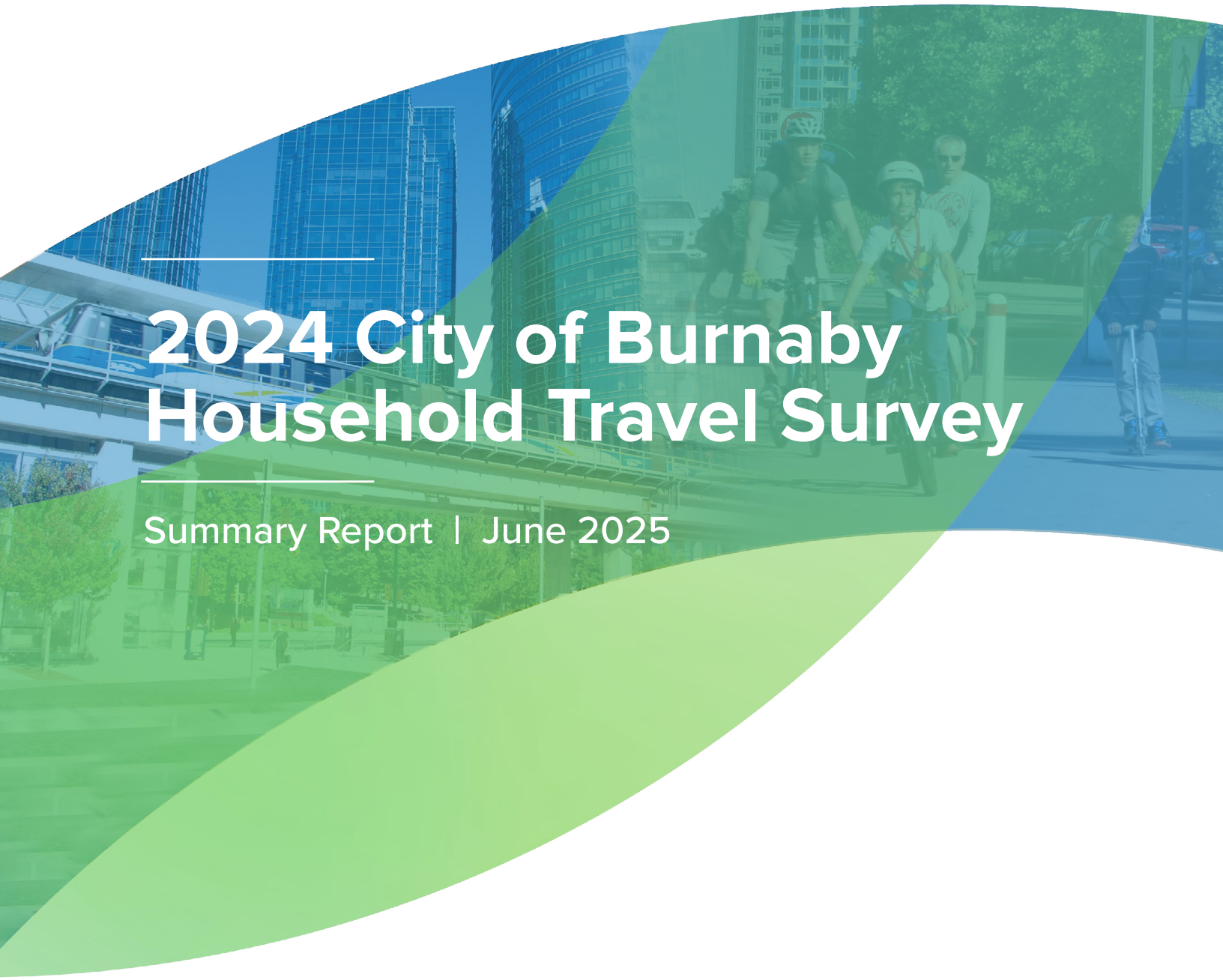


2024 City of Burnaby Household Travel Survey

Summary Report | June 2025

Prepared for

City of Burnaby

Prepared by R.A. Malatest & Associates Ltd. in association with Urban Systems. 2024 Burnaby Household Travel Survey | Summary Report

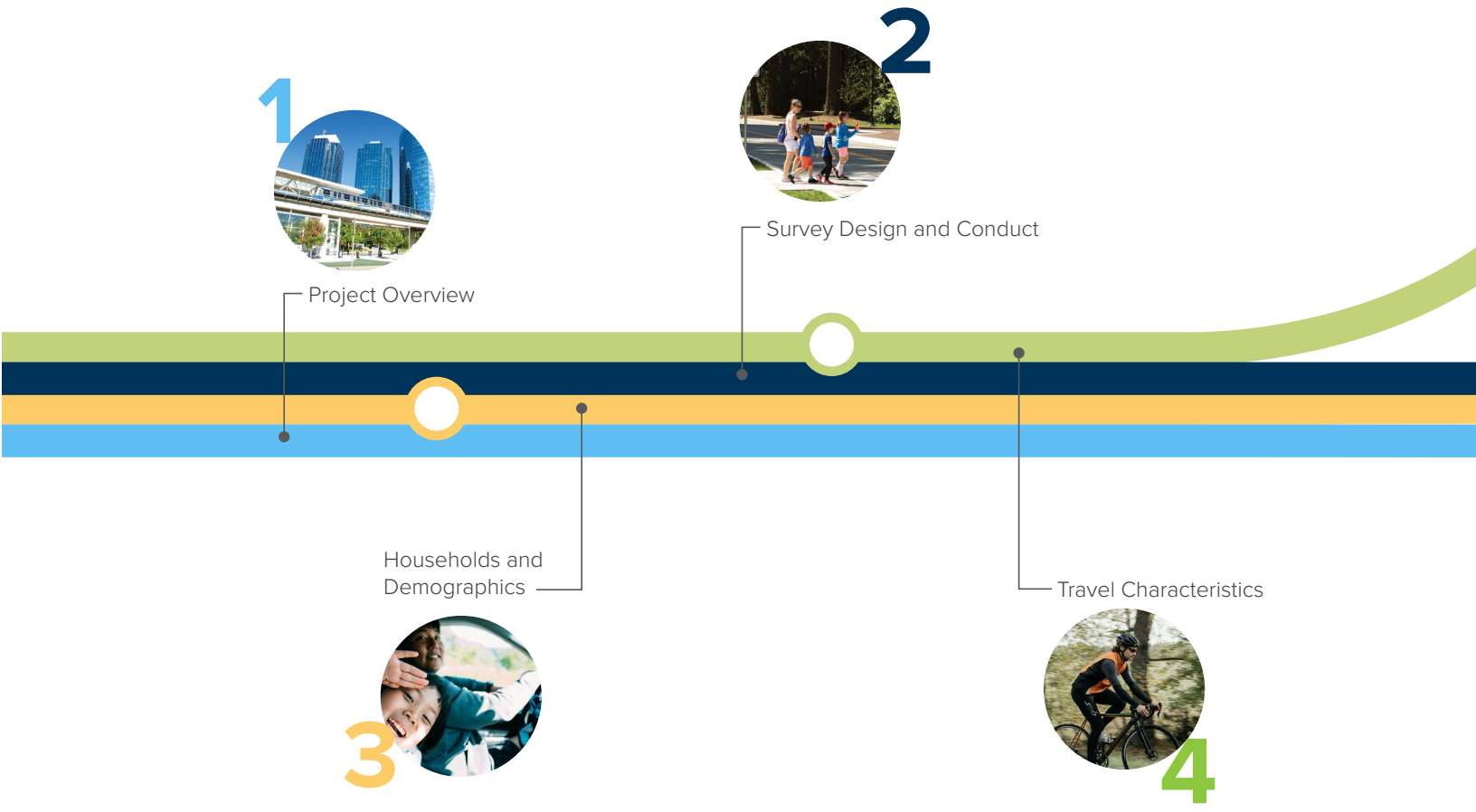
MALATEST

URBAN SYSTEMS

TERRITORIAL ACKNOWLEDGEMENT

We respectfully acknowledge that the city of Burnaby is located on the unceded territories of the xʷməθkʷəy̓ əm (Musqueam), sḵwx̱wú7mesh (Squamish), səlilwətaɬ (Tsleil-Waututh), and kʷikʷəƛ̓ əm Peoples (Kwikwetlem). Each Nation has distinct histories and distinct traditional territories that fully or partially encompass the city.

We encourage you to learn more about the host nations whose ancestors have occupied and used these lands, including parts of present-day Burnaby, for thousands of years.



ACKNOWLEDGEMENTS

The survey research was conducted by R.A. Malatest & Associates Ltd. in association with Urban Systems. The Consultants gratefully acknowledge the direction and guidance of the City of Burnaby project team.

This project would not be possible without the contributions of over 2,450 households that responded to the survey via phone or online, and told us about their daily travel. Thank you for participating in the City's Household Travel Survey. You contributed to transportation planning data that will be useful for years to come.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS

The table below explains the acronyms that are used in this report.

ACRONYM	EXPLANATION
API	Application Programming Interface. In this report, refers to Google's Directions and Geocoding APIs used to retrieve travel distances, durations, and location information.
BTP	Burnaby Transportation Plan
CAGR	Compound aggregate growth rate (annualized compounded average rate of growth)
CATI/CAWI	Computer assisted telephone/Web Interview survey systems
CMA	Census Metropolitan Area
CSD	Census Subdivision
DA	Census Dissemination Area
F /T	Full-time employment or full-time student
Gender	Gender Refers to an individual's personal and social identity as a man, woman, or non-binary person (a person who is not exclusively a man or a woman). Given that the sample of non-binary population surveyed is small, for the purpose of this report, analysis is undertaken using aggregate categories of "men+" and "women+" that group random portions of non-binary persons with men/boys and women/girls.[1]
GIS	Geographic Information System
HOV	High-occupancy vehicle
HTS	Household Travel Survey
IPF	Iterative Proportional Fitting, a method of balancing multi-variate weighting controls
K12	Kindergarten to grade 12 (grade school)
Men+	Aggregate category used for analysis in this report, consisting of men, boys and a portion of people who identify as non-binary, prefer to self-describe, or who refused to provide their gender on the survey.
O-D	Origin-destination
P/T	Part-time employment or part-time student
PSE	Post Secondary Education
SOV	Single-occupancy vehicle (only the driver)
TAZ	Traffic Analysis Zone
TDM	Transportation Demand Management
UTM	Universal Transverse Mercator (UTM) Zone
VKT	Vehicle Kilometers Travelled
Women+	Aggregate category used for analysis in this report, consisting of women, girls and a portion of people who identify as non-binary, prefer to self-describe, or who refused to provide their gender on the survey.

1 This follows the approach used by Statistics Canada in aggregating to a two-category gender variable to protect the confidentiality of the responses provided. More information can be found here: 2021 Census gender note_(https://www12.statcan.gc.ca/census-recensement/2021/ref/gender-genre-eng.cfm) and Filling the gaps: Information on gender in the 2021 Census (https://www12.statcan.gc.ca/census-recensement/2021/ref/98-20-0001/982000012021001-eng.cfm).

1 PROJECT OVERVIEW

1.1 Introduction

The City of Burnaby is experiencing rapid population growth and economic development, leading to increased demands on the transportation network. The City of Burnaby's transportation plan, Connecting Burnaby: Burnaby's Transportation Plan (BTP), documents the community's vision and priorities for transportation. It provides long-term guidance for transportation planning and policy decisions for the next 30 years.

BTP establishes citywide targets that align with the City's climate action goals and emissions targets and provide measurable indicators for the BTP's policies and actions. To achieve the community's vision for transportation, the BTP includes a detailed implementation framework, which emphasises the importance of tracking the policies and actions and monitoring the transportation system's performance to measure progress. Since the BTP was adopted, the City has been working to implement several policy priorities, and it's expected that the BTP will be updated in the coming years. To help track some of the performance indicators outlined in the Implementation Framework, the City conducted the 2024 Burnaby Household Travel Survey. This is the first survey of its kind for the City.

Household travel surveys are a commonly used tool that collect individual and household travel data to inform transportation policy, while also broadening the understanding of social and economic trends. The results of this travel survey will provide the City with an understanding of current travel patterns and mode share. This information will confirm the City's transportation priorities, show how implemented policies have impacted travel patterns (report back on performance indicators), and provide a benchmark for future comparisons. This will be particularly important as new policies are implemented, and the City considers refining existing goals, targets and actions, and identifying new ones.

To support the development of the questions included in the 2024 Burnaby Household Travel Survey, a review of the City's existing planning and policy documents was undertaken, including the following:

- Connecting Burnaby: Transportation Plan (2021)
- Climate Action Framework (2020)
- Environmental Sustainability Strategy (2017)
- Social Sustainability Strategy (2011)

From this review we designed survey questions that can be used to measure policy impacts and provide performance indicators for 2024 and in the future. Questions related to the following performance indicators were included:

- Mode share
- Trip distance (including VKT)
- Trip purpose
- Car share membership
- Motor vehicle ownership including electric vehicles (EV)

These indicators can also be cross-referenced with household, demographic, and trip characteristic information to provide additional insights that may be helpful in reporting on BTP implementation progress and general transportation trends.

1.2 Project Background

This report presents the findings from the 2024 Burnaby Household Travel Survey.
In the fall of 2024, the City of Burnaby conducted a comprehensive household travel survey and asked household members aged -five years or older to share information about their travel behaviours over a recent 24-hour weekday. The survey collected information at three levels:

- **Household**, including number of members, number of vehicles, type of dwelling, and more.
- **Person**, including age, occupational status, type of occupation if employed, whether the person has a driver's licence, and more.
- **Trip**, covering the trips made by each household member. For each trip made on the designated survey day, information was gathered about where the trip began (origin), the time the trip began, where it ended (destination), the mode(s) used for the trip (e.g., auto, public transit, bicycle or walk), the purpose of the trip (e.g., commuting to work), and more.

An address-based sample of households was randomly selected and invited to participate by letter. Additionally, some households whose telephone numbers were available were contacted by phone—mostly to target selected areas with low online response rates.

The 2024 survey was undertaken to establish key benchmarks for the performance indicators outlined in the Connecting Burnaby: Burnaby's Transportation Plan (BTP) implementation framework.[1] The survey results will assist the City in developing community plans, transportation plans and other ongoing sustainable planning initiatives.

The 2024 survey study area coincides with Burnaby's municipal boundary. The survey was conducted with a random sample of 2,450 households in the study area. A total of 24,022 households were invited to participate by survey invitation letter, email and/or phone call, for a response rate of 10.2% (prior to data validation).

The data has been weighted to compensate for non-response bias and expanded to the population. The final survey dataset used for analysis comprises 2,349 households after removing surveys that failed validation tests, resulting in a valid response rate of 9.8%. The valid survey dataset exceeds the original survey target of 2,023 surveys, reflecting a high level of engagement with Burnaby residents through the survey.

The survey data were weighted and expanded to represent approximately 105,568 households and 253,781 residents in Burnaby. This representation is less than official forecasts of total population in both private and collective dwellings.[2]

The survey achieved a sampling rate of 2.2% of households or 2.1% of the population living in private residences (exceeding the initial survey target of a 2.0% response rate). Overall, the household-level survey results are subject to a margin of sampling error of ±2.9% for household-level results and ±1.9% for person- and trip-level results, at a 95% confidence level, considering the effects of data weighting.[3]

1 https://www.burnaby.ca/sites/default/files/acquiadam/2021-12/Burnaby-Transportation-Plan.pdf

1.3 Report Organization

The report has five chapters including this introductory chapter:

- Chapter 1 details how and why the survey was conducted, including an overview of the sampling, expansion and analysis.
- Chapter 2 reviews the survey design, sampling design, survey administration, data processing, data expansion and statistical reliability.
- Chapter 3 explores the key household, demographic and mobility characteristics that were gathered in the survey.
- Chapter 4 profiles the travel characteristics that were gathered in the survey.

2 The expansion of the survey data was based on 2021 Census counts of households (private dwellings occupied by usual residents), projected forward to 2023 using the City of Burnaby's 2023 dwelling estimates by TAZ. The expanded survey data only represent population in private dwellings occupied by usual residents. The expanded population represented by the survey data may differ from official forecasts of total population from other sources. Note also that the survey data do not represent the portion of the total population that lives in collective dwellings or is unhoused (both of which were out of scope for the survey).

3 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.


