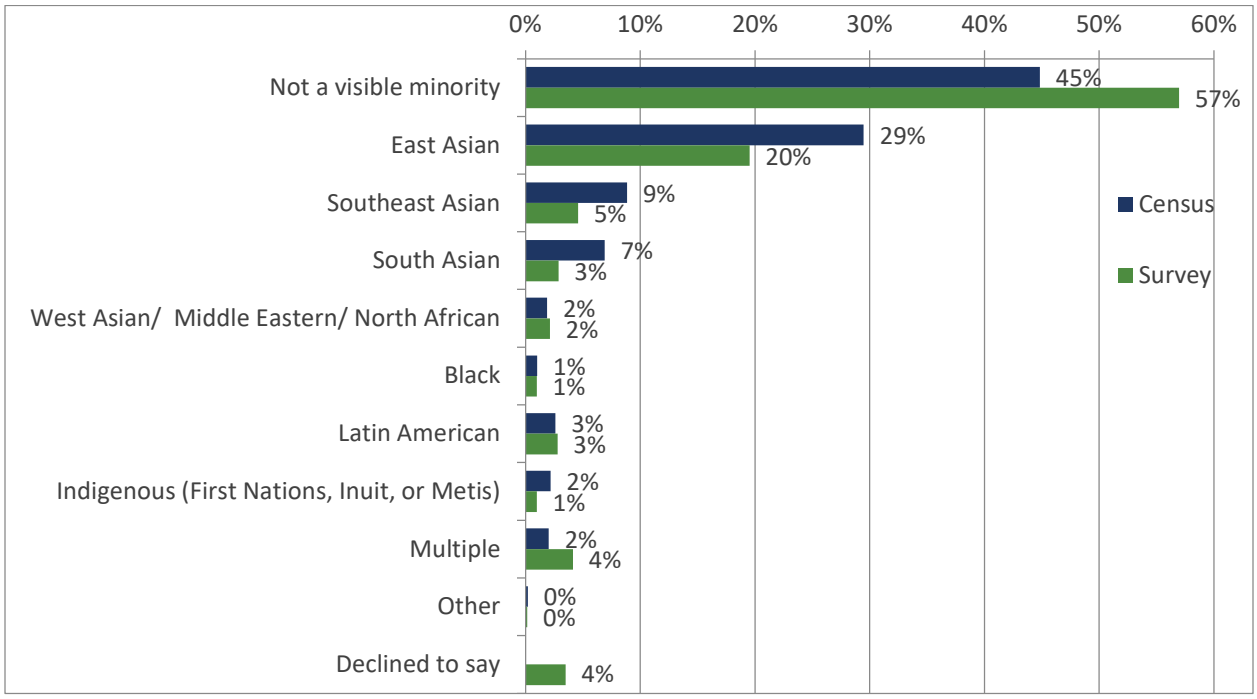


Figure 11. Self-reported Racial Identity[9]



[8] 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.

[9] Caution should be exercised when making comparison to the Census data, as the Census data include0- to 17-year-olds, whereas the survey data only include participants 18+ years of age.

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 12** and show that one-half (50%) 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 13**, we see a similar pattern to that observed in 2022. Survey participants between 18 to 24 were least likely to report being moderately or very active (48%) with this percentage increasing with age to 66% amongst those 65 to 74 years old and dropping to 56% 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 slightly more than half of younger people do not see themselves as very active.

Figure 12. Level of Physical Activity

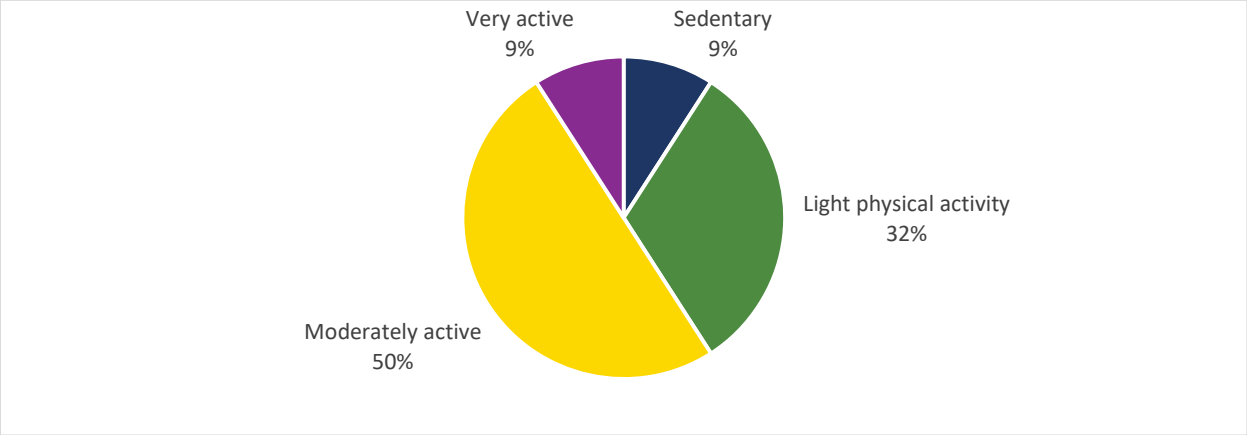
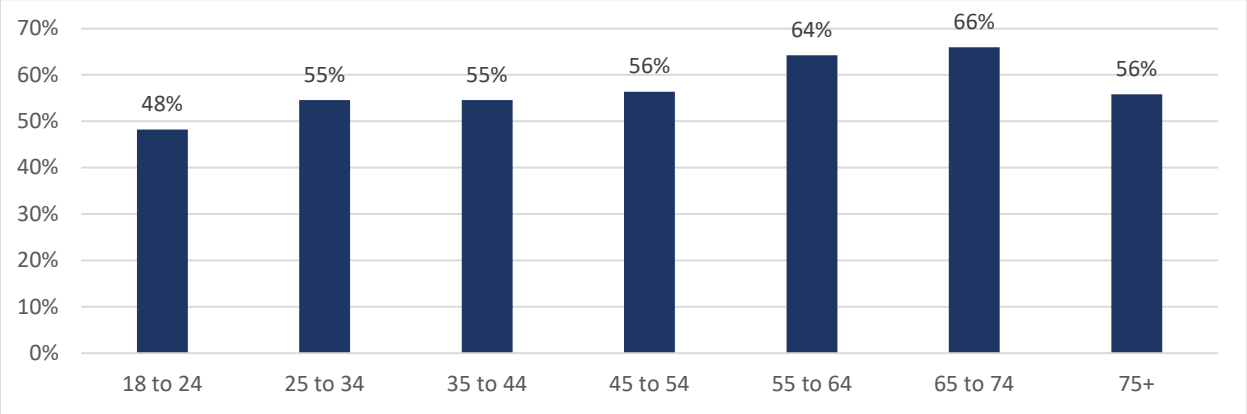


Figure 13. Moderately or Very Active Physical Activity by Age Group[10]



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

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 older.

4.5.1 Occupational Status

Figure 14 illustrates the employment statuses of survey participants while **Figure 15** illustrates student status, with both charts illustrating the overlap between employment and school. The survey results show that nearly two-thirds (65%) of the City's adult residents are employed, most of whom report working full-time (54%). Retired people account for the next-largest group, representing 21% of the adult population. Note that these results exclude the small proportion of the total population living in 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. About one-half (51%) of all students are also employed.

Figure 14. Employment Status[11]

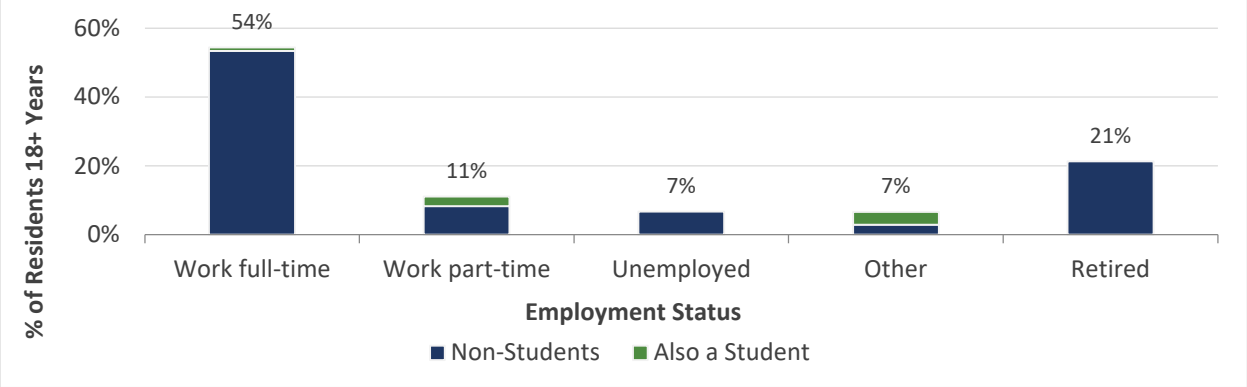
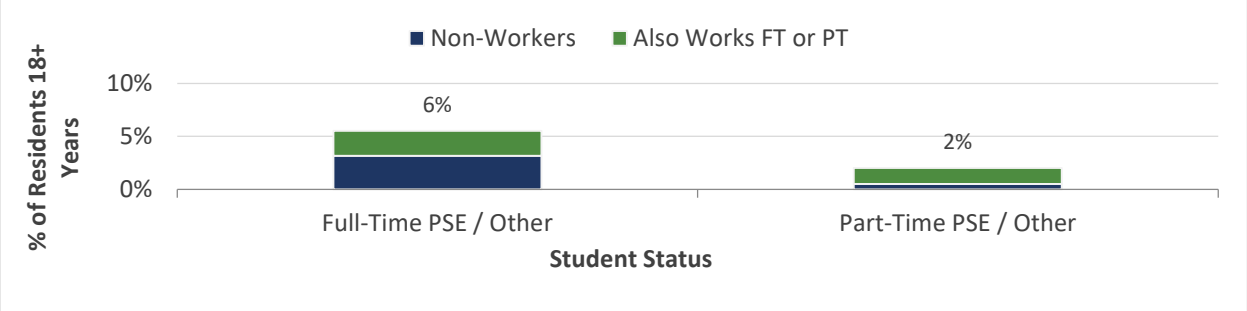


Figure 15. Student Status[12]



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

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

Figure 16 and **Table** 6 shows employment status and student status by zone. Vancouver Kerrisdale has the lowest percentage of full-time workers (41%) and the most retired people (31%). The two CBD zones and Vancouver Broadway have the greatest number of full-time workers ranging between 60% to 64%. Vancouver South, Vancouver Kerrisdale, Vancouver Kitsilano, and Vancouver East have the highest proportions of adult students, ranging between 9% to 11% of survey participants.

Figure 16. Map of Employment Status by Zone

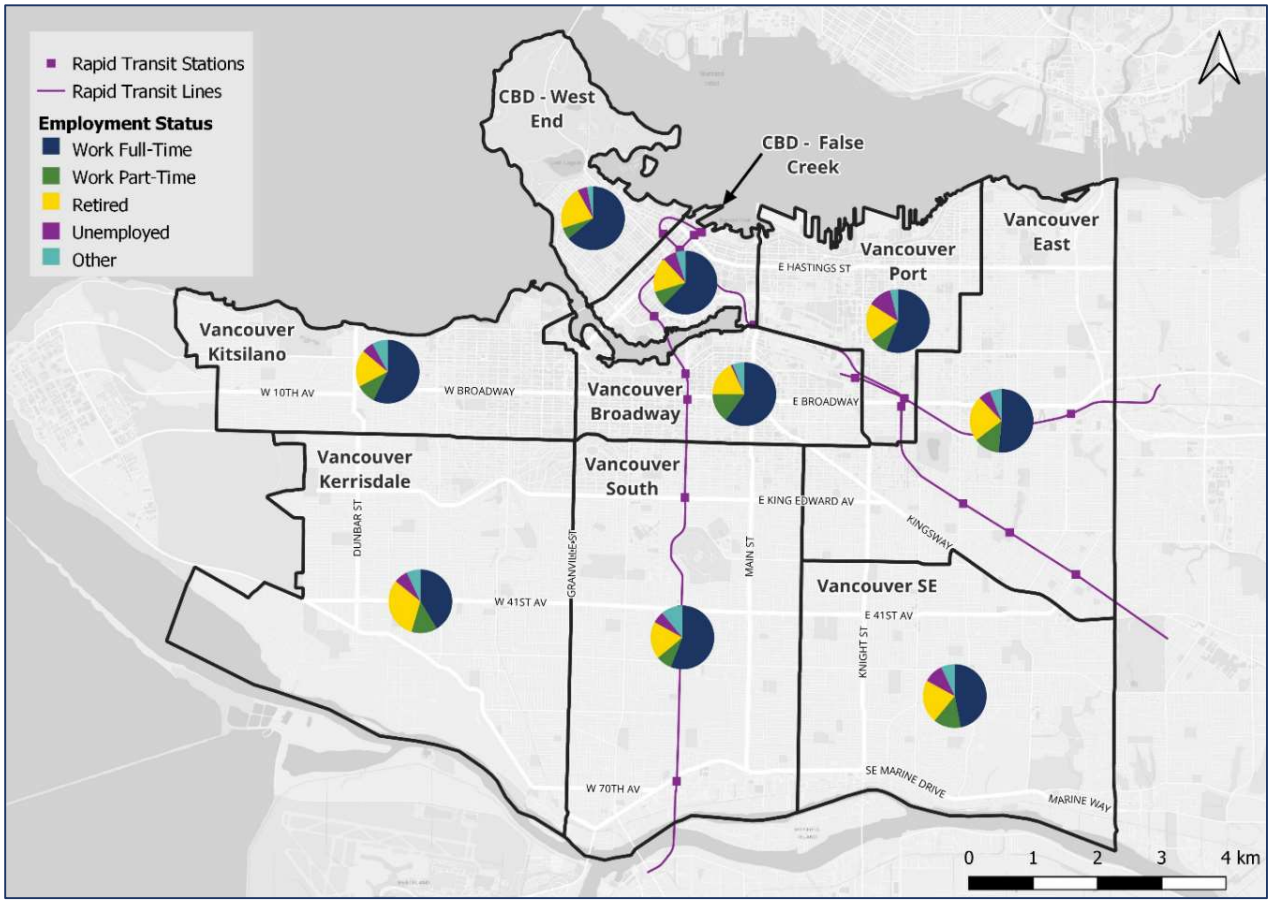


Table 6. Employment and Student Status, by Zone[13]

	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	54%	64%	63%	60%	56%	41%	58%	47%	51%	56%
Work Part-Time	11%	6%	8%	15%	8%	13%	10%	14%	13%	9%
Unemployed	7%	5%	7%	1%	6%	7%	6%	10%	6%	12%
Other	7%	3%	5%	6%	11%	7%	8%	7%	6%	4%
Retired	21%	22%	18%	18%	19%	31%	19%	22%	23%	19%
Student Status										
Full-Time	6%	4%	3%	6%	8%	4%	9%	4%	7%	2%
Part-Time	2%	0%	0%	2%	1%	6%	2%	2%	3%	2%
Total students	8%	4%	3%	8%	9%	9%	11%	6%	10%	3%

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

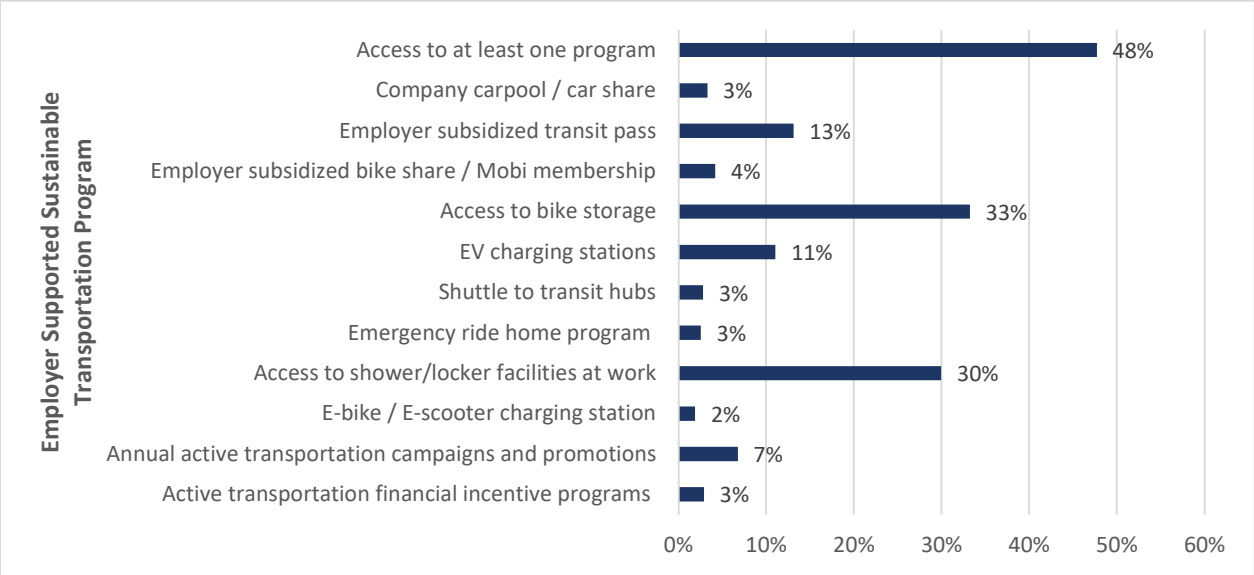
4.5.2 Employer Support for Sustainable Transportation Programs

Sustainable transportation programs range from providing electric vehicle charging infrastructure to having a company carpool/car share program to employer-subsidized transit passes. **Figure 17** below summarizes the proportion of workers living in Vancouver whose employers support various sustainable transportation programs. The results show that nearly half (48%) of workers have access to at least one program. Secure lock-up for bicycles is the most common support offered, with one-third (33%) of workers having access to bicycle storage and 4% of employers offering subsidized bikeshare membership.

Looking at programs that support modes other than biking (i.e., auto and transit), we see that just over one in ten (11%) workers have access to EV charging stations at their place of employment and 3% having access to a company carpool or car share program. Regarding transit, 13% of workers reported having access to transit subsidies.

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 Broadway, Vancouver South, Vancouver Kerrisdale, and Vancouver Kitsilano.

Figure 17. Access to Employer Supported Sustainable Transportation Programs[14]



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

Table 7. Access to Employer Supported Sustainable Transportation Programs by Zone of Workplace[15]

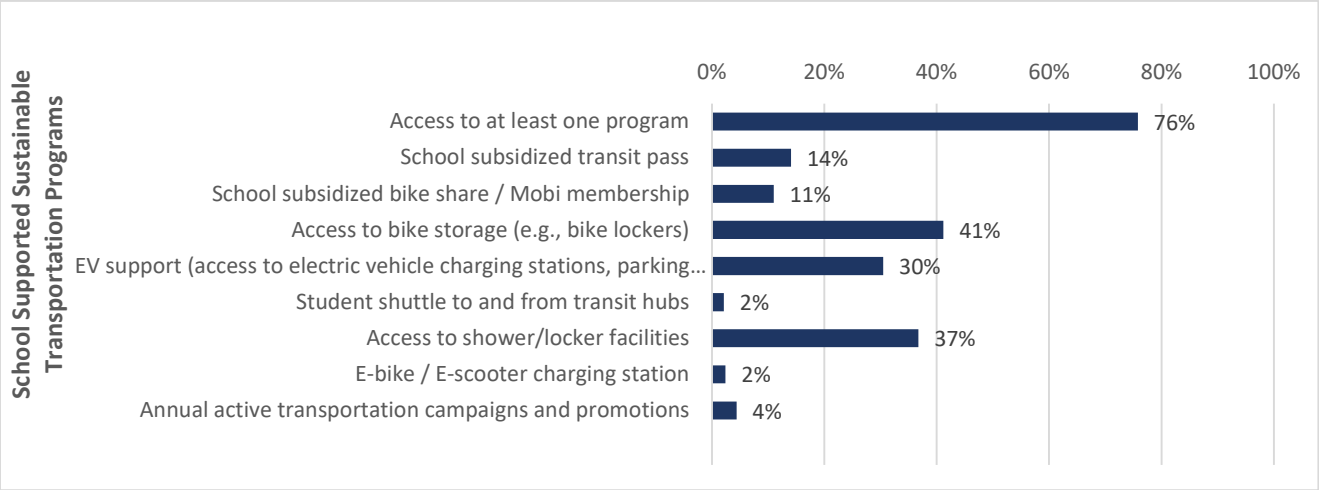
	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. SE	Van. East	Van. Port
Jobs Held by Residents	383,100	285,700	39,100	72,000	54,300	27,100	15,800	21,500	17,200
Access to at least one program	48%	46%	54%	62%	51%	48%	23%	28%	14%
Company carpool / car share	3%	3%	3%	2%	6%	2%	1%	0%	2%
Employer subsidized transit pass	13%	13%	11%	11%	26%	24%	5%	8%	6%
Employer subsidized bikeshare / Mobi membership	4%	5%	3%	7%	8%	4%	0%	5%	2%
Access to bike storage	33%	33%	43%	52%	36%	24%	18%	15%	7%
EV charging stations	11%	8%	6%	9%	7%	15%	3%	2%	4%
Shuttle to transit hubs	3%	2%	2%	0%	1%	9%	3%	0%	2%
Emergency ride home program	3%	3%	5%	3%	4%	1%	6%	0%	0%
Access to shower/locker facilities at work	30%	28%	37%	38%	33%	25%	9%	16%	7%
E-bike / E-scooter charging station	2%	0%	0%	0%	0%	0%	0%	0%	0%
Annual active transportation campaigns and promotions	7%	6%	3%	6%	12%	7%	4%	0%	2%
Active transportation financial incentive programs	3%	3%	0%	4%	8%	2%	4%	0%	2%

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 three-quarters (76%) of students have access to at least one program. Access to bike storage is the most common, with over one-third of students (41%) reporting access. Almost one-third (30%) reported having access to EV support on school campuses and over one-third (37%) reported access to shower/locker facilities.

[15] Percentages add to greater than 100% due to multiple responses.

Figure 18. Access to School Supported Sustainable Transportation Programs[16]



[16] Percentages add to greater than 100% due to multiple responses. Interpret results with caution due to small sample size (n=70).

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 438,000 bicycles which is a substantial increase from 392,000 in 2022. There are a number of factors that may have contributed to the observed increase, including the increase in population, rising gas prices, increased pressure to return to in-office work, continued interest in e-bikes, and differences between the 2022 and 2023 samples.[17] **Table 8** shows that most Vancouver households have at least one adult bicycle, with 65% of the adult population having access to a bicycle. E-bikes account for 9% of all adult bikes owned by residents, or about 39,300 e-bikes. While only 9% of bicycles are e-bikes, 18% of bicycle trips on weekdays are made with e-bikes.

Compared to 2022 results, there has been a slight increase in e-bike ownership, from around 31,700 e-bikes accounting for 8% of all adult bikes in 2022 to 39,300 e-bikes accounting for 9% of all bikes in 2023. Some people who own an e-bike may have purchased it 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). Another contributing factor may be a rebate program introduced by the Province. Beginning in June 2023, residents of British Columbia could apply for rebates after purchasing an e-bike. Based on their income they could receive a maximum rebate of $1,400.

Bicycle ownership is lowest in the areas with the most apartments (the two CBD zones), likely related to bicycle storage availability and also easier walking access to amenities and transit. 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.

[17] The survey sample is composed of 72% panel members who have participated in previous survey cycles and 28% individuals from a newly cross-sectional sample for whom this was their first year of participation. New recruits to the 2023 survey reported proportionately more bicycles per household than panel members, and more so again than the 2022 participants who did not participate again in 2023. A portion of the difference between the survey cycles may be attributable to the margin of error in the random samples of new recruits. Regardless, it is certain that there has been growth in the number of bicycles. Responses to the 2022 and 2023 surveys of panel members who participated in both cycles were reviewed to verify the consistency of responses; they did show growth in the number of bicycles, particularly in the number of adult e-bicycles, albeit more modest growth than in the results for the total sample.

Table 8. Bicycles and Bicycle 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 adult bicycles (incl. e-bikes)	438,700	38,400	38,400	51,300	64,400	46,300	48,800	45,500	70,200	35,400
% of households with at least one adult bicycle	63%	54%	55%	67%	67%	71%	64%	58%	68%	70%
Avg. adult bicycles per household	1.38	1.04	1.08	1.36	1.61	1.89	1.42	1.20	1.51	1.52
Estimated no. of e-bikes	39,300	1,900	2,200	3,400	4,200	4,200	4,100	6,600	9,500	3,300
% of adult bicycles that are e-bikes	9%	5%	6%	7%	6%	9%	8%	15%	14%	9%
% of population 18+ with access to an adult bicycle	65%	59%	53%	72%	69%	67%	69%	59%	68%	72%

5.1.2 Bikeshare Utilization

About 7% of respondents are a member of (or have used) bikeshare services including 6.5% for Mobi and a very small percentage (0.5%) for the Lime e-bikeshare service, currently operating in its third year in North Vancouver, or another bikeshare service.

The City has provided residents with a cycling option by supporting the Mobi bikeshare service which has been available to Vancouver residents since 2016. The program offers a convenient cycling choice for residents and visitors to the city.

Coverage of Mobi bikeshare services at the time of the survey roughly included downtown Vancouver and extends east to Commercial Drive, south to 16th Avenue, and west to Point Grey and UBC, 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 bikeshare use by zone. The service use is highest in the CBD - West End, CBD - False Creek, and Vancouver Port which coincides with the zones that have the most bikeshare service.

Table 9. Bicycle Share Use by Zone

	Vancouver	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
Use of at least one bikeshare service	7%	15%	14%	8%	5%	5%	9%	1%	4%	11%

5.2 Electric Micromobility Device Access

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. As shown in **Table 10**, the use of electric micromobility devices such as e-kick scooters, e-skateboards, or hoverboards is still relatively uncommon in Vancouver, with only 3% of households in the survey owning a micromobility device; this is a slight decrease from 5% in 2022.

Ownership appears to be highest amongst residents of Vancouver East (5%), Vancouver Broadway (4%) and Vancouver South (4%). The survey results suggest that residents of Vancouver own about 11,500 such devices. 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. All findings related to electric mobility devices should be interpreted with caution due to the small sample size of survey participants who use such devices.

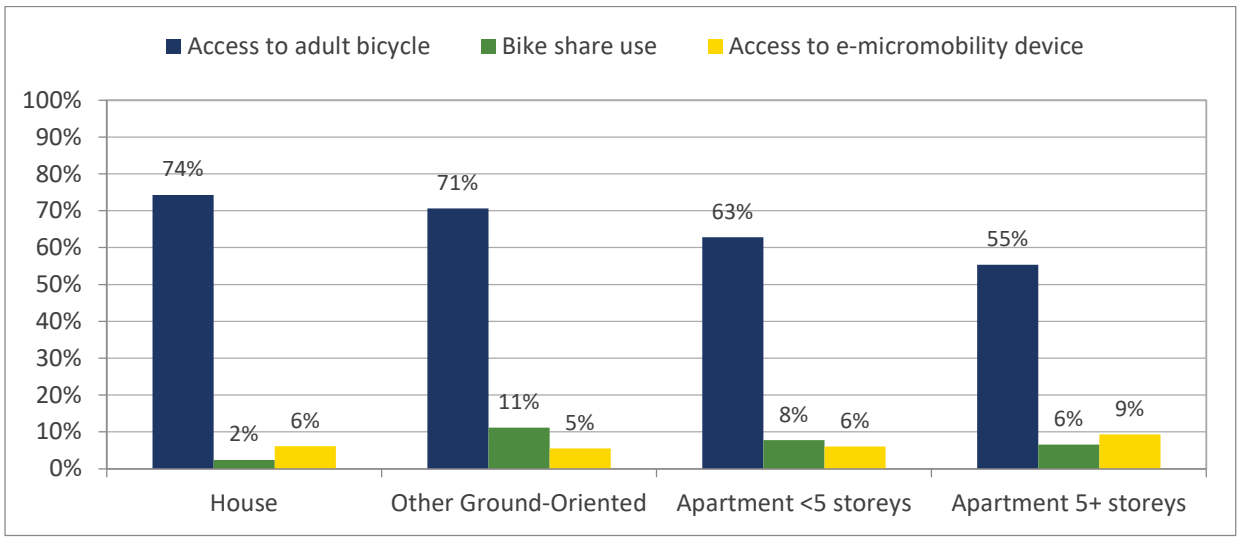
Table 10. Electric Micromobility Device Access by Zone

	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	11,500	1,300	1,200	1,600	1,600	400	600	1,700	2,300	800
% of households with at least one micromobility device	3%	3%	3%	4%	4%	2%	1%	3%	5%	3%

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

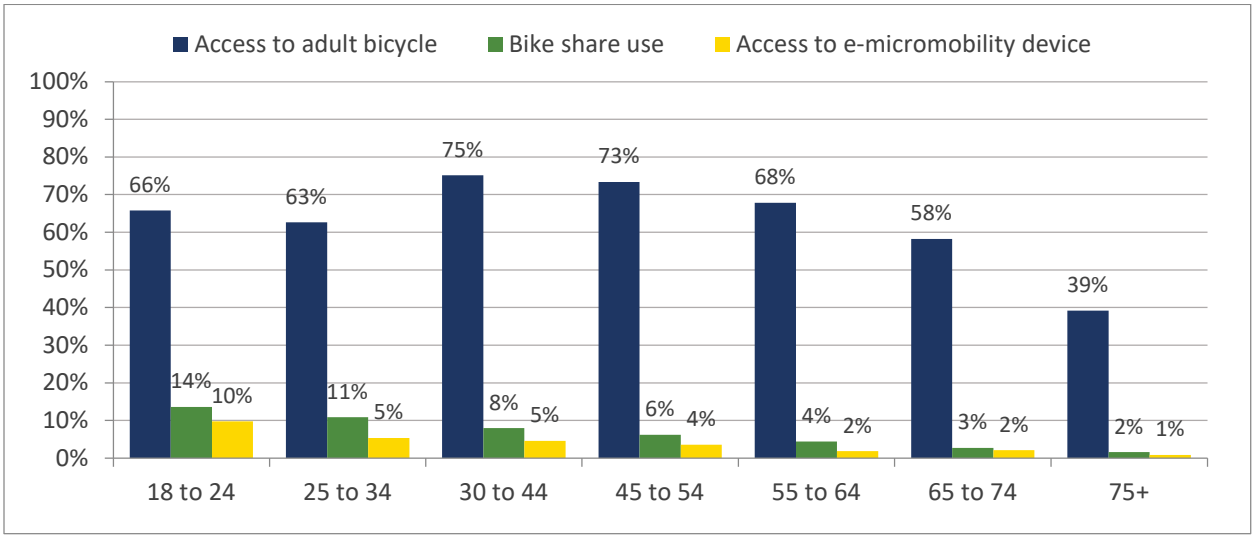
Figure 19. and **Figure 20.** illustrate trends in access to bicycles and micromobility devices by dwelling type and by age. As shown in **Figure 19.**, access to an adult bicycle is highest amongst those living in houses and other ground-oriented units, at 74% and 71% respectively. Fewer people living in apartment buildings report owning a bike (63% of those in apartments under 5 stories and 55% of those in higher-rise apartments). Bikeshare use is highest amongst those living in other ground-oriented units, at 11%, and lowest amongst those living in houses (2%). Micromobility device ownership is highest among those living in high-rise apartments, at 9%, and lowest among those living in other ground-oriented units (5%).