RED LIGHT

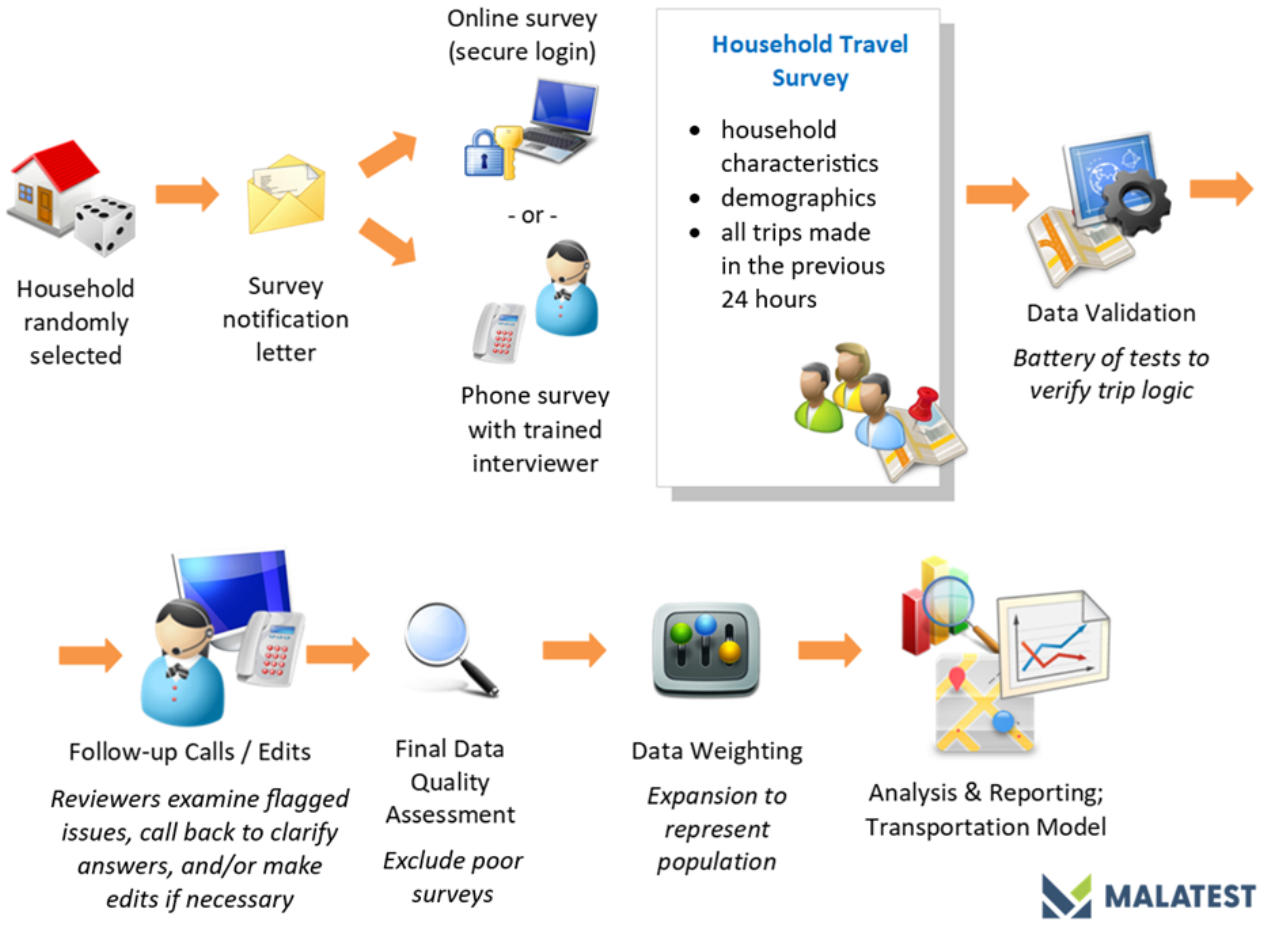
2 SURVEY DESIGN AND CONDUCT

2.1 Overview

The 2024 Burnaby Household Travel Survey is designed to obtain information on mode shares and travel patterns in the study area. The survey captured information on key household characteristics (number of household members, number of vehicles, dwelling type, income); household residents' demographics, socio-economic characteristics and places of work and school; and trips taken over the past 24 hours (from 4 am to 3:59 am the next day).

The study method allowed for the completion of surveys both by telephone and online via a 24-hour recall survey. TriptelligenceTM, Malatest's CATI/CAWI (Computer Assisted Telephone/Web Interview) system, accommodated both survey types on a single integrated platform. Figure 1 illustrates the general process for the HTS. The survey process described in the figure is explained in the sections that follow.

Figure 1. Household Travel Survey Overview



2.2 Survey Geography

The 2024 Burnaby HTS study area coincides with Burnaby's municipal boundaries. The study area is organized into four quadrants which are then broken down into eight subquadrants illustrated in Figure 2. The eight subquadrants were used as a basis for developing the initial sampling plan and survey targets. Locations outside the study area were categorized within subgroups as shown in Figure 3 for trip origin-destination mapping and vehicle-kilometer calculations.

Figure 2. Map of the Study Area

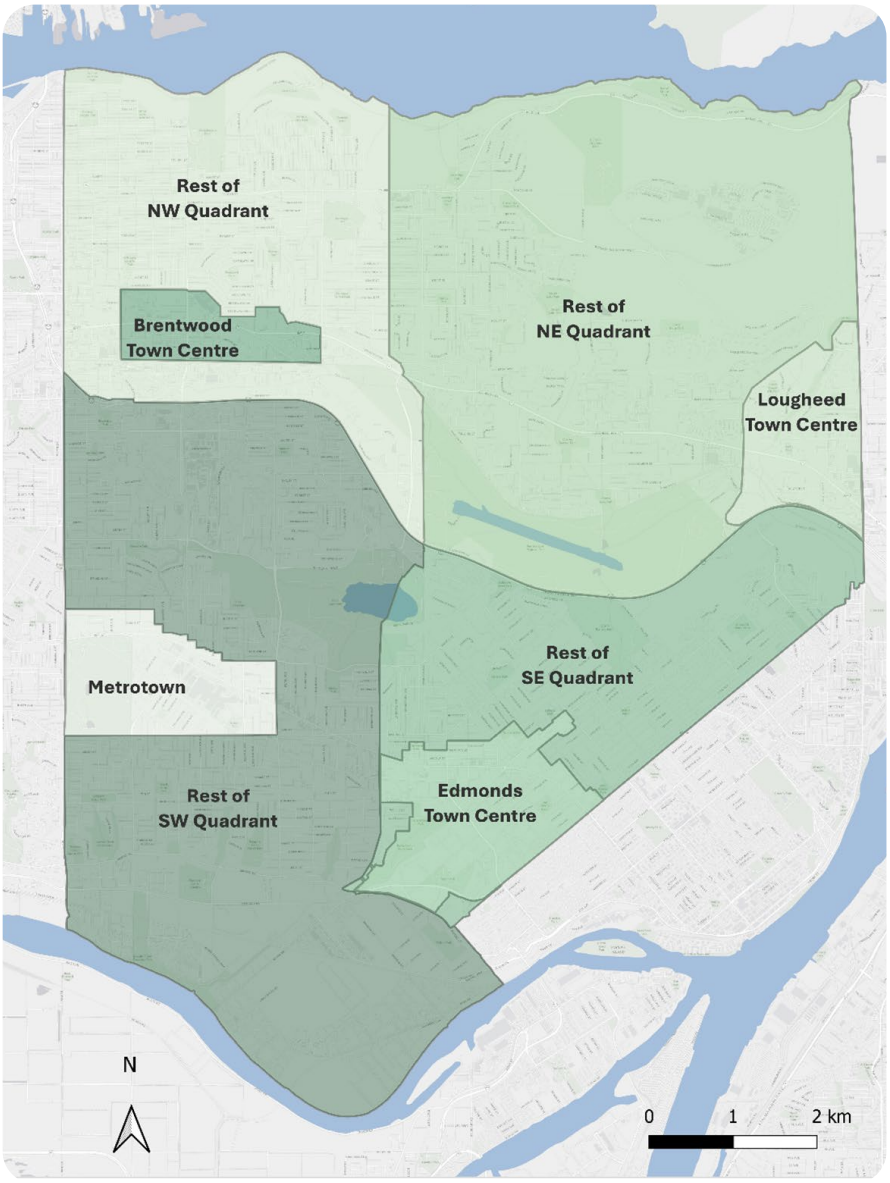
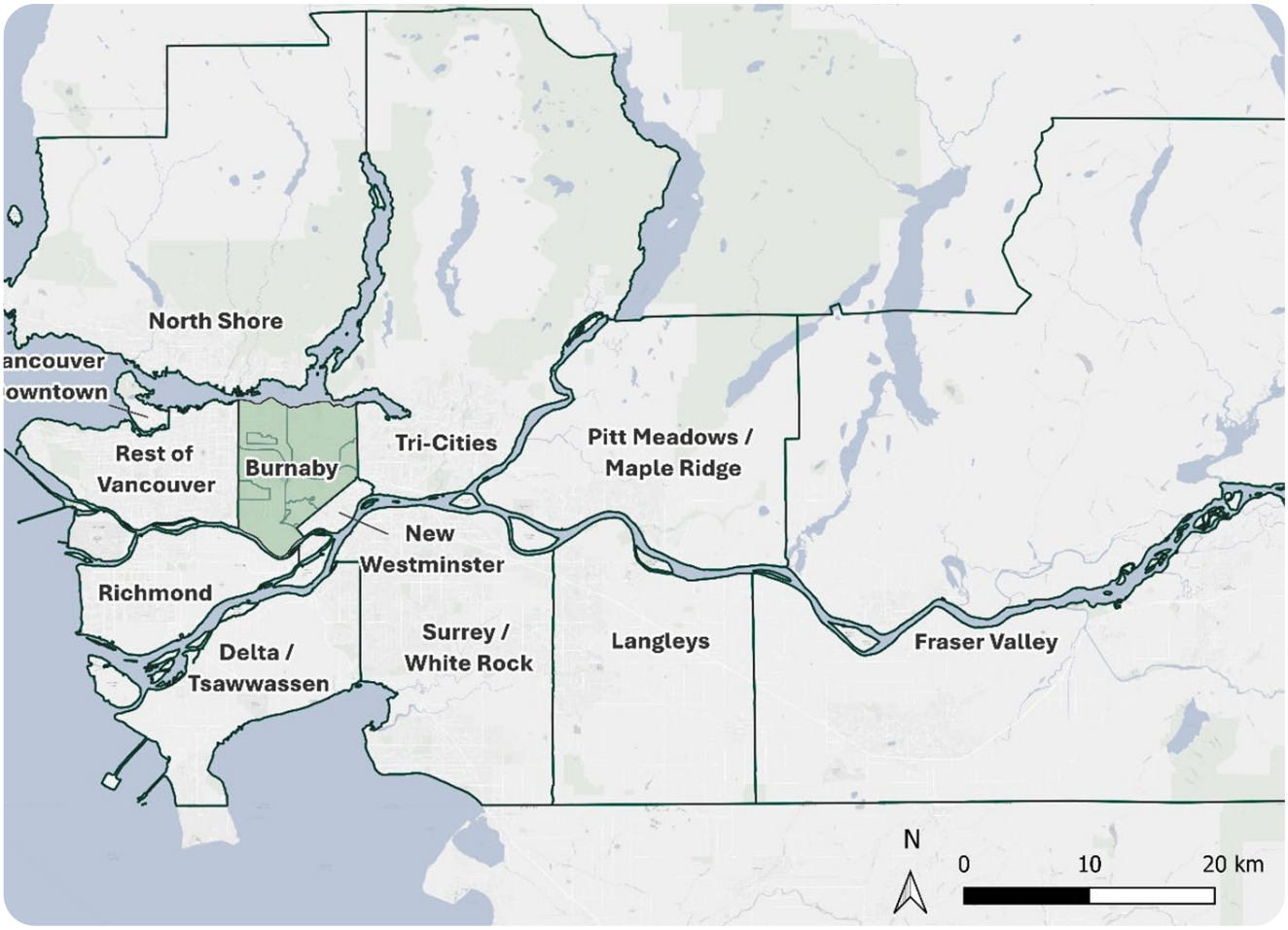


Figure 3. Map of External Zones



2.3 Survey Design

The primary goal of the 2024 Burnaby HTS is to understand where people are going and how they get there by collecting information on the trips made by each member of the household. The 2024 survey design was a household-based survey that collected demographic information on all household members and trip information for household members five years of age and older. The survey employed a 24-hour recall method that asked survey respondents to report on their trips on the previous weekday, from 4 am on the previous day to 3:59 am the next day. The ensuing text box explains how a trip is defined.

What is a trip?

For this survey, a trip was defined as a journey from one place (origin) to another (destination) with single purpose that may involve more than one mode of travel. For example, travel to work with a stop at a coffee shop is two separate trips: one with a purpose of restaurant/dining and another with a purpose of work. Travel to work involves driving to a park-and-ride location and then taking transit the rest of the way is considered a single trip, with transit as the primary mode and driving as the transit access mode.

Respondents could complete the survey online or over the phone, with the majority choosing to do so online. The survey was conducted using Malatest's TriptelligenceTM system, an integrated CATI/CAWI (computer assisted telephone/web interview) system incorporating Google Maps and data handling features developed specifically for origin-destination surveys.

2.3.1 Survey Data Elements

The survey collected the following data points at the household, person and trip levels for all household members over five years of age:

HOUSEHOLD LEVEL

- Confirmation that the survey will be completed by the appropriate household member (and online, confirmation that the person is at least 16 years of age)
- Phone number and email address (optional)
- Travel day surveyed (date and day of week)
- Household address (Geocode home XY coordinates)
- Dwelling type
- Dwelling tenure
- Number of household members
- Number of vehicles available to members of the household (includes company vehicles, leased or owned, motorcycles, light trucks, but not recreational vehicles like RVs, UTVs or snowmobiles)
- Number of motor vehicles of each fuel type (if vehicles are available to the household)
- Household income
- Household car share membership (if anyone in the household has a carshare membership service. E.g. Modo, Evo, etc.)
- Immigration status

PERSON LEVEL

- Identifier (respondent's preference – first name, initial, relationship, or other identifier) for reference in survey questions
- Gender
- Age
- Driver's licence (yes/no)
- Transit pass (yes/no)
- Cycling frequency
- Student status (full-time, part-time)
- School type (elementary, high school, college, etc.)
- School name/location (Geocode school XY coordinates)

- Attending school in-person, online/home schooled, or hybrid
- Employment status (full-time, part-time, self-employed, unemployed, retired)
- Occupation Type
- Workplace location (employed) (note if home) (Geocode workplace XY coordinates)
- Weekdays commuted or telecommuted last week
- Usual mode of travel to work
- Work parking rate and location (if auto driver is usual mode of travel to work)
- Bicycle parking (if bike is usual mode to work)
- Frequency of carshare service use (if anyone in the household has membership)
- Time period of migration to Canada (asked depending on immigration status))
- Trips made between 4 am yesterday and 3:59 am on travel day

TRIP LEVEL

- Origin (Geocode origin XY coordinates)
- Destination (Geocode destination XY coordinates)
- Trip departure time
- Trip purpose (or activity at destination location)
- Mode of travel (up to five modes)
- Clarify access and egress modes if transit was chosen without a preceding or subsequent mode entry in the trip chain
- Bus route(s) taken on trip (if transit taken)
- Bus route(s) boarded (if bus used as mode)
- Parking location (if drove to access transit)
- Number of vehicle occupants (if auto driver or auto passenger)
- Additional information about trip (open-ended response)

2.4 Sample Design

The population frame for the 2024 Burnaby HTS included all private households within the study area. All persons normally residing within each sampled household in the study area were included in the sample frame. Detailed trip data were only collected for individuals five or older, as it is assumed that younger children would generally be accompanied by an older individual for their travel. Beyond reducing the response burden for families with young children, another reason for limiting the data collection to older individuals is the reluctance of some respondents to provide potentially sensitive information about the activities of younger children. For children under five, the survey collects some limited demographic information (such as age and gender).

Also, the sample frame does not include the small proportions of the population housed in collective dwellings such as long-term care homes or institutional settings, or who are homeless.

A sampling plan was developed that stratified the survey area into eight sampling zones based on subquadrants. Dwelling counts for each sampling zone were developed from matching 2021 Census dissemination blocks to the zones as close as possible, with apportionment of dissemination blocks that straddled zones as close as possible. To obtain a representative sample of households in the study area, an address-based sampling approach was employed. Households were randomly sampled from a database of mailable residential addresses maintained by Canada Post, with a portion of records having only address listings (address-only) and a portion having addresses that could be matched to listed phone numbers (address-and-phone). A total of 24,022 survey invitation letters were sent to households in private dwellings within the Burnaby study area. Approximately 68% of these invitations came from the address-only sample, and the remaining 32% comprised the address-and-phone sample. As address-and-phone listings have higher response rates, fewer listings were required to obtain a representative survey sample.

2.5 Survey Conduct

At the start of survey administration, a rolling field test was conducted with a sample of 100 households across Burnaby. The test began with a small batch of invitation letters mailed on September 16, 2024, and the first survey completions were received on September 18, 2024. The field test:

- assessed initial response
- tested telephone administration of the survey
- ensured processes associated with the reception of calls to the toll-free line and email enquiries were working as intended
- confirmed that the survey programming functioned as intended
- gauged the effectiveness of the survey questions through feedback from initial respondents and telephone surveyors

As no issues were identified, full survey administration continued. Five initial waves of survey invitation letters were sent (including the first smaller flight for the field test). The balance of letters sent to each sampling zone was adjusted in the fifth wave based on the initial response to the first three waves. In October, a sixth wave was added to target specific sampling zones with low response rates.

Survey administration continued until mid-December. Most survey completions were obtained by the end of October, while November and early December were used to target low response subquadrants. The first travel date recorded was September 18, 2024, and the last was December 11, 2024, by which time the survey completion targets had been met or exceeded for all sampling zones.

Households were sent survey invitation letters signed by the City of Burnaby's Transportation Planning Senior Manager with an informational brochure explaining the purpose of the study, along with a secure access code and instructions for completing the survey online or over the telephone. The mixed-mode telephone/online method maximized opportunities for households to complete the survey. A total of 24,022 households were sent a survey invitation letter, with the largest flights of invitations mailed out in late September and early October, and a few smaller flights in late October.

For addresses with listed landlines, households were contacted by professional interviewers to complete the survey over the phone. Respondents who expressed a preference to do the survey online were provided the option to do so and were e-mailed instructions with a link to the online survey. Outbound telephone surveying began on September 25, 2024 (while inbound calling began a couple of days prior, with September 23 recorded as the first inbound call date). Outbound calling continued until early November, with inbound and limited calling for appointments and follow ups continuing until December 6. Telephone follow-ups for partially completed surveys also occurred in late November/early December to help respondents finish their surveys and to obtain extra survey completions. The over-achievement of the target number of survey response also provided room to replace any surveys which might later be found to contain unusable data.

As the 2024 Burnaby HTS considers only weekday travel, telephone surveying was limited to Tuesday through Saturday, to collect data on Monday through Friday travel. Online respondents were permitted to complete the survey between Sunday and Monday. Although the survey usually asked about the most previous weekday, to mitigate the potential for over-representation of Friday travel, a portion of respondents who completed the survey on Saturday or Sunday were directed to complete the survey with respect to Thursday. Those who completed the survey on Monday were always asked about Friday, as recollection of Thursday travel may wane more by Monday. No calls were made regarding trips made on National Day for Truth and Reconciliation (September 30), Thanksgiving (October 14) or Remembrance Day (November 11), as travel recorded on those dates would be atypical of normal travel patterns for many households. Online surveys were also restricted from providing travel for those dates. The survey was conducted with a total random sample of 24,022 households in the study area, for a response rate of 10.2% prior to data validation. Fully 90% of all surveys were obtained by November 1, with decreasing gains

in November from phone follow-up and later online response to the letter. Overall, about 97% of all surveys were obtained by November 15, while temperature and precipitation were still very conducive to use of active modes. Mode choice amongst the last 3% of survey completions may have leaned a little away from active modes and towards driver. (E.g., in the raw unweighted data, active mode use was 16.3% in trips captured for travel days prior to November 15, and 13.2% for the trips captured for travel days after November 15). However, given the small number of surveys completed after November 15, bias to the survey results would be negligible. The survey results should be considered to be representative of travel in early to mid-fall, before the onset of winter weather.

Table 1. Survey Completion by Week of Survey Administration

Survey week (starting the week of Sept 20)	Month	Survey completions	Cumulative surveys	Cumulative %
1	September	123	123	5%
2	September	447	570	24%
3	October	218	788	34%
4	October	495	1,283	55%
5	October	260	1,543	66%
6	October	219	1,762	75%
7	October	251	2,013	86%
7	November	104	2,117	90%
8	November	116	2,233	95%
9	November	49	2,282	97%
10	November	27	2,309	98%
11	November	25	2,334	99%
12	December	11	2,345	100%
13	December	4	2,349	100%

A prize draw was offered to survey respondents to encourage participation. The prize draw included two grand prizes of $200.00, and 45 $25 e-gift cards to local vendors. The prize draw was administered in January 2025 after initial survey data verification processes had been completed.

2.6 Data Processing

2.6.1 Data Validation and Imputations

Each night, Malatest's Triptelligence™ data validation system automatically ran a battery of tests on survey completions from the previous day. The system assigned flags for different issues with different levels of priority (critical issue, possible error, warning, etc.) for review by data validation staff. The data validation staff reviewed each flagged survey and either made logical corrections, re-geocoded locations, called back respondents to clarify information, or rejected the survey as unsalvageable. Surveys that passed all data validation tests were randomly selected for manual review to verify that such surveys appeared to be correct and that validation tests were working as expected. Through the data validation process, 4.1% of surveys were rejected.

The data was systematically reviewed and tested by data analysts during and post data collection to provide quality control of the dataset and rule out the possibility of any systemic data issues. Any relevant re-codes to the data were undertaken (such as combining captured information on work status, school status or other status into a single occupation variable) in preparing the data for analysis.

After data collection, the survey data was further tested by analysts using additional/final validation tests and manual checks to flag any remaining errors in the data or issues with trip logic. This addressed any unresolved edits or errors from case follow ups/corrections to finalize the dataset for analysis and reporting.

A modest number of missing data points were imputed in preparation for the data weighting by age and gender. Person records with unknown age were imputed (420 who provided a five-year age range and 88 who answered only a broader age range, out of 5,289 person records in the dataset used for analysis). Those who reported non-binary gender or who refused to provide their gender (95 persons) were randomly assigned to categories of "men+" (men and boys plus a portion of non-binary/refused) or "women+" (women and girls plus a portion of non-binary/refused) for data weighting and analysis, as such respondents were too few to analyse separately. This follows the approach used by Statistics Canada in reporting the Census profile results used for the Burnaby HTS data weighting. The original responses are preserved in the final dataset.

After data validation and rejection of surveys with unresolvable trip logic issues, 2,349 surveys were retained.

2.6.2 Geocoding

After finalization of the dataset, all latitude/longitude coordinates for locations captured by the survey (home, work, school, trip origin, trip destination) were geocoded using GIS tools to relevant study geographies (eight subquadrants) and to Universal Transverse Mercator (UTM) Zone 10N x-y coordinates.

2.6.3 Trip Distances

Euclidean straight-line distances between trip origins and destinations were computed from the UTM Zone 10N x-y coordinates associated with the latitudes and longitudes.

Google APIs were accessed to determine estimates of the actual trip distance and duration as travelled on actual roads, cycling paths, and/or walking paths using Google's recommended route of travel for the given mode of travel and time of day. The Google API may not have returned trip distances and durations for a small portion of trips. The actual distance travelled by the participant on their travel day may have differed if the participant's route choice differed from Google's recommended route. Durations are estimates for the given mode and time of day and may have differed on the actual day of travel. The durations for different modes are not exactly comparable: for transit trips, the trip duration includes the total time associated with the journey, including time spent walking to the bus stop or transit station, time walking between transfers, and time waiting for transfers. For automobile trips, the duration does not include time to find parking or time to walk from the parking location to the final destination. It should be noted that for the small portion of transit trips that has access modes other than walking, the trip distance and duration obtained from this method may not always be accurate.

Distances for trips reported with the mode of 'school bus' are not known, as routes are not known. They were estimated using driving distance for analysis purposes.

2.7 Data Expansion and Weighting

The data for the surveyed households were expanded to represent the total population living in residential households in the study area. The survey data were also weighted to more accurately represent the distributions of households by household characteristics and demographics. This is necessary to address non-response bias and uneven sampling rates in the final survey sample.
Households were weighted against data controls from the census for households that are usual occupants of private dwellings.

The study area geography was organized into expansion zones as the base geographical unit for data weighting. The expansion zones were developed based on the best aggregations of Burnaby's 322 dissemination areas (DAs) into subquadrants, with detailed census profile data available for all the 322 dissemination areas. The eight expansion zones do not necessarily align exactly within the eight subquadrants used for analysis.

An iterative proportional fitting (IPF) method was employed to balance household weights and person weights for the multiple weighting controls. In this method, incremental adjustments to the household weights are made in succession for each of the household controls, as well as a composite adjustment to each household weight to account for the disproportionate distribution by age/gender amongst the members of each household. Each successive adjustment to balance a given control may slightly or significantly unbalance the correction previously introduced for a different control. However, iteratively cycling through each control results in convergence to a solution where all household and population controls have expected distributions (to within reasonable tolerance; some deviations may be expected, particularly for expansion zones with smaller sample sizes). In this manner, all persons within each household carry the same weight as the household.

Limits were set on extreme weights, although they were allowed to range from 0.175 to 5.75 times the base expansion weight for the household's expansion zone. Only 3% of households received weights above 4.0 times the base expansion weight. The weights received final calibrations to ensure that the total number of households in each expansion zone matched the control totals.

The core weighting controls were developed from the 2021 Census data. The controls were selected for having significant influence on trip-making behaviour and for completeness of the information in the survey data. Estimates for 2024 were initially projected forward from 2021 Census counts based on a 5.7% three-year growth estimate using the 2016 to 2021 census compound aggregate growth rate (CAGR). The weighted data were later rescaled such that the count of total dwellings matched the City of Burnaby's 2023 dwelling count estimates.

Adjustments to the resulting census-based counts were also made to remove the portion of the population outside the survey sampling frame (approximately 1.5% of the population) that lives in collective dwellings or without a fixed address. The adjustments to the distributions of population by age group considered that seniors make up a greater portion of the population living in collective dwellings. For this adjustment, information from Statistics Canada on the proportion of population by age and gender at the Census Subdivision level was used determine subtractions in the population counts by age and gender groups in those expansion zones known to have population in collective dwellings. The final census-based weighting controls thus represent the age distributions of population living in private households. In some smaller expansion zones, certain age and/or gender categories may have been collapsed further due to small sample sizes or strata with no sample.

Throughout the IPF iterations, census-level weighting controls were applied to households. For each expansion zone, the weighting controls applied to 'households' included:

4 Other ground-oriented' includes dwellings such as town houses, row houses and semi-detached dwellings but excludes single-family dwellings and apartments.
5 Men+ (men, boys, and some non-binary persons) and Women+ (women, girls, and some non-binary persons).

- total households (private dwellings occupied by usual residents)
- household counts by dwelling type (house, apartment 0 to 4 floors, apartment 5+ floors, other ground-oriented[4])
- household counts by household size (1-person, 2-person, 3-person, 4-person, 5+ person)
- population counts by age and gender (12 age ranges, two genders[5])
- household counts by report zone (eight Burnaby subquadrants)
- household counts by traffic analysis zone (TAZ) aggregated to eight Burnaby subquadrants

In addition, the weights were seeded by an initial adjustment of household counts by dissemination area to better balance the sample geographically within each expansion zone. After this, the expansion zone level adjustments were applied.

After the expansion zone adjustment, an adjustment by subquadrant was applied so that the reported results accurately represent each subquadrant. In the final step, an adjustment was applied by 17 sub-quadrant geographies formed of aggregated TAZ that generally respected the eight subquadrant's boundaries to match 2023 dwelling counts for the aggregated TAZ.[6] This ensured that any new builds between the 2021 Census and City's 2023 dwelling counts by TAZ were properly represented by the survey.

To contain the variance of the data weights, no attempt was made to adjust the weighting to balance the survey sample by day of the week, as such weighting could create more extreme high or low data weights. It may be noted that travel on Mondays is under-represented (9% of all surveys, in part due to postal delivery dates for the mailouts, in part due to statutory holidays (usually being Mondays). In comparison, Fridays are over-represented (37% of all surveys, due to a higher likelihood of the survey being completed for the previous weekday for any response submitted between Saturday through Monday). As Mondays have lower average daily trip rates than Fridays, the over- and under-representation of these days should balance out. However, there may be some bias towards trip purposes that may be more common on Fridays.

While the expanded number of households represented by the survey data after data weighting matches the forecast of households used, in neighbourhoods with small samples of larger households the resulting expanded population may fall short of forecast population in private households, due to limits placed on extreme weights. Note that as the data weighting controls are based on the proportion of dwellings that are private dwellings occupied by usual residents from the census applied to the City's 2023 dwelling counts, the resulting expanded survey population may not match population estimates from other sources.[7]

2.8 Validation of the Weighted Survey Data

The weighted survey data were validated against census statistics (various household and demographic characteristics),[8] and other available reference data (school enrolments). The results compared favourably for most census characteristics, including geographic distributions, most household size categories, dwelling type, age/gender, and household income. This suggests that the survey results can be taken to be generally representative of the total population. However, it may be noted that in some expansion zones, the survey under-represents households with five or more persons and thus may slightly under-represent the population even when the number of dwellings matches census counts. It also may be noted that the weighted survey results are less than the total Burnaby population, given that persons living in collective dwellings are not in scope. Furthermore, it may be noted

6 This step was introduced after discussing the preliminary weighted results with the City of Burnaby. As the expansion of surveys to 2024 relied on the 2016 and 2021 census growth rate, this method may not represent the growth rate accurately. The adjustment to 2023 TAZ aggregated data in the survey results represents the dwelling counts captured as of 2023 (one year before the survey was conducted). However, the method applied ensures that the growth rate within a given subquadrant is more aligned with current dwellings in each subquadrant area.

7 In particular, Census profile data on private dwellings and private dwellings occupied by usual residents do not take into account Census undercounts of population or temporary residents.

8 Statistics Canada. 2023. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed May 14, 2025)

that the expanded population from the survey may differ from population estimates from other sources due to differences in data sources and forecast methodologies.

The survey data may modestly under-represent renters compared to owners. In the weighted survey data, 27% of households are renting, compared to 39% in the 2021 Census. An adjustment was not introduced to the data weighting, in order to limit the likelihood of extreme weights.

The survey data may somewhat underrepresent immigrants and overrepresent residents who were born in Canada or citizens at birth. In the weighted survey data, 54% of participants indicated that they were born in Canada (or 58% if refusals to answer the question are excluded), compared to 42% in the 2021 Census. Nevertheless, the sample of immigrants surveyed by the Burnaby HTS is robust and provides the opportunity to undertake analysis of travel patterns for immigrants compared to non-immigrants.

The income distribution of households surveyed for households which provided an answer was found to be very similar to the distribution per the 2021 national census, with some apparent underrepresentation of lower-income households (10% having incomes of less than $25,000 per the 2021 Census, compared to 6% in the valid expanded survey counts). Note that the Census data are for household incomes in 2020, while the survey data are for household incomes as reported at the time of the survey.

School enrolment observed in the survey was compared against K–12 enrolment data. The survey data estimates of student enrolment are for a total of 29,000 students attending K-12 education (including adult students) which closely aligns with Burnaby School District's 2024/25 K-12 enrolment counts of 29,200 students for all grades.[9] The alignment between survey and enrolment data is supported by the survey weighting process, which incorporates age group distributions. Despite the close match in total enrolment, it may be noted that survey respondents did report K12 students with attendance of schools located outside Burnaby and may have reported private schooling that is not included in the school district counts, so it is possible there may be some undercounting of actual K12 students.

The survey results suggest that the estimated fleet of household vehicles numbers 143,700 vehicles. ICBC statistics[10] for 2023 (one year earlier than the survey) list about 111,500 passenger vehicles and 6,100 commercial vehicles (e.g., vans, pickups, crew cab, etc.) for personal use, plus another 18,500 passenger vehicles and 20,000 commercial vehicles insured for business/other purposes. Vehicles insured for personal use total 117,600, which is considerably less than the number of household vehicles. For the purpose of the survey, however, household vehicles reported by participants included business vehicles owned by household members' businesses and vehicles provided by employers for employee use. It is impossible to know how many of the 38,500 vehicles insured for business use are household vehicles, although it is likely that it may not be enough to make up the gap between the personal-use total and the survey estimate. Looking at electric vehicles (EVs) and hybrids, the expanded survey estimates for EV and hybrid vehicles combined total 20,600, which is higher than the ICBC estimate of 18,700 in 2023. Note that the ICBC figure may also include non-household vehicles, but also note that between 2022 and 2023, the ICBC statistics indicate 31% growth in the number of such vehicles, suggesting that by 2024 there could have been as many as 24,500 such vehicles (including non-household vehicles). In summary, these comparisons suggest that survey estimates are in the right ballpark but may somewhat over-estimate vehicle ownership. It is difficult, however, to say by how much.

9 BC Schools - Student Enrolment and FTE by Grade - Enrolment and FTE 2020/21 to 2024/25 (https://open.canada.ca/data/en/dataset/2c53729a-2453-4633-92f3-6876a45f8bc4/resource/ce5720af-8ca9-4992-9158-6d34ece4b6a0, last accessed May 13, 2025).

2.9 Final Survey Dataset

The final database is in Microsoft Access format and includes the expanded data for the 2024 Burnaby HTS. The dataset consists of three main data tables (household, persons and trips) along with associated lookup tables. The final dataset contains the following records:

Table 2. Final Dataset Summary

Table	# of valid records	Weighted #
Household	**2,349**	105,570
Persons	5,289	253,780
Trips (for persons 5+ years)	11,708	555,200

Table 3. Survey Completions by Travel Day (Day of Week)

Day	% of surveys	Weighted %
Monday	**9%**	9%
Tuesday	14%	14%
Wednesday	15%	15%
Thursday	25%	24%
Friday	37%	38%

The data collection period covered travel dates from September 18 to December 11, 2024, with about 97% of the data having been collected for travel dates prior to November 15. Table 3 presents the breakdown of weighted surveys completed by day of the week of the travel dates surveyed. As previously noted, Mondays are underrepresented, and Fridays are overrepresented. As Mondays and Fridays are days more likely to have reduced commuting due to flex days or hybrid work schedules, the low Monday proportion may be balanced out by the high Friday proportion. Although with these two days representing 47% of total surveys (rather than the 40% that would be expected with balanced representation), there may be modest bias in the survey data to Friday travel.

2.10 Statistical Reliability

Even with stratified random sampling, well-designed survey instruments, thorough quality control during data collection, data validation and data processing, and data weighting to correct for sampling bias and to better represent the population, it is inherent in any survey to have some residual and unavoidable errors, such as sampling error. To inform applications of the survey data, this section discusses data reliability and explains possible sources of error in the data. The section concludes with a summary of caveats that analysts should note when using the data.

10 ICBC vehicle population statistics for 2023 for the City of Burnaby (https://public.tableau.com/app/profile/icbc/viz/VehiclePopulationIntroPage/VehiclePopulationData, last accessed May 13, 2025).

2.10.1 Data Reliability

As with any survey, the data collected can be subject to sources of error or bias that can affect the reliability of the survey results. Potential sources of error can include the following:

- **UNDER-COVERAGE.** Coverage error is associated with the failure to include some populations in the same frame used for sample selection, which may occur with samples of convenience such as telephone directories. The sample frame used was a Canada Post database of mailable residential addresses, which provides excellent coverage of private dwellings in the study area, reducing the concern of under-coverage. However, the Canada Post database may occasionally miss or underrepresent some housing types, such as basement/secondary suites, mobile home parks and other non-conventional dwelling types.

- **NON-RESPONSE BIAS.** Non-response bias occurs when individuals who do not participate in a survey differ in relevant ways from individuals who do participate. For example, younger people are often less inclined to participate in surveys. This bias has also been addressed, in part, through the data expansion process, including the weighting by household size, dwelling type, age and gender. However, it should be noted that there can be other, hidden biases in the data that could not be corrected by the data weighting.

- **MEASUREMENT ERROR.** This type of error is associated with the failure of survey instruments to capture correct information (e.g., through misunderstanding survey questions). To control for this, the questionnaire and associated materials were based on previously well-tested survey questions, thoroughly reviewed for content and meaning and field-tested with a sample of respondents prior to the full survey administration. Telephone interviewers were trained on the objectives of the survey, definitions of key terms, the intent of survey questions and how to address different trip circumstances described by respondents. During survey administration, telephone interviews were regularly monitored by a supervisor to ensure consistent application of questions. The online survey also included several built-in tests to prompt respondents to confirm key data and clarify illogical responses (e.g., checking for someone who reported their travel mode as “auto driver” even though they were not reported as having a driver’s licence).