Figure 19. Access to Bicycles, Bikeshare Use, and Micromobility Devices by Dwelling Type



By age group, access to an adult bicycle is highest among people ages 30 to 44 and 45 to 54 (75% and 73% 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 63% for ages 25 to 34, it appears that many younger people make up for this by using bikeshare service. Younger respondents reported the highest level of bikeshare use (14% for 18–24-year-olds and 11% for 25-34-year-olds). One in ten young adults ages 18 to 24 reported access to an e-micromobility device which is at least double all other age groups. Bikeshare use declines as age increases, but is relatively steady for those in the 30 to 44 (8%) and 45 to 54 (6%) age groups, indicating that bikeshares are beneficial for a wide range of ages. As bikeshare 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, Bikeshare, and Micromobility Devices by Age[18]



5.3 Vehicle Access

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

5.3.1 Licensed Drivers

Table 11 highlights the prevalence of driver's licences by zone. Overall, nine in ten adults have a driver's licence. Incidence varied only slightly by zone, being highest in Kerrisdale and Kitsilano (94% each) and lowest in CBD – False Creek (84%) and CBD - West End (86%). Examination of the data by age range revealed that 85% of survey participants 25 to 34 years old have a driver's licence, with this proportion rising to over 90% for 35 to 74 years, then dropping only slightly to 88% for those 75+ years of age.

[18] Results for 18- to 24-year-olds should be interpreted with caution due to small sample size (n=73).

Table 11. Licensed Drivers 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
% of population 18+ with driver's licence	90%	86%	84%	89%	91%	94%	94%	91%	94%	87%

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, 76% of Vancouver residents currently have access to a household vehicle. This compares similarly to the result of 77% in 2022 and 80% in 2021. 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.

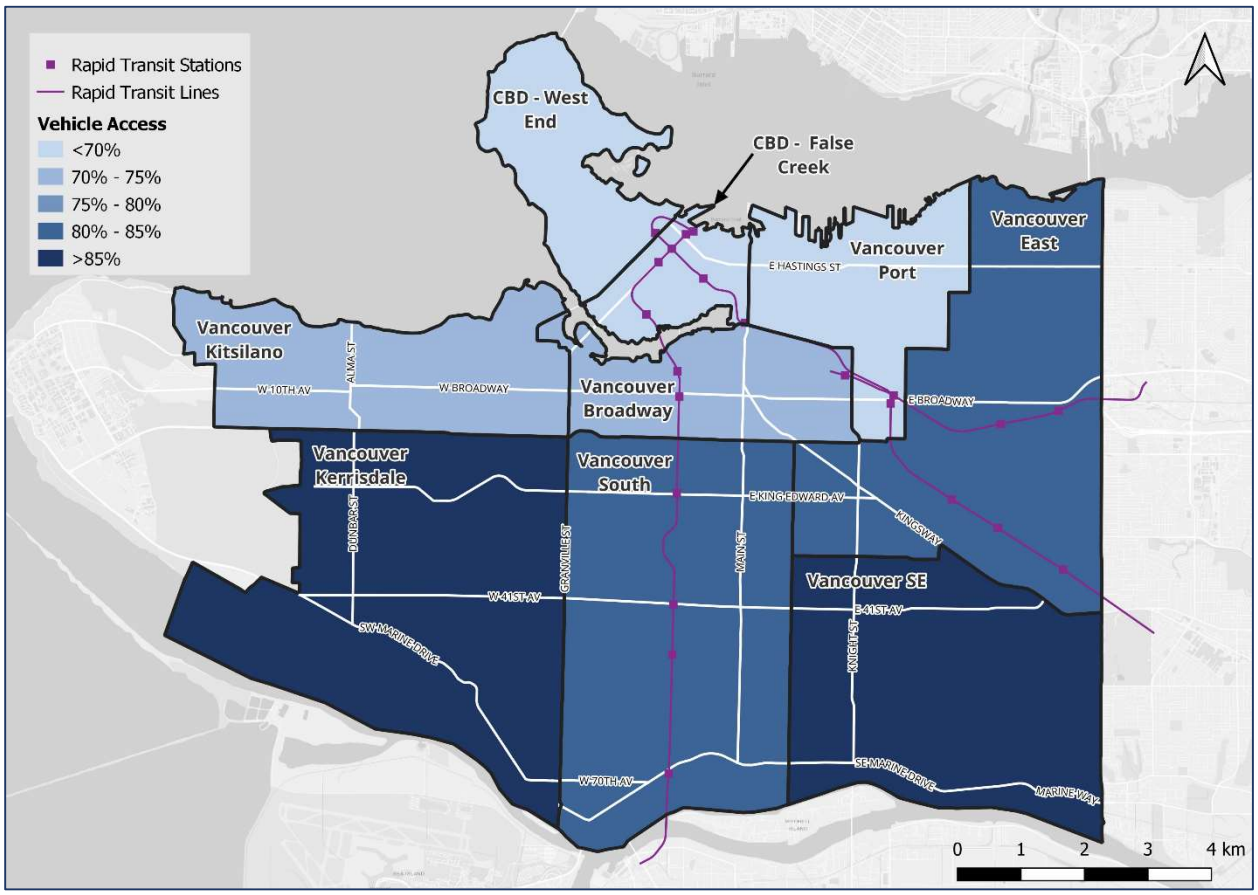
By zone, private vehicle access is lowest downtown (CBD - West End, 63%, and CBD - False Creek, 66%) and in the Vancouver Port area (68%). Vehicle access is highest in the Kerrisdale and Southeast zones, with 89% of adults having access to at least one vehicle.

Table 12. Private Vehicle Availability by Zone[19]

	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
Average vehicles per household*	1.07	0.71	0.80	0.88	1.21	1.45	1.09	1.38	1.24	0.87
Average vehicles per adult	0.58	0.48	0.52	0.57	0.59	0.70	0.65	0.60	0.58	0.52
% population 18+ with access to at least one vehicle	76%	59%	58%	71%	81%	89%	73%	89%	83%	67%
% of households with vehicles	78%	63%	66%	74%	86%	92%	81%	90%	83%	68%

[19] The 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 the lowest access amongst the 25 to 34 age group (66%) and 85+ age group (68%), with all other age groups ranging between 77% and 84%.
- Vehicle availability is nearly equal by gender, at 78% for women and 76% men.
- By dwelling type, vehicle availability is highest amongst those living in houses and lowest amongst those living in apartments of greater than five storeys.
- By income, vehicle ownership increases steadily, starting from 58% amongst people with annual incomes of less than $25,000 per annum and increasing to 85% 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 51% 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 (78%).
- There appears to be some variance by visual minority population group, with East Asian, Southeast Asian, and West Asian/Middle Eastern/North African all having high vehicle availability (ranging from 83% to 85%). South Asian residents, Hispanic/Latin American residents, and Multiple/Mixed race residents vehicle availability range between 56% to 64% while white residents have about 76% vehicle availability.

Figure 22. Private Vehicle Availability by Age Range[20]

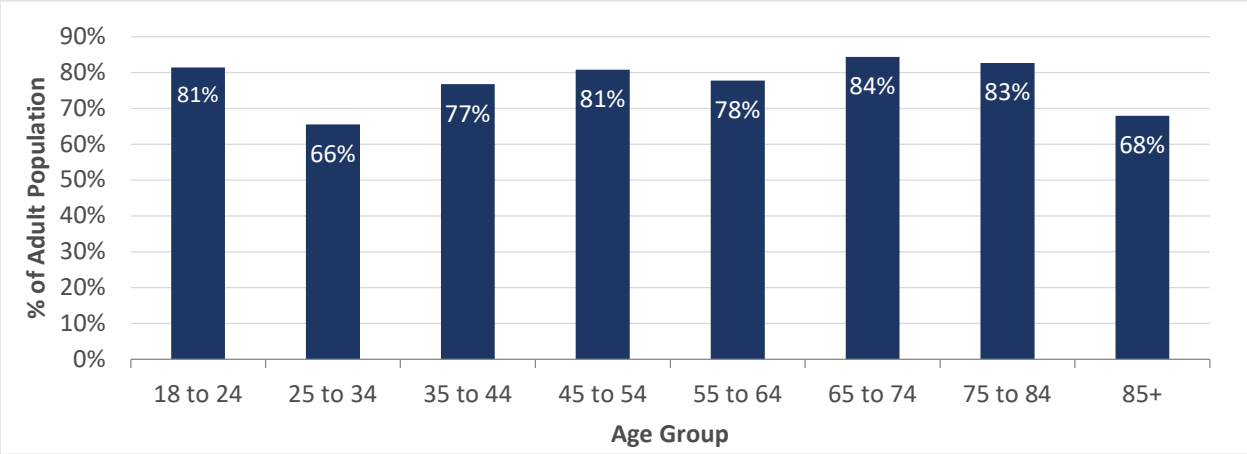


Figure 23. Private Vehicle Availability by Gender

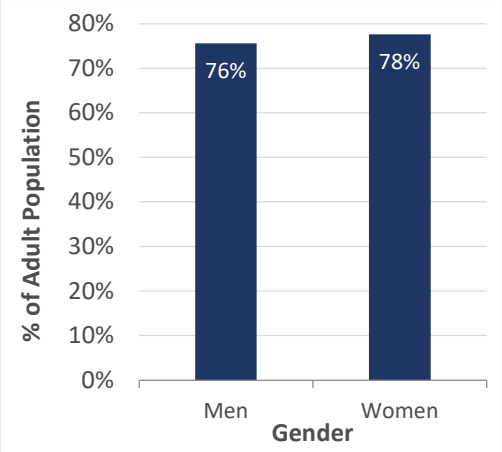
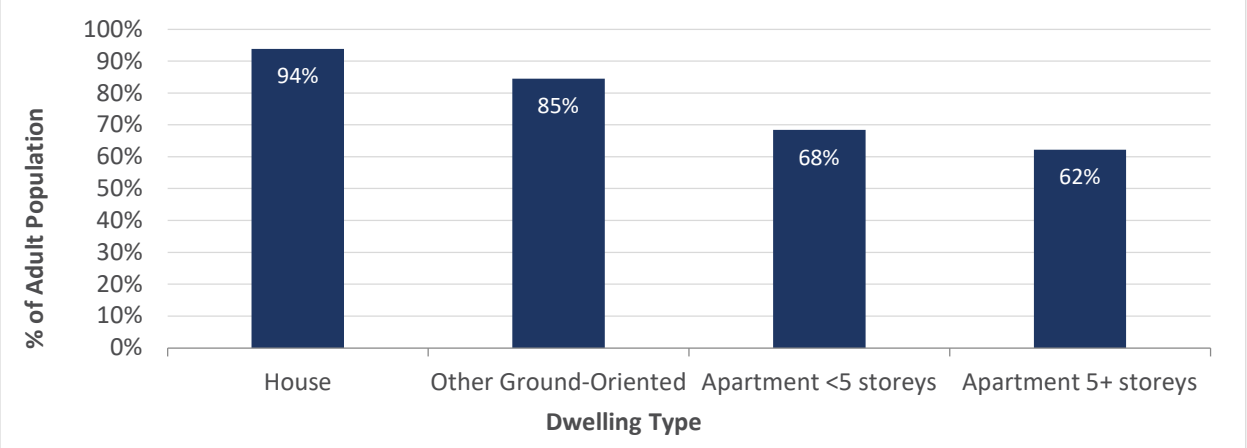


Figure 24. Private Vehicle Availability by Dwelling Type



[20] *small sample size for age 18-24 and 85+, interpret with caution.

Figure 25. Private Vehicle Availability by Household Income

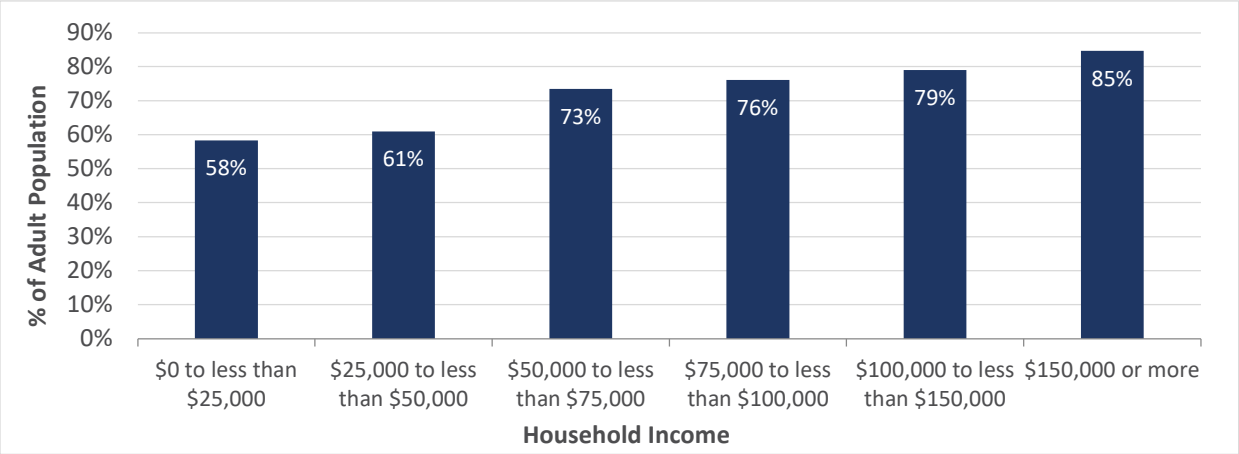


Figure 26. Private Vehicle Availability by Immigration Status[21]

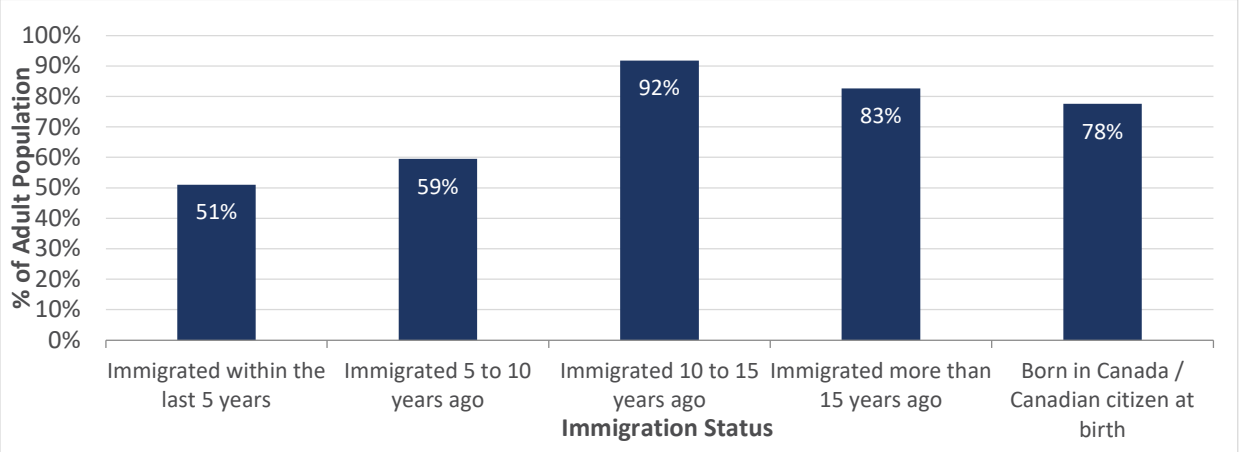
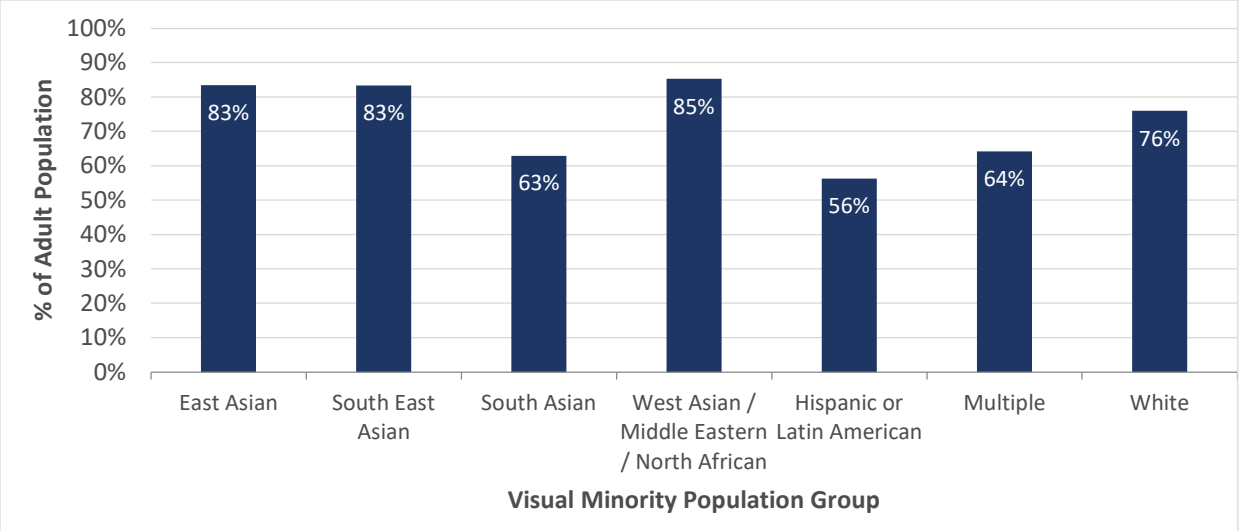


Figure 27. Private Vehicle Availability by Visual Minority Population Groups[22]



[21] *small sample sizes interpret with caution.

[22] *small sample sizes interpret with caution. Excludes Indigenous, Black, and Other due to very small sample sizes.

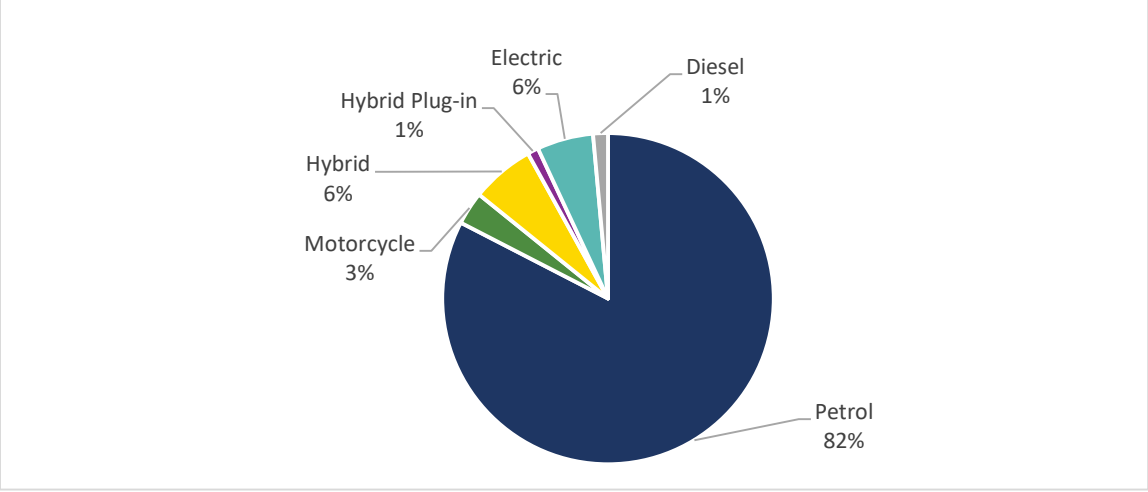
5.3.3 Vehicle Fuel Type

One of the City's Climate Emergency goals is: By 2030, 50% of the kilometres 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. 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 due to recent legislation for zero-emission vehicle targets starting for the 2026 model year.

The 2023 survey asked about vehicle fuel type to help measure EV ownership as an indicator for progress with these initiatives. **Figure 28** shows the fuel type for household vehicles and **Figure 29** shows the trend from 2021 to 2023. Conventional gasoline vehicles are the majority (82%), showing a small decline (-3 percentage points) from 2022, as EVs and hybrid market shares have increased. EVs account for 6% of all vehicles, up by 1% in 2022 and the hybrid share of all household vehicles is up slightly from 6% in 2022 to 7% (combining both regular hybrids and plug-in hybrids),[23] again suggesting more sales amongst drivers making the shift to greener modes.

As shown in **Table 13**, the zone with the highest EV ownership is Vancouver Kerrisdale at 7%, while that with the lowest EV ownership is Vancouver Broadway at 4% (although Vancouver Broadway survey participants reported among the highest average share of hybrids).

Figure 28. Vehicle Fuel Type[24]



[23] 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.

[24] Not displayed in the figure are small proportions (<1%) of biodiesel and other/unknown alternative fuel types.

Figure 29. Vehicle Fuel Type, 2021 to 2023

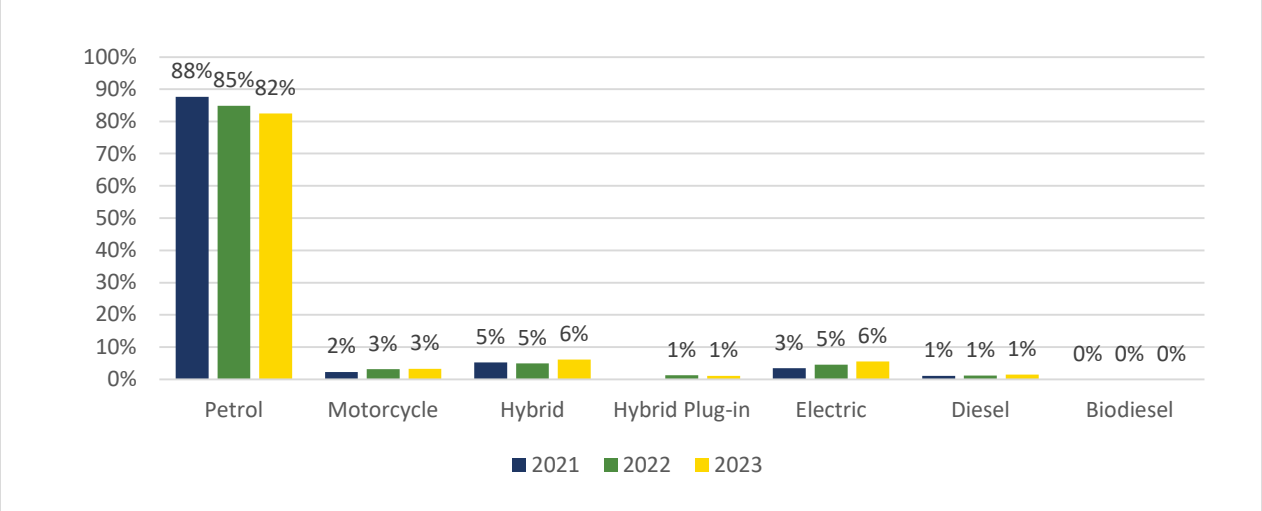


Table 13. Vehicle Fuel Type by Zone

	Vancouver	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
Petrol	82%	86%	79%	84%	81%	82%	85%	82%	85%	76%
Motorcycle	3%	1%	5%	4%	3%	3%	3%	2%	3%	8%
Hybrid	6%	5%	8%	8%	6%	5%	5%	8%	6%	5%
Hybrid Plug-in	1%	0%	1%	0%	2%	2%	1%	2%	0%	2%
Electric (EV)	6%	7%	6%	4%	5%	7%	5%	5%	5%	7%
Diesel	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Biodiesel	0.1%	0%	0%	0%	0%	0%	0%	0%	0%	0.9%
Other/Unknown Alternative Fuel Type	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.2%	0.0%

5.3.4 Electric Vehicle Charging Availability at Home

Electric vehicle charging availability at home or close by is another data element being collected as an indicator of support for the Climate Emergency Action Plan. The overall average reported by survey participants is 30% availability (**Figure 30**). 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 facilities may be. The results suggest that availability and/or awareness of local charging facilities is on the rise, compared to the 27% survey result in 2022.

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 (47%, up from 39% in 2022) 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 31% 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 (43%).

Figure 30. Percentage of Households with Access to EV Charging at Home or Nearby, by Dwelling Type

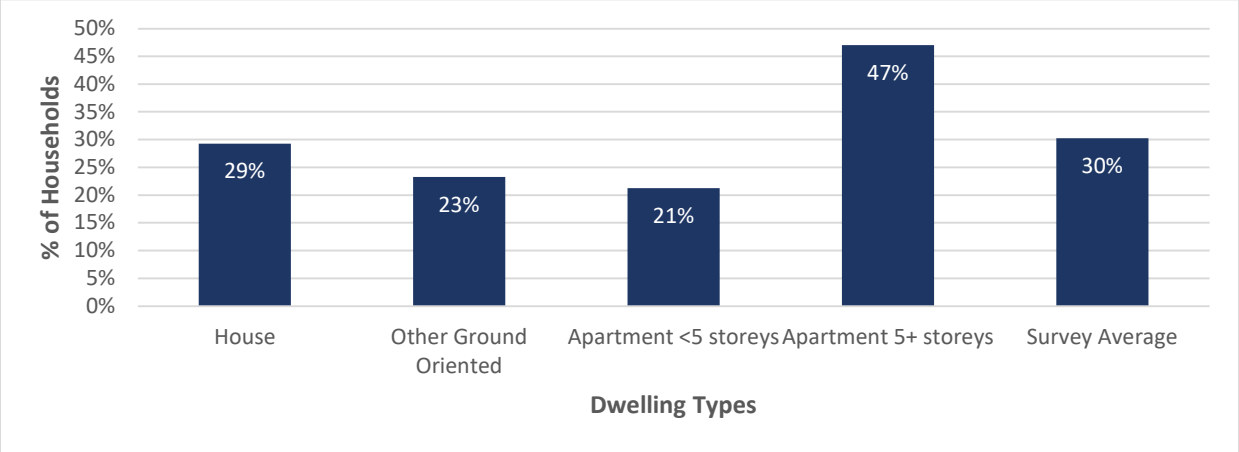


Table 14. Percentage of Households with Access to EV Charging at Home or Nearby, by Zone

% of households with access to EV charging at home or close by	Vancouver	CBD – West End	CBD – False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port
2023	30%	31%	55%	23%	27%	43%	21%	29%	25%	25%
2022	27%	21%	55%	26%	23%	33%	22%	25%	23%	17%

5.3.5 Car Share Membership or Use

Table 15 shows the percentage of survey participants, by zone, who had a membership to (or have used) at least one car share service at the time of the survey in Fall 2023. The percentage of residents has increased to 37%, following a pattern of decline observed from 2019 to 2021. Car share use 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, 47% are car share users. This compares to 34% 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 (49%), Vancouver East (41%), and Vancouver Broadway (44%). Vancouver Southeast (21%) continues to have the lowest car share use, though with an increase from 2022 (16%).

Table 15. Car Share Membership or Use of at least one Car Share Service

	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
2023	37%	42%	40%	44%	35%	25%	43%	21%	41%	49%
2022	34%	39%	39%	45%	32%	30%	41%	16%	35%	47%
2021	30%	31%	36%	46%	34%	18%	41%	11%	30%	38%
2020	32%	37%	22%	38%	36%	30%	39%	13%	37%	43%
2019	37%	47%	35%	46%	35%	30%	48%	17%	35%	52%

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 2.9 trips per person in 2022 to 3.0 trips per person in 2023, accounting for an additional 144,000 daily trips in 2023 compared to 2022 (**Figure 31**). 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 2022 to 2023 likely reflects the continued rebound in daily trips from the low number in 2020, at the onset of the pandemic. In 2023, 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 new normal trip pattern has the potential of reducing the daily work trips even after all residents have returned to work. The 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 32**. Daily trips rates are highest for residents of the Vancouver Broadway (3.36 trips per person), Vancouver Port (3.30 trips per person), and CBD - West End (3.27 trips per person) zones. All other zones had trip rates between 2.7 and 3.1 trips per person.