- **RESPONDENT UNDER-REPORTING OF MINOR TRIPS FOR OTHER HOUSEHOLD MEMBERS.** This type of error could include respondents failing to report all trips made by other household members. In the 24-hour recall method employed in this survey, in which a household member reports on the travel made by other household members, the household member responding to the survey should remember all of their trips. They should also be aware of the most important trips made by other household members, such as non-discretionary (commuting) trips as well as their home-based trips (those that leave or arrive at home). They may not always be aware of or report non-home-based trips with discretionary purposes, such as a stop for coffee along the way to somewhere else or a short trip at lunch from work to a sandwich shop and back. Thus, there may be some underrepresentation in the survey data of brief stops along reported journeys or short non-home-based discretionary trips. No attempt was made to correct for possible under-reporting of such trips.[11]

- **PROCESSING ERROR.** Processing errors include data entry, coding, editing and imputation errors. These potential sources of error were addressed through comprehensive training of survey staff and survey validation staff, continuous quality management practices and data validation.

- **SAMPLING ERROR.** Sampling error refers to the variability that occurs by chance because a sample was

11 Such adjustments would require detailed analysis of the trip making behaviours by trip type, trip purpose, and demographic characteristics of primary respondents and proxy respondents (other household members) as well as complex trip-synthesis imputations and/or weighting adjustments that would have been beyond the scope of this project. Such imputations or weighting adjustments also carry the risk of introducing unintended bias (e.g., over-compensation) and/or distortion of other trip characteristics such as average trip distances.

surveyed, rather than the complete population. As much as possible, sampling error was controlled by obtaining a robust survey sample and targeting areas with lower-than-expected response rates to improve sample sizes for these areas.

- **ERROR DUE TO EXTREME WEIGHTS WHEN ANALYSING SMALL SAMPLES.** Notwithstanding the limiting of very extreme weights in the data weighting, small sample sizes for some strata and non-response bias may contribute to the assignment of high weights for some cases relative to others within the same geographic zone or population stratum. Users of the data should take note that the sample sizes for some zones are relatively modest. The survey results for such zones should be interpreted with caution. Caution should also be exercised when analysing any small subgroups of the total population.

2.10.2 Estimates of Sampling Error

Sampling error can be estimated based on the size of the sample universe (number of households in the study area) and the number of household survey completions. The estimated margin of error for the survey results at the household level is at ±2.9% at a 95% confidence level (theoretically, for a given survey question, the true response proportion for the population would be somewhere within the margin of error of the survey results 19 times out of 20), considering the effects of data weighting on sampling error. For person- and trip-level survey results for the entire study area, the sampling error is estimated to be ±1.9%. Sampling errors increase when the study area is disaggregated into subquadrants or other sub-municipal districts, or when analysing population sub-samples. Table 4 provides the household sampling rate, the household and person sample sizes and the household and person sampling errors for the geographies in the study area. All subquadrants achieved sampling rates ranging from 1.9% to 2.5% of the estimated number of households.

Geography Households	Households*	PopulaTion*	Survey	Sampling rate (% of households Sampling rate (% of households)	Sampling error, household level (±%)	Persons in surveyed households	Sampling rate (% of population in private dwellings)	Sampling error for persons, trips info (±%)
Burnaby	**105,600**	**253,800**	**2,349**	**2.2%**	**2.9%**	**5,289**	**2.1%**	**1.9%**
Subquadrants								
Brentwood Town Centre (NW)	11,900	22,500	236	2.0%	8.0%	428	1.9%	6.0%
Rest of NW Quadrant	12,700	32,600	308	2.4%	8.6%	799	2.4%	5.2%
Lougheed Town Centre (NE)	8,400	18,600	156	1.9%	9.6%	328	1.8%	6.7%
Rest of NE Quadrant	12,500	32,700	299	2.4%	8.2%	729	2.2%	5.3%
Edmonds Town Centre (SE)	12,200	27,500	305	2.5%	8.4%	596	2.2%	6.1%
Rest of SE Quadrant	10,700	31,400	242	2.3%	10.7%	648	2.1%	6.3%
Metrotown (SW)	18,000	35,100	385	2.1%	6.9%	683	1.9%	5.0%
Rest of SW Quadrant	19,200	53,400	418	2.2%	6.8%	1,078	2.0%	4.1%
Quadrants								
Northwest Quadrant	24,580	55,104	544	2.2%	5.9%	1,227	2.2%	4.0%
Northeast Quadrant	20,875	51,274	455	2.2%	6.2%	1,057	2.1%	4.1%
Southeast Quadrant	22,880	58,928	547	2.4%	6.7%	1,244	2.1%	4.4%
Southwest Quadrant	37,233	88,475	803	2.2%	4.8%	1,761	2.0%	3.2%
Town Centre								
Town Centres	50,549	103,628	1,082	2.1%	4.0%	2,035	2.0%	2.9%
Outside Town Centres	55,019	150,153	1,267	2.3%	4.2%	3,254	2.2%	2.5%

*In this table, Households and Population are the expanded survey estimates. Figures may differ from the TAZ aggregated data and reflect some underrepresentation of total population due to the underrepresentation of households with five or more persons and/or because persons living in collective dwellings and unhoused persons are not included in the sampling frame.

The sampling errors for person-level information can be considered to carry over to the trips those people make (i.e., the person-level sampling error is associated with the entire trip chain). Reporting of survey results related to trips originating in or destined to given sub-regions or subquadrants includes trips made by residents of the given geography as well as other residents of the study area from outside that given geography. Therefore, the sampling error associated with information on trips to, from or within the area would be much better than that for just the trips made by residents of the area—particularly in areas that attract a lot of trips, such as Metrotown and other town centres. Therefore, the calculation of sampling error can be undertaken using the number of persons who make trips to a given zone as the sample size rather than number of trips.

2.10.3 Caveats

Sampling error is not the only possible source of error. While efforts have been made to control for possible error and to weight the data to be more representative of the population, there may remain some non-response bias or other sources of error not accounted for in the data weighting and data processing. The weighted survey data are based on a sample of the population expanded to represent the total population of persons living in private dwellings (excluding those living in collective dwellings). As such, expanded counts from the survey data should be understood to be estimates, not exact counts.

Caution should be exercised when comparing the survey results with other sources of information that may use different methodologies in their estimations. Comparisons with other sources of information may be more reliable when the other source of information has exact counts rather than estimations (e.g., census-based data), however the time frame of the information compared against should be taken into consideration (e.g., the last census was conducted during the peak of the COVID-19 pandemic).

Users of the survey data should note that while the survey captured information on transit routes used, and the reported routes were checked against origin/destination for reasonableness, the expanded counts by route cannot be validated against ridership data (as only Burnaby residents were surveyed, and residents of other cities in the TransLink service area also use Burnaby). Analysis of the data by route should be undertaken with caution given the modest sample sizes of transit users by individual route, although analysis for high-ridership bus routes or SkyTrain lines may be more reliable.

2.11 Comparison with Other Surveys with Travel Data for City of Burnaby Residents

There are two other major surveys that can provide insight into Burnaby residents' travel behaviour, complementing the Burnaby HTS. These are TransLink's Metro Vancouver Regional Trip Diary and Statistics Canada's Census Profiles (data on commuting).[12] All three surveys aim to understand travel patterns and preferences and employ different methodologies, making them complementary sources of information.

The census is conducted every five years and recent cycles of the TransLink Metro Vancouver Regional Trip Diary have been conducted every six years. The census was last conducted in 2021 and provides a detailed snapshot of the country's population including information on work commuting patterns and household demographics. TransLink's Metro Vancouver Trip Diary was last conducted in 2023, with new cross sections of the population being surveyed in each survey cycle. Full results from these sources are typically available one-and-a-half to two-and-a-half years after data collection. The Burnaby HTS, the first of its kind, surveyed a cross section of the population, with results available about six months after completion of the survey.

The census commuting data only provides information on work commuting of Canadian population aged 15 and older living in private households.[13] The census long-form questions on the labour force, workplace location, and commuting are asked of a sample of 20% of the households.

The TransLink Regional Trip Diary is conducted as a complete household travel survey, for which demographics and all trips are collected for all members of the household. The 2023 survey sampled 1.25% of households in Metro Vancouver, with survey targets set for municipal subareas, and had an overall response rate of 2.3% (with a high abandonment rate, with 56% of those recruited to the survey not going on to complete it).[14] The TransLink survey primarily used address-based sampling and survey invitation letters, supplemented by a cell-phone sample to boost

12 It may be noted that Statistics Canada's Labour Force Survey, an ongoing survey of population 15+ years of age eligible for the labour force, also collects information on commuting, but with a much smaller sample of the population, and results are only available for Census Metropolitan Areas (CMAs) such as the Vancouver CMA (all of Metro Vancouver), not for individual municipalities within each CMA.

13 Statistics Canada. Commuting Reference Guide, Census of Population. 2021.

14 2023 Regional Trip Diary presentation, RTM User Group Meeting, April 8, 2024.

response. Almost three-quarters (73%) of survey participants complete the survey online, while 27% completed via smart phone app, which logged trips throughout the day. Close to 1,400 valid surveys were completed with Burnaby households.

The Burnaby HTS was conducted with a sample of 2.2% of households and had a response rate of 9.8%. The survey relied entirely on address-based sampling and survey invitation letters, with some geographically targeted dialling of phone numbers associated with sampled addresses. The survey had a low abandonment rate, with 12% of those who completed initial questions continuing on to finish the full survey. The majority of surveys were completed online, with a small proportion completing via phone. For most surveys, the primary survey respondent fills in the information for all other household members. In total, 2,349 valid surveys were completed with Burnaby households.

The census commuting data is used in conjunction with age, gender, labour and income variables to provide additional context of those who commute. The census commuting data is available at different scales from dissemination areas to the municipal, regional, provincial and national level, and data is suppressed when numbers are too small at any given scale. The TransLink data are also weighted at a sub-municipal level, with five sub-municipal geographies within Burnaby, although some adjustments are made globally across the entire dataset. The 2021 Census data on labour, workplace location, and commuting was gathered during a peak wave of the COVID-19 pandemic (May 2021) and thus provides a view of work arrangements and commuting patterns that was unique to that time and may not be applicable today. This should be kept in mind when comparing the Burnaby HTS results against the 2021 Census for such topics. The 2016 and 2021 Census results provide useful benchmarks against which to measure changes in workplace arrangements and usual commute mode pre-pandemic, during the pandemic and post-pandemic.

The Burnaby HTS and the TransLink Regional Trip Diary have very similar questions on demographics and about trips taken on a sampled travel day. The Burnaby questionnaire, however, has a few additional questions, and there may be differences in wording, definitions and how the data are reported. The TransLink Regional Trip Diary is broader in scope, capturing a comprehensive dataset of travel behaviours across the Metro Vancouver Region. The TransLink Regional Trip Diary surveys all household members and reports trip behaviours for residents five years of age and older. Similarly, the Burnaby HTS reports on trip making of residents five years of age and older. These two surveys differ in how the data are processed and weighted to represent the full population, including the following:

- While both surveys are based on census data scaled to population estimates in the survey year, the TransLink Regional Trip Diary may expand to different household and population estimates from the Burnaby HTS. From the published information, it appears that the population estimates used in the TransLink weighting are higher than those used in the Burnaby HTS weighting, which will affect any comparisons of trip volumes.

- Both surveys use key census profile information as data weighting controls to compensate for non-response bias, including dwelling type, household size, age and gender.

- The TransLink survey includes additional weighting controls beyond those used in the Burnaby HTS, including:
  - transit ridership (with the adjustment applied across the entire region)
  - Statistics Canada Labour Force Survey (LFS) estimates on the proportion of workers who work from home as well as the proportions who reported different modes of travel to work (with both adjustments applied across the entire region)[15]
  - household income (which relies on imputing missing income for respondents who did not answer the question)

    It should be noted that the transit ridership and usual work travel mode adjustments likely affect the mode shares in the trip results.

15 The adjustment by usual mode of travel to work also required imputation of unknown usual work commutes for participants who did not report a work trip.

- The Burnaby HTS cannot take into account the same additional adjustment factors.
  - The Burnaby HTS cannot adjust for transit ridership amongst just Burnaby residents, as the available ridership figures apply to the whole region.
  - The Burnaby HTS also cannot take into account LFS estimates of workplaces and usual mode of travel to work, as the LFS is conducted with only a small sample of population (around 0.3% of population 15+ years of age) and therefore does not release results at the municipal level. Equivalent census journey-to-work measures cannot be used for weighting the Burnaby HTS data, as the 2021 Census was conducted at a time of considerable disruption to workplace arrangements and commuter mode choice.
  - The Burnaby HTS also does not incorporate adjustments such as household income that do not have complete responses from survey participants (as those who refuse to answer may not always have the same distribution as those who answer, and imputation of unknown household incomes was not in scope).

- The TransLink survey reduces the weights of participants who did not report any trips. The TransLink survey also includes a significant adjustment to boost the weights of certain kinds of trips reported by online survey respondents based on the observation that the portion of survey respondents using the smart phone app report more trips than online respondents. These adjustments significantly increase overall trip volumes and average daily trip rates beyond those collected by the survey. They could also have impacts on other trip characteristics, such as mode shares and average trip distances.

- The TransLink survey allows a wide range of weights to be applied to the survey data, ranging from 0.1 to 30 relative to the base expansion weight for a given expansion geography, meaning that the highest weight can be 300 times larger than the smallest weight. The Burnaby HTS allows weights in the range of 0.175 to 5.75 relative to the base expansion weight for each zone, meaning that the highest weight can be up to 33 times larger than the lowest weight for the zone.

Overall, the TransLink Regional Trip Diary undertakes more complex data processing and weighting adjustments, some of which are predicated on imputations, estimates from other sources, applied mathematics, and adjustments that are applied on the regional level (i.e., transit ridership, work-from-home, and mode of travel to work are applied globally without the benefit of data at the municipal level). The TransLink survey has a low response rate and a high abandonment rate, any may be subject to more non-response bias, in which case the additional adjustments to the weighting may be warranted to ensure the accuracy of the overall regional results. The Burnaby HTS has a higher response rate and lower abandonment rate, which may result in less non-response bias. The Burnaby HTS takes a conservative approach to weighting, with fewer adjustments to the collected data, in order limit extreme weights and enable more detailed analysis by subgeography and for subpopulations. The adjustments made to the TransLink data may potentially produce more representative results overall for the entire region. However, the broader range of weights may also mean that analysis for smaller geographies and subpopulations may have more variance, and there may be a risk of unintended biases being introduced by the adjustments themselves.

Given that different methods were used to arrive at final estimates, this may affect the direct comparability of the two surveys. Of particular note, the adjustments to boost the weights of households with trips and to boost the weights of non-home-based discretionary trips in the TransLink data may affect the comparability of trip rates, mode shares, and trip distances against the Burnaby HTS, which did not include these adjustments. The Burnaby HTS likely has some underreporting of non-home-based discretionary trips made by other household members reported on by the primary survey respondent (see discussion in Section 2.10.1). Further exploration of the TransLink methodology and results may be warranted to better understand the differences and similarities between the two surveys and their survey results.

To sum up, the surveys should be viewed as generally complementary. Disparities in findings between the Burnaby HTS and TransLink Regional Trip Diary surveys may arise due to differences in sampling, survey methods, geographic context, data processing, and data weighting methodologies. Disparities in findings between the two surveys do not necessarily indicate conflicting data, but rather additional perspectives on travel behaviours within the region.

Both surveys provide useful measures for transportation planning purposes. The TransLink Metro Vancouver Regional Trip Diary is important for regional transportation modelling and for regional planning. The TransLink survey results for Burnaby may best be used to compare against previous cycles of the same survey. The 2017 data have been reweighted using the same method as the 2023 survey to enable longitudinal comparisons. Similarly, the Burnaby Household Travel Survey will provide an important baseline against which to compare the results of future surveys. The City of Burnaby has access to the entire Burnaby HTS dataset, with its larger sample size and narrower range of weights, which enables in-depth analysis at finer levels of geography.


Royal Oak Station
58641
Passenger Waiting Area
TO PEDESTRIANS

3 HOUSEHOLDS AND DEMOGRAPHICS

This chapter describes key household and demographic factors that influence people's travel choices and patterns. The 2024 survey was a baseline year. It will allow for comparisons in future survey cycles that will reveal trends in key determinants of travel behaviours with shifts in the population demographics, changes in economic conditions, and the influence of urban planning on where and how people live and work.

Note that the factors and proportions presented in this chapter reflected the survey results, which were expanded and validated to census and other reference statistics described in the previous chapter. As a result, in most cases the results are consistent with these references. However, references to the working population may differ from the census, given that the 2021 Census was taken at the height of a COVID wave whereas the household travel survey was conducted in 2024. These differences refer specifically to total employment, mode of travel to work and the number of people working at home.

Important note on interpreting the survey results

In interpreting the survey results, it is important to emphasize that the expanded survey counts are estimates based on 2,349 households surveyed, or a 2.2% sample of all dwellings occupied by usual residents. After application of the data weights, the survey results are subject to an estimated effective margin of sampling error of ±2.9% at the household level and ±1.9% at the person- and trip-level, taking into account the effects of data weighting.

The expanded counts from the survey are estimates based on weighted survey data expanded to represent the size of the population, with these expanded counts. These estimates are based on a modest survey sample of 2.2% of the population (about 1 in every 45 households) and should not be taken to represent exact counts.

All household and person level results in this report are rounded to the nearest 10 and all the trip level results are rounded to the nearest 100.
When percentages are presented, due to rounding, the percentages presented for individual response categories may not always sum to 100%.

3.1 Key Household and Population Indicators

This section describes the household and demographic factors that influence people's travel choices and patterns and discusses how these relate to each other.