Figure 31. Daily Trip Volumes and Average Daily Trips per Person, 2013-2023 (Persons 18+ Years)

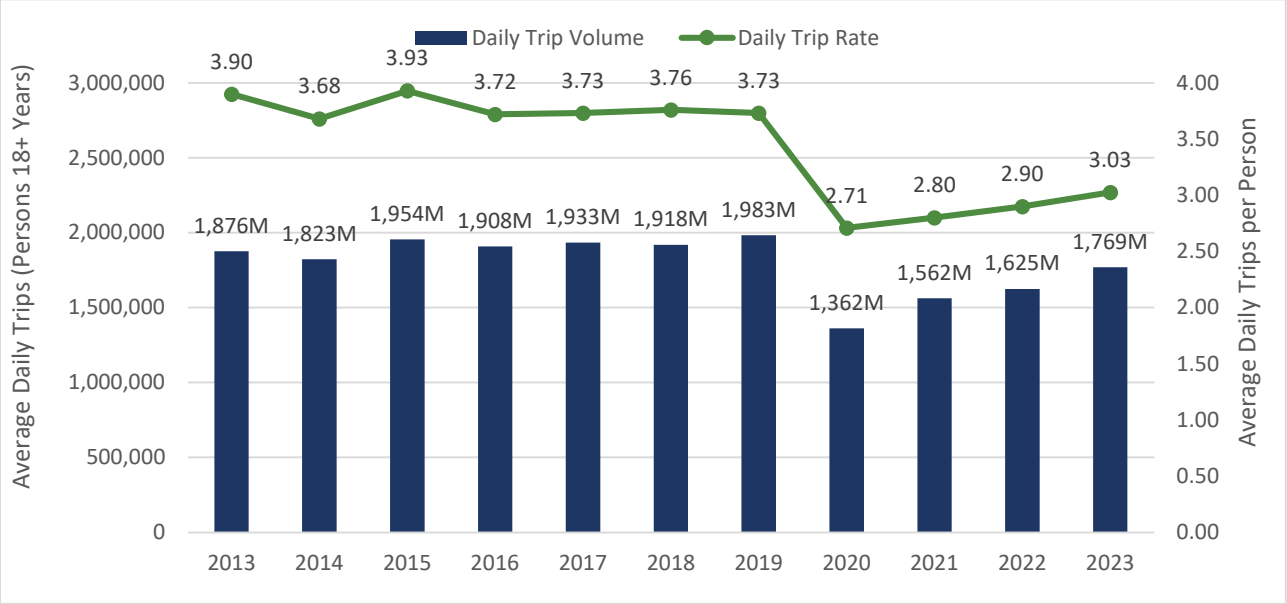
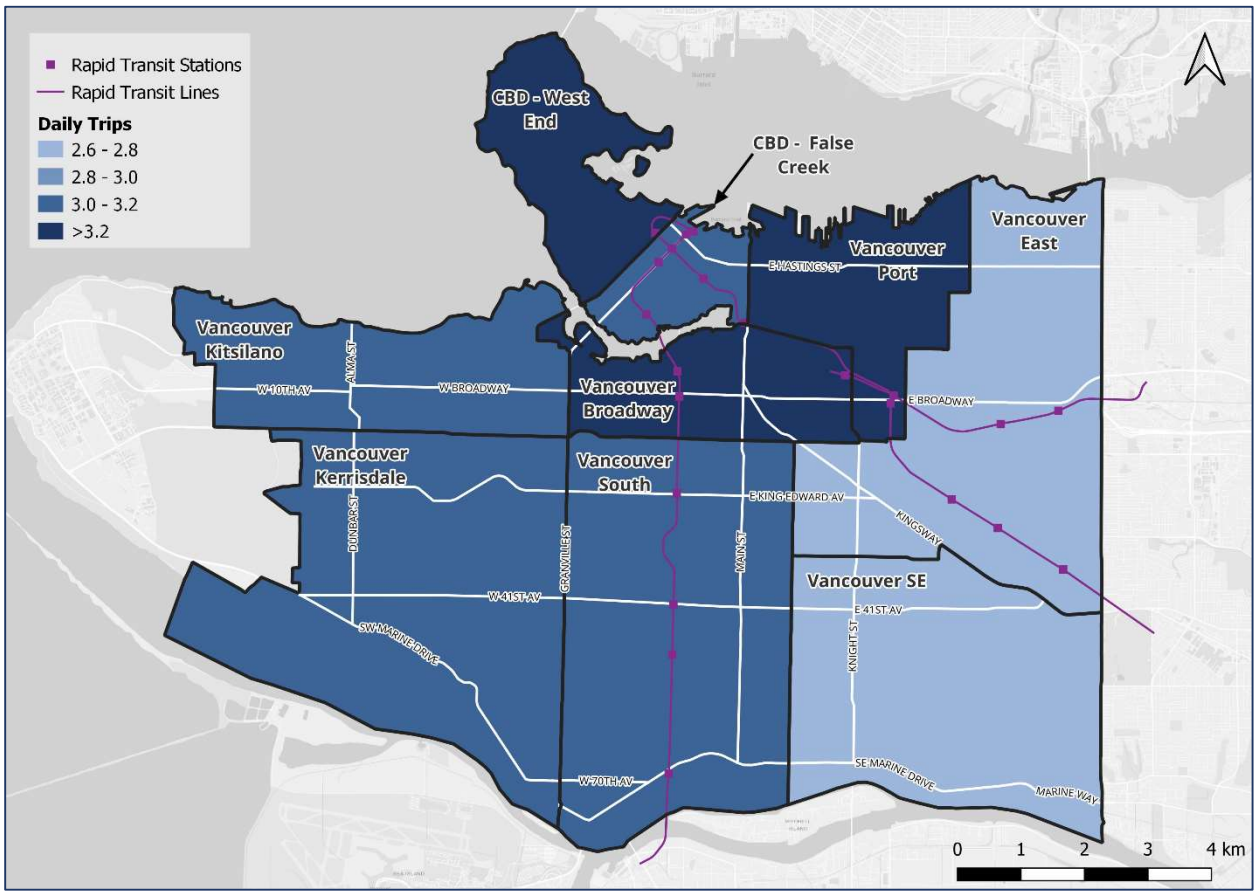
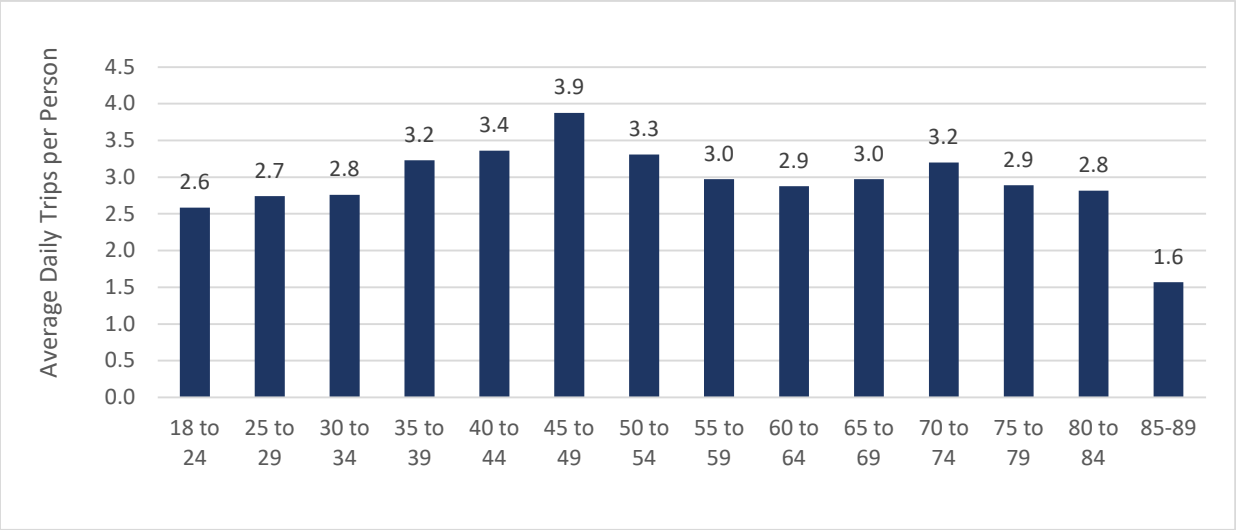


Figure 32. Map of Average Daily Trips by Zone



Average daily trip rates by age are shown in **Figure 33**. Residents between the ages of 45 to 49 years old have the highest average trips rates, at 3.9 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 1.6 trips per day. The figure notes the age ranges with a low sample size therefore a higher sampling error for the smaller population.

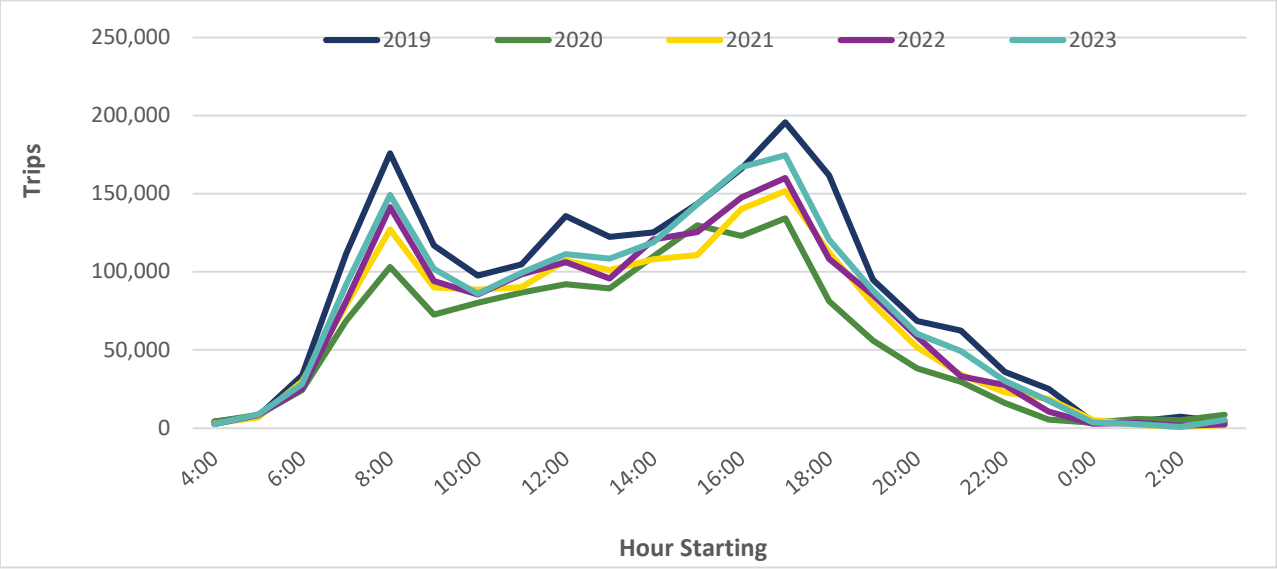
Figure 33. Average Daily Trips per Person, by Age Range[25]



6.1.2 Trip Volumes by Time of Day

Figure 34 shows the percentage of weekday trip volumes by time of day of departure for four years: 2019 through 2023. As shown, trip volumes by time of day are similar in 2023 compared to 2022, with a slight increase at the 8 a.m. peak hour (+5 percentage points) and 5 p.m. peak hour (+9 percentage points) in 2023. 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.)

Figure 34. Weekday Trips by Time of Day, 2019-2023



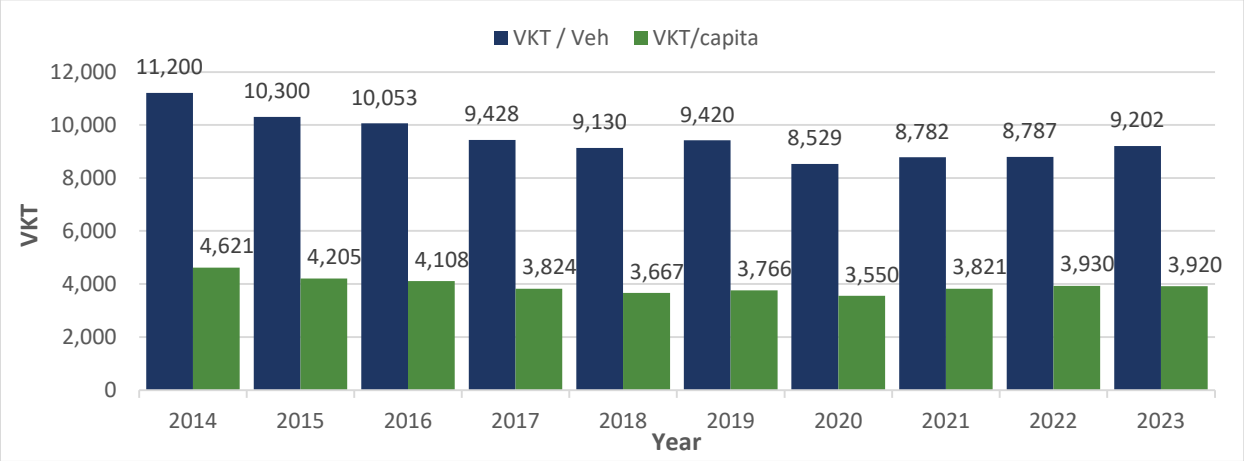
[25] Age range with smaller sample size (18-24, n=73; 85-89, n=75) should be interpreted with caution.

6.1.3 Vehicle Kilometres 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 35.** illustrates the annual vehicle kilometres travelled, or VKT, estimates for 2014 through 2023. 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 10,300 km travelled annually per vehicle to a low of 9,100 km, followed by a slight increase in 2019 to 9,400 km. The onset 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 2022 survey estimate being comparable at about 8,800 km per vehicle. The most recent 2023 survey shows an increase of 5% in VKT bringing it to 9,200 km per vehicle. Based on Insurance Corporation of British Columbia (ICBC) statistics on insured vehicle policies in Vancouver, which suggest that there were about 318,100 passenger vehicles registered to Vancouver residents in December 2023, the total annual VKT for the entire fleet is about 2.93 billion kilometres per year. This is about 3% below the 3.01 billion kilometres estimated for 2014, and 2% less than 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 3,920 km, which is about 15% below 2014 estimates.

Figure 35. Trend in VKT per Capita and VKT per Vehicle, 2014-2023 [26]



[26] 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 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 through 2023 surveys use the same methodology as in the 2020 survey cycle.

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 36 shows the distribution of trip purposes for weekday trips in 2023. **Figure 37** presents trip volumes by trip purpose for weekday trips in four years: 2019 through 2023. 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 3% or 6,500 trips in 2023 compared to 2022 and are still well below 2019 trips. Shopping trips, work-related and recreational trips are the three trip types that have exceeded 2019 levels.

Figure 36. Weekday Daily Trip Purpose

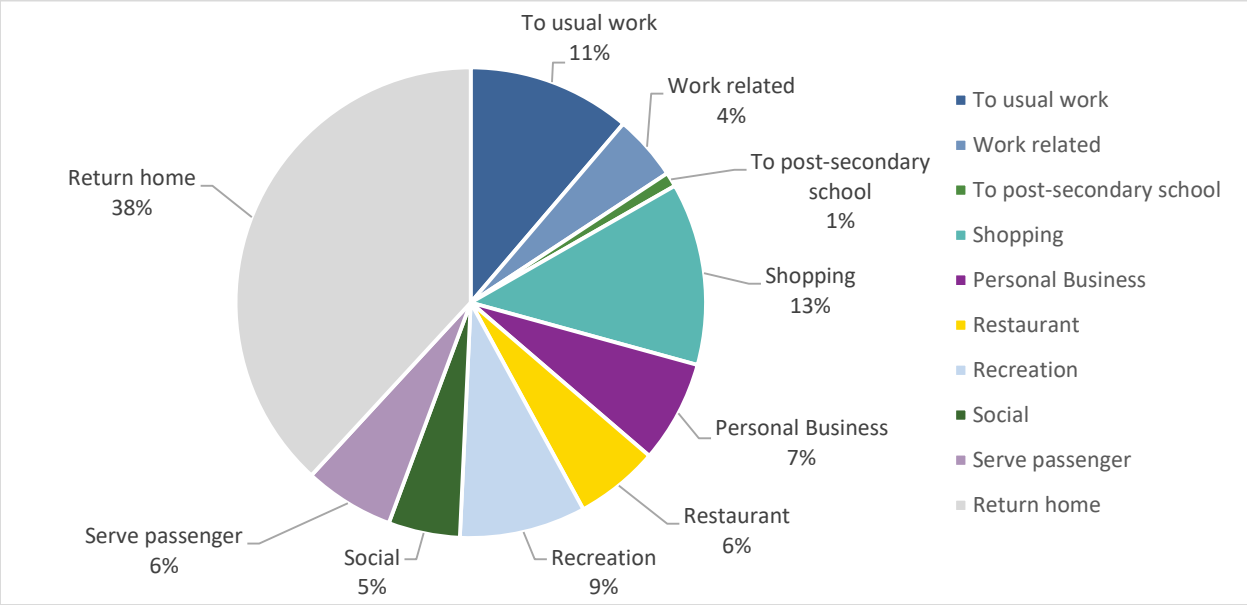
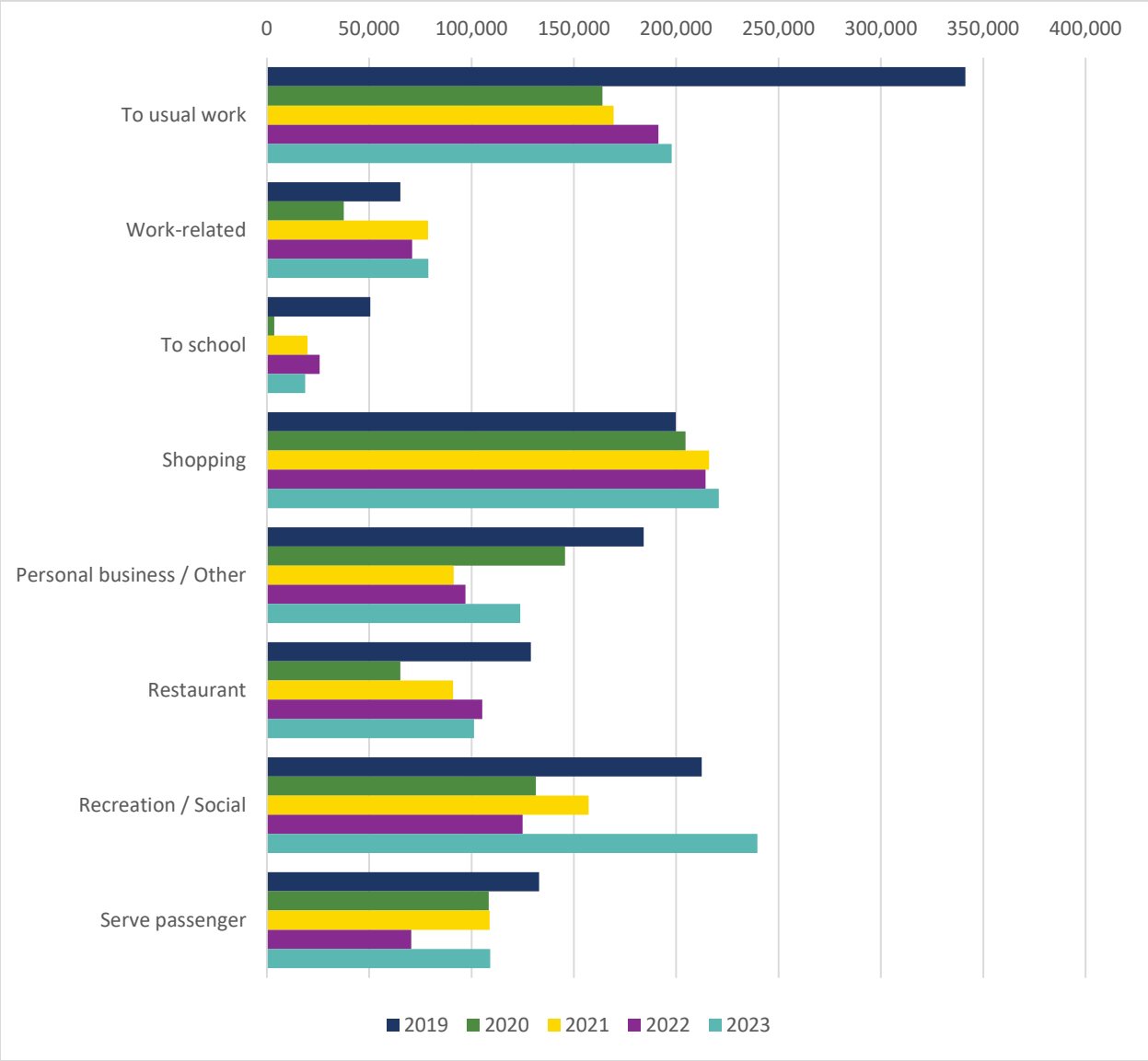


Figure 37. Trip Purpose Volumes, 2019-2023



6.2.1 Trip Purpose by Peak Hours

Figure 38, **Figure 39** and **Figure 40** 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.), 241,200 expanded trips;
- the PM Pre-Peak Period (two hours from 2:00 p.m. to 3:59 p.m.), 262,000 expanded trips; and
- the PM Peak Period (two hours from 4:00 p.m. to 5:59 p.m.), 341,500 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, 49% of all the trips are headed to the usual work. The proportion of serve passenger trips was second highest at 15%, with an estimated 35,100 serve passenger trips in this period. Examining the data more closely reveals that 97% 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 (18%) are highest after return home trips (42%). In third place, 9% of all trips were serve passenger trips, with an estimated 24,200 such trips. Of these, 72% were pick-ups and 28% were drop-offs.
- During the PM Peak period, shopping trips (14%) remain highest after return home trips (53%). Recreational trips take the third place at 9%. 6% of all trips were serve passenger trips, with an estimated 18,800 such trips, a lower volume than that observed in the preceding two hours. Of these, 70% were pick-ups and 30% 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.

Figure 38. AM Peak Trip Purposes

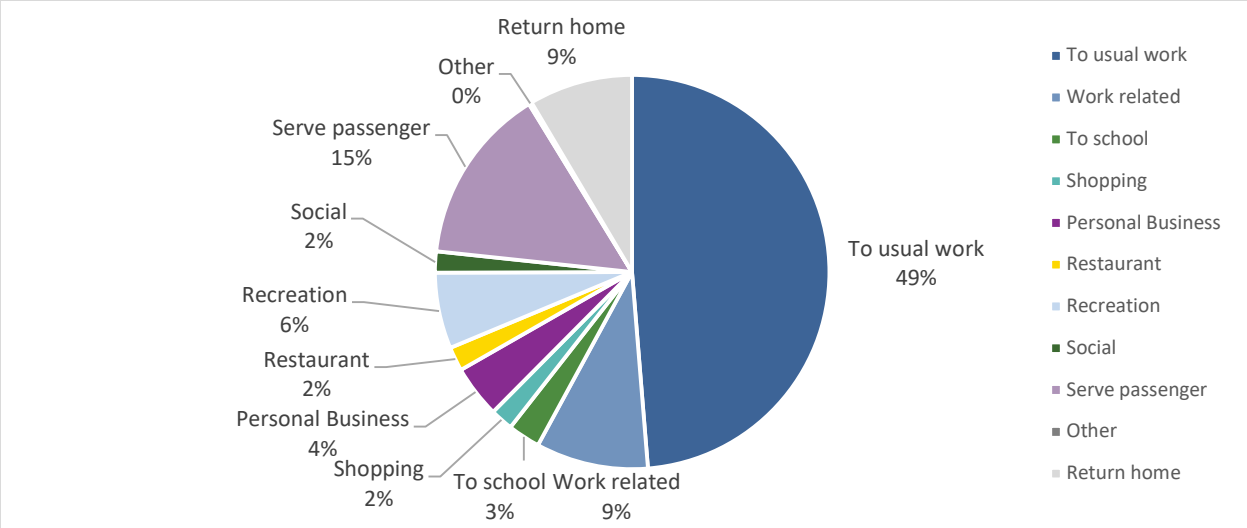


Figure 39. PM Pre-Peak Trip Purposes

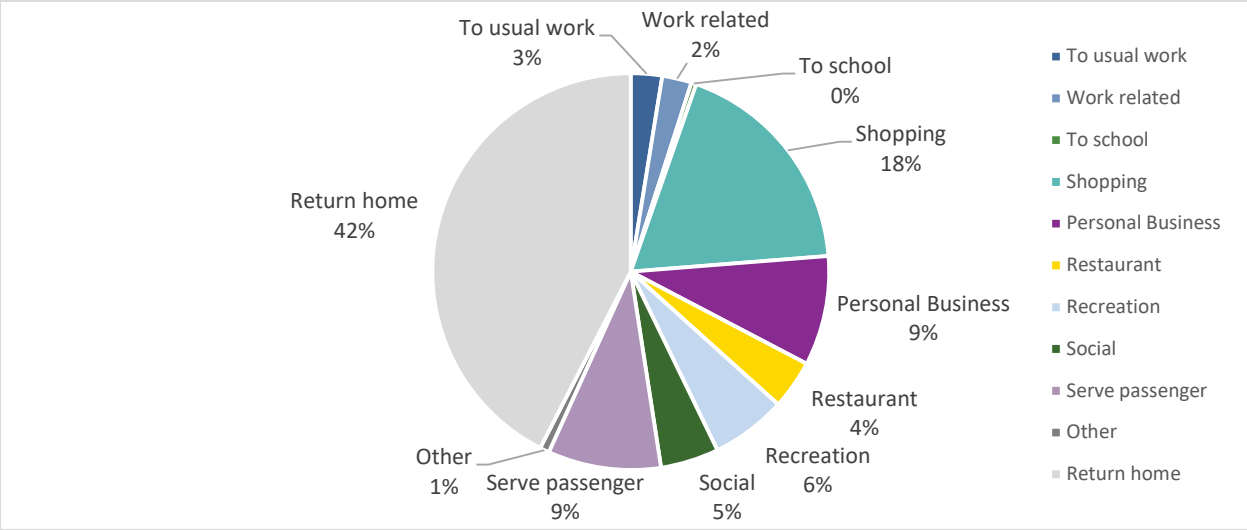
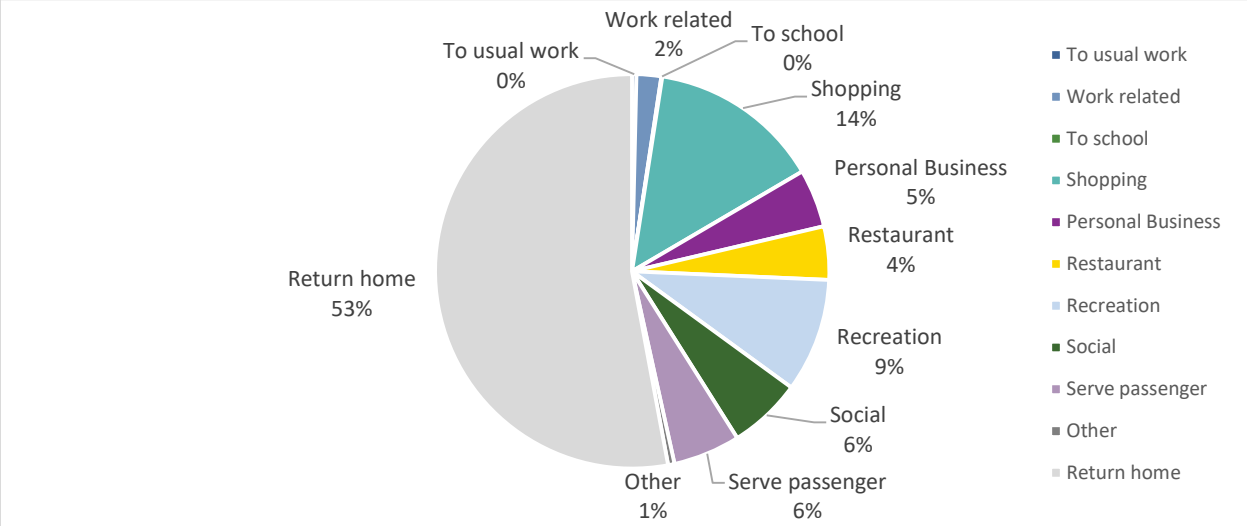


Figure 40. PM Peak Trip Purposes



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, SkyTrain is primary over Bus)
2. Auto driver
3. Auto passenger
4. Bicycle
5. Taxi
6. Uber
7. Motorcycle

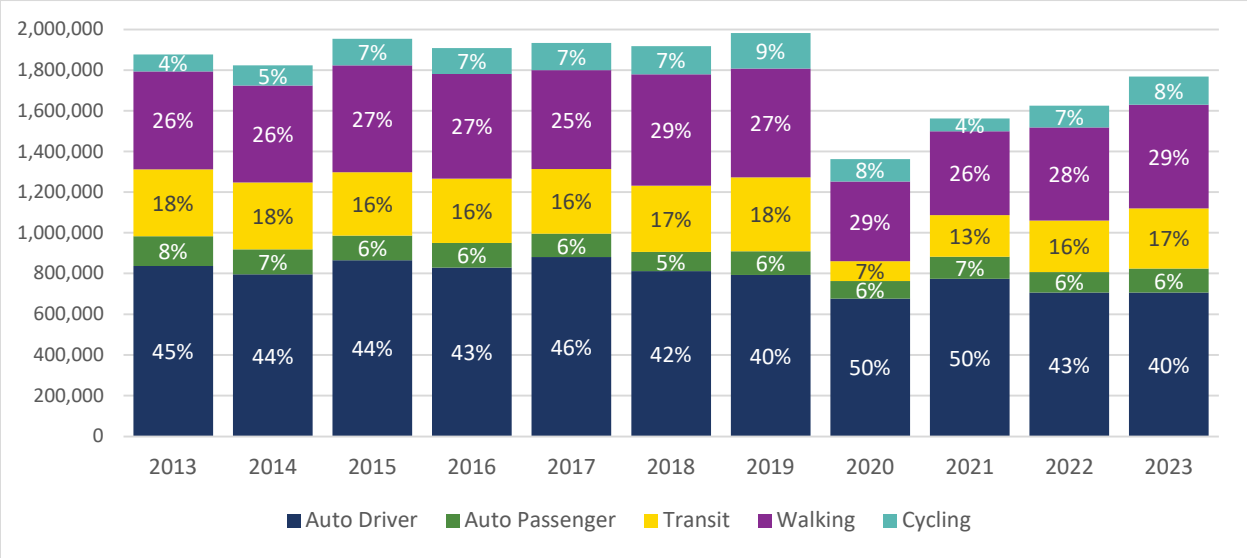
8. Other Mode (e.g., other communal mode, school bus, etc.)
9. Walk (as the only mode, i.e., walked the entire way)

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 41 shows the mode shares of the 1,769,000 daily trips made by residents of Vancouver in 2023 and for daily trips made in 2013 through 2023, for comparison. Auto trips (driver and passenger combined) account for 46% of all daily trips, which is slightly lower than 2022 (49%) and 2021 patterns (57%), but similar to 2019 (46%). Compared to before the onset of the COVID-19 pandemic in 2019, the number of daily trips has decreased by 11% but the mode shares are relatively similar to what was observed in 2019. This likely indicates that Vancouver residents have reduced trips compared with pre-pandemic levels regardless of which mode they use for travel.

Figure 41. Trip Mode Share and Daily Volumes by Year[27]



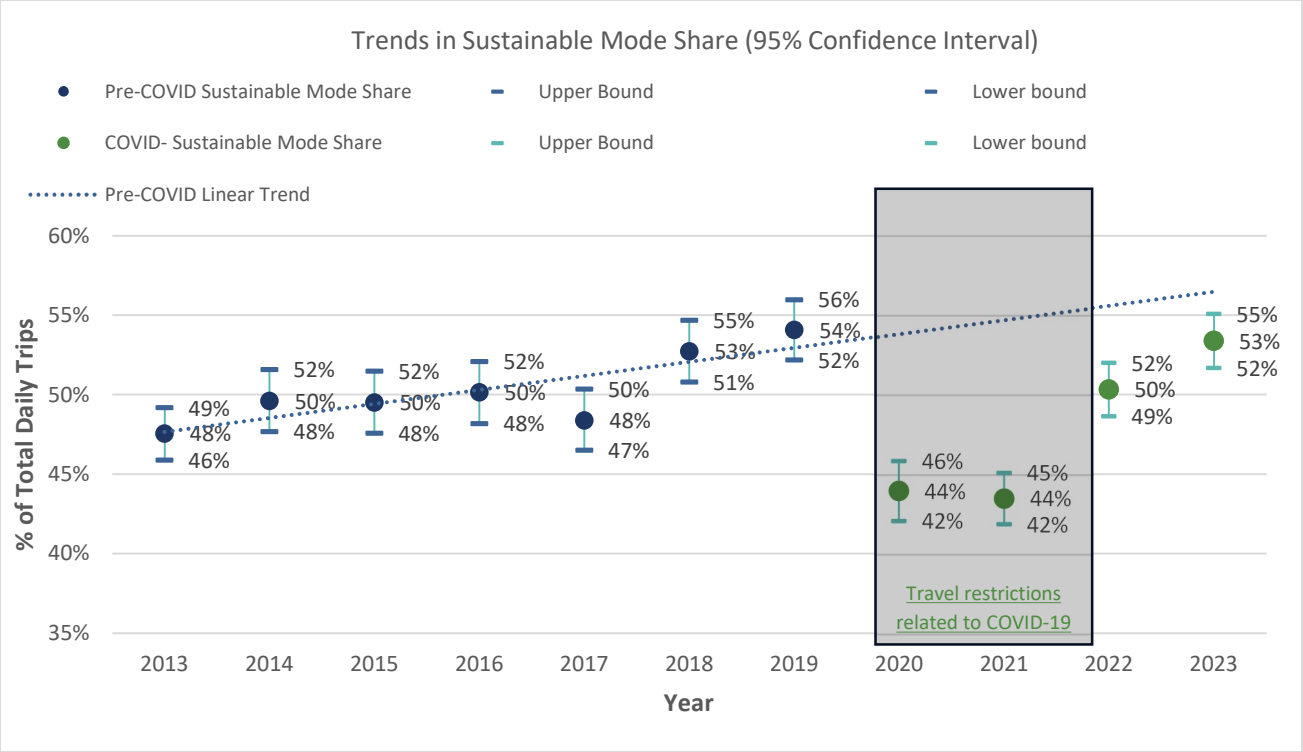
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Auto Driver	836,300	795,300	865,800	829,600	880,300	811,600	792,900	676,400	773,300	706,200	706,200
Auto Passenger	147,200	122,900	120,600	121,200	116,000	94,600	117,100	86,200	108,600	100,600	118,000
Transit	328,500	328,600	311,400	314,800	317,600	325,400	362,900	98,200	204,900	253,200	296,200
Walking	480,600	477,200	525,500	514,600	485,500	547,000	535,000	391,600	412,800	458,300	509,000
Cycling	83,300	99,100	131,000	128,100	133,300	139,300	174,600	109,400	63,000	106,400	139,400

[27] Note: Percentages in the graph have been rounded to closest whole number. The actual percentages, presented in **Figure 43** are as follows: Auto driver (39.9%), Auto passenger (6.7%), Transit (16.7%), Walking (28.8%), and Cycling (7.9%). Auto trips sum to 46.6%, rounded down to 46% and sustainable mode shares sum to 53.4, rounded down to 53%.