Note that the factors and proportions presented in this chapter are reflective of the survey results, which were expanded and validated to the census and other reference statistics described in the previous chapter. As a result, in most cases, the results are consistent with these references. However, the population and households in the survey may not necessarily align with the 2021 Census given that the figures below include growth factors from 2021 to 2023 estimates, using the 2023 dwellings by TAZ provided by the City.

Further, references to the working population may differ from the census, given that the 2021 Census was taken at the height of the COVID-19 pandemic whereas the 2024 household travel survey was conducted during a non-pandemic period. These differences refer specifically to total employment, mode of travel to work and the number of people working at home.

Figure 4 and Figure 5 present key survey estimates and indicators from the survey, which are summarized in Table 5.

The expanded survey count of 105,570 households matches closely with the dwelling units count by TAZ of 105,559 private dwellings occupied by usual residents. The expanded surveys represent over 253,780 residents of Burnaby, which it may be noted is less than the 273,803 total population from the dwelling by TAZ data. This difference may be explained in part by the fact that the survey frame included only private residential addresses and so does not represent residents living in collective dwellings (seniors care homes, group homes, prisons, etc.) or the homeless, and in part by higher non-response bias for larger households (those with 6 or more household members). The survey results suggest that the estimated fleet of household vehicles is 143,700, which may somewhat overrepresent such vehicles (see Section 2.8).

Of the residents represented by the survey results, 95.8% are five years of age or older, the age threshold for collecting trip information in the household travel survey. More than half (56%) of Burnaby residents are employed.

The average household size is 2.4 persons per household, with 1.35 workers per household, and 1.36 vehicles per household. There is parity between the number of vehicles and workers, at 1.01 vehicles per worker on average (although of course not all workers have access to a vehicle). In future iterations of the survey, it will be interesting to observe the trends in these indicators as Burnaby continues to grow and densify, and as transportation options evolve.

Figure 4. Expanded Survey Estimates

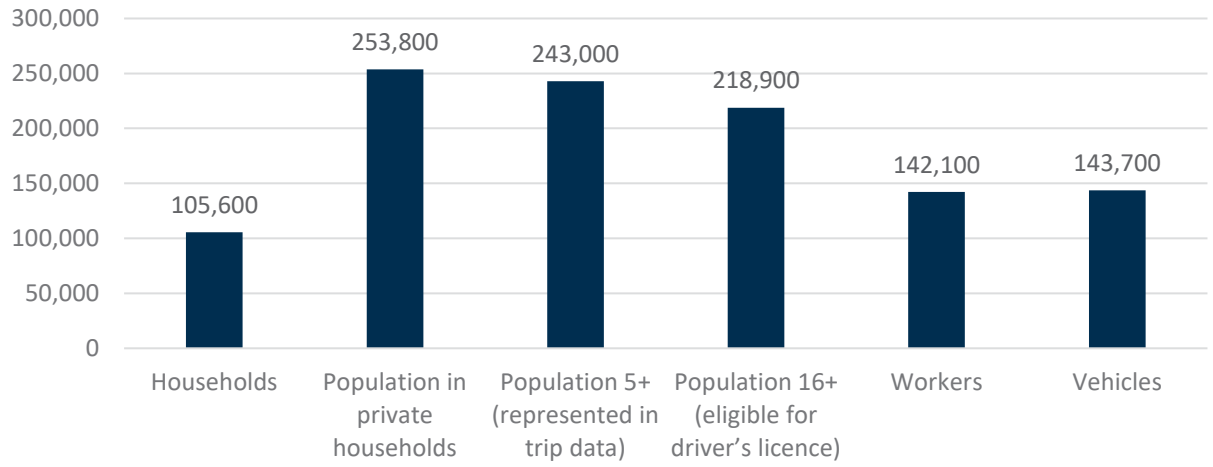


Figure 5. Key Indicators

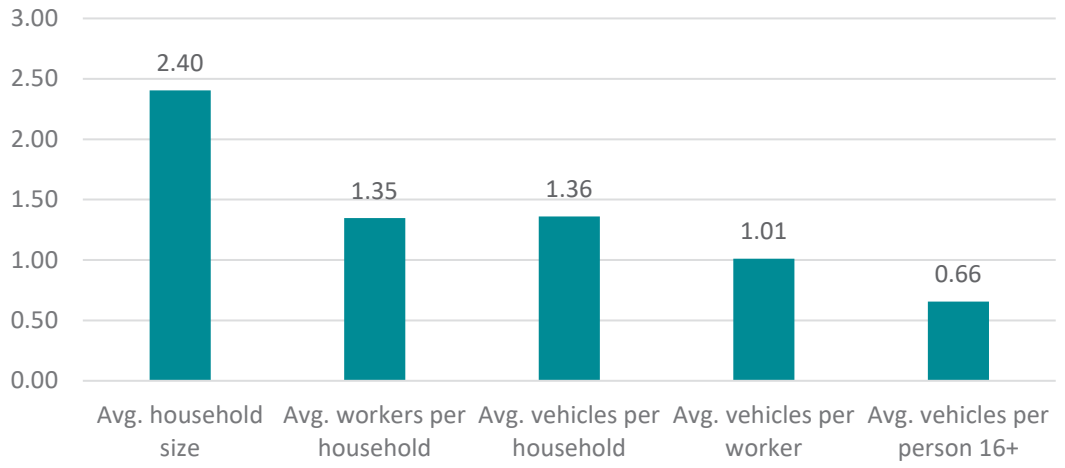


Table 5. Key Indicators (Households, Vehicles, Population, Employed Population)

Statistic	2024 expanded survey estimate
Households	105,570
Number of vehicles	143,710
Population in private households	253,780
Total employed population	142,100
Population 5+ (represented in trip data)	243,010
Population 16+ (eligible for driver's licence)	218,910
Average household size	2.40
Avg. workers per household	1.35
Average vehicles per household	1.36
Average vehicles per worker	1.01
Average vehicles per person 16+	0.66

3.2 Household Characteristics

3.2.1 Dwelling Type

The most common household type in this study is apartments with five or more storeys, at 30% of the weighted sample (Figure 6 and Table 6). The remainder is split between other ground-oriented units, at 28% of all households, smaller apartments (one to four storeys), at 24%, and single detached, at 18%. The proportions compare favourably with the census, given that dwelling type was one of the weighting controls. Note that within the "other ground-oriented" dwelling type—which includes semi-detached, duplex, triplex, townhouse, mobile home and others —the individual categories differ slightly from the Census, so caution should be undertaken for any analysis using detailed dwelling types. The Census figures are 2021 Census counts projected forward to 2024.

Figure 6. Dwelling Type

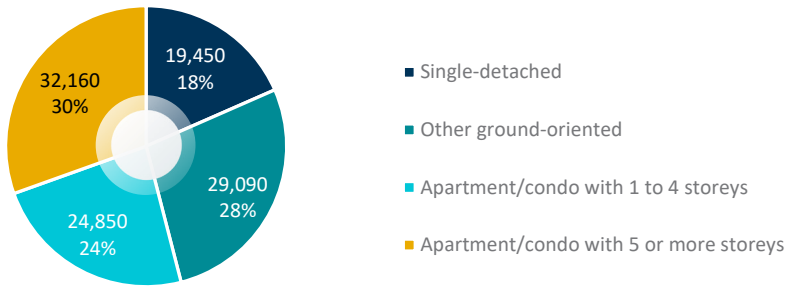


Table 6. Households by Dwelling Type: Expanded Survey Data vs. Census

Households by dwelling type	Census	%	Survey	%
Single-detached	**20,190**	**19%**	**19,450**	**18%**
Other ground-oriented subtotal	**30,060**	**28%**	**29,090**	**28%**
Semi-detached (side-by-side or duplex)	20,620	19%	14,220	13%
Row house or townhouse	9,280	9%	14,870	14%
Other	160	0%	0	0%
Apartment/condo with 1 to 4 storeys	**25,230**	**24%**	**24,850**	**24%**
Apartment/condo with 5 or more storeys	**31,400**	**29%**	**32,160**	**30%**

3.2.2 Dwelling Tenure

Table 7 shows the distribution of surveyed households by dwelling tenure. 27% of survey respondents are renting, while 70% own their dwellings. Another 3% did not provide a response to this question. When compared to the census, owners are overrepresented by 9% (61% owners in census data) and renters are underrepresented by 12% (39% renters in census data). This modest underrepresentation of renters is a caveat to the survey results.

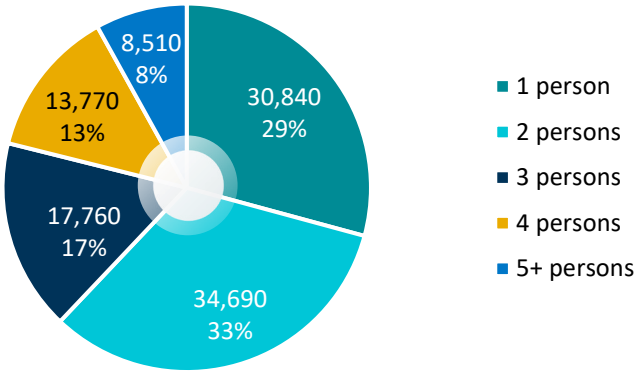
Table 7. Households by Dwelling Tenure: Expanded Survey Data vs. Census

Dwelling tenure	Census	%	Survey	%
Rent	42,220	39%	28,080	27%
Own	64,690	61%	74,390	70%
Unknown	n/a	n/a	3,100	3%

3.2.3 Household Size

Household size distributions are presented in Figure 7. Overall, 29% are single-person households, 33% have two household members, and 38% have three or more household members.

Figure 7. Household Size



3.2.4 Household Structure

Table 8 provides the distribution of households by household structure. Three-quarters (75%) of households do not have children while one-quarter (25%) have children. Of note, single-person households make up 29% of all households, and just over one-fifth (21%) of households have three or more adults (extended-family households, roommates, or other situations), with one-third of these 3+ adult households also including children.

Figure 8. Household Structure

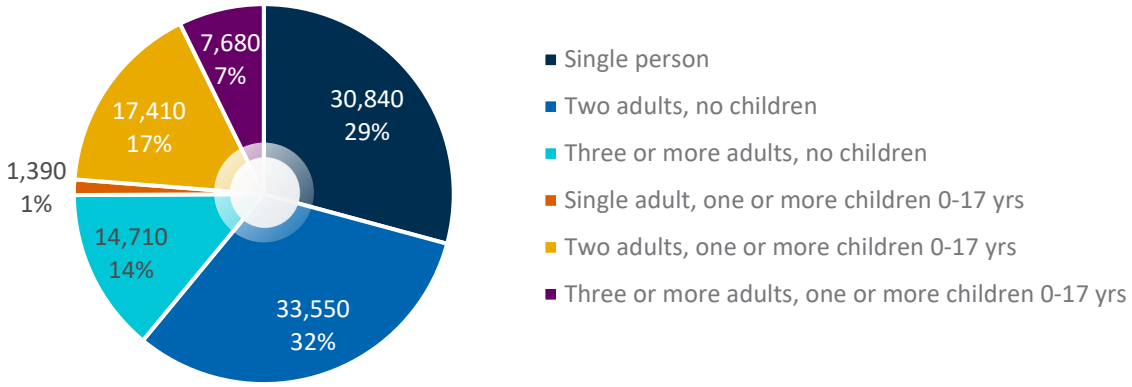


Table 8. Household Structure

Households by dwelling type	#	%
Single person	30,840	29%
Two adults, no children	33,550	32%
Three or more adults, no children	14,710	14%
Single adult, one or more children 0-17 years	1,390	1%
Two adults, one or more children 0-17 years	17,410	16%
Three or more adults, one or more children 0-17 years	7,680	7%

3.2.5 Household Income

Table 9 highlights the income distribution of households surveyed, which, for households who provided an answer, is very similar to the distribution per the 2021 national census , with some apparent underrepresentation of lower-income households (10% having incomes of less than $25,000 and 17% having incomes of between $25,000 and $49,999 per the 2021 Census, compared to 6% and 12% respectively in the valid expanded survey counts). Comparison with the census should be undertaken with caution given that fully 17% of households surveyed either declined to provide their household income range or did not know it; it is not known whether their income distributions follow the same distribution profile as for those who did provide a response. In addition, the census asked about annual income in 2020, and household incomes may have shifted in the last four years.

Figure 9. Household Income

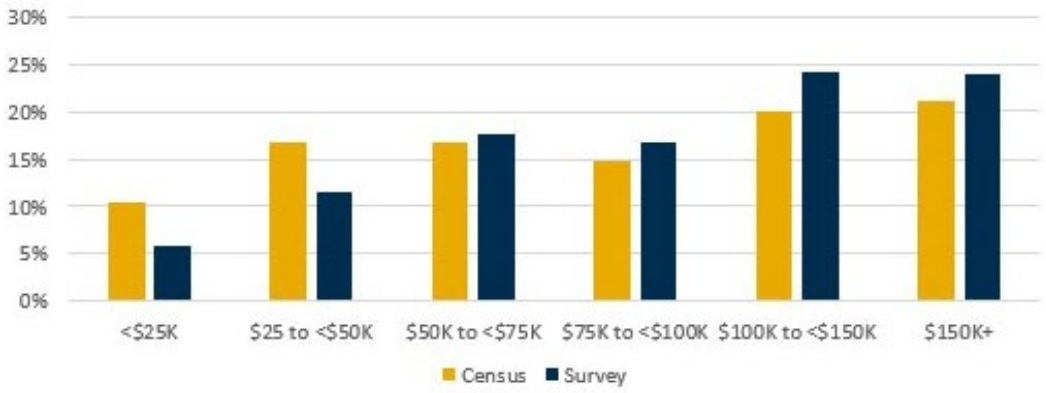


Table 9. Household Income (Total Household Income before Taxes)

Annual household income	Census*	%	Survey	% with answer
Under $25,000	10,890	10%	5,110	6%
$25,000 to $49,999	17,430	17%	10,180	12%
$50,000 to $74,999	17,560	17%	15,400	18%
$75,000 to $99,999	15,410	15%	14,750	17%
$100,000 to $149,99	20,950	20%	21,220	24%
$150,000 and above	22,150	21%	20,960	24%
Total known	**104,390**	**100%**	**87,620**	**100%**
Unknown / declined	**n/a**	**n/a**	**17,950**	**(17% of surveys)**

*Source: Statistics Canada 2021 Census Profile

3.2.6 Household Vehicles

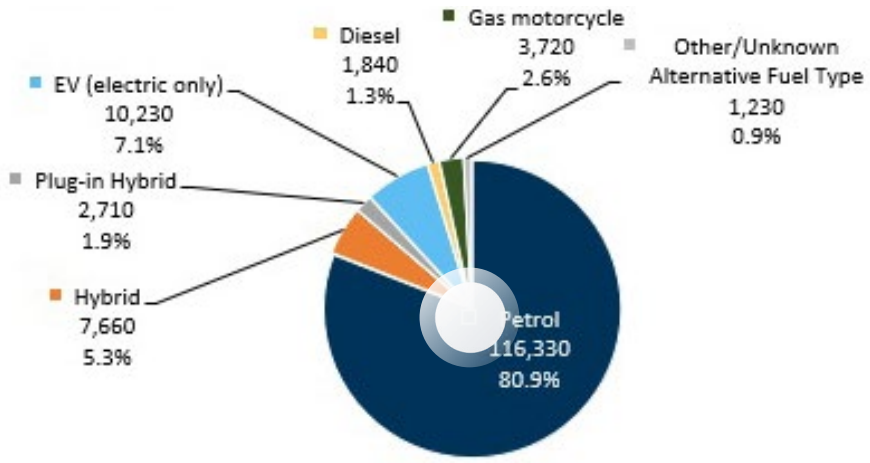
The average number of vehicles per household is 1.36. Table 10 shows the variation in this statistic by household size. Across all household sizes, residents have 0.66 vehicles per person (of those eligible to hold a driver's licence), although this slightly decreases as household size increases. Figure 10 presents vehicle fuel types for vehicles owned by household members. Overall, 9.0% are zero-emissions vehicles (ZEV), which consist of plug-in hybrid and electric in the survey,[16] while fully 14% are electrified, when including non-plug-in hybrids. It will be interesting to track the trend in vehicle fuel type in future surveys.

Table 10. Vehicles Per Household by Household Size

Household size	Households	Vehicles	People 16+*	Vehicles / household	Vehicles / person 16+	% of households
1 person	30,840	25,810	30,840	0.84	0.84	70%
2 persons	34,690	44,350	68,260	1.28	0.65	86%
3 persons	17,760	29,700	45,390	1.67	0.65	92%
4 persons	13,770	23,540	39,700	1.71	0.59	97%
5+ persons	8,510	20,310	34,720	2.39	0.58	99%
Total	**105,570**	**143,710**	**218,910**	**1.36**	**0.66**	**85%**

*Population 16 years or older who are eligible for a driver's licence, whether or not they hold a licence. (Excludes 14 and 15-year olds who may only be eligible for a learner's licence and can only drive accompanied by someone with a non-probationary licence over the age of 18).

Figure 10. Vehicle Fuel Type



16 Transport Canada defines a ZEV is a vehicle that either produces no tailpipe emissions or has the potential to produce no emissions, for example, an electric vehicle. There are three types of ZEVs on the market: battery-electric, plug-in hybrid electric, and hydrogen fuel cell.

Table 11 provides a breakdown of key vehicle statistics by subquadrant and shows that access to a vehicle is not uniform throughout Burnaby. Access to a vehicle is less likely in town centres, although still the majority of households (at 78% on average, and lowest in Metrotown, at 68%), and more prevalent outside of town centres (91% on average). This stands to reason given the higher urban densification and access to nearby services and amenities.