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 42** 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 to 53% in 2023 which is the same as 2018 levels.

Figure 42. Sustainable Mode Share by Year with High and Low Ranges [28]



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

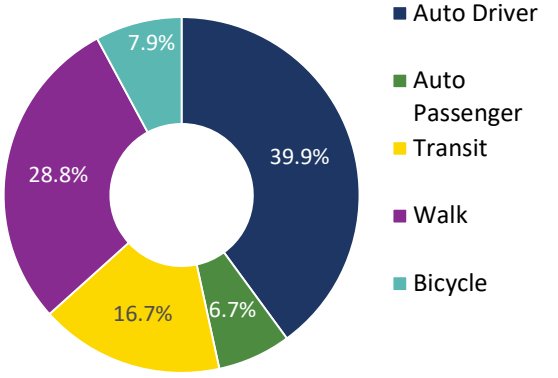
Figure 43 provides further categorization for auto trips, transit trips, and cycling trips.

- High Occupancy Vehicle (HOV) auto driver trips represent 11% of all daily trips made by residents of the city (or 30% of all trips made by vehicle) and Single Occupant Vehicle (SOV) trips account for 27% of all trips. Most vehicle trips (95%) are made by personal vehicles.

[28] 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.

- While transit trips account for 17% of all trips, many of them involve a mix of bus, SkyTrain, and walking. Transit trips made by bus account for 9% of all trips and 53% of all transit trips. SkyTrain is used for 8% of all trips or 45% of all transit trips. Transit trips are most often accessed by walking (97%).
- E-bikes account for 18% of all bicycle trips, or 1.4% of all trips. Just over three-quarters (77%) of bicycle trips are taken by non-electric personal bicycles.
- Sustainable mode shares account for 53% of all trips and active mode shares account for 37% of all trips.

Figure 43. Detailed Examination of Trip Mode Share



Auto Driver Trips based	Mode Share	% of Auto Driver Trips
Single Occupant (SOV)	27.1%	70.3%
2-Occupant (HOV-2)	9.2%	24.0%
3-Occupant (HOV-3+)	1.7%	5.7%

Auto Trips (Driver + Passenger)	Mode Share	% of Auto Trips
Personal vehicle	44.0%	94.5%
Car share vehicle	1.6%	3.5%
Taxi or ride hail	0.9%	2.0%

Transit Service(s) Used	Mode Share	% of Transit Trips
Bus	8.9%	53.1%
SkyTrain	7.6%	45.5%
SeaBus	0.1%	0.4%
Other communal modes	0.2%	1.0%

Bicycle Trips*	Mode Share	% of Bicycle Trips
Personal bicycle	6.1%	77.0%
Personal e-bike	1.4%	17.8%
Bikeshare bicycle or E-bike	0.3%	3.7%
E-micromobility or micromobility	0.1%	1.5%

Transit Access	Mode Share	% of Transit Trips
Walk Access	16.2%	96.9%
Park & Ride (drive access)	0.2%	1.0%
Kiss & Ride (passenger access)	0.1%	0.8%
Bicycle Access	0.0%	0.3%

Sustainable Mode Share	
Transit + Walk + Bicycle	53.4%

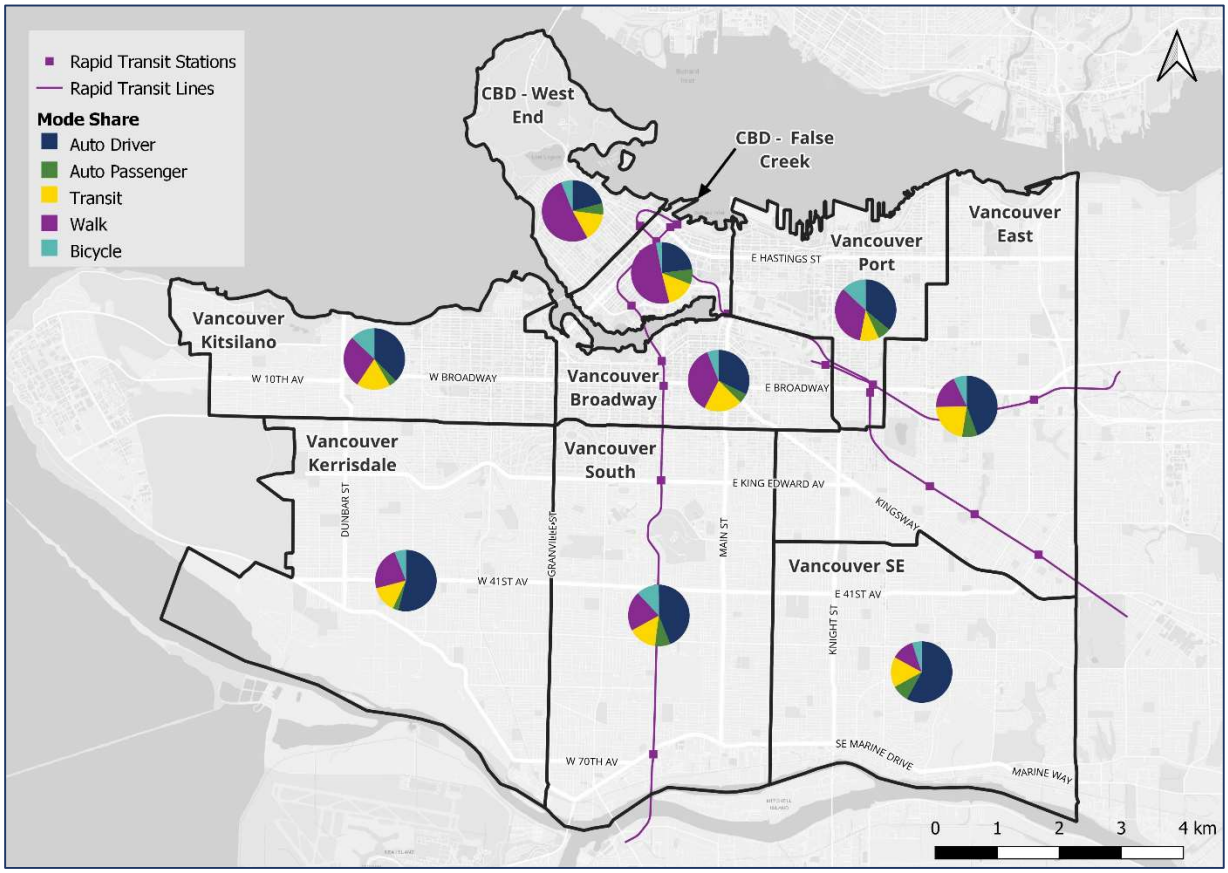
Active Mode Share	
Walk + Bicycle	36.7%

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

6.3.4 Mode Share by Zone

Figure 44 presents 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 most significant variation by zone is in the walk mode which could be related to dwelling type, population density, and proximity to employment and amenities within walking distance. Variations in transit mode may be related to proximity to the fast and frequent transit network and accessibility to employment by transit and age demography. Cycling may also be related to dwelling type, demographics, topography, and proximity to employment and amenities within cycling distance.

Figure 44. Map of Mode Share by Zone



The CBD - West End zone has the highest sustainable mode share (i.e., transit, walk, and bike) and has exceeded the City's sustainable mode share target, with 73% of daily trips being made by active transportation or transit. CBD – False Creek zone has the next highest sustainable transportation mode share and also meets the target, at 70%. The CBD zones have a high population density, high transit access, young age demography, and proximity to employment.

Vancouver Broadway (62%) and Vancouver Kitsilano (58%) 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 (57%) also has a high sustainable mode share.

The lowest sustainable mode share is seen in Vancouver Southeast, with 33% 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 43%. Vancouver Kerrisdale has the lowest population density and no rapid transit or SkyTrain service, but does have the R4 Rapid Bus.

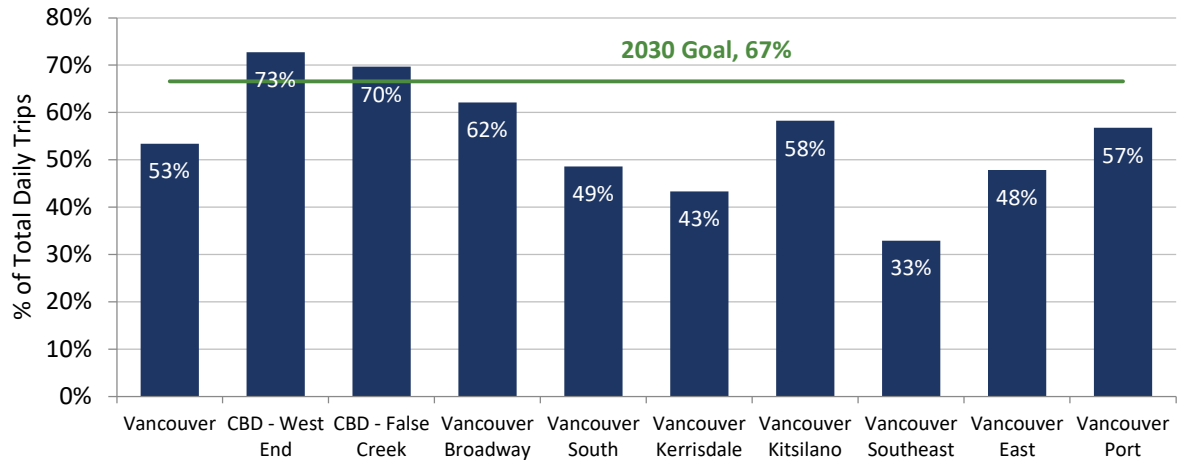
Vancouver East (48%) and Vancouver South (49%) have modest sustainable mode shares with transit being higher and active transportation being lower. These zones have lower population densities along with SkyTrain stations throughout the zone. The lack of active transportation mode share can be attributed to the scattered developments, low densities and the land topography making walking and cycling less viable options.

Table 16. Mode Share by Zone

Mode Shares	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
Population density (per ha)	58	86	169	92	45	30	61	59	59	56
Auto Driver	40%	21%	23%	32%	44%	54%	38%	58%	44%	36%
Auto Passenger	6%	6%	8%	6%	8%	3%	4%	9%	8%	7%
Transit	17%	15%	15%	20%	15%	14%	18%	16%	22%	10%
Walk	29%	52%	51%	36%	21%	23%	28%	12%	19%	34%
Bicycle	8%	6%	3%	6%	12%	7%	12%	5%	7%	13%
Sustainable Mode Share (Transit + Walk + Bike)	53%	73%	70%	62%	49%	43%	58%	33%	48%	57%
Active Mode Share (Walk + Bike)	37%	58%	54%	42%	33%	29%	40%	17%	25%	46%

Figure 45 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 and CBD - False Creek are the only two zones exceeding this target. Other zones are not yet meeting the target.

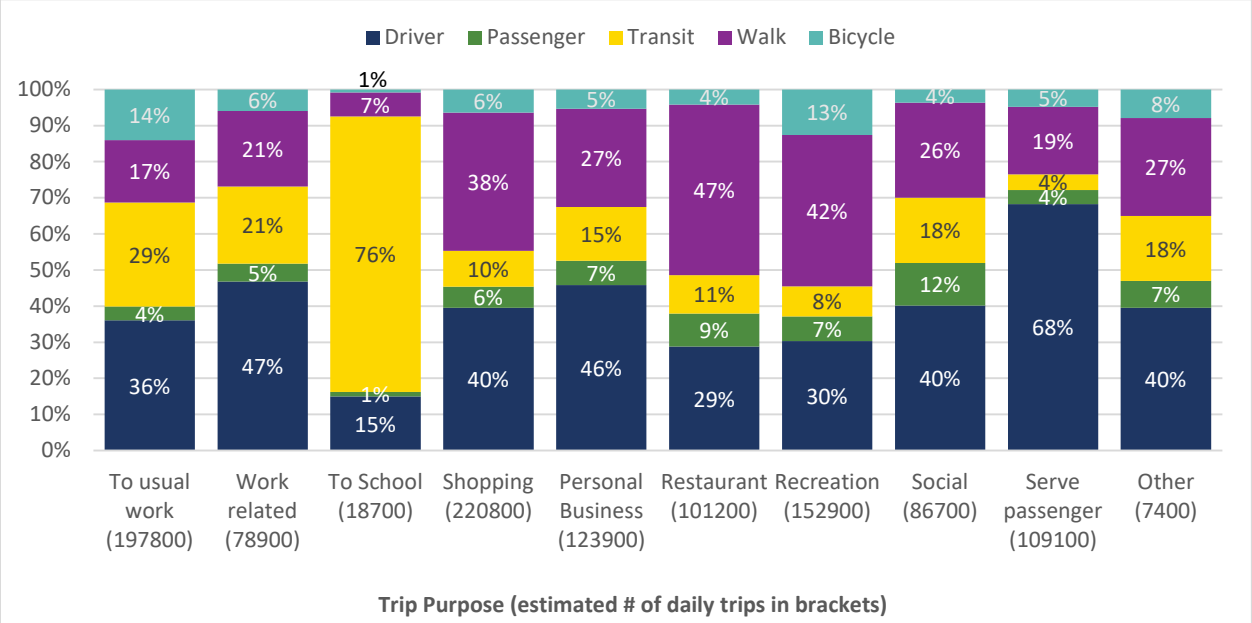
Figure 45. Sustainable Mode Share by Zone



6.3.5 Mode Share by Trip Purpose

Figure 46 shows weekday mode shares by trip purpose. The highest auto driver mode shares are for the purpose of serving passengers (68%), work-related trips (47%) or personal business trips (46%). Passenger auto trips are most often for social purposes (12%) or trips to restaurants (9%). Similarly, walk mode shares are highest for trips to restaurants (47%) and trips for recreational purposes (42%). The largest percentage of transit trips are trips to school (76%), followed by trips to work (29%). Finally, cycling mode shares are highest for work commutes (14%), followed by trips for recreational purposes (13%).

Figure 46. Weekday Mode Share by Trip Purpose [29]



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 47 shows mode shares by age group.

- Auto driver mode shares are highest for survey participants over the age of 45, ranging from 45% to 49%, and lowest for participants under the age of 24 (19%).
- Participants over the age of 75 had the highest auto passenger mode share (11%) while participants aged 35 to 64 years old had the lowest passenger mode share (4% to 6%).
- Transit mode shares are highest for the 18- to 24-year-old age group, at 47%, decreases with age, with 23% for 25- to 34-year-olds, 16% for 35- to 44-year-olds and a more consistent range of 9% to 12% for ages 45 and older.

[29] Mode shares 'to school' and 'other' purposes are based on a small sample size (n=37, n=39), interpret with caution.

- Walk mode share is highest amongst those 25 to 34 years old (32%) and ranging from 26% to 30% for ages those 35 and older.
- Cycling mode shares are highest amongst those between the ages of 25 and 64, ranging from 8% to 10%, and lowest for those over the age of 75 (3%).

Figure 47. Trip Mode Share by Respondent Age Group[30]

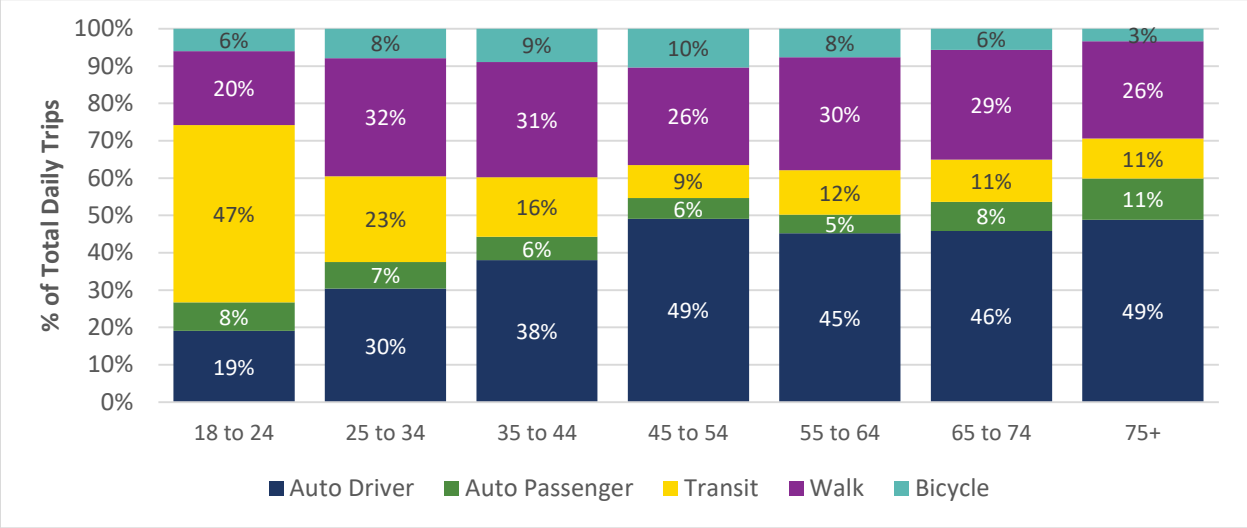
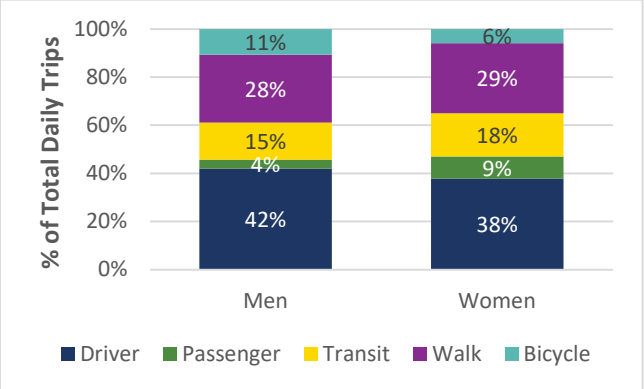


Figure 48 shows mode share by gender. Women are slightly less likely to be auto drivers (38%) or cyclists (6%) and more likely to be auto passengers (9%) compared to men (42%, 11%, and 4% respectively). Compared to the previous year, the sustainable mode shares of men have increased while those of women have remained relatively unchanged. This change has brought both men and women to a more similar level of sustainable mode shares. This is consistent with the other results of the survey that suggest private vehicle availability (**Section 5.3.2**) and frequency of transit use (**Section 7.4.1**) are nearly equal by gender.

Figure 48. Trip Mode Share by Gender[31]



[30] Mode shares for 18-24 years olds and 75+ are based on small sample sizes, interpret with caution.

[31] 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.

As shown in **Figure 49**, survey participants who self-identified as a visible minority population group are more likely to rely on transit (23% mode share compared to 14% for non-visible minorities). They have a smaller walk and bicycle mode share (25% and 5%) than non-visible minorities (31% and 9%).

Figure 49. Trip Mode Share by Respondent Visible Minority Population Group

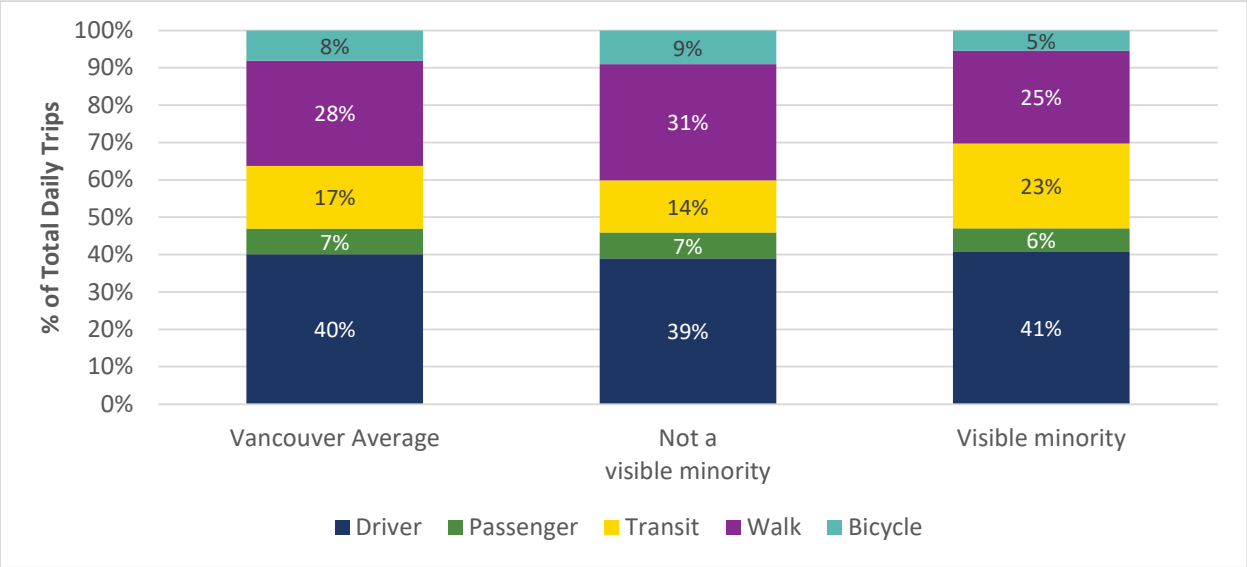


Figure 50 highlights mode shares for specific visible minority population groups. Some caution should be exercised in interpreting the results for Hispanic/Latin American, West Asian/MENA, Multiple, and Southeast Asian due to modest sample sizes (n=147, n=136, n=314, and n=255 trips respectively), while the results for East Asian and white can be viewed with more confidence (n=1,498 and n=6,697, 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 proportion of 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 50. Trip Mode Share for Specific Population Groups[32]

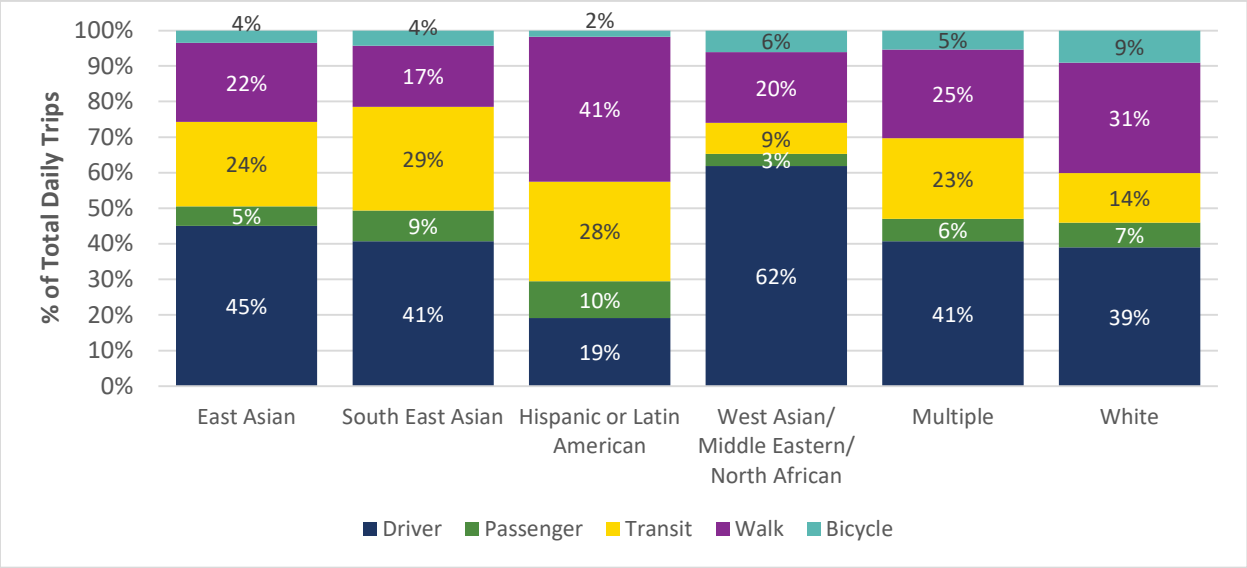
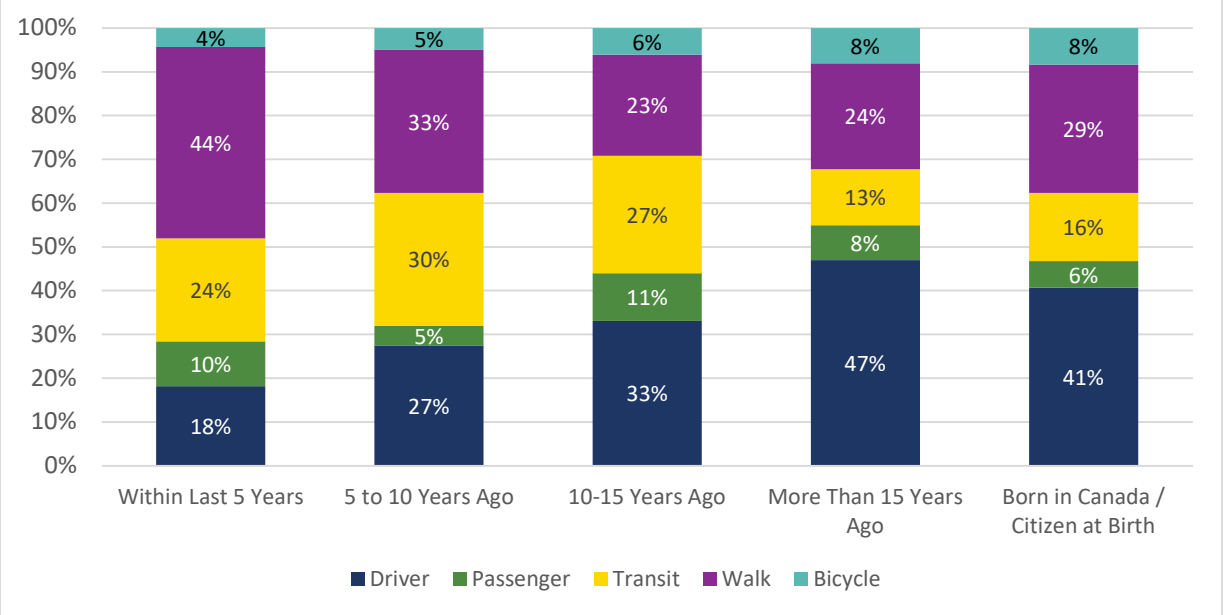


Figure 51 shows that recent immigrants to Canada (within the last 5 years) are more likely to walk (43%). Auto driver and bicycle mode share was lowest amongst participants who have lived in Canada less than five years (18% and 4%) and highest amongst the participants who have lived in Canada 15 years or more (47% and 8%).

Figure 51. Trip Mode Share by Respondent Year of Immigration[33]



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

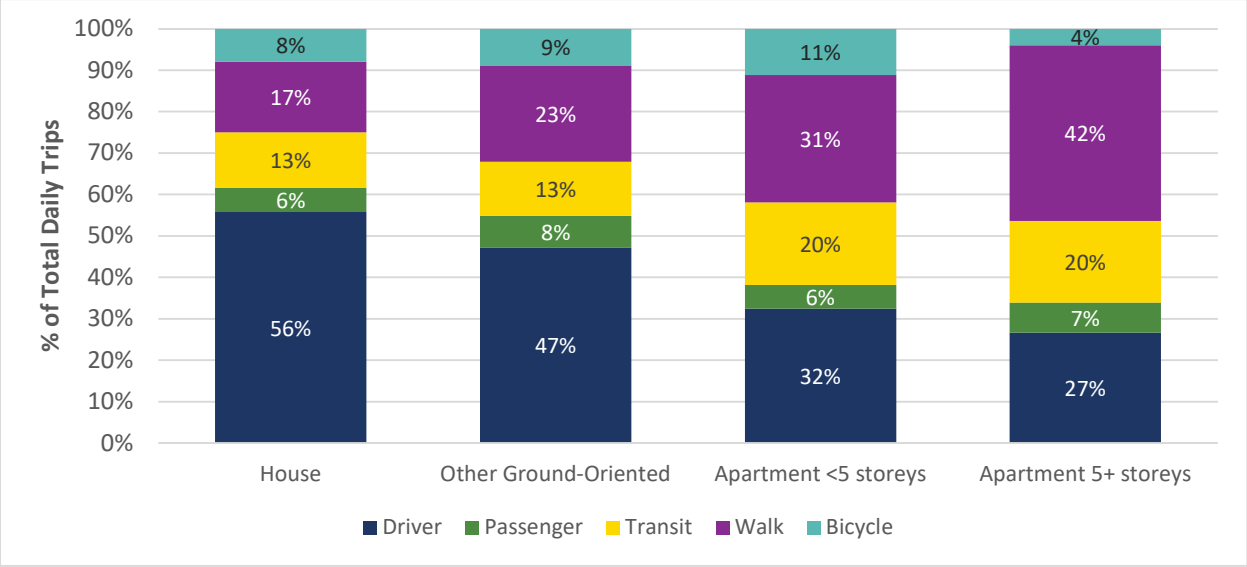
[33] Interpret results for immigrants within the last 5 years with caution due to smaller sample size (n=134).

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.