The survey results suggest that adoption of ZEVs (EVs + plug-in hybrids) is also not uniform across the city, with the proportion of all vehicles being ZEVs highest outside town centres (10.1% on average) and lowest in the town centres. Further analysis or research would be required to ascertain whether this is associated with differences in income amongst residents of different areas (with ownership of an EV more likely among higher-income households) or factors associated with access to charging stations (such as older apartments not yet retrofitted for EV charging).[17]

Table 11. Selected Vehicle Statistics by Subquadrant, with Town Centre Subtotal

	Study area	Subtotals		Subquadrants							
		Town centres	Outside town centres	Brentwood Town Centre (NW)	Rest of NW quadrant	Lougheed Town Centre (NE)	Rest of NE quad-rant	Edmonds Town Centre (SE)	Rest of SE quad-rant	Metro-town (SW)	Rest of SW quad-rant
Vehicles		55,000	88,710	15,270	20,330	8,730	19,400	14,680	17,470	16,320	31,520
% of households with a vehicle	85%	78%	91%	88%	88%	78%	91%	83%	92%	68%	92%
Vehicles per person 16+	0.66	0.60	0.70	0.75	0.73	0.54	0.71	0.62	0.66	0.52	0.69
% of vehicles that are ZEVs	9.0%	7.2%	10.1%	9.5%	10.2%	4.7%	10.3%	7.6%	9.8%	5.9%	10.2%

ZEVs = EVs + plug-in hybrid vehicles

3.3 Demographic Characteristics

This section provides an overview of demographic characteristics of the expanded survey sample (age, immigration status, car share membership, driver's licences, occupation status, occupation type).

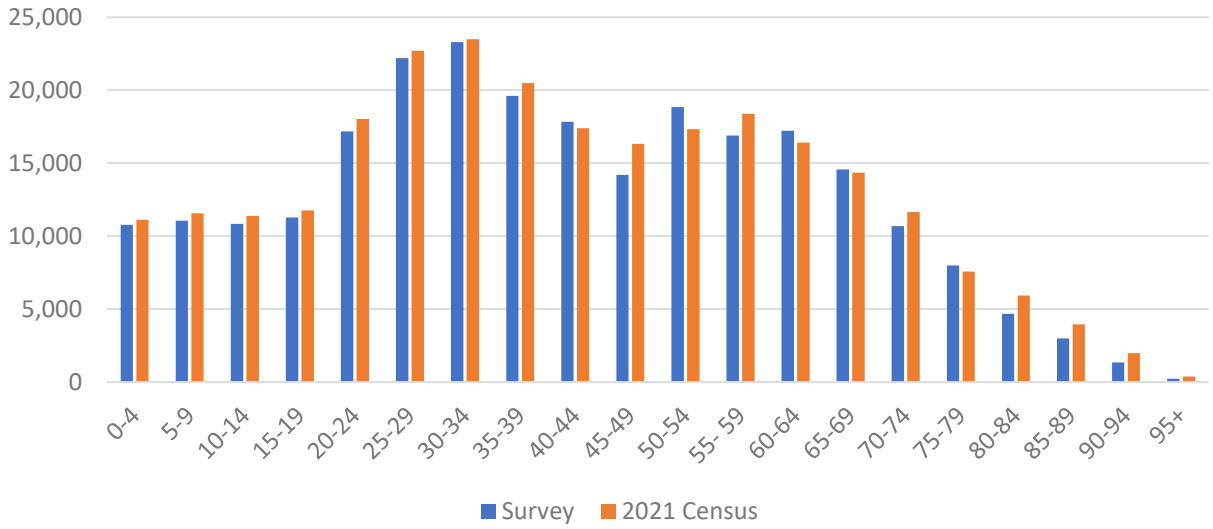
3.3.1 Age Distribution / Gender

The survey data was weighted by age and gender in five-year age groups up to age 34, ten-year age groups between 35 and 75, and a single aggregation for all those aged 75 and older. The survey data was also adjusted to exclude persons living in collective dwellings by age range, based on CSD-level (census subdivision) data from Statistics Canada. Figure 11 compares the survey results to the 2021 Census by five-years age range. It can be noted that in the 35-to-75-year age ranges, the distribution may not perfectly match with the census when reviewing by 5-year age ranges, however this balances out when reviewing by 10-year age ranges.

The results show that the city has a significant young population between the ages of 25 and 39, who collectively represent about one-quarter of total population in private dwellings.

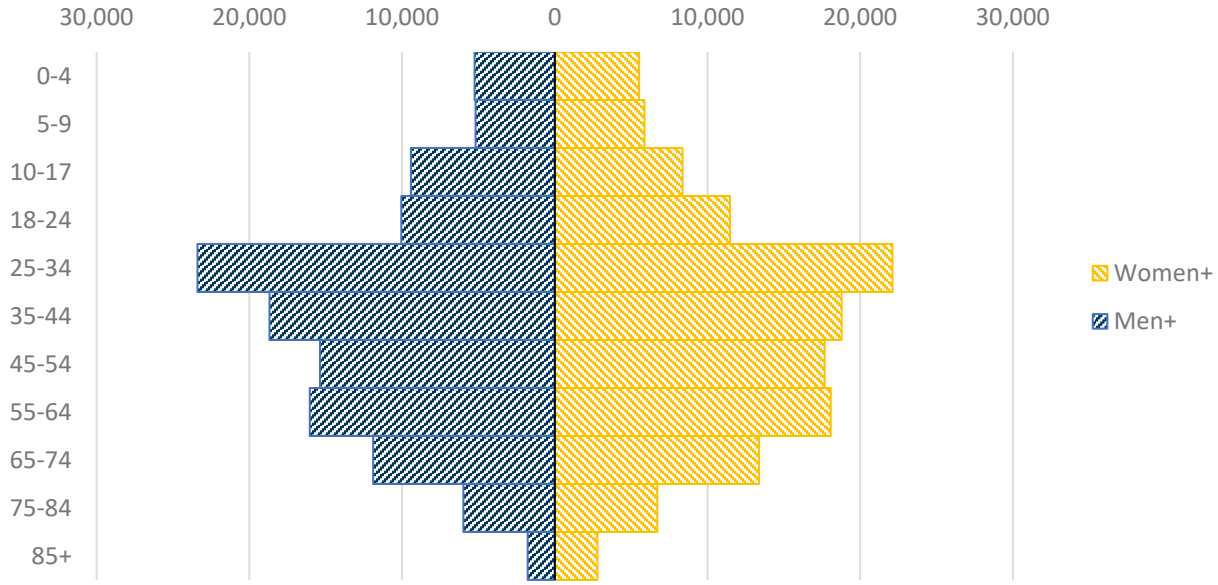
17 Level 2 EV charging infrastructure for 100% of parking spaces in new residential buildings has been mandatory for all new multi-unit residential buildings since 2018 (Electric Vehicles in Burnaby, https://www.burnaby.ca/our-city/projects/electric-vehicles-burnaby, last accessed May 13, 2025). It may be easier for home owners in single-family dwellings to add EV charging than for those living in older apartment/condominium buildings.

Figure 11. Population by Age Distribution, 2021 Census vs 2024 Burnaby HTS



Age distributions in the survey data are shown in Figure 12, and broken out by gender. In the chart, "Men+" includes men, boys, and a portion of non-binary, self-described, or undisclosed gender respondents. "Women+" includes women, girls, and a portion of the same.[19] Amongst children, there may be some imbalance by gender which may be due to collapsing gender groupings in the data weighting for certain subquadrants with small samples. When examining the data by subquadrant, greater variations from the Census age distributions may be possible.

Figure 12. Survey Population Distributions by Gender and Age Range



19 This follows the approach used by Statistics Canada to aggregate data to a two-category gender variable to protect the confidentiality of responses provided, given that the non-binary population is small.

3.3.2 Immigration Status

The survey asked whether household members were Canadian citizens at birth or immigrants, and if immigrants, when they immigrated. Overall, 6% of respondents refused to provide an answer to the survey question asking about immigration status or didn't know when they immigrated to Canada. Of the respondents who provided an answer, the majority are Canadian by birth (58%), while about 41% are immigrants. Of Burnaby residents surveyed, 22% of immigrated to Canada more than 20 years ago, and an additional 2% of residents are temporary residents. Table 14 shows the survey responses for this question. According to the census, approximately 42% of residents of Burnaby were non-immigrants in 2021. This suggests that the survey may somewhat overrepresent non-immigrants and underrepresent immigrants. Nevertheless, the sample of immigrants surveyed by the Burnaby HTS is robust and provides the opportunity to undertake analysis of travel patterns for immigrants compared to non-immigrants.

Table 12. Immigration Status

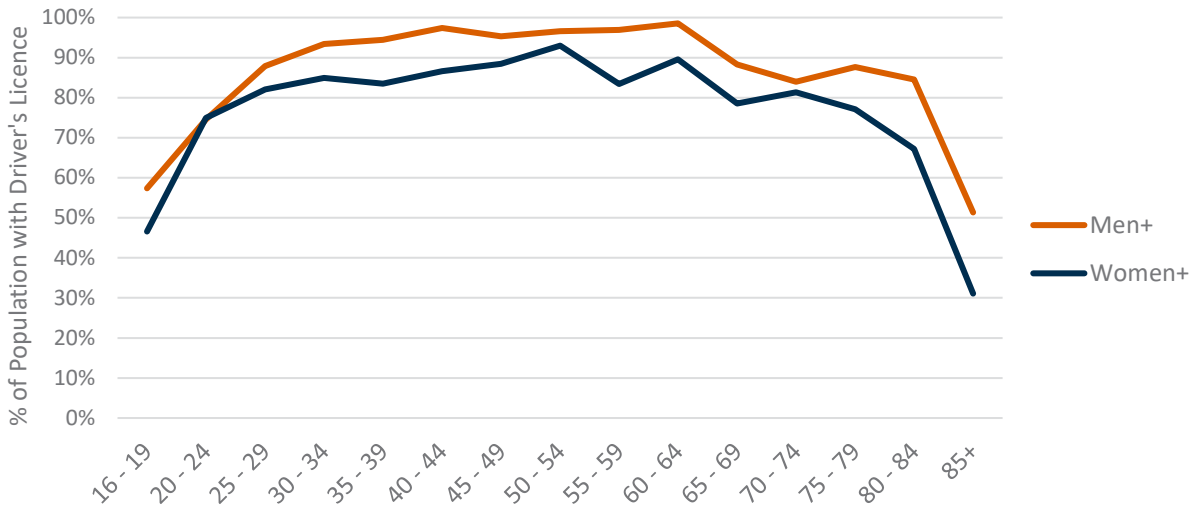
	Population in private dwellings	% population	% valid response
Born in Canada/Canadian citizen at birth	136,910	54%	58%
Immigrated within the last 2 years	5,110	2%	2%
Immigrated 2 to 5 years ago (2019-2022)	10,870	4%	5%
Immigrated 5 to 10 years ago (2014-2018)	11,480	5%	5%
Immigrated 10 to 20 years ago (2004-2013)	16,580	7%	7%
Immigrated more than 20 years ago (2004 and earlier)	52,190	21%	22%
Not a permanent resident or citizen of Canada (student visa, visitor, other status)	4,300	2%	2%
Decline/don't know	16,330	6%	
Total	**253,780**	**100%**	

3.3.3 Driver's Licences

The survey results suggest that of population 16 years of age and older, 85% have a driver's licence. There is a notable difference between the proportion of women+ with a driver's licence and men+ with a driver's licence. Overall, across all age groups, 89% of men+ over the age of 15 have a driver's licence vs. 81% of women+[20]. The gap is narrowest among 20 to 24, 50-54, and 70-74 age groups, as shown in Figure 13, with some variation by age group potentially due to the modest sample sizes in the survey.

20 Analysis is undertaken using aggregate categories of "men+" and "women+" that group random portions of non-binary persons with men/boys and women/girls, to protect the confidentiality of responses of the small sample of non-binary persons surveyed, following the approach used by Statistics Canada.

Figure 13. Percent of Population with Driver's Licence by Age Group and Gender

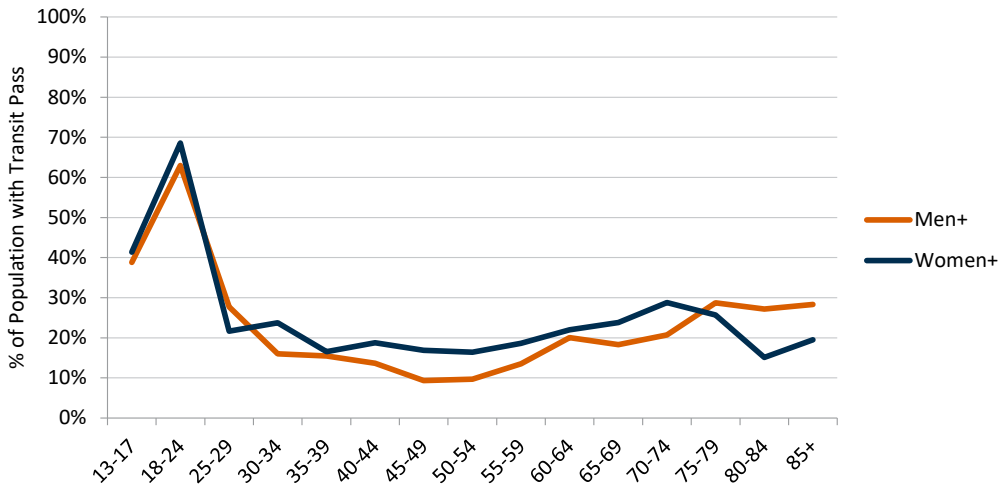


3.3.4 Public Transit Pass Uptake

Since 2021, children 12 years of age and under have travelled on TransLink transit services for free. Of those 13 years of age and older, almost one-quarter, or 24% (21.5% of total population of all ages) have a transit pass . By gender, 20% of men and 23% of women have a transit pass. Exploration of the data revealed that 36% of households have at least one person with a transit pass.

Figure 14 presents the survey results by age and gender. About four in ten children aged 13-17 have transit passes, which is consistent with many children travelling to and from school via public transit (as there is not a district-wide school bus system). Transit pass uptake peaks for young adults of 18-24 years, in the range of two-thirds having a transit pass (likely due in part to the availability of U-Passes for those attending public post-secondary institutions). Use of a transit pass declines above age 25. Transit pass uptake ranges between 9% and 16% for men between the ages of 30 and 59, but is higher for women, ranging between 16% and 24% for those between 30 and 59. Possession of a transit pass increases somewhat again for those aged 60 and above, varying somewhat by age range and gender, peaking at 29% for women 70-74 years and 29% for men 75-79 years.

Figure 14. Percent of Population with Transit Pass by Age Group and Gender



3.3.5 Car-share Membership and Usage

Overall, 15% of households (about 15,380) in Burnaby reported having a car-share membership (Figure 15). Table 15 summarizes car-share usage among individuals in households with at least one person having a car-share membership. Overall, 16% of drivers live in a household with a car-share membership. Of these drivers living in households with car-share memberships, almost 70% use a car-share service once per year or more, and 25% use it at least once per month or more. Meanwhile, 30% never use it, despite living in a household with a member having access. Note that anyone with a driver's licence in a household with at least one person having a car share membership was asked about the frequency of using a car share, even if they themselves do not. Also, some may have a free or discounted car-share membership bundled with other services and may never use the car-share membership. Expressed as a proportion of all drivers in Burnaby, the survey results suggest that 16% of drivers use a car-share service at least once per year or more, with 11% use it at least once per month.

Figure 15. Proportion of Households with Car-share Membership

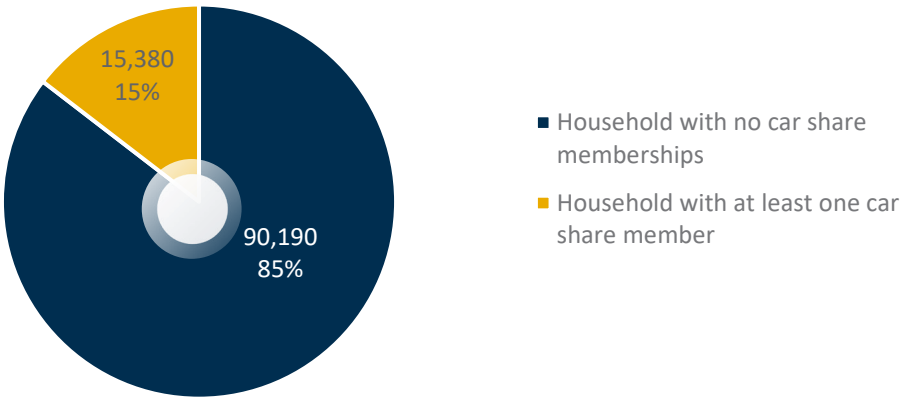


Table 13. Person's Frequency of Car Share Use for Persons Households with Membership

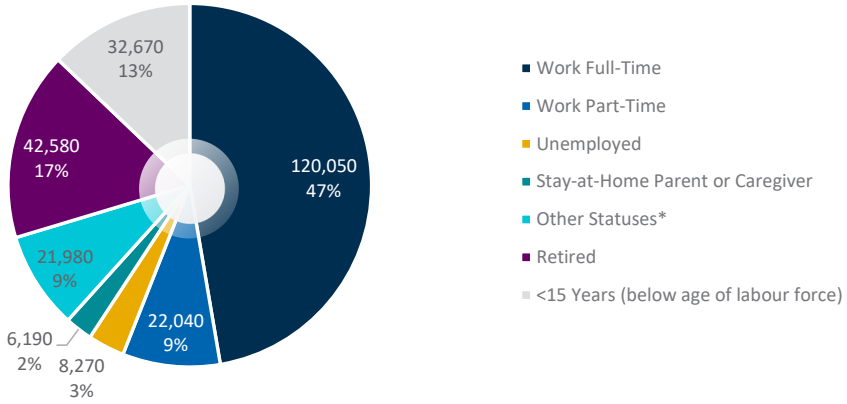
Frequency of car share use	Persons	% of population	% of population with driver's licence	% of drivers in households with car share membership
Daily	120	0.0%	0.1%	0.4%
At least once per week	1,890	0.7%	1.0%	6.4%
At least once per month	5,380	2.1%	2.9%	18.2%
At least once a year	13,160	5.2%	7.1%	44.5%
Never use carshare but household has membership	9,000	3.5%	4.8%	30.5%
Driver's licence but does not live in household with car share membership	156,520	61.7%	84.1%	n/a
16+ years but does not have licence	32,830	12.9%	n/a	n/a
Under the age of 16	34,880	13.7%	n/a	n/a

3.3.6 Occupation Status

Figure 16 provides a breakdown of employment status for the survey population. Overall, 56% of the surveyed population is employed, with 47% full-time and 9% part-time.

Table 14 shows the detailed breakdown of occupation status, combining the survey responses on questions about employment, student status, or other status. Overall, 19% of the population are students (including both K-12 and post-secondary).

Figure 16. Employment Status



* Other statuses: students aged 15+ years who are not working, or who are on disability supports, on parental leave etc.

Table 14. Detailed Occupation Status

Overall status	2024 expanded count	%
Total	**253,780**	**100%**
Employed full-time	118,170	47%
Employed part-time	17,110	7%
Employed full-time / student part-time	1,890	1%
Student full-time / employed part-time	3,930	2%
Student part-time / employed part-time	990	0%
Student full-time	40,120	16%
Student part-time	1,240	0%
Caregiver or stay at home parent (primary occupation is care of children or household)	6,190	2%
Unemployed and not looking for work	2,330	1%
Unemployed and lookin g for work	5,940	2%
Retired	42,580	17%
Other Status	2,520	1%
Under 5 years of age	10,770	4%
Subtotals - Employed	**142,100**	**56%**
Employed Full Time	120,050	47%
Employed Part Time	22,040	9%
Subtotals - Students	**48,170**	**19%**
Student Full Time	44,050	17%
Student Part Time	4,120	2%

3.3.7 Occupation Type

Among surveyed workers, the highest proportion are in business, finance and administrative occupation (20%). Commercial driver and natural resources, agriculture and related operators are the occupations with smallest proportion of workers at 1% each. These distributions may not necessarily match census distributions.

Table 15. Occupation Type

Occupation type	Workers	Percent of workers
Senior Management Occupations*	8,490	6%
Business, Finance, and Admin Occupations	28,170	20%
Natural and Applied Science Occupations	19,800	14%
Health Services Occupations	13,720	10%
Education, Law & Social, Community & Government services	23,040	16%
Performing and Facilitating Art, Culture, Recreation, and Sports	5,980	4%
Sales & Service Provision	18,540	13%
Trades, Transport & Equipment Operators (excluding commercial drivers)	9,090	6%
Commercial Driver	1,020	1%
Natural Resources, Agriculture & Related Production	820	1%
Manufacturing and Utilities	4,300	3%
Unknown	9,130	6%
Total, full time and part time employed	**142,100**	**100%**

Occupation categories used in the questionnaire are from the 2021 National Occupational Classification (NOC) broad occupational categories.
*Note that some survey respondents in middle-management occupations may have mistakenly selected Senior Management instead of the appropriate category they belong to, despite definitions being included in mouseovers that explain that Senior Management is for highest-level managers and legislators.

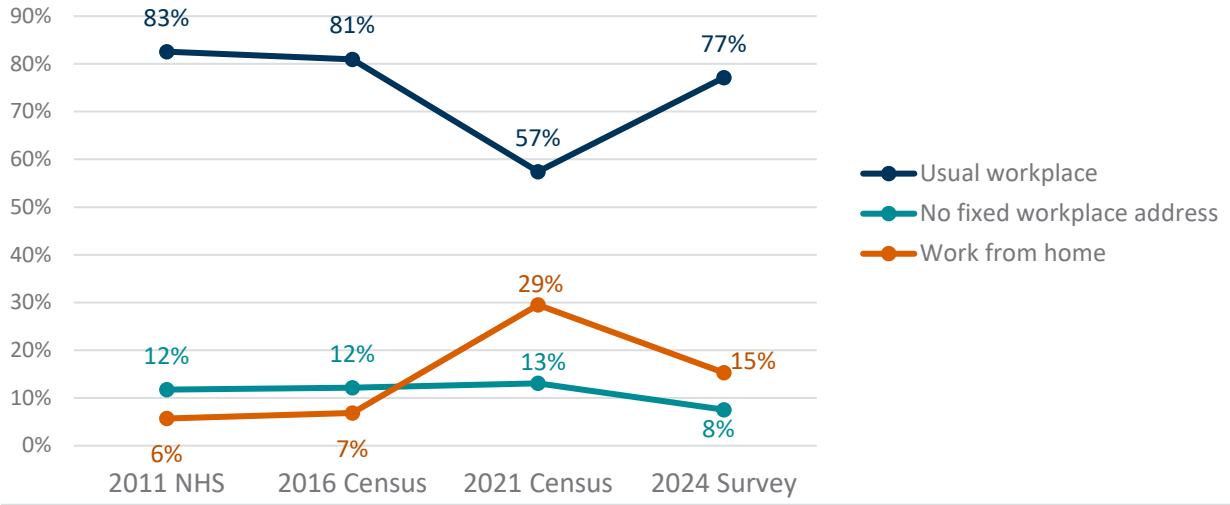
3.4 Place of Work, Commuting and Telecommuting

3.4.1 Place of Work

Looking at the trend in place of work between 2011 and 2024, the proportion of workers working from home appears to have risen from 6% to 15% (Figure 17). The overall trend has been a reduction in the proportion of workers with a usual workplace outside the home, which has been accelerated by the disruption of the pandemic. During the COVID-19 pandemic, at the time of the census in May 2021, only 57% of workers reported a usual workplace outside the home, and 29% of Burnaby workers were working from home. The rebound to 77% of workers with a usual workplace in 2024 is still lower than 81% in the 2016 Census.

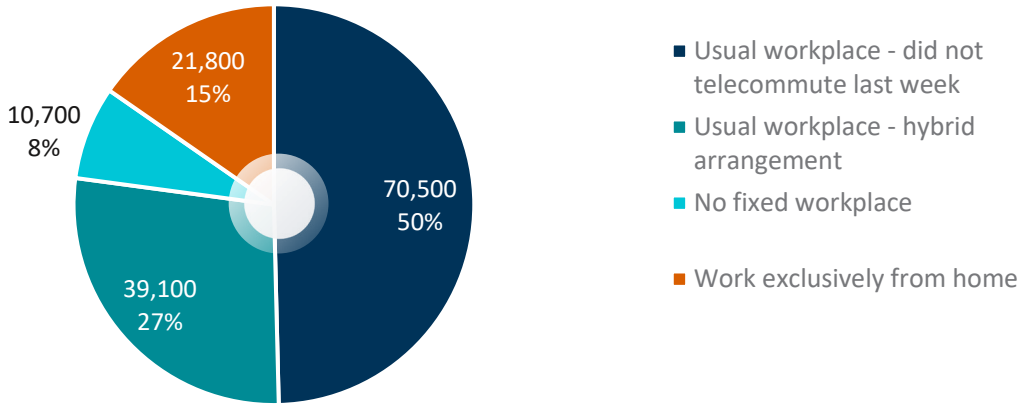
The difference from 2016 in persons with no fixed workplace could be indicative of a trend, or it could be differences in how people interpreted the questionnaire (i.e., some who would answer ”no fixed workplace” on the Census may have answered “work from home” on the travel survey). Either way, there certainly have been shifts in work arrangements, and some of those shifts may go deeper than workplace location. Figure 18 highlights the 2024 Burnaby HTS results, breaking out those with a usual workplace into those with hybrid work arrangements and those who only commute to work. The categorization is based on the results of a question asking workers with a usual workplace which days they commuted and telecommuted in the last week. As indicated, more than one quarter (27%) of all workers, or 36% of those with a usual workplace, have hybrid work arrangements, meaning that they telecommuted to work instead of travelling to their usual workplace at least one day in the week prior to their survey.

Figure 17. Trend in Place of Work, 2011 - 2024



Sources: 2011 National Household Survey, 2016, 2021 Canada Censuses, 2024 Burnaby Household Travel Survey.

Figure 18. Place of Work (including Hybrid Work)



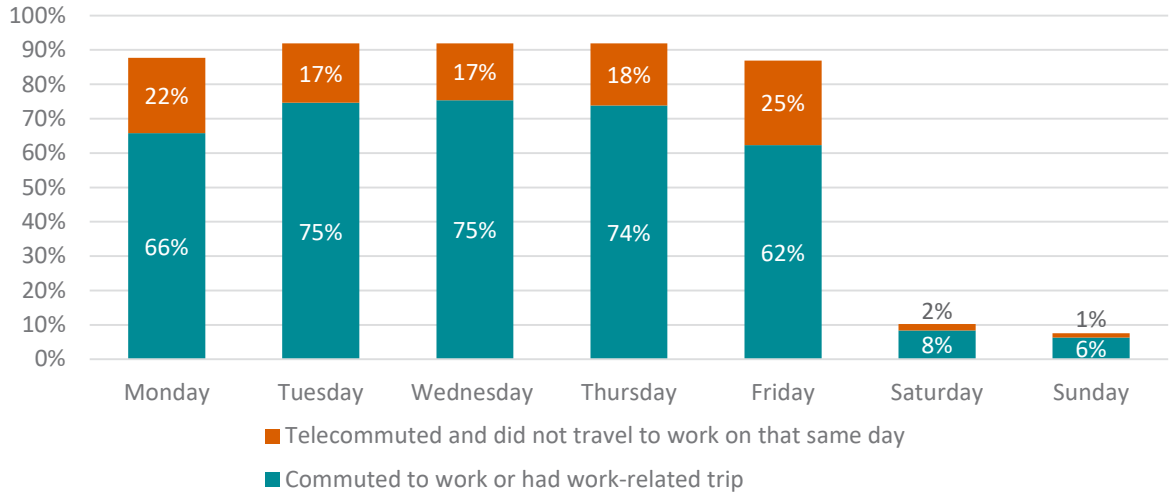
Hybrid arrangement = telecommuted on at least one day in the last week

3.4.2 Commuting and Telecommuting

Additional details on the commuting and telecommuting patterns of full-time workers with a usual workplace can be found in Figure 19 and illustrate the prevalence of telecommuting. Of full-time workers with a usual workplace, 92% reported commuting to work on at least one day in the previous week, the remaining 8% likely includes individuals who were either not working that week due to time off or leave, or who have flexible hybrid arrangements that rarely require them to be in the office. Overall, 39% of full-time workers with a usual workplace reported telecommuting at least one day in the previous week.

On an average weekday, 20% telecommuted and did not commute to work, with this proportion being highest on Mondays and Fridays (22% and 25% respectively), and lower on other weekdays (17%-18%).

Figure 19. Commuting and Telecommuting Patterns by Day of Week (% of Full Time Workers with Typical Workplace outside the Home)



Note: if someone reported that they both travelled to or for work and also worked from home on the same day, they were not counted as telecommuting for that day. For the purpose of this analysis, telecommuting considers only working from home for the entire day instead of travelling to or for work.

3.4.3 Workers by Place of Residence and Location of Work

To this point, the discussion has looked at characteristics at the home end: that is, where people live. The discussion considered the characteristics of the working population, whose habitual commuting patterns have traditionally dominated peak period travel, public transit use and more. Where the workplaces are located – where people work – also shapes commuting choices.

Table 16 presents the distribution of workers by place of residence vs. place of work. People who reported that they work from home or who have no fixed workplace location were assigned to their home subquadrant, although it may be noted that those with no fixed workplace location do not necessarily go to worksites within their own home quadrant. Note that as the Burnaby HTS only surveyed Burnaby residents, the analysis cannot take into account jobs within Burnaby held by residents of other cities.

Overall, 35% of Burnaby residents who work reside in the Southwest Quadrant, which also has the highest concentration of residents' jobs within Burnaby (20% of Burnaby workers' jobs, with 8% in Metrotown and 12% in the Rest of the Southwest Quadrant). Overall, about half (49%) of resident workers' jobs are within Burnaby. Half of Burnaby workers (51%) have jobs outside Burnaby, with 15% working in downtown Vancouver and 16% in the Rest of Vancouver, with others spread throughout the rest of Metro Vancouver, and negligible numbers in the Fraser Valley or elsewhere.

Looking at the ratio of jobs (places of work) to resident workers by subquadrant, Brentwood Town Centre, Lougheed Town Centre, Edmonds Town Centre, and the rest of the Southeast Quadrant have the lowest ratios (ranging from 0.28 to 0.43 jobs per resident). This is indicative of generally more residential development relative to commercial, institutional, and industrial development in those subquadrants. This highlights the critical role of town centres in supporting high-density residential development, thanks to their proximity to major roads and the region's Fast and Frequent Transit Network, which enables residents to reach their jobs. Metrotown, Burnaby's primary town centre, has a somewhat higher ratio of residents' jobs to resident workers, at 0.56. It may be noted that given Burnaby is situated in large metropolitan area with half of Burnaby's resident workers having jobs outside the city, none of the subquadrants is a net attractor of Burnaby workers' commutes. Readers are reminded that this analysis is limited to workers who live in Burnaby and cannot account for jobs in the city held by workers who live elsewhere.

Table 16. Distribution of Workers' Places of Residence and Place of Work by Quadrant / Subquadrant

Geography	Workers by place of residence	%	Places of work	%	Jobs per resident worker
Survey Total	**142,100**	**100%**	**142,100**	**100%**	
City of Burnaby Subtotal	**142,100**	**100%**	**69,260**	**49%**	
Quadrant Subtotals					
Northwest Quadrant	32,780	23%	15,380	11%	0.47
Northeast Quadrant	28,280	20%	13,780	10%	0.49
Southeast Quadrant	31,630	22%	11,320	8%	0.36
Southwest Quadrant	49,400	35%	28,780	20%	0.58
Subquadrants					
Brentwood Town Centre (NW)	16,190	11%	5,300	4%	0.33
Rest of NW Quadrant	16,600	12%	10,080	7%	0.61
Lougheed Town Centre (NE)	10,560	7%	2,950	2%	0.28
Rest of NE Quadrant	17,710	12%	10,830	8%	0.61
Edmonds Town Centre (SE)	17,170	12%	7,300	5%	0.43
Rest of SE Quadrant	14,460	10%	4,020	3%	0.28
Metrotown (SW)	20,780	15%	11,620	8%	0.56
Rest of SW Quadrant	28,630	20%	17,160	12%	0.60
External Job Locations					
Vancouver Downtown	n/a	n/a	21,850	15%	n/a
Rest of Vancouver	n/a	n/a	23,120	16%	n/a
Richmond	n/a	n/a	6,670	5%	n/a
Surrey / White Rock	n/a	n/a	5,140	4%	n/a
North Shore	n/a	n/a	4,780	3%	n/a
New Westminster	n/a	n/a	4,160	3%	n/a
Tri-Cities	n/a	n/a	4,120	3%	n/a
Delta / Tsawwassen	n/a	n/a	1,400	1%	n/a
The Langleys	n/a	n/a	1,070	1%	n/a
Pitt Meadows / Maple Ridge	n/a	n/a	240	<0.5%	n/a
Fraser Valley	n/a	n/a	130	<0.5%	n/a
Outside Fraser Valley/Lower	n/a	n/a	180	<0.5%	n/a

*Places of work for residents of Burnaby only. People who reported that they worked from home, or who have no fixed workplace location, were assigned to their home subquadrant.
Does not include employment in the city for residents of communities outside the study area.

3.4.4 Usual Commute Mode

Table 17 presents the usual mode of travel reported by workers surveyed that have a usual workplace location or who have no fixed workplace address (i.e., excludes people who work exclusively from home). It should be noted that this does not necessarily translate into mode shares on an average day, since on any given day some workers will not be scheduled for work, some will not work due to illness or vacation, some will work from home, and some may choose a different mode than their usual mode. Caution is recommended when comparing these survey results to the census journey to work data, given that the 2021 Census was conducted during the height of the pandemic. While about six in ten workers who work outside the home rely on auto commutes (55% driver, 4% passenger), one-third (34%) of workers use transit to get to work. As noted above, this does not translate into daily commute mode shares. Only 3% usually walk to work, while 4% cycle, suggesting that few workers live within close proximity to their work.

Table 18 presents results by subquadrant, grouping town centres to better illustrate the pattern. Workers living in Lougheed Town Centre, Metrotown, and Edmonds Town Centre have high proportions of transit commuters (52%, 48%, and 41% respectively). Subquadrants with the highest proportions of active mode commuters (walk and bicycle/ micromobility combined) include: Rest of Northeast (11%), Rest of Northwest (8%), and Rest of Southeast (8%).

Table 17. Usual Mode of Travel for Commuting Purposes

Usual mode	Workers with a	% of workers
Auto Driver	65,650	55%
Auto Passenger	4,770	4%
Transit	40,720	34%
Bicycle+micromobility	4,500	4%
Walk	3,890	3%
Other	800	1%

Table 18. Usual Mode of Travel for Commuting Purposes by Subquadrant of Residence

Usual Mode	Burnaby Total	Brentwood Town Centre (NW)	Lougheed Town Centre (NE)	Edmonds Town Centre (SE)	Metrotown (SW)	Rest of NW Quadrant	Rest of NE Quadrant	Rest of SE Quadrant	Rest of SW Quadrant
Auto driver	55%	57%	42%	49%	40%	62%	60%	63%	59%
Auto passenger	4%	4%	3%	4%	4%	3%	4%	3%	5%
Transit	34%	33%	52%	41%	48%	26%	25%	24%	29%
Bicycle+ micromobility	4%	3%	1%	3%	3%	5%	5%	5%	3%
Walk	3%	2%	2%	2%	4%	3%	6%	3%	3%
Other	1%	1%	1%	0%	1%	2%	0%	2%	0%

3.4.5 Auto Parking at Work

Survey participants who usually drive to work were asked whether their parking was free or pay parking (Figure 20), and what type of parking it was (Figure 21). Table 19 provides the breakdown by subquadrant of workplace location.