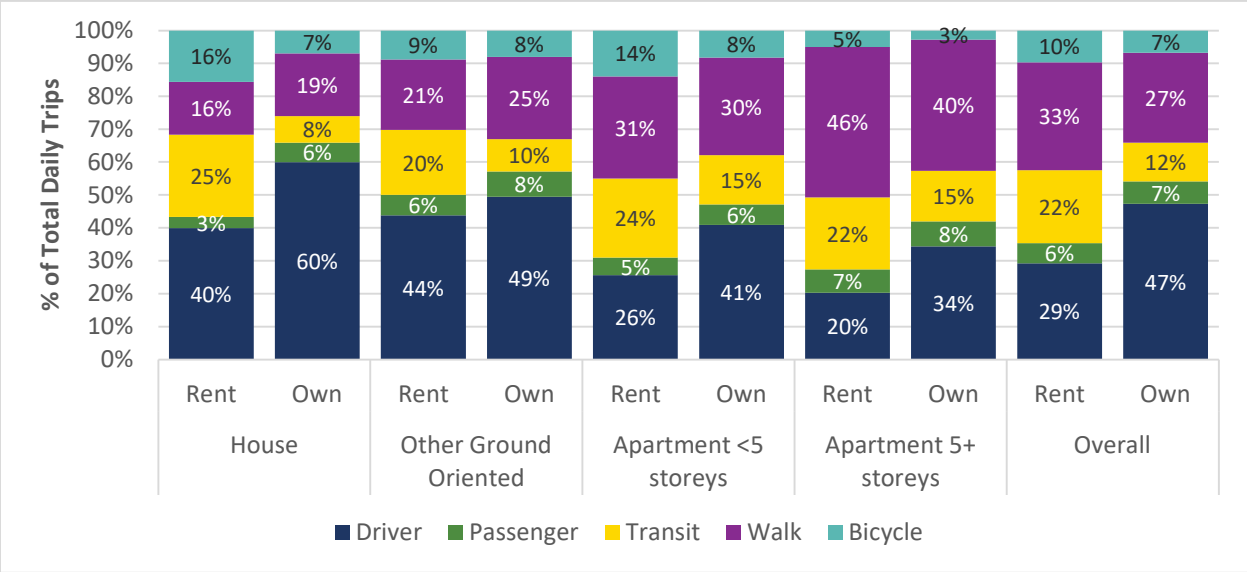
Figure 52 shows mode share by dwelling type, it shows an interesting but not surprising pattern of higher walk mode share associated with apartment buildings and higher auto driver mode shares associated with houses or other ground-oriented dwellings. This likely reflects a few things, including limited 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.

Figure 52. 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 53**, the difference for all dwelling types combined is that those who own have a higher auto driver mode share (47% versus 29%) and lower transit mode share (12% versus 22%). Participants in houses and other ground-oriented dwellings were more likely to be auto drivers than participants in apartments, regardless of whether they rent or own. It is also notable that participants who rent have equal or higher bicycle mode share, compared to those who own regardless of dwelling type.

Figure 53. Trip Mode Share by Dwelling Tenure



As shown in **Figure 54**, auto driver mode share is substantially higher amongst survey participants who have at least one household vehicle, at 50% compared to only 5% amongst those with no household vehicles. Those with no household vehicles had higher transit (34%), walk (43%) and bicycle (11%) mode shares than those with at least one household vehicle (12%, 25% and 7%).

Figure 54. Weekday Mode Share by Private Vehicle Availability

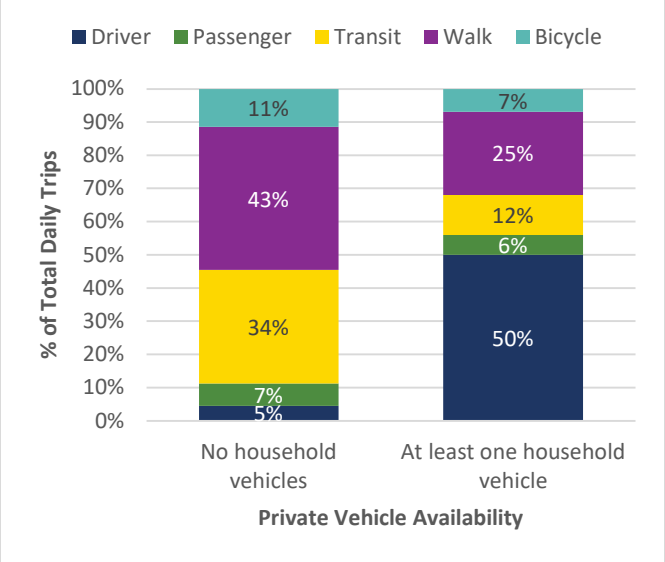


Figure 55 shows mode shares by household income.

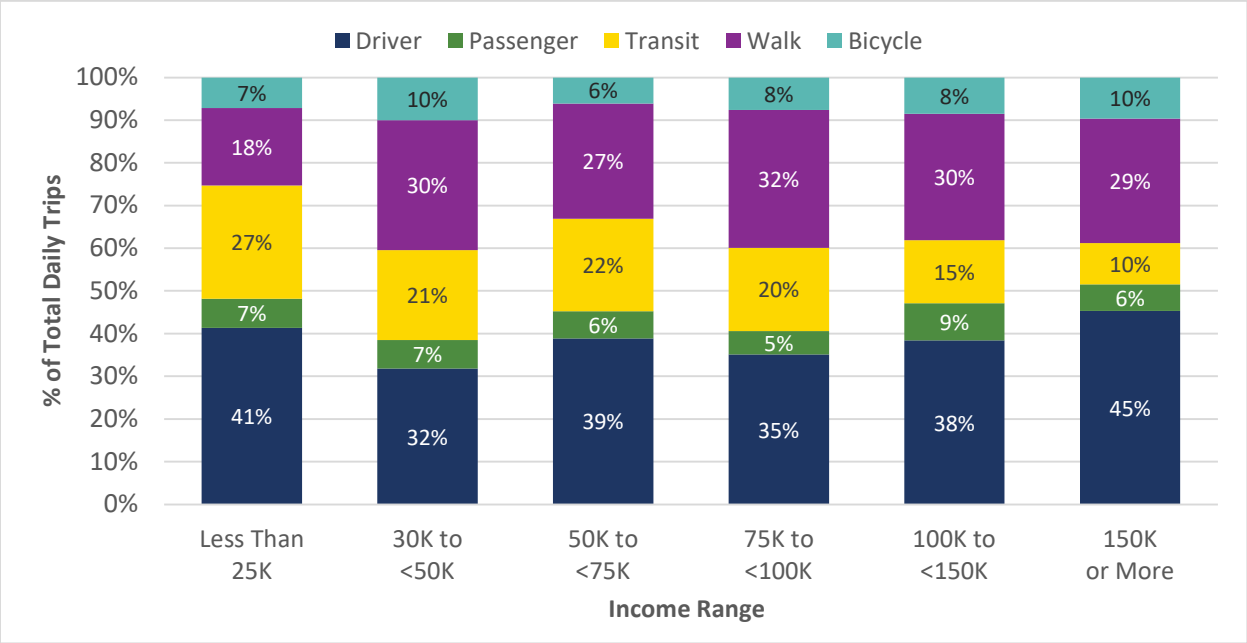
- Auto driver mode shares are highest for the households with the highest income group (45%) followed by the households with the lowest income group (41%).
- Transit use is highest amongst the lowest income households, representing 27% of all trips from residents with a household income below $25,000. Transit use decreases as household income

range increases, with a low of 10% 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 $75,000 to $100,000.
- Similarly, cycling mode shows no clear pattern. Cycling mode shares are highest amongst the households with income $30,000 to $50,000 (10%) and $150,000 and more (10%) and lowest amongst the households with income less than $25,000 (7%).

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.

Figure 55. 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 1,769,000 total daily trips made by residents of the city, 77% (1,360,200) are made within the City of Vancouver. One in five daily trips (20%, or 348,700 trips) are between the City of Vancouver and places external to the city (10% each leaving and returning to the city). Finally, about 3% of all daily trips made by City of Vancouver residents are made entirely outside of the city, with 59,900 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

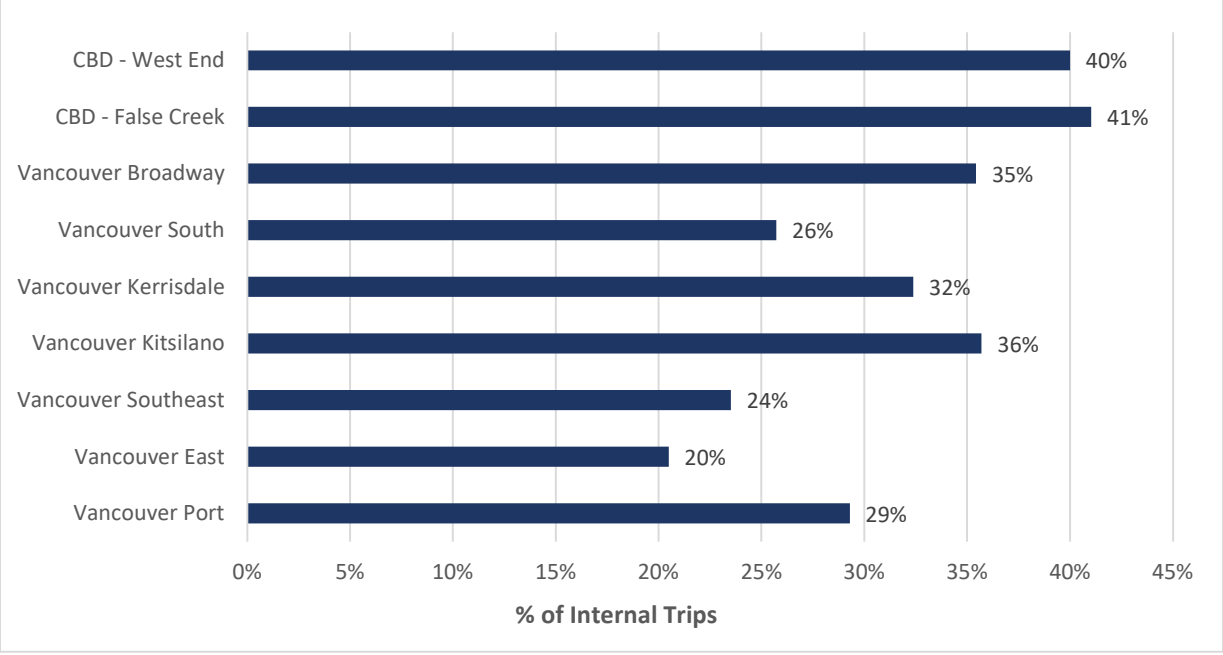
Destination																		
Origin/Destination	CBD - West End	CBD - False Creek	Van. Broad-way	Van. South	Van. Kerris-dale	Van. Kits-ilano	Van. South-east	Van. East	Van. Port	North Shore	UEL	Burnaby / New West	NE Sector / Maple Ridge / Pitt Meadows	Richmond / South Delta	North Delta / Surrey / White Rock	Langley	Other Metro Vancouver	Total Daily Trips
CBD - West End	77,800	23,000	11,500	7300	2,400	8,100	2,400	4,100	5,300	4,400	400	1,500	300	1200	100	-	100	150,000
CBD - False Creek	23,400	94,000	22,800	12,800	6,500	11,000	6,700	12,400	10,000	3,100	1400	3,400	1400	1800	1000	-	-	211,700
Vancouver Broadway	9,900	21,800	91,300	31,000	10,600	19,000	8,300	12,300	13,300	2,200	7300	6,000	600	3300	1100	-	900	239,100
Vancouver South	8,000	14,600	32,600	74,700	14,300	7,200	16,000	12,500	2,400	3,200	6100	5600	800	6900	400	-	400	205,800
Vancouver Kerrisdale	2,300	5,400	11,400	14,200	54,000	16,300	2,000	2,700	2,000	300	2900	2400	-	5700	-	200	100	122,000
Vancouver Kitsilano	7,300	11,200	18,600	7,200	15,200	72,200	1,900	4,800	4,000	2,100	8200	5800	900	2400	100	200	500	162,600
Vancouver Southeast	2,200	7,200	7,400	18,200	2,900	1,800	56,900	12,000	3,500	500	2500	17,400	600	8600	400	300	700	143,200
Vancouver East	3,300	14,400	14,800	15,400	2600	4,700	12,100	61,800	17,400	2,500	4800	22,300	600	3100	900	100	500	181,400
Vancouver Port	4,900	10,400	11,300	3,500	1,100	2,700	3,600	22,500	47,400	1,200	600	5600	200	1400	300	600	900	118,300
North Shore	5,400	1,800	2,100	2,200	300	1,100	600	3,300	2,600	5,400	-	300	-	-	-	-	-	24,900
UEL	800	1800	5300	5600	4800	7200	2100	4300	800	100	6,000	1200	-	-	300	-	-	40,300
Burnaby / New Westminster	1,600	2,800	4,000	4600	3200	5500	19,800	21,600	6800	200	-	12,900	1000	600	500	200	-	85,200
Northeast Sector / Maple Ridge / Pitt Meadows	300	1600	400	500	-	900	600	800	-	-	-	1000	6,200	-	300	-	-	12,800
Richmond / South Delta	900	1900	2700	8400	4700	3200	8800	3900	1700	-	-	600	-	12,700	200	-	400	50,300
North Delta / Surrey / White Rock	100	1000	1100	400	-	-	700	900	300	-	300	200	300	200	2,400	100	-	7,900
Langley	-	-	-	-	200	200	400	200	700	-	-	-	-	-	-	800	100	2,500
External to Metro Vancouver	900	100	300	200	100	500	800	1800	700	-	-	-	-	300	100	-	5,100	109,00
Total Daily Trips	149,100	213,200	237,600	206,200	123,000	161,700	143,500	181,900	118,900	25,400	40,500	86,200	13,000	48,300	7,900	2,500	9,800	1,769,000

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 56** highlights that CBD – False Creek and CBD – West End zones have the highest percentage of internalized trips, at 41% and 40%, 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 and Vancouver Southeast zones have the lowest percentage of internalized trips, at 20% and 24%. 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 Vancouver South, Burnaby/New West Zone and Vancouver East which are the adjacent zones.

Figure 56. 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, 32% of its HBW trips are within its own zone and 47% of

its HBO trips are within the zone. In the case of NHB trips, only 37% 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 Zone[34]

	Average across all trip purposes	Home-based work (HBW)	Home-based other (HBO)	Non home-based (NHB)
CBD - West End	41%	29%	53%	19%
CBD - False Creek	42%	32%	47%	37%
Vancouver Broadway	38%	21%	49%	21%
Vancouver South	27%	6%	40%	12%
Vancouver Kerrisdale	35%	13%	46%	13%
Vancouver Kitsilano	40%	12%	54%	19%
Vancouver Southeast	23%	4%	38%	9%
Vancouver East	22%	3%	36%	4%
Vancouver Port	30%	16%	41%	16%

6.4.3 Trip Locations by Mode

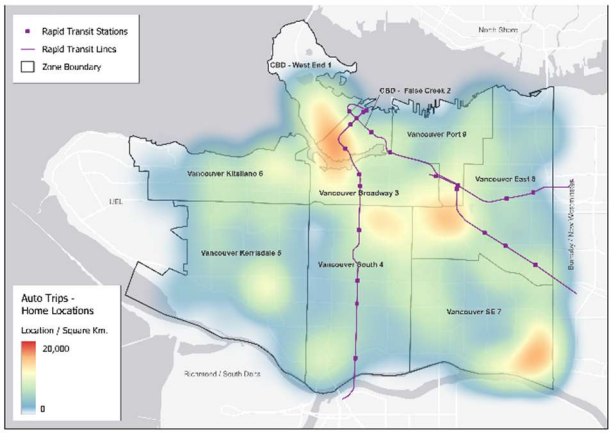
Figure 57, Figure 59, and **Figure 61** show heat maps of the home locations of home-based trips, including both work related and other home-based trips by car, transit, and cycling respectively. **Figure 58**, **Figure 60**, and **Figure 62** show similar heat maps but for non home-based trip ends (whether origin or destination). The heat scales (based on density of trip origins/destinations per square kilometre) are different for 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 59**, 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 60**, illustrates the fact that the CBD is an attractor of transit trips, and also highlights the importance of transit for travel to UBC.

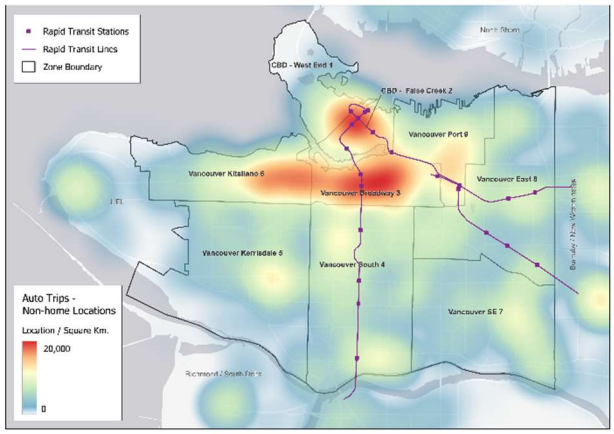
[34] Note: Excludes home-based school (HBS) due to small samples sizes.

Figure 57. Heat Map for Home-Based Locations of Auto Trips



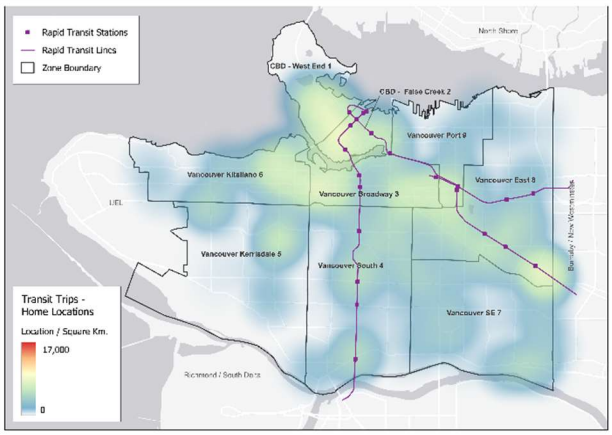
Home origins/destinations for home-based auto trips

Figure 58. Heat Map for Non Home-Based Locations by Auto



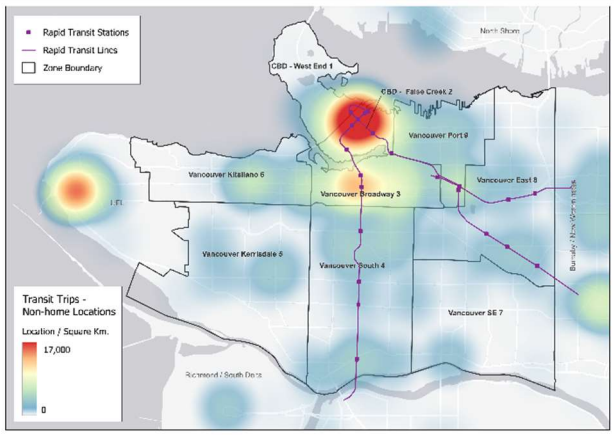
Trip origins/destinations other than home associated with car trips

Figure 59. Heat Map for Home-Based Locations of Transit Trips



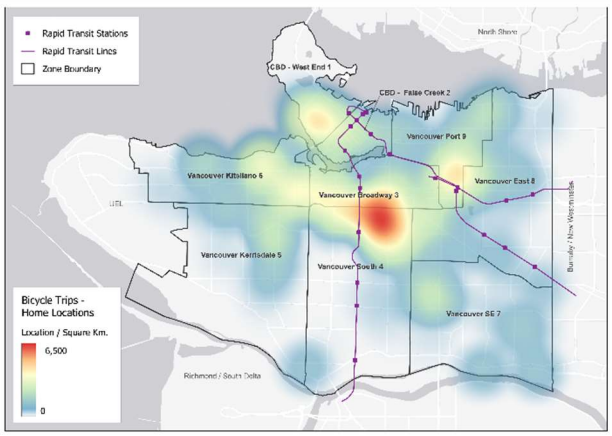
Home origins/destinations for home-based transit trips

Figure 60. Heat Map for Non Home-Based Locations by Transit



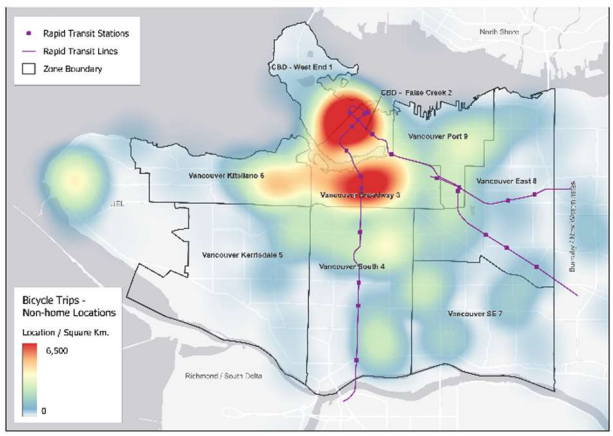
Trip origins/destinations other than home associated with transit trips

Figure 61. Heat Map for Home-Based Locations of Cycling Trips



Home origins/destinations for home-based cycling trips

Figure 62. 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.[35] **Figure 63** shows the average trip distance for home-based work trips and all trips. Transit users tend to have the longest trip distances for both home-based work trips at 10.2 km and all trips at 8.5 km. Looking at all trips, walking trips are the shortest distance at 1.2 km, bike trips are longer at 4.4 km, followed by auto trips at 7.0 km. Home-based trips to work follow a slightly different pattern with walking trips being shortest (1.5 km), followed by bike trips (6.3 km) and auto passenger trips (7.4 km).

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

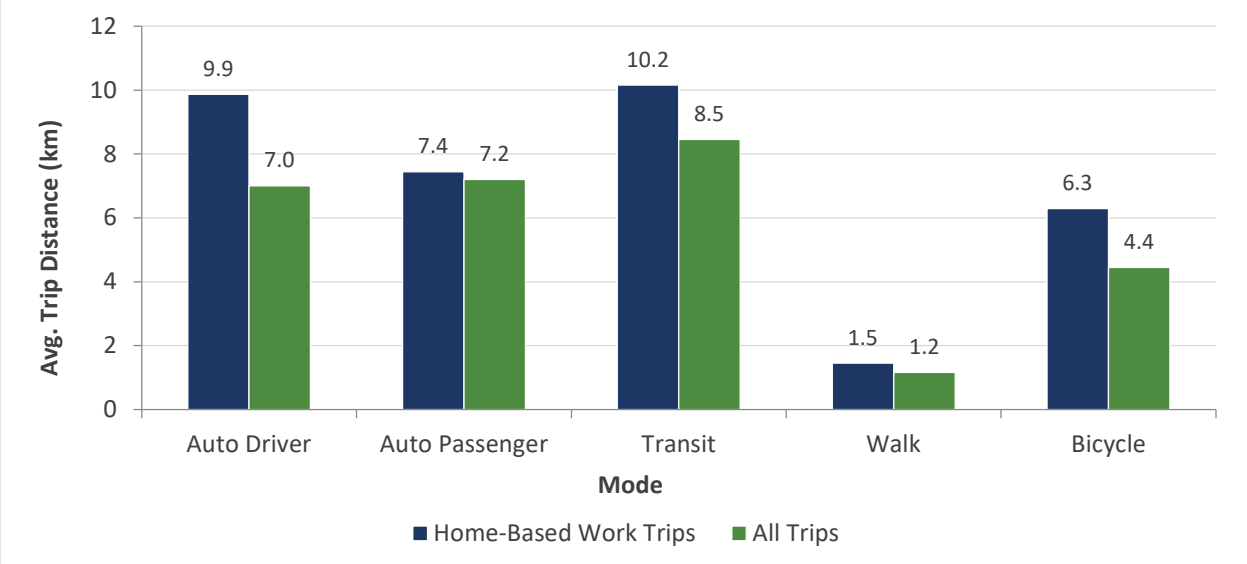


Figure 64 illustrates the average duration (in minutes) for home-based work trips and all trips. Similar to longest travel distances, transit users typically have the longest travel duration for home-based work trips (39.2 minutes) and all trips (34.2 minutes). Bicycle trips, while shorter in distance, have the second longest duration for work trips (24.8 minutes) and all trips (17.7 minutes). Auto passenger trips are among the shortest travel durations for home-based work trips (14.7 minutes) while auto trips have the shortest travel duration for all trips (13.2 minutes).

[35] 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 64. Average Trip Duration for Home-based Work Trips and All Trips

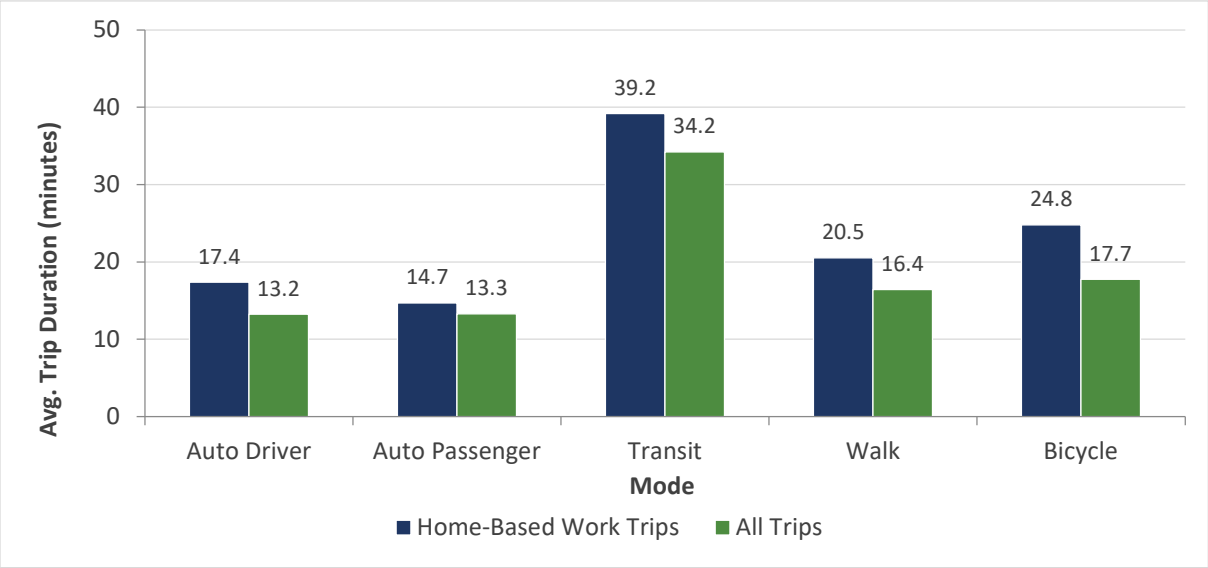


Figure 65 shows the daily person-km trips on weekdays across all modes. Even though the average distance travelled by auto drivers is less than transit, auto drivers account for the largest share of total daily person-km, more than two times the total for transit, due to the greater auto mode share of daily trips.

Figure 65. Total Daily Person-KM on Weekdays

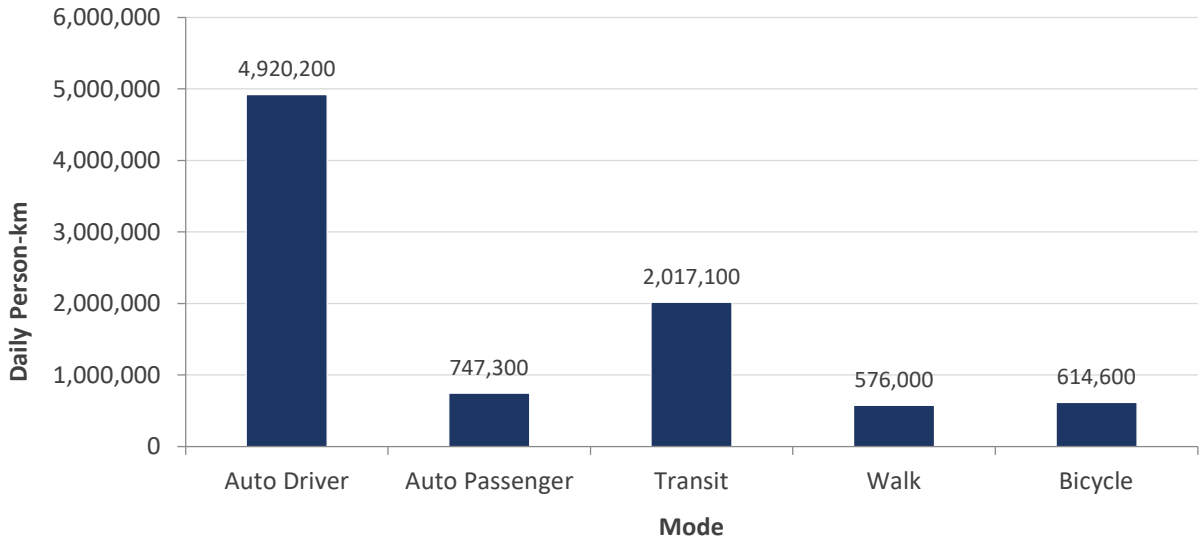


Figure 66 and **Figure 67** show the distributions of the estimated trip distances and durations by different modes of travel. This breakdown reveals some interesting findings:

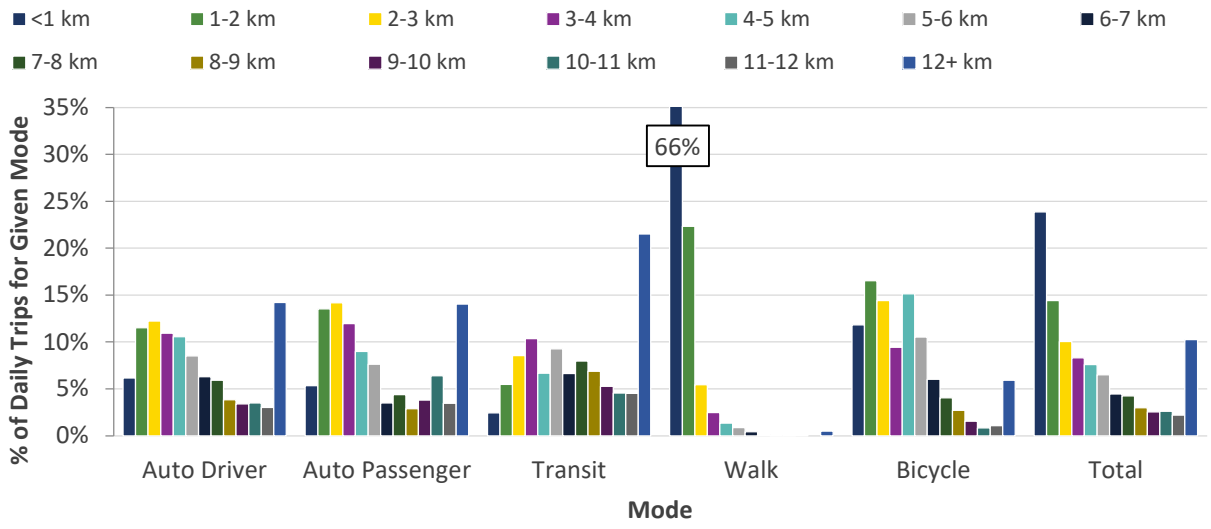
- About half (51%) of all auto driver trips are within a 5 km drive, 28% are a 5 to 10 km drive, while 21% are 10 km or more. Two-thirds (67%) would take less than 15 minutes to drive.
- 33% of transit trips are within 5 km (on available routes for the time of day of travel, including distance to walk to/from the transit stop), 36% are within 5 to 10 km, and 31% 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 13% of transit trips take less than 15 minutes, 34% are between 15 and 30 minutes, 27% between 30 and 45 minutes, and 25% are 45 minutes or more.

- Just over two-thirds (66%) of walking trips made on available sidewalks and walking paths are within a 1 km walk, 22% are between 1 to 2 km, and only 11% are greater than 2 km. In terms of duration, 23% are less than a 5-minute walk at average walking speed (of approximately 4.5 kmph), 27% are between 5 and 10 minutes, 19% are between 10 to 15 minutes, and 31% are more than 15 minutes.
- Just over one-quarter (28%) of cycling trips are within 2 km on available bicycle routes and roads, 39% are between 2 to 5 km, 25% are within 5 to 10 km, and only 8% are greater than 10 km. Half (50%) of these trips take less than 15 minutes, 37% take 15 to 30 minutes and the remaining 13% trips take longer than 30 minutes.

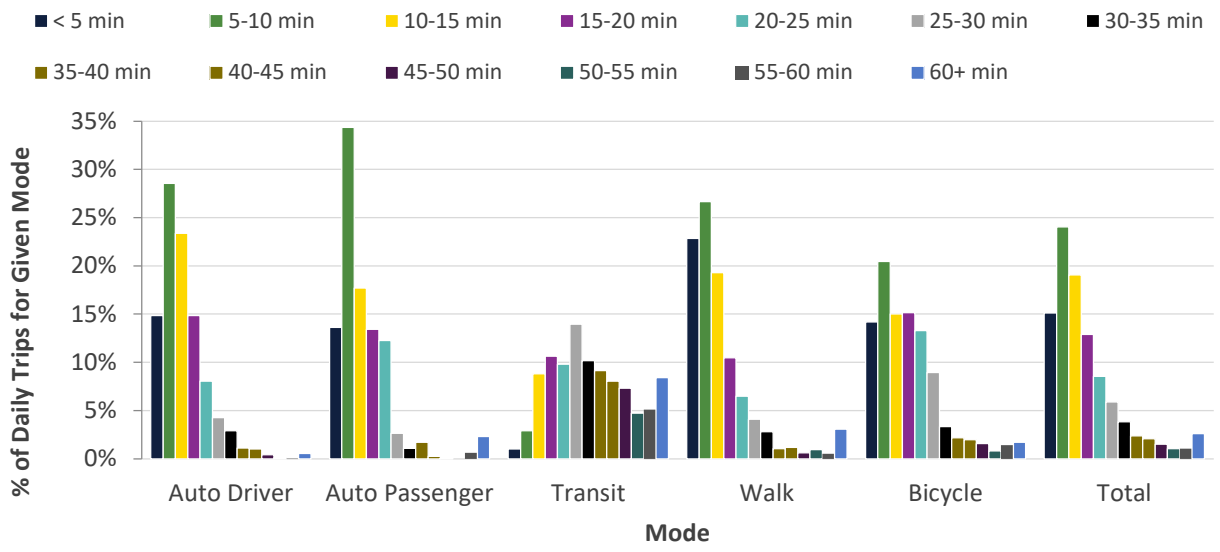
Of note, the trip lengths of daily trips by transit are more normally distributed while the trip length distributions of all other modes are skewed towards shorter distances. Additionally, the percentage of short-distance trips (<5 km) by transit is similar to medium (5 – 10 km) or long-distance trips (>10 km). This may indicate the user's reliance on the transit for medium and long-distance commutes. It is also likely that users prefer to take transit instead of using a vehicle for those long-distance daily trips which have reasonable transit connectivity to save the fuel and avoid driving fatigue. Further, even though the commuting times in transit are higher than auto for the same trip length, this time may not be perceived as wasted time. People may use plenty of ways to maximize their productivity by listening to audiobooks/music, reading news, making calls, catching up on their emails, and planning their day.

Figure 66. Distribution of Trip Distances by Mode [36]



[36] 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.

Figure 67. Distribution of Trip Durations by Mode [37]



6.6 Walkability and Bikeability of Motorized Trips

The trips captured in the 2023 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).[38] 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 walking routes. If the cycling or walking distance was found to be within the appropriate threshold, the trip was deemed bikeable or walkable for the purpose of this analysis. Identification of walkable or bikeable distance was undertaken

[37] 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 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.

[38] 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.

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 40% of trips that are auto driver trips, about 12% are bikeable but not walkable and 6% are walkable or bikeable. As shown in **Figure 68**, this suggests that overall, 18% 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 6% of all trips were auto driver trips within a reasonable distance for potential mode-shifting to walking. It should be noted that it may not be possible to convert all potential bikeable or walkable trips to actual bike or walk mode due to several factors not considered in the estimation of these trips such as availability of active transportation infrastructure, safety conditions, terrain and weather elements.

Figure 68. Walkable and Bikeable Trips from Current Mode Share Based on Trip Distance

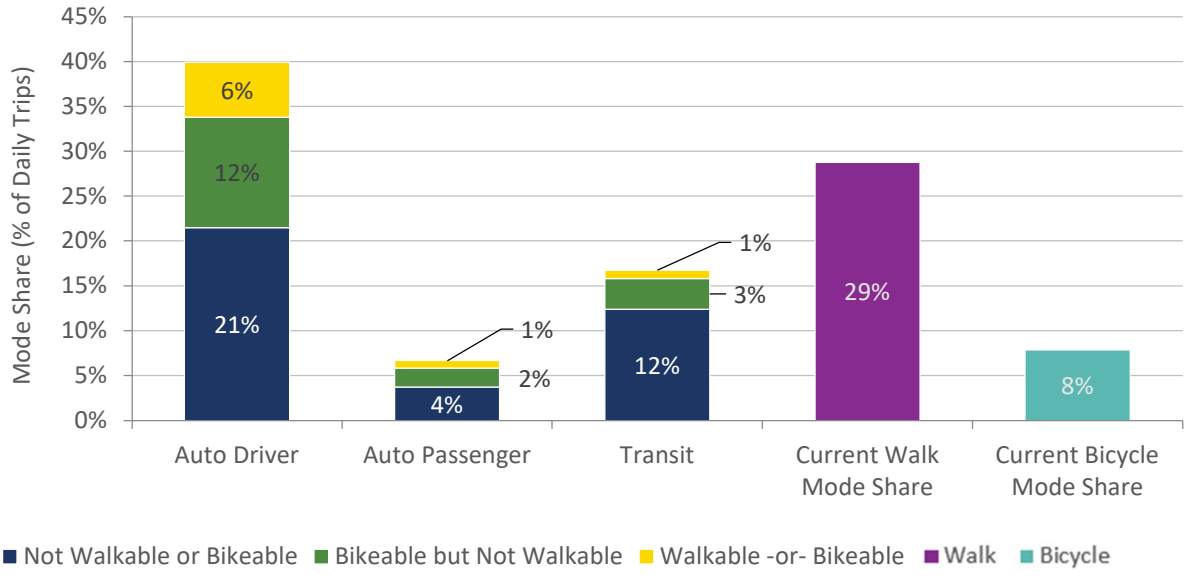


Table 19 shows mode shift potential for trips taken by auto drivers by zone. While reading this table, zones with lower mode shift potential should be interpreted as zones with high number of residents already biking or walking wherever they can.

Mode shift potential (from auto driver to cycling) ranges from 7% for CBD – West End Zone to 26% for Vancouver Kerrisdale Zone. Notably, at least one in four auto trips made by residents of Vancouver Kerrisdale and Vancouver Southeast are within what is considered a bikeable distance. About one in five trips made by residents of Vancouver South, Vancouver Kitsilano, and Vancouver East are considered bikeable. Mode shift potential from auto driver to walking is lowest in the CBD zones at 3% each and highest in Vancouver Kerrisdale (9%) and Vancouver Southeast (8%).

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

	Vanc-ouver	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	37,600	38,600	63,800	107,500	84,800	66,100	139,600	121,800	46,400
Auto Driver Mode Share	40%	21%	23%	32%	44%	54%	38%	58%	44%	36%
Bikeable Trips	326,100	13,300	19,600	34,900	52,000	40,400	37,500	56,300	52,300	19,800
% of Auto Driver Trips	46%	35%	51%	55%	48%	48%	57%	40%	43%	43%
Mode shift potential	18%	7%	11%	18%	21%	26%	22%	23%	19%	15%
Walkable Trips	108,500	4,800	5,300	13,100	17,500	14,500	12,000	18,000	16,100	7,200
% of Auto Driver Trips	15%	13%	14%	21%	16%	17%	18%	13%	13%	16%
Mode shift potential (% of all trips)	6%	3%	3%	7%	7%	9%	7%	8%	6%	6%

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.

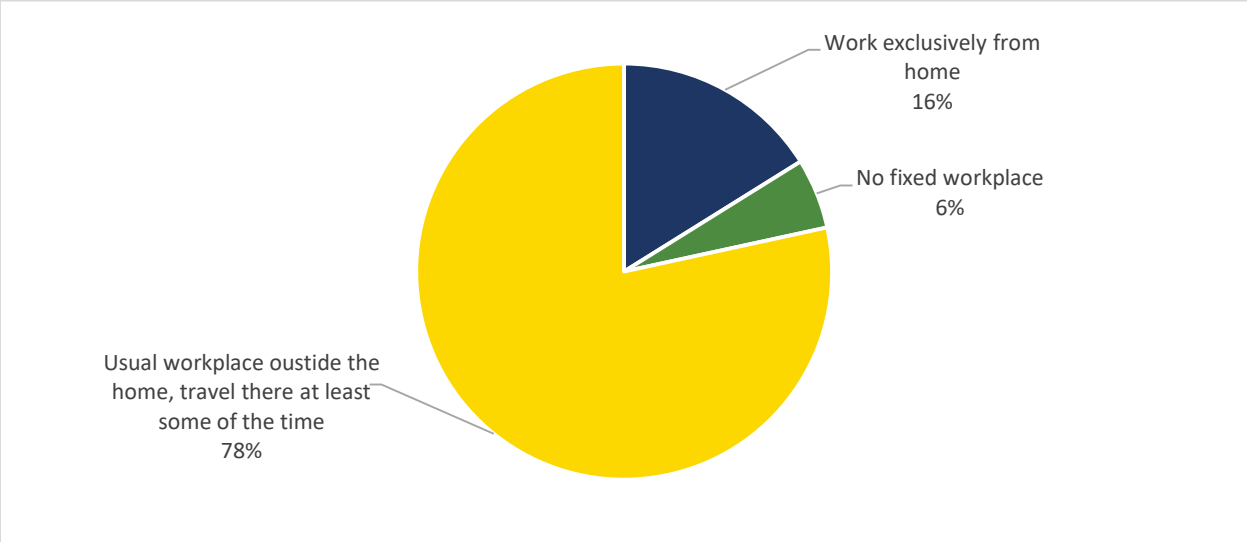
7.1 Work Commute Patterns

Commute travel patterns discussed in this section include city residents' reported type of workplace/work arrangement (i.e., work from house 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 69**, 16% of the 383,100 workers who live in Vancouver work exclusively from home, and 6% have no fixed workplace address. Most workers (78%) have a usual place of work that they travel to at least some of the time. Compared to 2022, the percentage of workers who work exclusively from home has decreased slightly (from 18% in 2022 to 16% in 2023) and the percentage who have a usual place of work that they commute to at least some of the time has increased slightly (74% versus 78%). Since 2021, 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 18% in 2022 to 16% in 2023, while the proportion who reported no fixed workplace address dropped from 8% to 6%.

Figure 69. Type of Workplace



7.1.2 Usual Commute Mode

Figure 70 shows residents' usual mode of travel for commute purposes. Over one-third of Vancouver workers who commute to work at least some of the time, do so by automobile (38% as drivers and 2% as passengers). Nearly one-third (32%) commute by transit, about 14% by bike, and 12% 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 70. Usual Mode of Travel for Commute

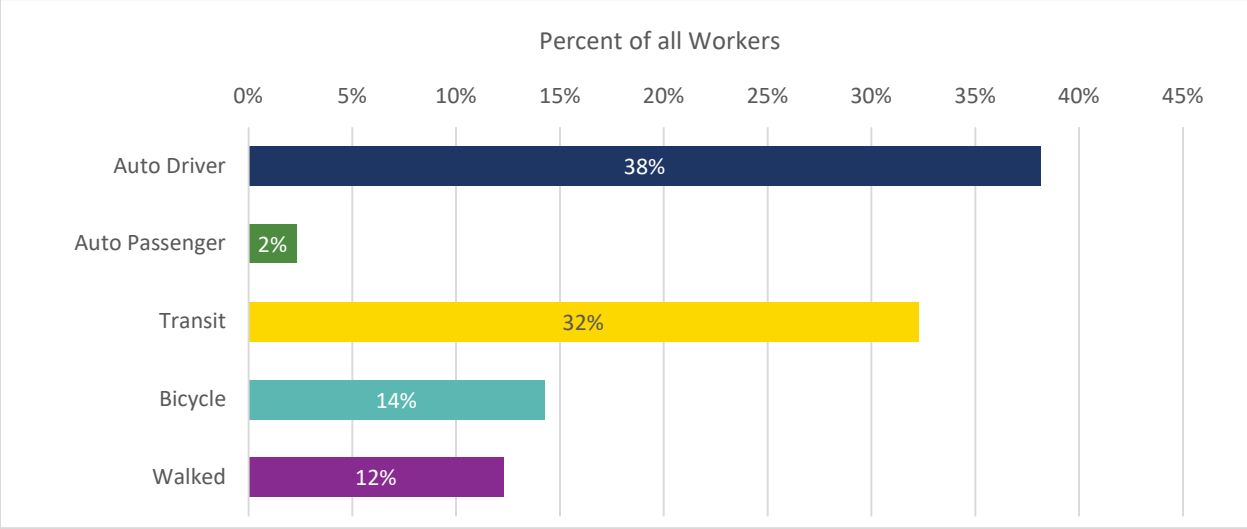
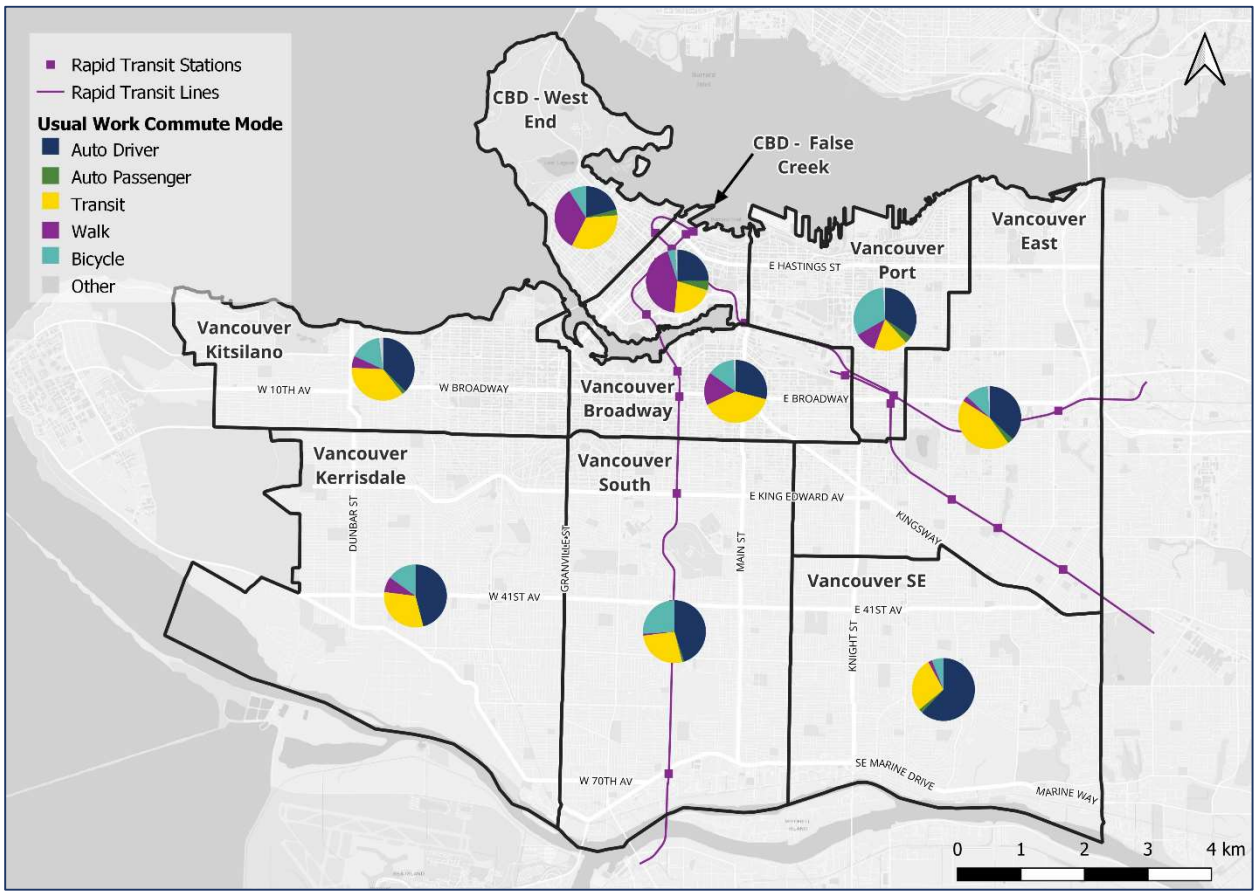


Figure 71 provides a breakdown of usual commute mode by zone. Auto driver is the most common mode across all zones ranging from 34% to 46% for most zones. Auto driver accounts for nearly two-thirds (62%) of resident's usual commute mode in Vancouver Southeast and almost half (46%) in the Vancouver Kerrisdale zone.

Sustainable transportation modes (Transit + Walk + Bike) account for more than half of residents' usual commute mode in all zones except where we see the highest percentage of auto drivers in Vancouver Southeast (36%).

Figure 71. 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. Examining telecommuting first, **Figure 72** presents percentages based on total workers. This includes the 16% of workers who work exclusively from home and the 5% 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 (27%) 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 72. Telecommuted Last Week (% of all workers)

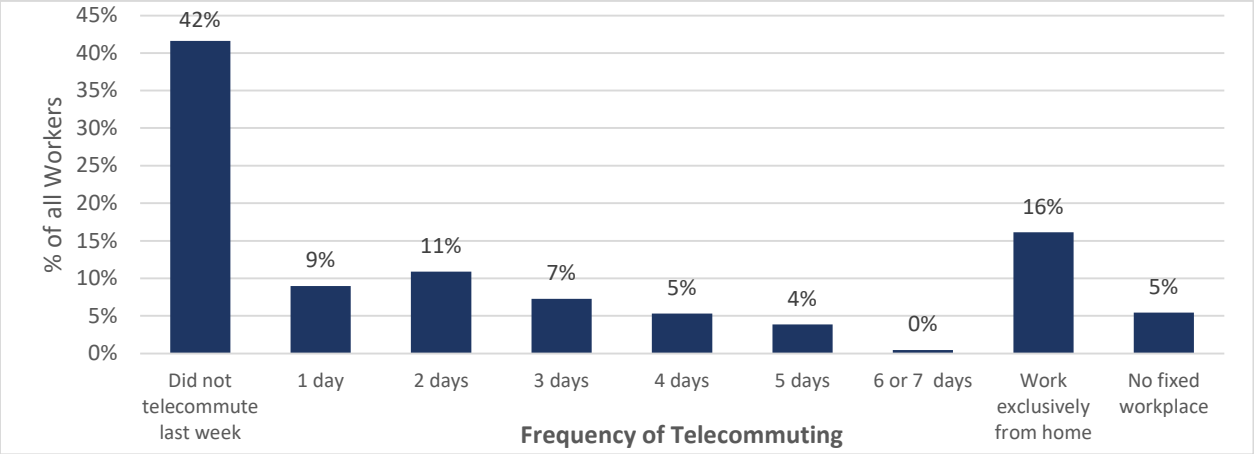


Figure 73 summarizes the frequency of commuting to work. The survey results challenge the notion that most workers have a typical Monday-to-Friday commute to work. About 29% of workers commuted to a usual workplace five or more days in the week before they participated in the survey, 15% commuted to work on four days in the previous week, and 29% commuted to work between one to three days. Another 6% 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 16% of workers work exclusively from home, while another 5% have no fixed workplace. Examination of the response to the telecommuting and commuting questions revealed at least 41% of workers with a usual workplace outside the home, representing 32% 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 73. Commuted to Work Last Week (% of all workers)

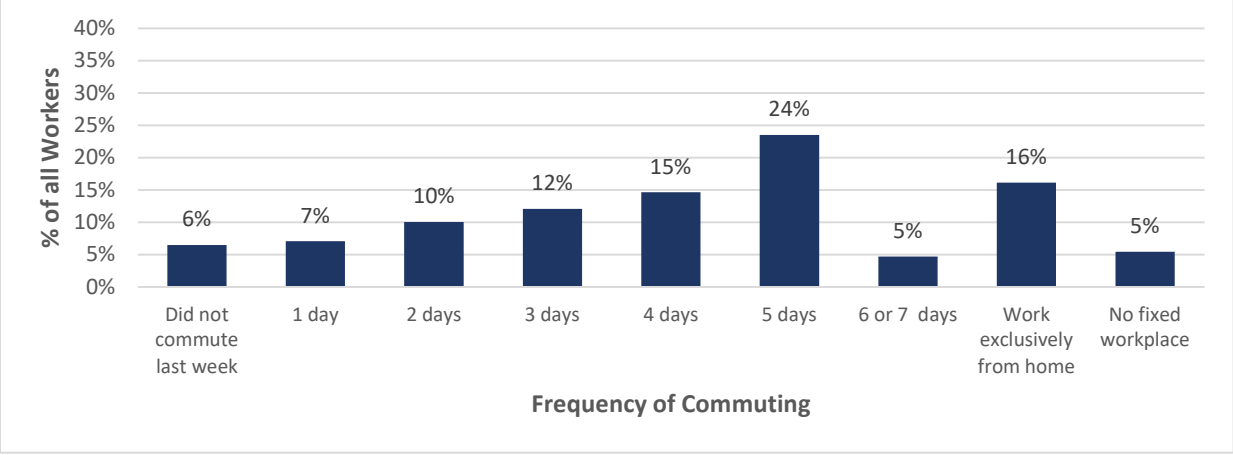


Table 20 and **Table 21** show the above data broken down by zone. In terms of telecommuting, there is some consistency across zones, with most zones having at least 29% of all survey participants who work reporting that they did not telecommute in the last week, with this percentage being highest amongst residents of Vancouver Southeast (45%), Vancouver Kerrisdale (48%) and Vancouver South (53%). Telecommuting at least two days in the last week is most common amongst residents of CBD – West End (35%) followed by Vancouver Kitsilano (34%), Vancouver East (31%), and CBD - 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 26%-36% of all workers commuting to work five days per week or more, with the exception of Vancouver Kitsilano (21%) and Vancouver Broadway (23%)[39].

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

	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 telecommute last week	42%	36%	37%	40%	53%	48%	29%	45%	42%	42%
1 day	9%	5%	9%	13%	8%	7%	13%	5%	11%	7%
2 days	11%	11%	10%	7%	8%	8%	14%	14%	11%	15%
3 days	7%	10%	8%	9%	8%	10%	5%	4%	6%	7%
4 days	5%	6%	8%	3%	2%	1%	9%	6%	8%	3%
5 days	4%	7%	3%	4%	4%	1%	5%	2%	5%	3%
6 or 7 days	0%	0%	1%	0%	1%	1%	1%	0%	0%	0%
Work exclusively from home	16%	19%	22%	15%	13%	22%	21%	13%	12%	15%
No fixed workplace	5%	4%	1%	8%	4%	3%	4%	12%	4%	8%
Subtotal at least 2 days/week	28%	35%	31%	23%	22%	20%	34%	26%	31%	28%
Subtotal at least 2 days/week or work exclusively from home	44%	54%	53%	38%	35%	43%	55%	39%	43%	43%

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	6%	5%	4%	5%	8%	6%	8%	4%	9%	7%
1 day	7%	6%	12%	8%	5%	2%	7%	5%	11%	4%
2 days	10%	14%	8%	11%	9%	12%	8%	11%	10%	8%
3 days	12%	13%	10%	10%	9%	6%	15%	12%	15%	17%
4 days	15%	13%	13%	19%	23%	13%	17%	9%	11%	13%
5 days	24%	23%	25%	23%	25%	26%	18%	23%	24%	25%
6 or 7 days	5%	4%	5%	1%	5%	10%	3%	10%	2%	4%
Work exclusively from home	16%	19%	22%	15%	13%	22%	21%	13%	12%	15%
No fixed workplace (work travel may be variable)	5%	4%	1%	8%	4%	3%	4%	12%	4%	8%

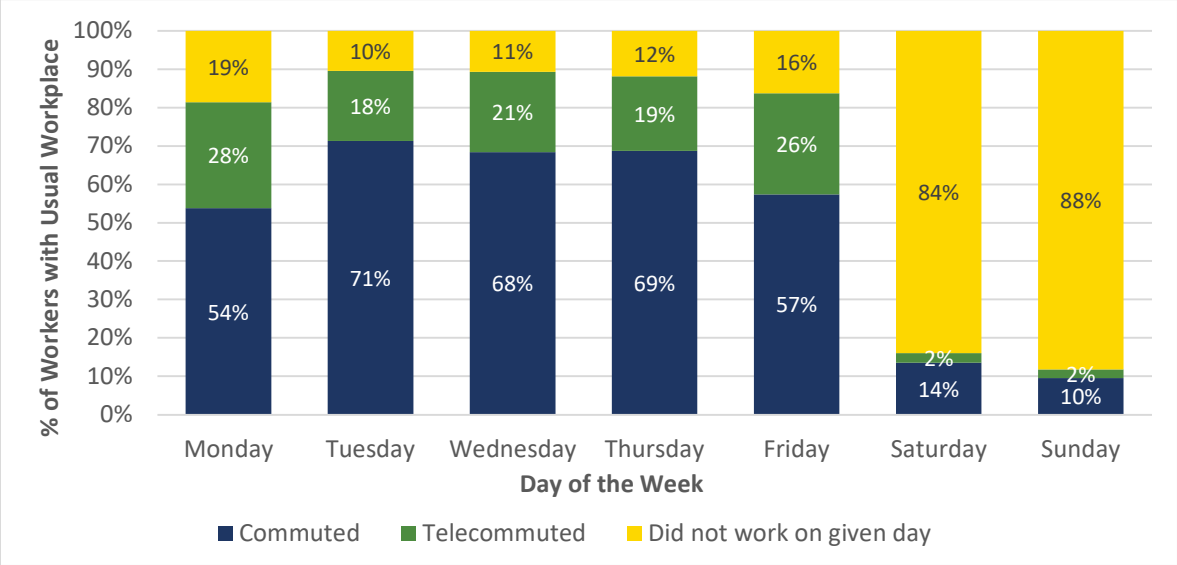
[39] Due to rounding, the percentage of workers commuting to work five days per week or more reported in the text may differ from the percentage resulting from summing percentages in the table.

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

Figure 74 and **Figure 75**, 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, 64% of people reported to commute and 22% of people reported to telecommute to work.

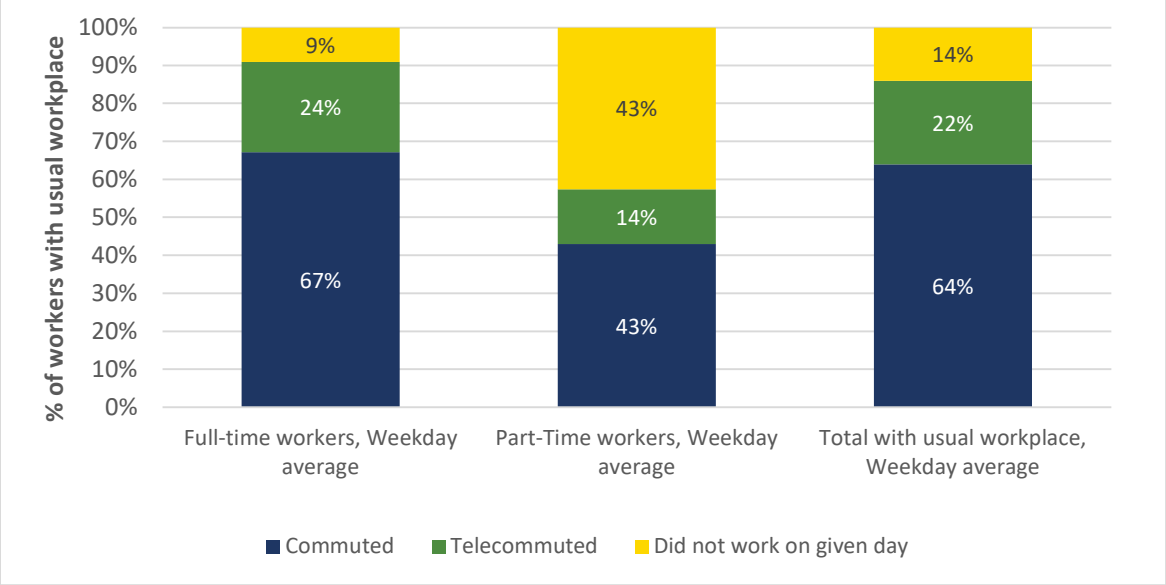
As illustrated, weekday commuting to work is highest Tuesdays through Thursdays (with 68% - 71% travelling to their usual workplace on these days), and notably lower on Mondays and Fridays, with Monday at 54% and Friday at 57%. Not all workers work on each weekday, and Monday was also the weekday with the largest number of workers reporting that they did not work on that day (19%).

Figure 74. Commute and Telecommute Pattern by Day of the Week for Workers with Usual Workplace



Averaged across all weekdays, 64% of all workers with a usual workplace commute to work and 22% telecommute rather than going into work, with the other 14% not working on the given day. These figures differ slightly for full time workers, with 67% going into work, 24% telecommuting, and 9% not working. For part-time workers, the survey results suggest that just over half work on an average weekday, with 43% travelling to work and only 14% 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. In total (not shown in the figure below), 91% of workers commuted and 46% of workers telecommuted at least one weekday.

Figure 75. Summary of Commute and Telecommute Patterns by Work Type for Workers with Usual Workplace



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 76** 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, four out of five (81%) workers work on any given day.
- More than one half (58%) either travel to their usual workplace (50%) 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 and 50% in 2022, suggesting a modest increase in travel for work.

[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).

- At least 23% work from home, with 12% being workers with a usual workplace who are working from home instead of travelling to work, and 10% 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 2022.

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.

Figure 76. Daily Work Travel and Commute Pattern

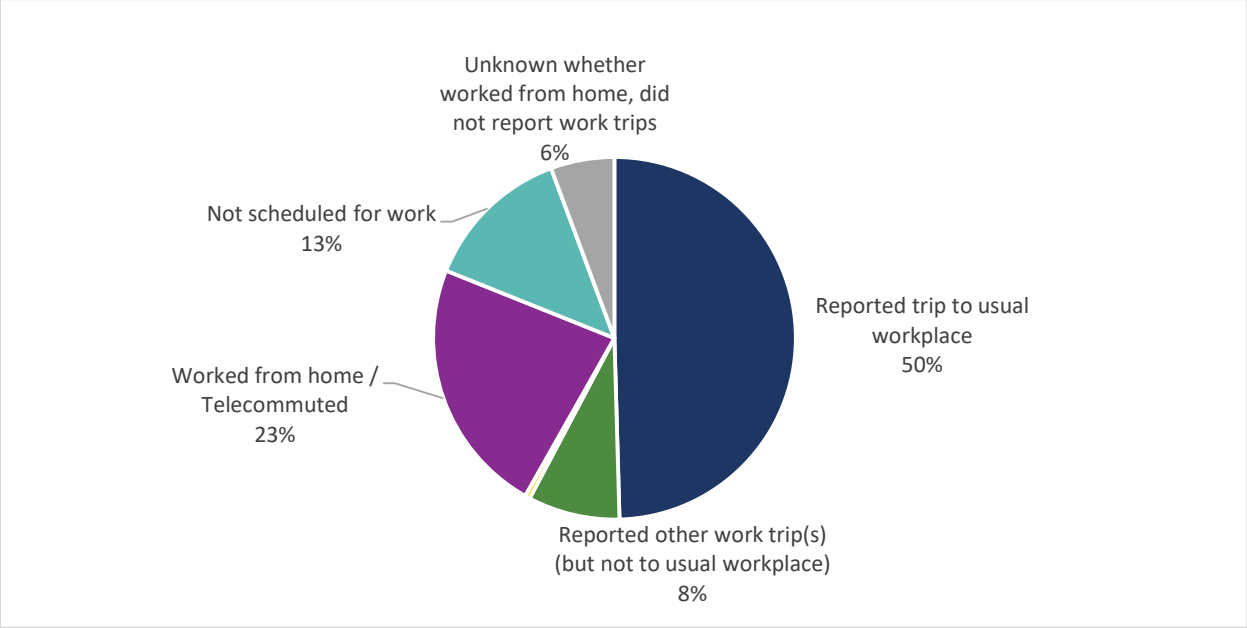
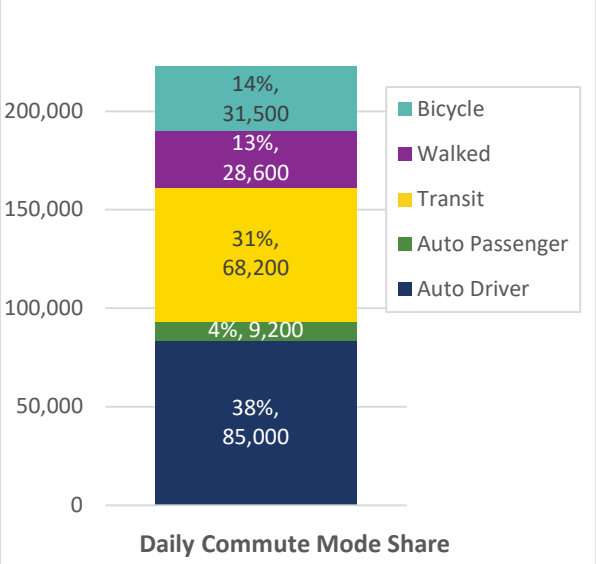


Table 22. Daily Work Travel and Commute Pattern by Type of Workplace

Commute Pattern	Works exclusively from home	No fixed workplace address	Usual workplace outside the home	Total workers
Workers	61,800	20,900	300,500	383,100
Reported trip to usual workplace	0%	0%	64%	50%
Reported other work trip(s) (but not to usual workplace)	8%	53%	5%	8%
Away on business / working on the road	1%	0%	0%	0%
Worked from home / Telecommuted	59%	11%	16%	22%
Not scheduled for work	14%	26%	12%	13%
Unknown whether worked from home, did not report work trips	17%	9%	3%	6%
Subtotal reported trip to usual workplace or for other work-related purposes	8%	53%	69%	58%
Subtotal known to have worked (reported trips to work or working from home)	68%	65%	85%	81%

Figure 77 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 2023, 38% 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 from a high of 50% in 2021. Nearly one-third (31%) of all trips to or for work were made via transit (an increase from 26% in 2022), with an equivalent proportion reporting either cycling (14%, up from 12% in 2022) or walking (13%, stable since 2022).

Figure 77. Daily Work Commute Mode Shares (Mode of First Trip to Work on Travel Day)



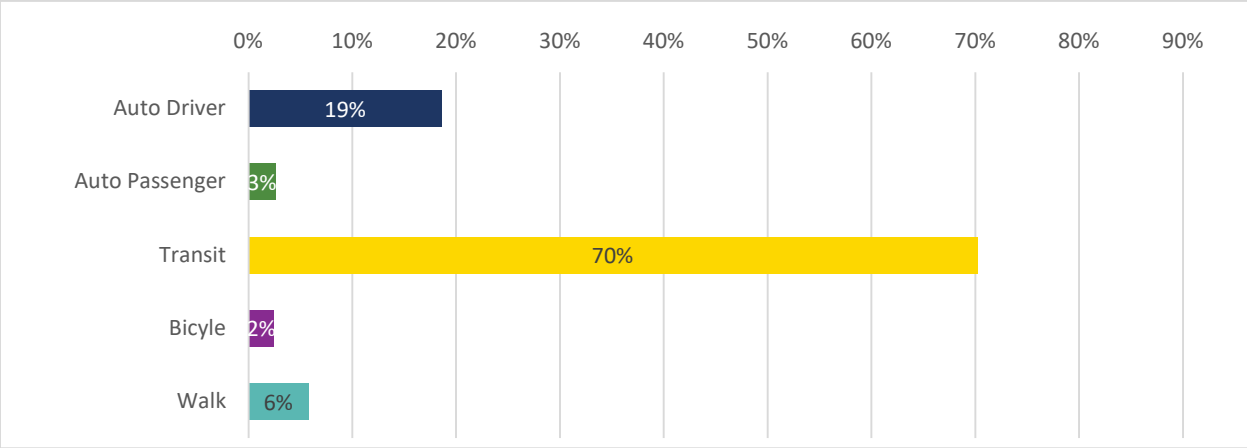
7.2 Usual School Commute Mode

7.2.1 Survey Participants

Given the small sample of survey participants who were students (n=76), 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 78 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 (19%). Smaller percentages of students reported their usual commute mode as walking (6%) or auto passenger (3%), and about 2% reported that they cycle to school as their primary commute mode.

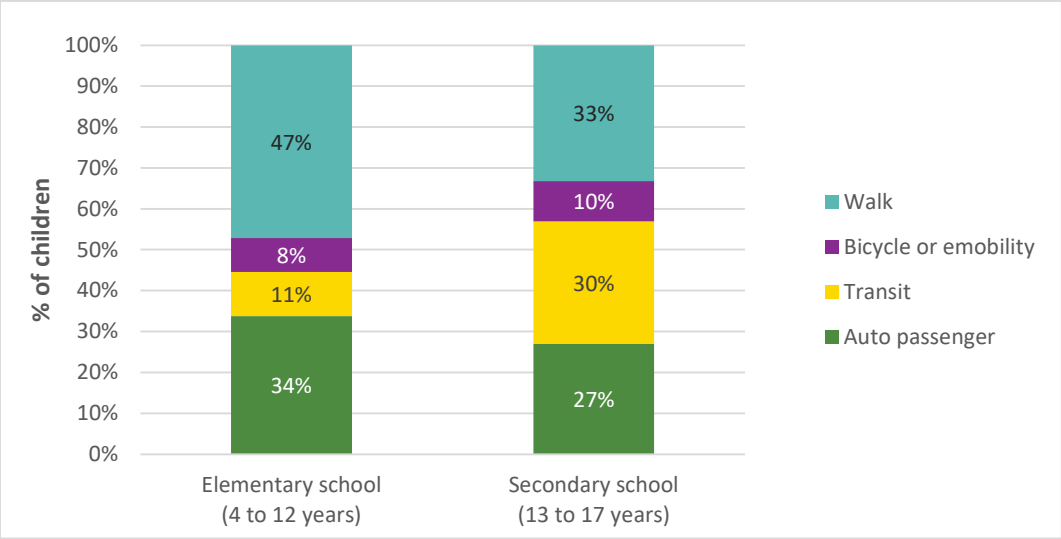
Figure 78. Usual mode of Travel for School Commute (Adult Students)



7.2.2 Children of Survey Participants

Survey participants were asked to report the usual mode of travel to school for any children 17 years old 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. Survey respondents indicated that 66% of their children age 4 to 12 years and 74% age 13 to 17 years use a sustainable transportation mode to travel to school with walking being the highest mode at 47% for age 4 to 12 and 33% for age 13 to 17, followed by transit at 11% for age 4 to 12 and 30% for age 13 to 17, and bicycle or e-micromobility at 8% for age 4 to 12 and 10% for age 13 to 17 (see **Figure 79**).

Figure 79. Usual Mode of Travel for School Commute (Children 17 and younger)[41]

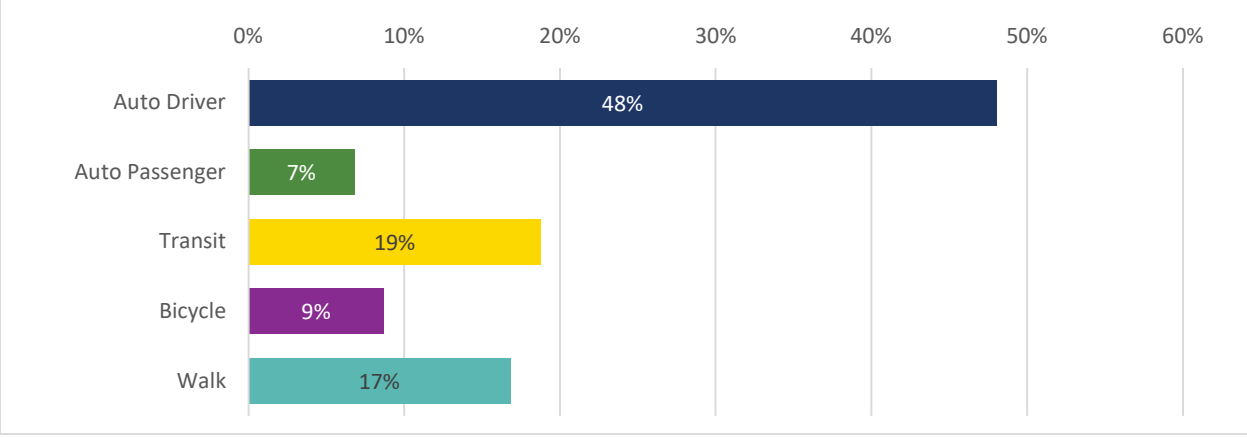


7.3 Usual Non-Commute Mode

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

Figure 80 shows usual mode share for non-commute trips. Auto driver accounts for the largest mode share for non-commute purposes, at 48%. Transit is the usual mode for 19% of non-commute trips and walking for 17% of non-commute trips. Compared with the usual mode for work commute trips in **Figure 70**, auto driver is higher by 10%, auto passenger is higher by 5%, walking is higher by 5%, transit is lower by 13%, and cycling is lower by 5%.

Figure 80. Usual Mode of Travel for Non-Commute Purposes[42]

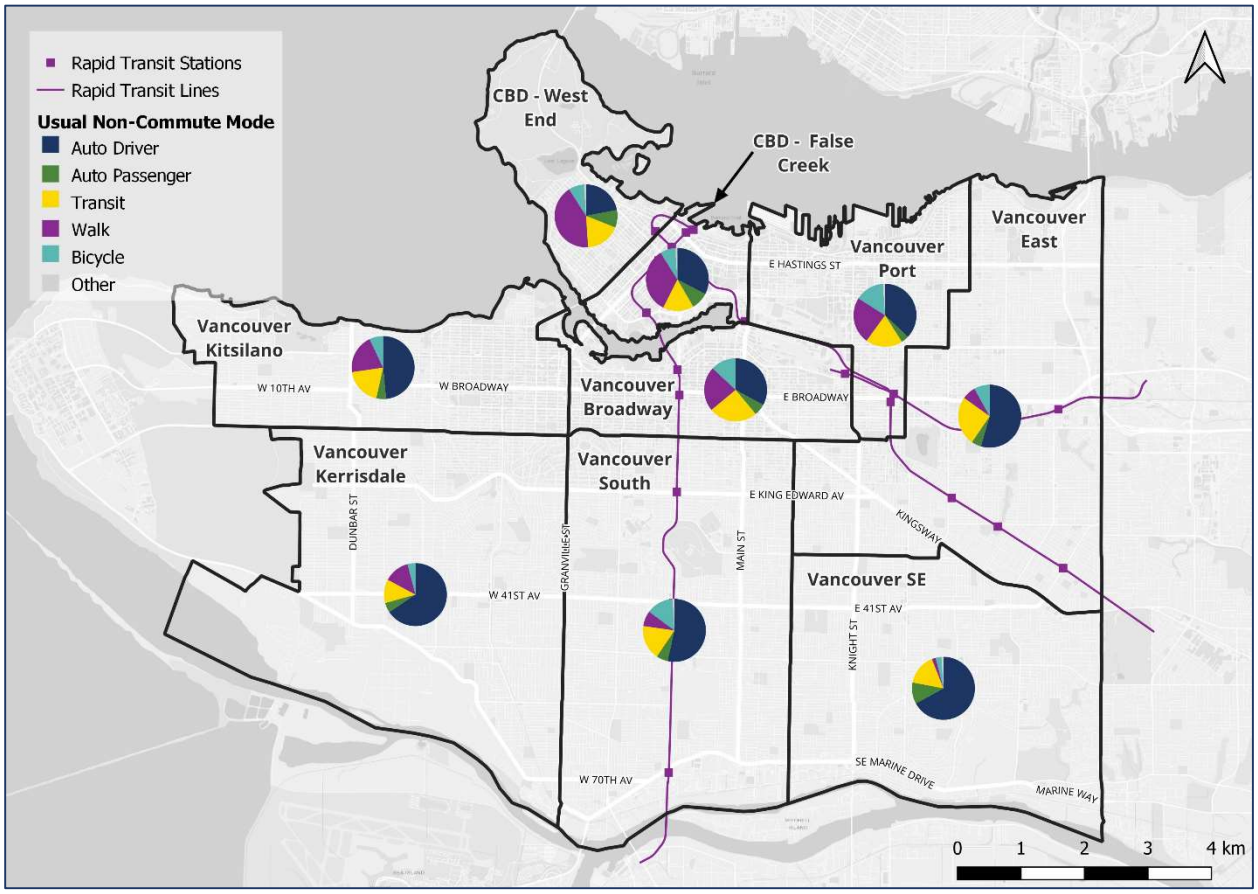


[41] Data for this figure are further weighted by the number of children 4 to 17 years of age reported by the survey participant.

[42] Figure does not include the 3% of respondents who selected "Other".

Figure 81 shows the above data broken down by zone. Across zones, auto driver and walk modes have the most variability with walking being more prevalent in central areas and less prevalent on the periphery. In CBD – West End and CBD – False Creek walking is the most common usual non-commute mode (42% and 34%, respectively), followed by auto driver (22% and 33%), and then transit (18% and 16%). Also notable is the large percentage of residents from Vancouver Kerrisdale (65%) and Vancouver Southeast (67%) 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 81. Map of Usual Mode of Travel for Non-Commute Trips by Zone



7.4 Transit Use

Figure 82 shows the frequency of transit use for Vancouver residents. Most survey participants (85%) reported that they take transit at least some of the time, with 12% doing so at least five days per week.

Figure 82. Frequency of Transit Use[43]

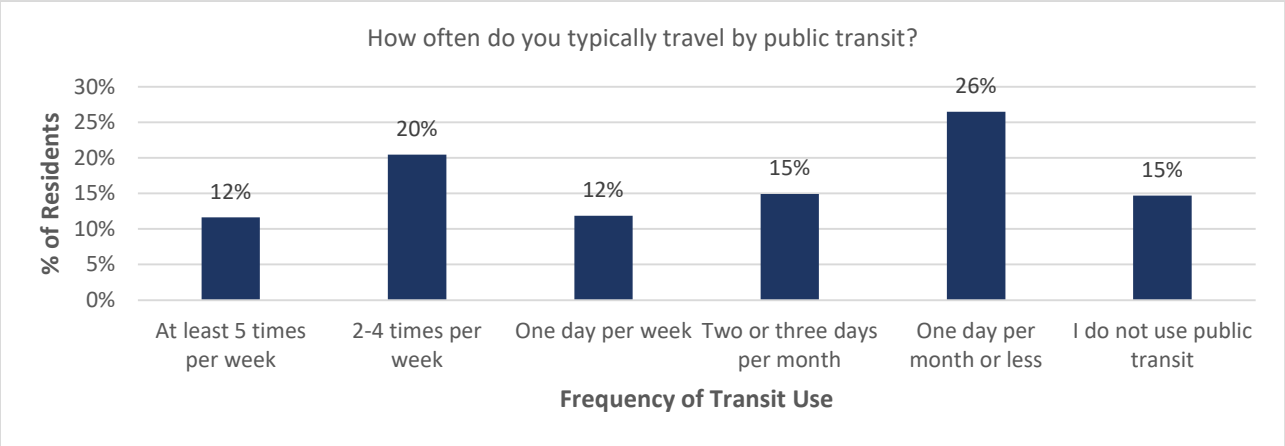


Table 23 shows transit frequency by zone in table format and **Figure 83** shows a map of the same data. The data shows that Vancouver Kerrisdale has the largest percentage of residents who are less likely to use transit with 78% of its residents using transit one day per week or less. Looking only at regular transit use (i.e., use transit five times per week or more), we see that Vancouver Broadway and Vancouver East have the highest percentage of residents that use transit on a regular basis, at 15% each.

Table 23. Frequency of Transit Use – 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
At least 5 times per week	12%	10%	13%	15%	11%	9%	11%	10%	15%	7%
2-4 times per week	20%	22%	22%	24%	17%	13%	27%	17%	22%	20%
One day per week	12%	12%	19%	13%	15%	7%	7%	7%	13%	16%
Two or three days per month	15%	20%	14%	17%	14%	10%	18%	10%	14%	21%
One day per month or less	26%	24%	21%	21%	29%	34%	24%	34%	23%	26%
I do not use public transit	15%	11%	12%	9%	13%	26%	14%	22%	13%	10%
Subtotal one day per week or less often or never	68%	68%	65%	61%	71%	78%	63%	72%	63%	73%

[43] Percentages do not add to 100% due to rounding.

Figure 83. Map of Frequency of Transit Use – by Zone

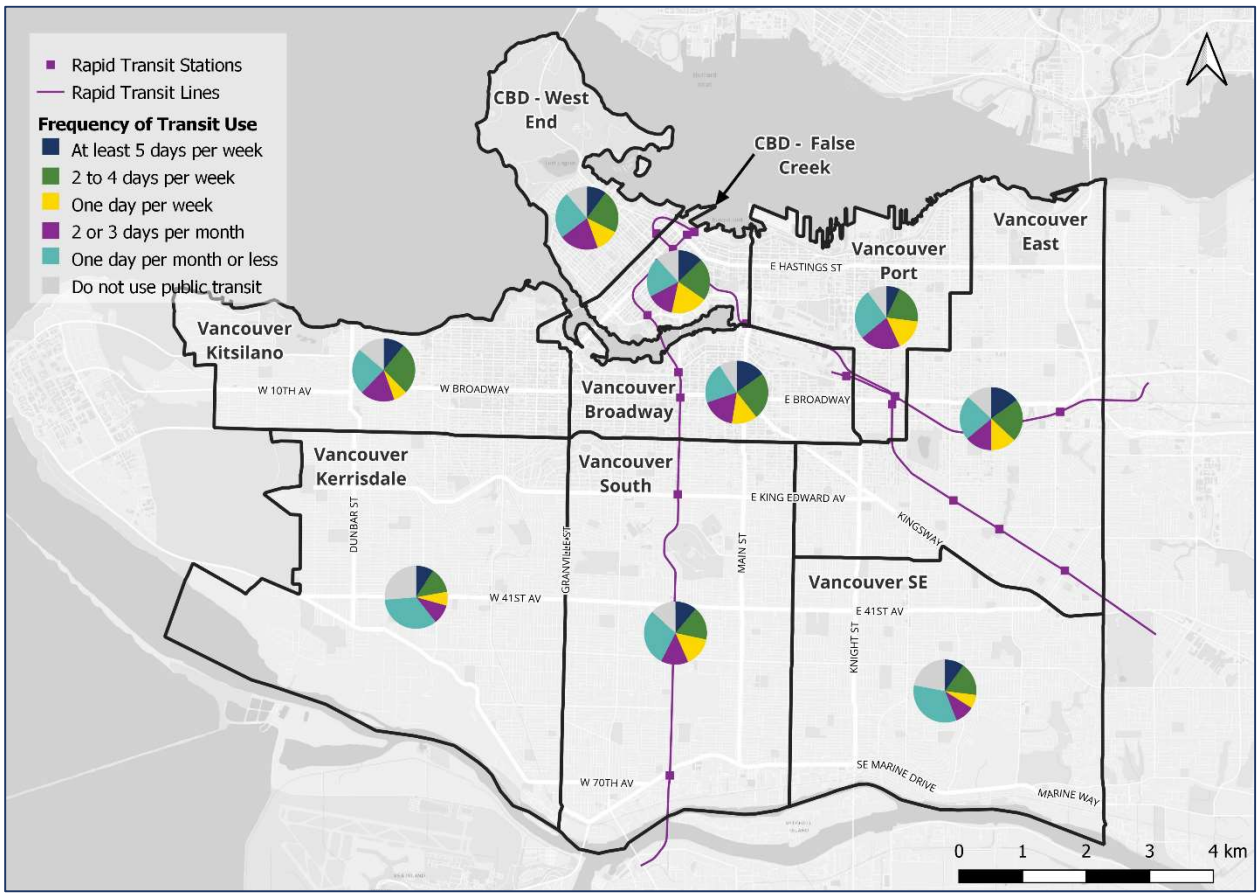
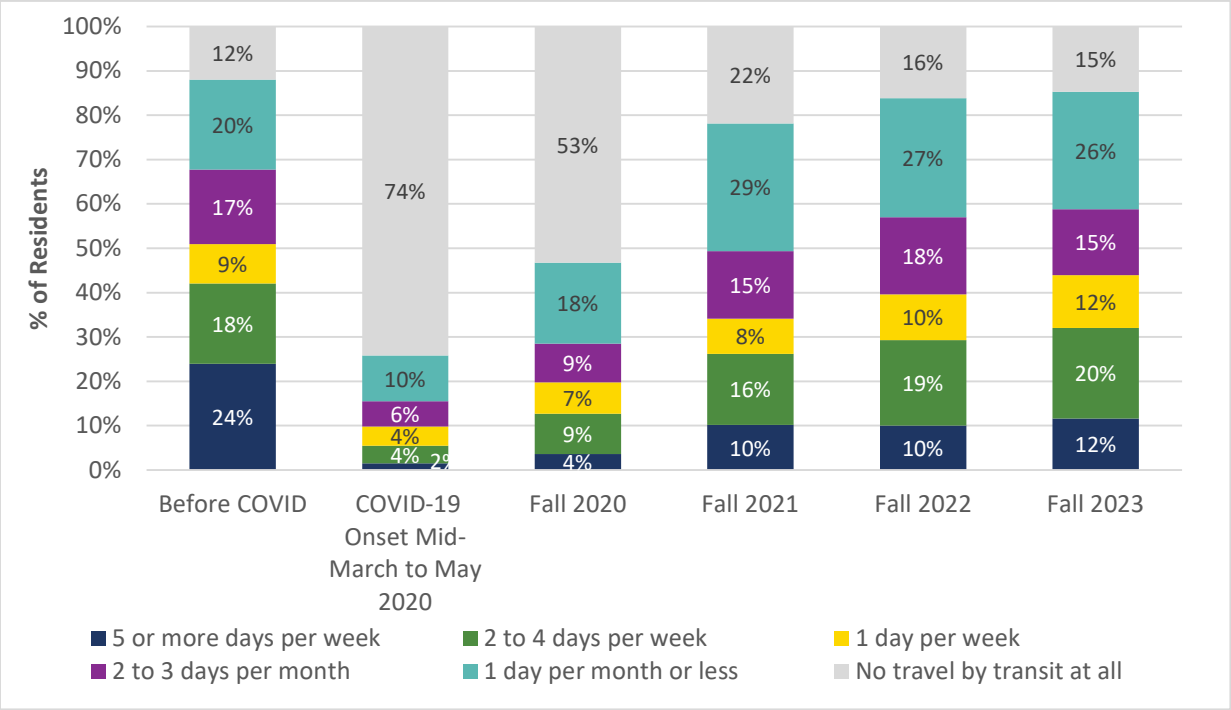


Figure 84 shows the frequency of residents' transit use between 2019 and 2023. This figure illustrates the significant reduction in transit use at the onset of the pandemic and related lockdowns/restrictions in 2020 and a pattern of a slow but steady increase in transit use in following years. As is shown, the percentage of residents that never take transit continues to decrease in 2023, though has not quite returned to pre-pandemic levels (15% in 2023 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 32% of survey participants reporting they use transit two or more days per week in 2023 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 impact on regular transit use.

Figure 84. Change in Frequency of Transit Use, 2019 to 2023



7.4.1 Frequency of Transit Use by Personal Demographics

Transit frequency was explored by personal demographics including work status, age, and gender. **Figure 85** 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 (13% versus 11% for non-workers). This finding is not unexpected as there seems to be more consistency in transit mode use for commute trips and non-commute trips.

Figure 85. Frequency of Transit Use – Workers and Non-workers

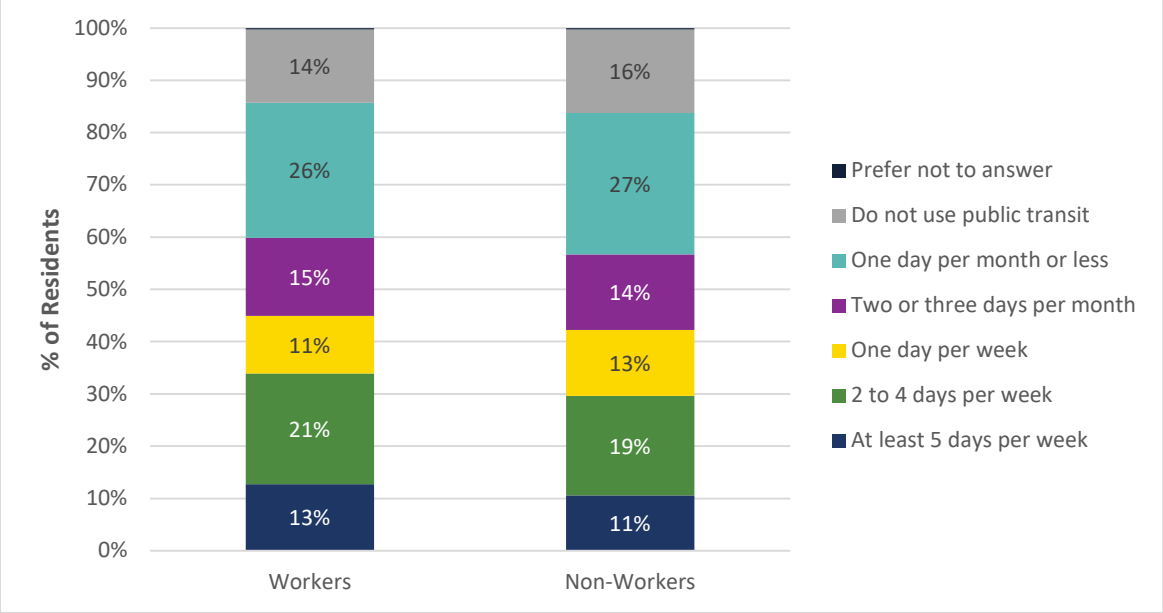
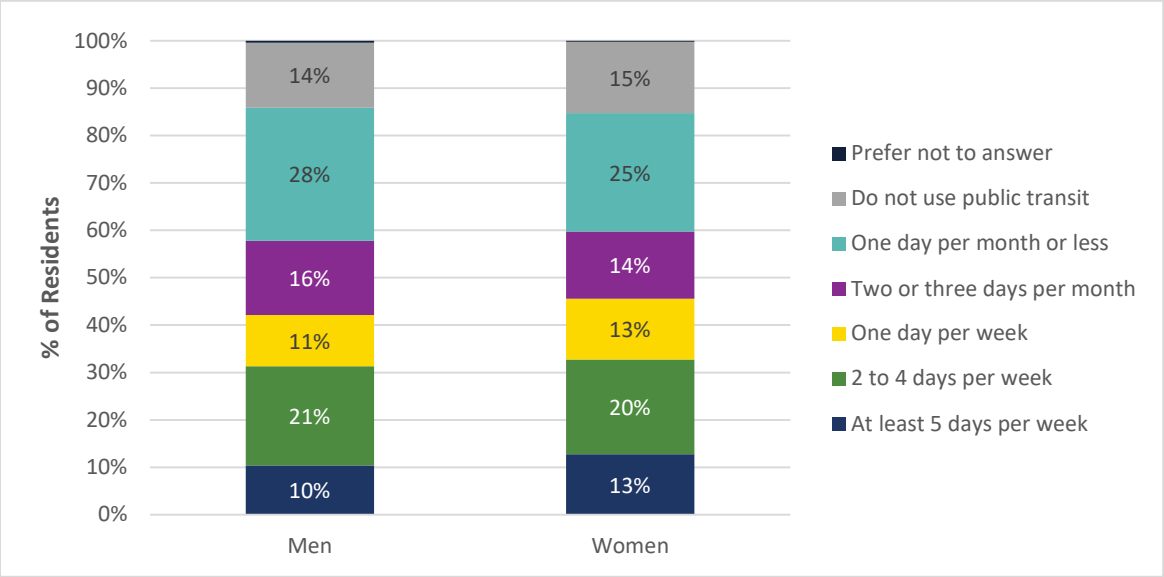


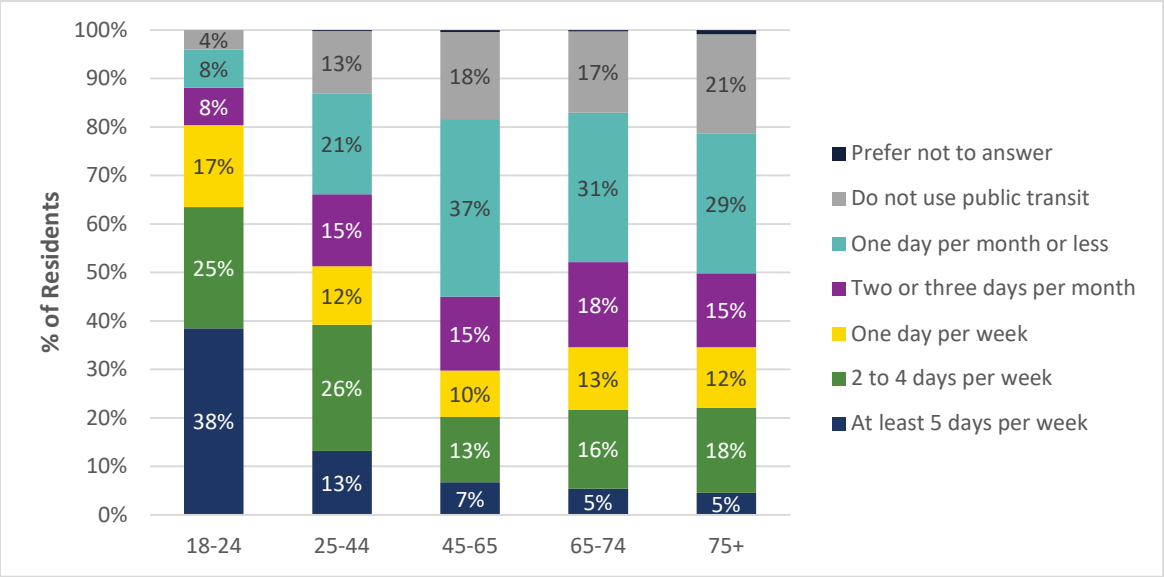
Figure 86 shows that men are slightly less likely to regularly use transit (i.e., 2 or more days per week) compared to women.

Figure 86. Frequency of Transit Use – by Gender



Finally, as shown in **Figure 87**, transit use steadily declines with age. Regular transit use (2 or more days per week) is highest amongst ages 18-24 years old at 63% and declines with each increasing age bracket until reaching a range of 20-23% amongst those over the age of 45 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 87. Frequency of Transit Use – by Age Group[44]

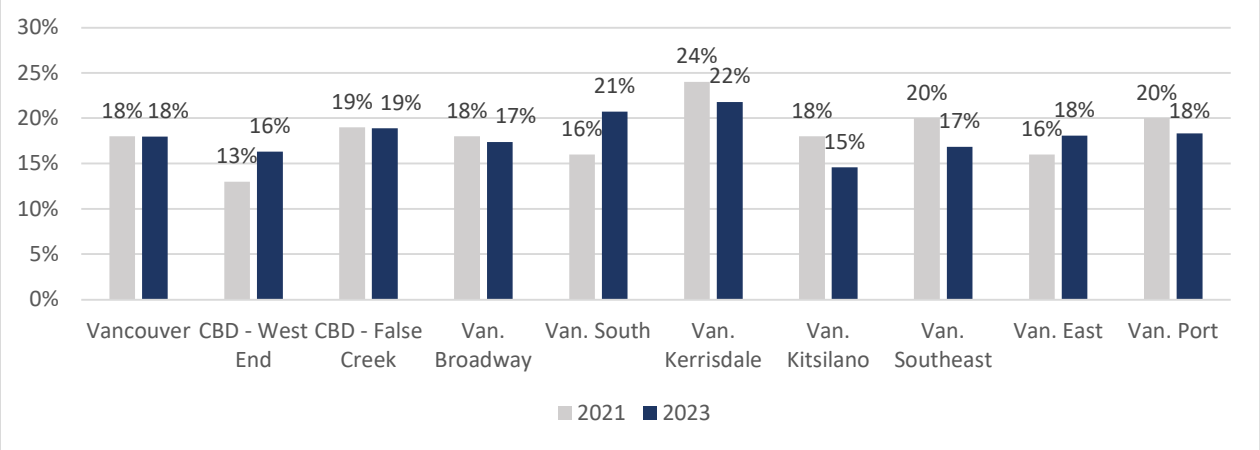


[44] Interpret results for age 18-24 with caution due to smaller sample size.

7.5 Use of Delivery Services

The survey results suggest that residents of the city of Vancouver receive around 64,200 daily deliveries, with about 18% of residents across the city receiving at least one delivery per day (**Figure 88**). This is similar to what was observed in 2021. Residents living in the Vancouver Kerrisdale zone (22%) and Vancouver South zone (21%) were most likely to report receiving a delivery while residents of the Vancouver Kitsilano zone were least likely to report receiving a delivery (15%).

Figure 88. Vancouver Residents Use of Delivery Services by Zone of Residence



Deliveries included small goods or packages, restaurant food, grocery deliveries, and other deliveries. The delivery of small goods or packages accounts for 68% of all deliveries, amounting to about 43,800 deliveries per day (**Table 24**). Restaurant food deliveries account for 17% of all deliveries and grocery deliveries account for 11% of all deliveries. This pattern is similar across all zones, though Vancouver Kerrisdale does stand out for having a larger percentage of delivery of small goods or packages, at 77% and relatively lower percentage of restaurant food deliveries, at 13%. The CBD – False Creek zone stands out for having a relatively larger percentage of restaurant food deliveries (27%) and lower percentages of other types of deliveries.

Compared to 2021, we see a decrease in the proportion of deliveries of small goods and packages, from 75% in 2021 to 68% in 2023. The proportion of restaurant food deliveries increased, accounting for 13% of all deliveries in 2021 and 17% in 2023, while the proportion of grocery deliveries and deliveries of large goods increased by about two percentage points each.

Table 24. Type of Delivery Service – 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
Small goods or packages	68%	67%	60%	60%	68%	65%	77%	72%	75%	72%
Restaurant food	17%	14%	27%	20%	20%	15%	13%	11%	15%	19%
Grocery deliveries	11%	15%	11%	12%	6%	18%	10%	10%	9%	9%
Large goods (e.g., appliances)	4%	4%	2%	8%	6%	2%	0%	6%	1%	0%

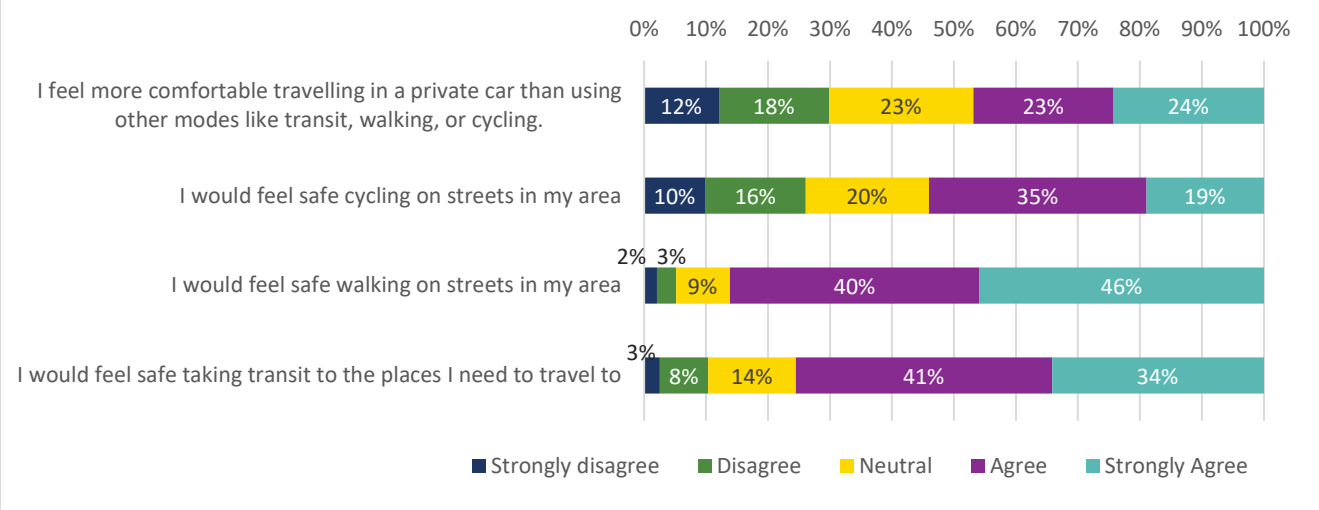
8 Perceptions and Attitudes

This section describes survey respondents' perceptions and attitudes related to key transportation issues, including perceptions of safety by zone, and perceptions of walkability of the survey participant's neighbourhood.

8.1 Perceptions of Safety of Transportation Modes

Survey participants were asked a series of questions related to their perceptions of comfort and safety when travelling by various modes. As shown in **Figure 89**, overall, the majority of residents of the City of Vancouver perceive a high degree of safety walking (86%) and taking transit (75%) in their area. While still a majority, a smaller percentage of residents feel safe cycling on the streets in their area (54%). When comparing modes, about one-half (47%) of residents feel more comfortable travelling in a private car, rather than using other modes like transit, walking, or cycling to the places they need to go.

Figure 89. Survey Participants' Perceptions of Safety and Attitudes



Closer examination of the survey results revealed two interesting observations:

- Of the 14% of the residents who indicated that cycling is their usual mode for work commutes, 87% indicated that they feel safe cycling in their area (with 37% agreeing and 50% strongly agreeing).
- Residents who indicated auto driver as their usual mode for work commutes were much more likely than those with other usual commute modes to report that they feel more comfortable travelling in a private care than using other modes like transit, walking, or cycling (67% auto driver compared to 40% for those who take transit, 34% for those who walk, and 9% for those who cycle).

Table 25 shows the data presented above broken down by zone. Some notable differences between zones stand out:

- Vancouver Southeast stands out as a zone with more people who feel more comfortable travelling in a private car over other modes, at 66%. This same zone indicated one of the lowest perceptions of safe cycling at 46% and safe use of transit at 66%.
- Vancouver Broadway has the fewest people who feel more comfortable travelling in a private car than other modes, at 32%. It also had the second highest percentage of residents who feel safe using transit, at 82%. This may contribute to why it has one of the highest transit mode shares of all zones.
- Vancouver Port has the highest percentage of residents who feel safe cycling on the streets in their area, at 71%. CBD – False Creek is the other zone besides Vancouver Southeast which has the lowest perception of safe cycling at 46%.
- CBD – False Creek had the lowest percentage of residents who feel safe walking on streets in their area at 67%. Ironically, this zone has one of the highest walking mode shares. Vancouver South, Kerrisdale and Kitsilano are the zones with the highest percentage of residents with who feel safe walking on the streets.
- The rest of the zones had similar responses as the average for the city.

Table 25. Perceptions of Safety by Zone (% Agree or Strongly Agree)

	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
I feel more comfortable travelling in a private car than using other modes like transit, walking, or cycling.	47%	43%	45%	32%	46%	51%	38%	66%	51%	35%
I would feel safe cycling on streets in my area	54%	53%	46%	63%	59%	51%	64%	46%	48%	71%
I would feel safe walking on streets in my area	86%	84%	67%	87%	95%	95%	95%	82%	83%	90%
I would feel safe taking transit to the places I need to travel to	76%	77%	74%	82%	81%	68%	79%	66%	77%	78%

8.2 Neighbourhood Walkability

The City of Vancouver has a goal to ensure 90% of people live within an easy walk or roll of their daily needs by 2030. A question on perception of walkability provides a benchmark to help measure this goal.

Figure 90 and **Table 26** show the percentage of survey participants who agreed or disagreed that their neighbourhood is walkable, that is, they can reach many of the services and amenities they need by walking. Overall, three-quarters (76%) of residents of the city agree that they can reach many of the services and amenities they need by walking. As shown in **Table 26,** perceptions of walkability vary by neighbourhood with CBD – West End (95%), CBD – False Creek (93%), Vancouver Broadway (87%), and Vancouver Port (86%) having the highest percentage of residents who agree that their neighbourhood is walkable. Vancouver Southeast stands out as it has the lowest percentage of residents who agree that their neighbourhood is walkable, at 53%. Recall that this zone also has relatively low percentages of residents reporting that they felt safe cycling or using transit in their area (**Section 8.1**) and a relatively low percentage of internal trips (**Section 6.4.2**).

Figure 90. Perceptions of Neighbourhood Walkability

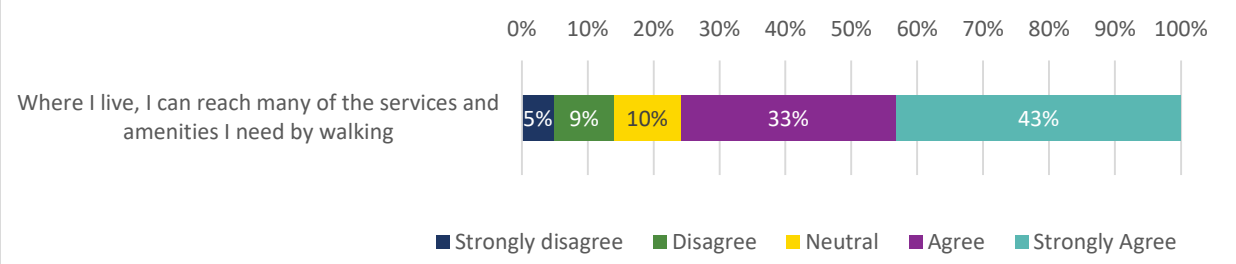


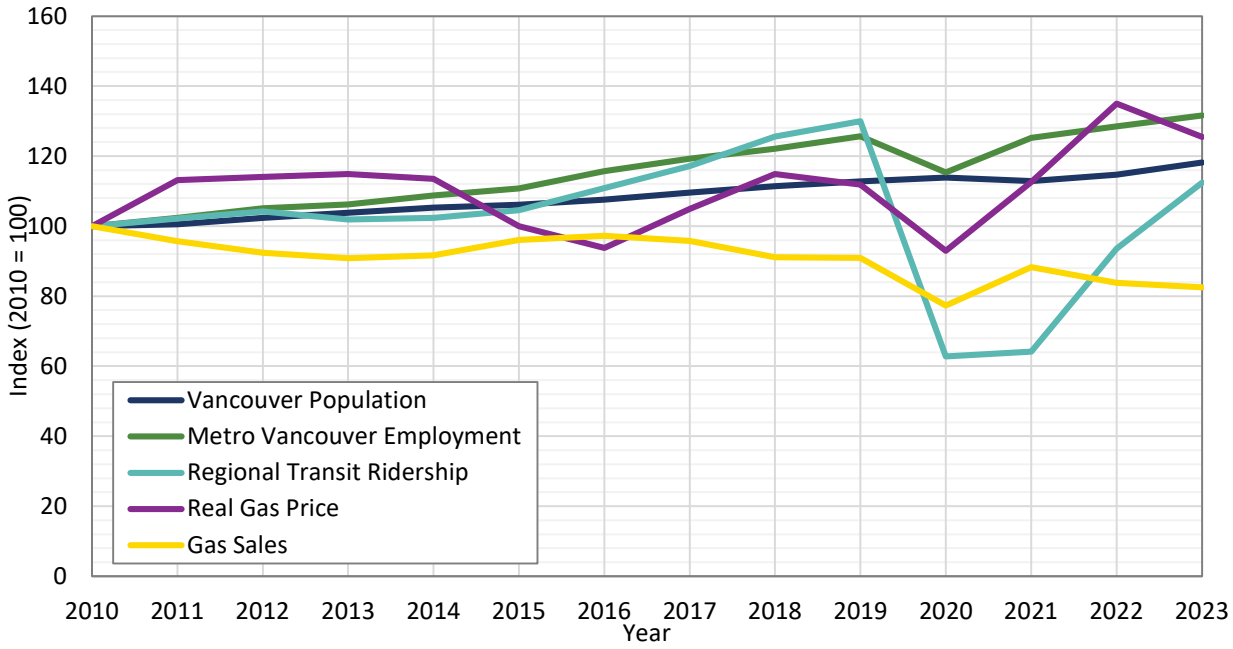
Table 26. Perceptions of Neighbourhood Walkability (% Agree or Strongly Agree)

	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
Where I live, I can reach many of the services and amenities I need by walking	75%	95%	93%	87%	69%	67%	84%	53%	68%	86%

9 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 91** shows the historical trends of the key factors over the last decade from 2010 to 2023.

Figure 91. Historical Trends of the Key Factors over the Last Decade [45]



The population of the City of Vancouver has continued to grow in 2023, adding 22,500 residents since 2022. Employment in the city has recovered and exceeded pre-pandemic levels after declining to 92% of 2019 levels in 2020. 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 86% of 2019 levels in 2023. 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 levels. 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

[45] 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.

levels is hindered by increased adoption of telecommuting and the fact that some people may not have shifted back to transit post pandemic.

Fuel prices have decreased by 7% in 2023 after increasing by about 20% in both 2021 and 2022. 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 both 2022 and 2023, returning to about 90% of 2019 levels in 2023. 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. The modest decrease in fuel sales from 2021 to 2023 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

10 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 **1-855-688-1131.**

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- 688-1131 (**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**.

[PROGRAMMER: The above page is a cul de sac. It should only have the Previous and Send Email buttons, and no continue button]

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**.

[PROGRAMMER: this page is also a cul-de-sac]

11 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 TELEPEHONE 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.)

12 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**.[PROGRAMMER: open link in new window]

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 1-855-688-1131 (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 [PROGRAMMER:open link in new window]
- Survey results from previous cycles are available here: https://vancouver.ca/streets-transportation/annual-transportation-survey.aspx [PROGRAMMER:open link in new window]
- 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.

13 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.

Who do I contact for more information or for help?

- If you would prefer to complete the survey by telephone, please call 1-855-688-1131 (toll free).
- 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.

14 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 [URL: https://www.malatest.com/privacy-policy/ [LAUNCH IN SEPARATE WINDOW].

For more information, please contact 1-855-688-1131 (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 .

15 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 2022 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.]

16 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]

17 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.*

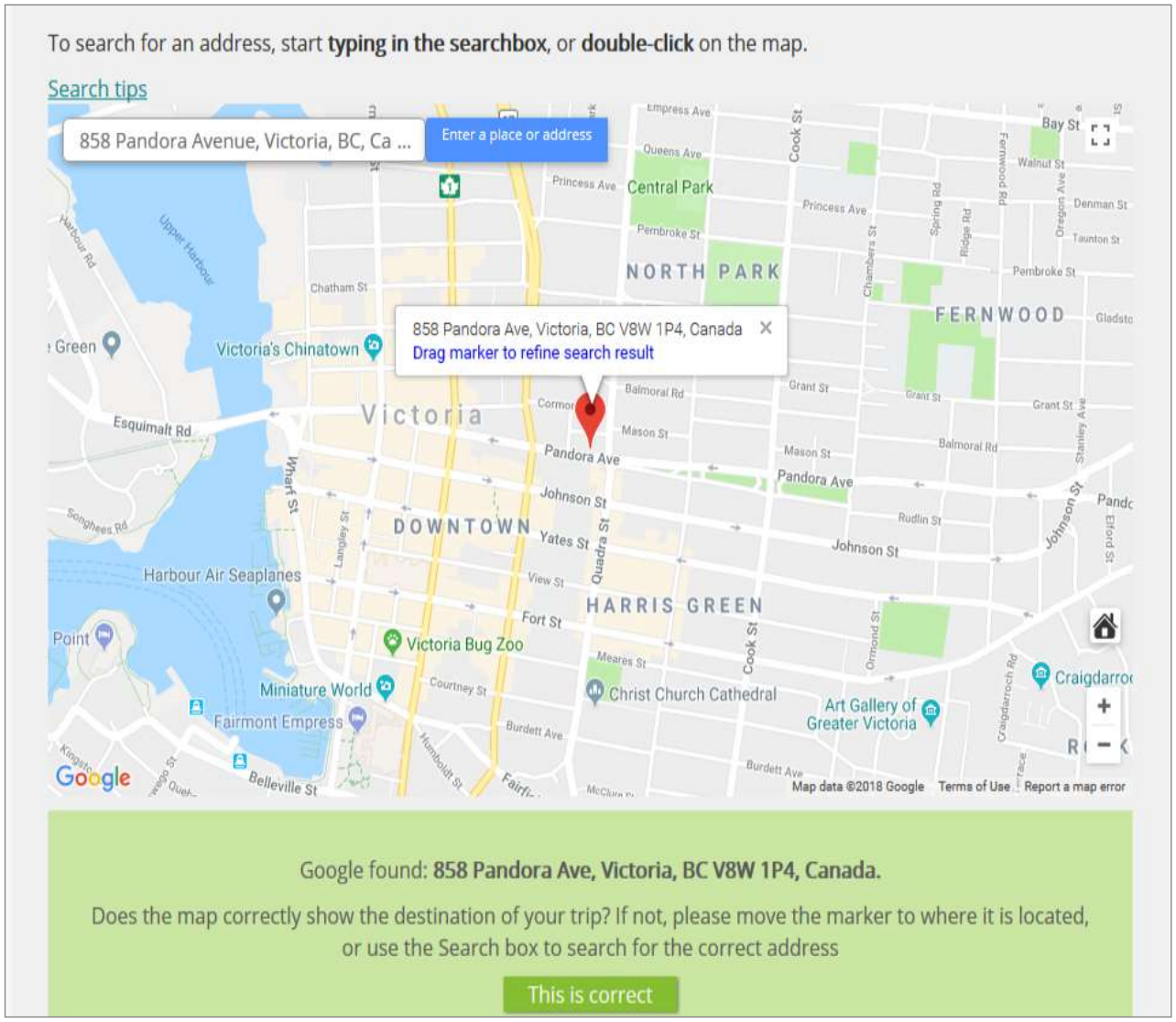
LOC1
- **Home** (display confirmed address, from sample or as captured in the survey)
- your main **work** location (display address captured in survey)
- your **school** (display address captured in survey)
- [previously captured destination #1]
- [previously captured destination #2]

...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]
- "Did not take another trip (stayed there the remainder of the day past 3:59 a.m.)"

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

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.



18 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]

NumberVehicles

B6. **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.]

HomeParking

B7D. **At your current place of residence, how many parking spaces are available to members of your household, excluding parking on city streets or pay-to-park lots (e.g., Easy Park)?**

(If you live in a rental building or condo, include only the number of parking spaces currently owned, rented, or assigned to your household.)

_____ (# of spaces) [allowable range: 0-20]
77. None
99. Don't know

[From this and the # of vehicles, the theoretical pressure on on-street parking and other parking arrangements can be assessed.]

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, NumBikesChild

B8. **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

19 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?**
[INTERVIEWER: do not ask unless necessary – record only]
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 in to 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

[PROGRAMMING: even if the panel member has confirmed their occupation status from the last survey, please trigger the occupation status question anyway. It is okay that is prefilled. We would like to make sure that they confirm their occupation status especially if they accidentally skipped it in the confirmations.]

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: _____

[PROGRAMMING NOTE: cannot select 'unemployed' if work full-time or part-time]

20 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

[PROGRAMMING: even if the panel member has confirmed their school information from the last survey, please trigger this set of school questions again. We would like to confirm the correct name and coordinates for their school using the current geocoding system.]

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)

[List of K-12 schools obtained from provincial list, supplemented with public post-secondary, and larger private post-secondary]
[Include street address and municipality in description of school location]

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]

21 DEMOGRAPHICS – WORK DETAILS

[PROGRAMMING: even if the panel member has confirmed their employment information from the last survey, please trigger the question about their workplace location anyway. We would like to confirm the correct coordinates for their workplace using our current geocoding system.]

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[s] to every day)

6. Work at a workplace you go to regularly or occasionally (away from home), including hybrid work models (combination or 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]

PROGRAMMING:
Mouseover on "No fixed workplace address", response option 3: If you regularly work outside the home but do not travel to the same worksite every day, please select "No fixed workplace address". Do not use this option if you work from home all of the time. Do not use this option if you have a fixed workplace address, terminal, or base outside the home that you start or end your day at.

Mouseover on "regularly or occasionally" in response option 6: Even if you are currently working from home most of the time due to the COVID pandemic or hybrid work schedule, identify the workplace you would normally commute to.

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 bikeshare / 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

[PROGRAMMER: do not allow selection of 77. No and other options]

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 bikeshare / 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 school
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

[PROGRAMMER: do not allow selection of 77. No and other options]

22 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).

23 TRIP CAPTURE – START OF TRAVEL DAY

QSTART_HOME

E1. Did your first trip start from home on [Travel Day]?

(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, my first trip started from home
2. No, my first trip started somewhere else
3. I did not take any trips [Travel 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.

[PROGRAMMING NOTE: if E4B=no, conclude trip capture and log person as "No trips"]

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]

24 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; And option to end Trip Capture "Did not take another trip (stayed there the remainder of the day past 3:59 a.m.)"]

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.

Depart

E2. **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. Bikeshare 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): _____

[note: response numbering is not in sequence as it matches how modes are already numbered in the underlying programming template]

25 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. Bikeshare 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. Bikeshare 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

26 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 actually 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

27 TRIP CAPTURE – OTHER STOPS

[Note: answers in this section will be used to split original trip record reported into multiple trip records, but will not be included in the final dataset.]

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?

___

OtherStopArrive

E50F. **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]

OtherStopDepart

E50F. **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]

28 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 1-855-688-1131 or email us at info@vantripsurvey.ca .

29 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.

Deliveries

E21. **On [TRAVELDAY] did you receive any deliveries at home?**
(Deliveries can include packages, restaurant food, groceries, large goods like appliances, etc.)
1. Yes
2. No

DeliveryTypes

E22. [If e21=1. YES] **How many of each of the following types of deliveries did you receive?**
____ Grocery deliveries
____ Restaurant food
____ Small goods / packages
____ Large goods (e.g., appliances)
____ Other. Please specify: _____

30 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 (or have you used) any car share services? (Check all that apply)**
1. None
3. Modo
5. Evo
6. Other, specify: _____
99. Prefer not to answer
[PROGRAMMING NOTE: None is mutually exclusive from other options]

BikeShare

C3D. **Are you a member of (or have you used) any bikeshare services? (Check all that apply)**
1. None
2. Mobi (City of Vancouver's bikeshare system)
3. Lime (North Vancouver's e-bikeshare system)
77. Other, please specify: _____
99. Prefer not to answer
[PROGRAMMING NOTE: None is mutually exclusive from other options]

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. Bikeshare 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 <u>usual mode of transportation</u> 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. Bikeshare 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 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 drove to work on the same day, you may select both.

	Telecommute	Commute to Work	N/A – did not work
1. Monday	☐	☐	☐
2. Tuesday	☐	☐	☐
3. Wednesday	☐	☐	☐
4. Thursday	☐	☐	☐
5. Friday	☐	☐	☐
6. Saturday	☐	☐	☐
7. Sunday	☐	☐	☐

99. Prefer not to answer

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. Bikeshare 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

31 PERCEPTIONS

Please indicate the extent to which you agree or disagree with the following statements. Please use a scale of 1 to 5, where 1 is strongly disagree and 5 is strongly agree.

[Programmer: randomize order]

	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	Unsure
Where I live, I can reach many of the services and amenities I need by walking	❍	❍	❍	❍	❍	❍
I feel more comfortable travelling in a private car than using other modes like transit, walking, or cycling.	❍	❍	❍	❍	❍	❍
I would feel safe cycling on streets in my area	❍	❍	❍	❍	❍	❍
I would feel safe walking on streets in my area	❍	❍	❍	❍	❍	❍
I would feel safe taking transit to the places I need to travel to	❍	❍	❍	❍	❍	❍

32 CHILD(REN) SECTION

C21. **How many ELEMENTARY 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 C32]

C22. **How does your child/or children in ELEMENTARY SCHOOL usually get to and from school?**
[PROGRAMMING: Add one column per child, based on response to C21]

	Child 1	Child 2	Child 3	Child 4	Child 5
2. Auto passenger – private vehicle	☐	☐	☐	☐	☐
22. Car Share passenger (Modo, Evo, etc)	☐	☐	☐	☐	☐
3. Transit Bus	☐	☐	☐	☐	☐
4. SeaBus	☐	☐	☐	☐	☐
5. SkyTrain	☐	☐	☐	☐	☐
7. HandyDART	☐	☐	☐	☐	☐
8. School bus	☐	☐	☐	☐	☐
9. Personal bicycle	☐	☐	☐	☐	☐
91. Personal e-bike (pedal-assisted electric bicycle)	☐	☐	☐	☐	☐
92. Bikeshare 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 passenger	☐	☐	☐	☐	☐
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): _____	☐	☐	☐	☐	☐

C23. How many SECONDARY SCHOOL-aged children (13 to 18 years old) are in your household?

7. None
8. 1
9. 2
10. 3
11. 4
12. 5

99. Prefer not to answer

[PROGRAMMING: If C23 = 1 [none] skip to C32]

C24. **How does your child/or children in SECONDARY SCHOOL usually get to and from school?**
[PROGRAMMING: Add one column per child, based on response to C21]

	Child 1	Child 2	Child 3	Child 4	Child 5
1. Auto driver – private vehicle	☐	☐	☐	☐	☐
2. Auto passenger – private vehicle	☐	☐	☐	☐	☐
22. Car Share passenger (Modo, Evo, etc)	☐	☐	☐	☐	☐
3. Transit Bus	☐	☐	☐	☐	☐
4. SeaBus	☐	☐	☐	☐	☐
5. SkyTrain	☐	☐	☐	☐	☐
7. HandyDART	☐	☐	☐	☐	☐
8. School bus	☐	☐	☐	☐	☐
9. Personal bicycle	☐	☐	☐	☐	☐
91. Personal e-bike (pedal-assisted electric bicycle)	☐	☐	☐	☐	☐
92. Bikeshare 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 passenger	☐	☐	☐	☐	☐
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): _____	☐	☐	☐	☐	☐

33 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, little or no exercise)
2. Light physical activity (on your feet some of the day, light exercise once or twice per week)
3. Moderately active (on your feet most of the day, moderate exercise 3 to 7 times per week)
4. Very active (walking most of the day, 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
[Ask only to new recruits]

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.**
10. Indigenous, for example, First Nations, Inuit, or Metis
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)
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]

[PROGRAMMER: Please make the examples in brackets mouse-over hover text, but leave the examples for Indigenous]

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 (2019 or after)
3. Immigrated 5 to 10 years ago (2013-2018)
4. Immigrated 10 to 15 years ago (2008-2012)
5. Immigrated more than 15 years ago (before 2008)
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.
[PROGRAMMER: if possible, Filter Model based on selection of Make; for both make and model, trigger display of open-ended field on selection of "Other"]

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: _____
4. I prefer not to provide my odometer reading

[PROGRAMMER: ALSO SET UP SEPARATE FORM THAT ALLOWS THE ENTRY OF THE ODOMETER READING TO THE SAME DATA FIELD IN THE HOUSEHOLD TABLE, SO THAT THEY CAN STILL MAKE AN ENTRY EVEN AFTER THIS FORM IS SUBMITTED AND CLOSED FROM FURTHER ACCESS. IF THE RESPONDENT CHOOSES TO BE SENT A LINK TO ENTER THEIR ODOMETER READING, EMAIL OR TEXT A LINK TO THEIR CASE IN THE SEPARATE FORM. EMAIL TEXT:

Subject: City of Vancouver Transportation Survey Odometer Reading
Please use the following link to enter the current odometer reading for your vehicle: [Link]
SMS TEXT: City of Vancouver Transportation Survey Odometer Reading: Please use the following link to enter the current odometer reading for your vehicle: [Link]
THE CASE IN THEIR SEPARATE FORM SHOULD BE GENERATED BY THE TIME THEY REACH THIS POINT IN THE SURVEY]

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).

34 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]

35 PANEL ENROLMENT

[Ask if new recruit, do not ask if already a panel member]

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

36 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

37 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 **1-855-688-1131**

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

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 11th 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 **1-855-688-1131**.

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,

On mobile? Use the QR code.

Paul Storer

Paul Storer, P.Eng.
Director of Transportation

Email Invitation to Returning Panelists

Email Subject line: 2023 City of Vancouver Transportation Study
Sender Email: vantripsurvey@malatest.com

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 September 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 1-855-688-1131.

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 **1-855-688-1131** 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]