As shown, three-quarters of workers have free parking at work, whether paid for by their employer (63%) or other free parking (12%). Only one in five (19%) pays for parking at work. Pay parking is more common in the town centres other than Lougheed (ranging from 25% to 31% of auto commuters), although sample sizes are small in some subquadrants and results should be interpreted with caution. Pay parking is most common in downtown Vancouver (54% of auto commuters). Overall, 41% of workers who usually drive to work park on-site at their workplace, 35% park on-street, and 22% park off-street in a private or public lot or garage.

Figure 20. Free Or Pay Parking at Work for Workers Who Typically Drive to Work

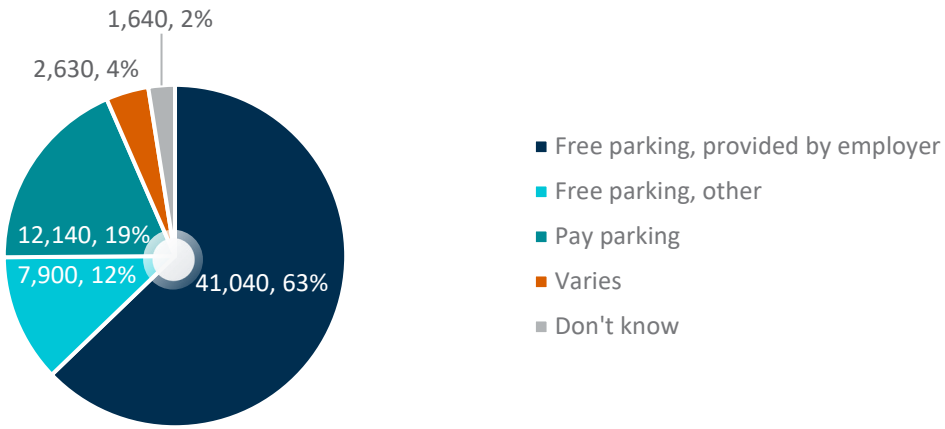


Figure 21. Type of Parking At Work for Workers Who Typically Drive to Work

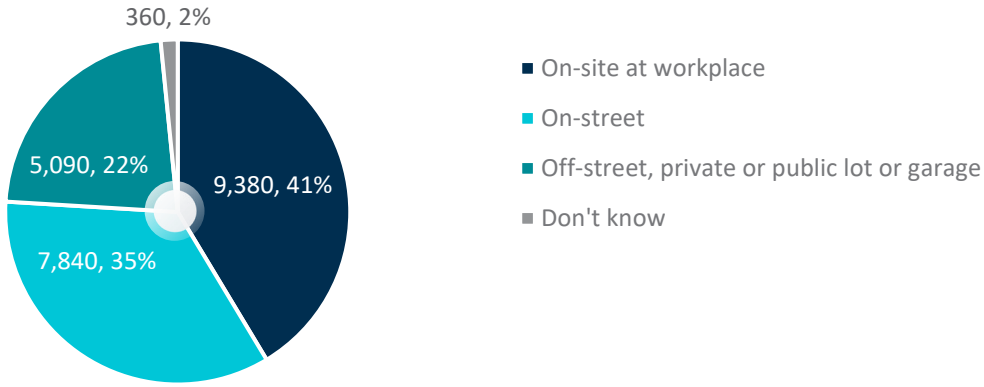


Table 19. Parking at Work for Workers Who Typically Drive To Work

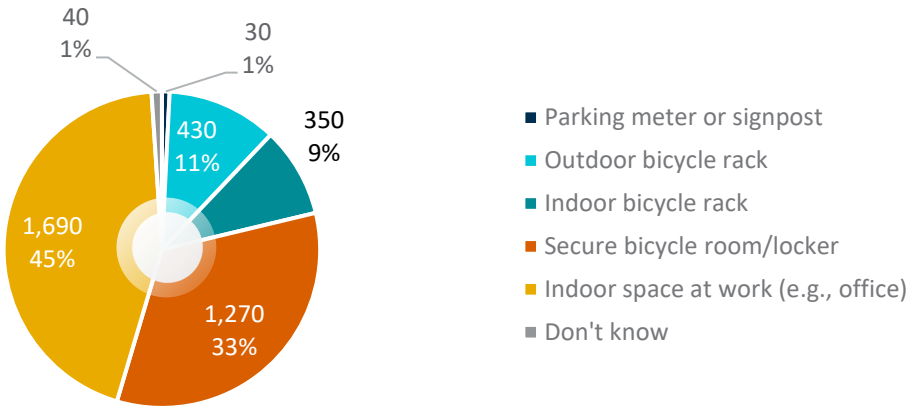
	Survey total	Brent-wood Town Centre (NW)	Rest of NW quadrant	Lougheed Town Centre (NE)	Rest of NE quadrant	Edmonds Town Centre (SE)	Rest of SE quadrant	Metro-town	Rest of SW Quad-rant	Downtown Vancouve	Rest of Vancouver	Else where	No fixed work-place
Usual commute mode													
Sample	1,262	15*	71	10*	43*	33*	8*	50*	138	88	279	380	147
Expanded workers		1,050	4,370	570	2,770	1,370	700	3,120	6,940	4,150	14,060	18,780	7,480
Free or pay													
Free parking, provided by employer		63%	80%	95%	63%	48%	81%	59%	74%	43%	48%	81%	35%
Free parking, other	7,900	9%	14%	5%	9%	20%	4%	16%	8%	3%	20%	6%	19%
Pay parking	12,140	29%	6%	0%	19%	31%	0%	25%	17%	54%	29%	10%	6%
Varies	2,630	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	35%
Don't Know	1,640	0%	0%	0%	9%	0%	14%	0%	1%	0%	3%	2%	5%
Parking type													
On-site at workplace	9,380	26%	3%	0%	12%	28%	1%	24%	15%	25%	22%	8%	10%
On-street	7,840	4%	14%	0%	5%	15%	3%	14%	7%	0%	19%	4%	32%
Off-street, private or public lot or garage		7%	3%	5%	12%	9%	0%	2%	3%	32%	8%	4%	12%
Don't Know	360	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%

* Interpret results with small sample size with caution.

3.4.6 Bicycle Parking at Work

Survey participants who usually bicycle to work were asked about where they park or lock up their bicycle. Figure 22 presents the overall survey result, while Table 20 provides a breakdown for workplaces in Burnaby and workplaces outside of Burnaby. The survey results suggest that 45% of bicycle commuters keep their bicycle in an indoor space at the office, one-third (33%) keep their bicycle in a secure bicycle room or locker, 11% use an outdoor bicycle rack, while 9% use an indoor bicycle rack. None indicated using a TransLink Bike Parkade or Locker at a SkyTrain station or bus exchange. For those who cycle to workplaces in Burnaby, 62% reported an indoor space at work, 19% an indoor rack, and 14% a secure bicycle room or locker. The survey results should be interpreted with considerable caution due to the small sample sizes.

Figure 22. Bicycle Parking at Work for Workers Who Typically Cycle to Work



Interpret with caution due to modest sample size (n=61)

Table 20. Bicycle Parking at Work for Workers Who Typically Cycle to Work, By Location of Work

Usual commute mode of bicycle*	Workplace within Burnaby	Workplace outside Burnaby or no fixed address
Sample Size	25	37
Expanded workers	1,620	2,190
Type of bicycle parking		
Parking meter or signpost	2%	0%
Outdoor bicycle rack	2%	18%
Indoor bicycle rack	19%	2%
Secure bicycle room/locker	14%	47%
Indoor space at work (e.g., office)	62%	31%
Don't know	0%	2%

Interpret with caution due to small sample sizes


BIKE
LANE

4 TRAVEL CHARACTERISTICS

This section of the report presents trip characteristics for the weighted data. Trip details were collected from household members who were five years of age or older (referred to elsewhere as "persons 5+"). The first part of this section covers trip characteristics with respect to household and demographics followed by sections describing trips rate by mode, purpose, number of passengers in vehicle, distance travelled, origin-destination flows, and other travel characteristics of interest. 2024 is a baseline survey year against which the results for future surveys will reveal trends in travel patterns.

Important note on interpreting the survey results

Readers are reminded that expanded counts from the survey are estimates based on a weighted survey sample of 2.2% of households expanded to represent the size of the population and should not be taken to be exact counts. Overall trip-level results are subject to a margin of error associated with random sampling of ±1.9% at a 95% confidence level.

Household and person level results are usually rounded to the nearest 10 and trip level results are usually rounded to the nearest 100. Due to rounding, the percentages presented for individual response categories may not always sum to 100%.

4.1 Total Trips and Trip Rates by Demographic Characteristics

The expanded survey results suggest that residents of the city of Burnaby make about 555,200 trips per day (as of late fall 2024, the time of the survey). As illustrated in Table 21, the average daily trip rate for residents of Burnaby is 2.28 trips per person. Notably, the COVID-19 pandemic may have had an impact on or accelerated other shifts in travel behaviours, such as possible increases in online shopping, grocery deliveries, restaurant deliveries and/or engagement in social and recreational activities.
Trip rates are presented by household size in Table 22, dwelling type in Table 23, and household income in Table

Table 21. Average Daily Trips per Household and per Person

Year	Households	Persons 5+ years	Total daily trips	Avg. daily trips per household	Avg. daily trips per person 5+
2024	105,570	243,010	555,200	5.26	2.28

Table 22. Total Daily Trips and Trip Rate by Household Size

Household size	Total daily trips	Household trip rate	Trips per person 5+
1 person	74,500	2.42	2.42
2 persons	151,700	4.37	2.20
3 persons	113,200	6.37	2.29
4 persons	121,400	8.82	2.38
5+ persons	94,400	11.09	2.21

Table 23. Total Daily Trips and Trip Rate by Dwelling Type

Dwelling type	Total daily trips	Household trip rate	Trips per person 5+
House	133,700	6.87	2.34
Apartment 5+ storeys	133,900	4.16	2.31
Apartment <5 storeys	111,900	4.50	2.41
Other Ground-Oriented	175,700	6.04	2.16

Table 24. Total Daily Trips and Trip Rate by Household Income

Dwelling type	Total daily trips	Household trip rate	Trips per person 5+
Under $25,000	15,500	3.03	1.90
$25,000 to $49,999	34,400	3.38	1.92
$50,000 to $79,999	64,400	4.18	2.06
$80,000 to $99,999	79,100	5.36	2.52
$100,000 to $149,99	115,400	5.44	2.29
$150,000+	153,400	7.32	2.58
Don't Know / Refused	92,900	5.17	2.09

The following chart and two tables illustrate trip rates by key demographic characteristics (age and employment status). The survey results suggest that people between the ages of 25 to 74 have the highest trip rates, with peak trip rates between the ages of 35 and 54 (Table 25, Figure 23). This stands to reason as people in these age ranges are more likely to be in their prime productive years and/or have families with children (who often require driving passengers to/from school and activities). Workers average 2.40 trips per day, whereas retired people average 2.09 trips per day, and unemployed people average only 1.34 trips per day (Table 26).

Figure 23. Trip Rates and Cumulative Daily Trips by Age Group

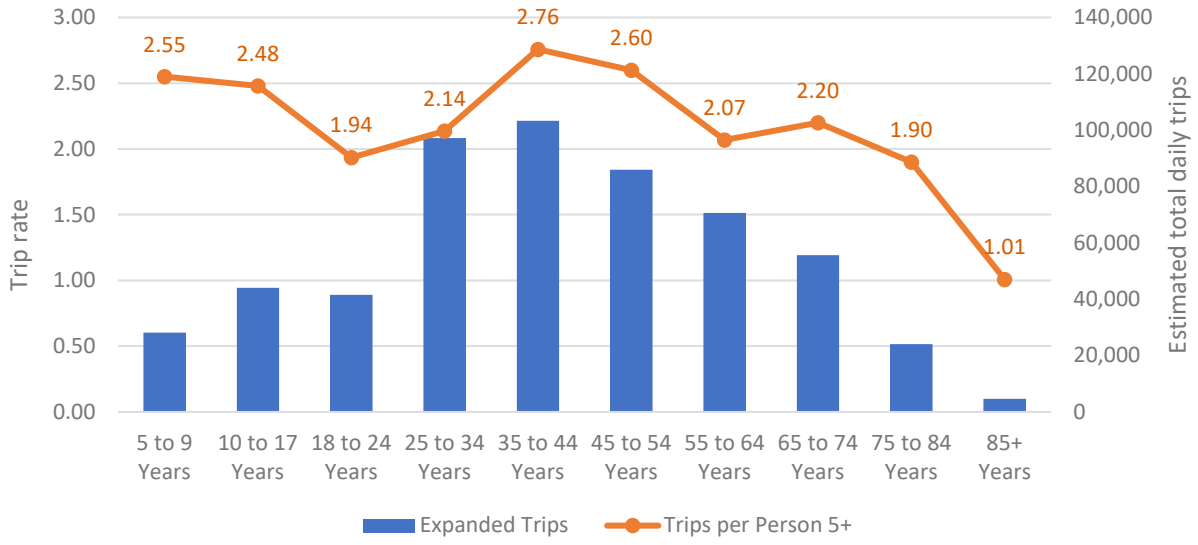


Table 25. Total Daily Trips and Trip Rate by Age Group

Age group	Expanded trips	Trips per person 5+
5 to 9 Years	28,200	2.55
10 to 17 Years	44,100	2.48
18 to 24 Years	41,600	1.94
25 to 34 Years	97,200	2.14
35 to 44 Years	103,300	2.76
45 to 54 Years	85,900	2.60
55 to 64 Years	70,600	2.07
65 to 74 Years	55,600	2.20
75 to 84 Years	24,100	1.90
85+ Years	4,600	1.01

Table 26. Total Daily Trip and Trip Rate by Employment Status

Occupation status	Expanded trips	Trips per person 5+
Work Full-Time	288,700	2.40
Work Part-Time	53,000	2.40
Unemployed	7,900	1.34
Other (includes students 15+ who do not work)	63,600	2.09
Retired	85,500	2.01
Not applicable (5-14 years)	56,400	2.58

4.2 Comparison with Other Jurisdictions

Table 27 compares daily person and household trip rates from the 2024 Burnaby Household Travel Surveys with selected rates from recent surveys in several other urban regions. The comparison serves to validate these key travel characteristics, both current and as they have evolved before and through the pandemic. All sources are publicly available or used with permission, although not all information was available.

While the trip rates vary by municipality, the comparison shows that Burnaby's person and household trip rates are generally comparable to other cities using similar survey methods. While the Burnaby trip rates are lower compared to many other comparably-sized cities, they are higher than those observed in other large multi-municipality metropolitan areas, such as the Greater Toronto Hamilton Area and the Greater Montreal Region.

Trip rates for Burnaby and Vancouver from recent cycles of the TransLink Metro Vancouver Regional Trip diary are provided in the table. The TransLink survey has a different survey method with a number of differences in the post-processing and data weighting (including boosting the weights of trips in online surveys, and additional weighting adjustments), so may not be the most equivalent comparator to the Burnaby HTS. TransLink has so far only published trip rates for individual municipalities (i.e. the average trip rate for the entire region is not known). Comparison with City of Vancouver results shows that Burnaby has a lower trip rate relative to Vancouver. A review of results of the 19 municipal geographies featured in the TransLink results showed that Burnaby residents consistently average fewer daily trips than residents of most other municipalities in the region, with Burnaby trip rates ranked 14th, 17th and 17th in the 2011, 2017, and 2024 trip diary results.

The comparative data also shows that person and household trip rates have been dropping from before the pandemic in several urban regions. The City of Edmonton, Victoria's Capital Regional District, the City of Vancouver, the City of Saskatoon, and the Central Okanagan all show evidence of reductions in person-trip and/or household-trip rates prior to the pandemic. Reductions in trip rates have continued past the pandemic, although they may be recovering in some urban regions. Victoria's Capital Regional District, the City of Saskatoon, and the City of Vancouver show continued reductions in post-pandemic person-trip rates compared with pre-pandemic rates. The clearest trend is provided by the City of Vancouver. These annual small-sample (panel) surveys reflect steady daily-person trip rates prior to the pandemic (3.73 daily-person trips in 2019). The precipitous 2020 drop to 2.71 daily person trips has been recovering slowly, although the 2024 rate of 3.17 daily person trips is still well below the 2019 rate.[18] It is likely that Burnaby has seen similar trends, as also evidenced by the 4% drop in the trip rate from 2017 to 2023 from the TransLink Regional Trip Diary estimates.[19] It will be interesting to observe the trend in trip rates in future cycles of the Burnaby HTS.

Table 27. Comparison of Trip Rates

City	Year of survey	Daily person trip rate	Daily household trip rate	Population	Method
City of Burnaby Household Travel Survey	**2024**	**2.28**	**5.26**	**253,780**	**A**
TransLink Regional Trip Diary – Burnaby Result	2023	2.86	--	not published	E1
	2017	2.99	--	not published	E1
	2011	2.93	--	not published	D
TransLink Metro Vancouver Regional Trip Diary – Vancouver Result	2023	3.11	--	not published	E1
	2017	3.27	--	not published	E1
	2011	2.94	--	not published	D
Greater Toronto and Hamilton Area ***	2022 5+	2.10	2.10	7,154,600	B
	2022 11+†	1.96	1.96	--	C
	Fall 2021 † †	--	--	6,813,900	G
	2016	2.22	2.22	6,577,200	C
	2011	2.36	2.36	5,871,900	C
	2006	2.40	2.40	4,926,400	C
	1996	2.42	2.42	4,062,900	C
	1986	2.36	2.36	6,577,200	C
	2006	2.40	5.67	5,871,900	C
	1996	2.42	5.58	4,926,400	C
	1986	2.36	5.57	4,062,900	C
NCR (Ottawa-Gatineau)	2022	2.47	5.23	1,365,600	A
	2011	2.69	5.70	1,233,800	A
	2005	2.78	6.03	1,150,600	A
Québec-Lévis Region	2017	2.57	--	841,404	A
	2011	2.40	--	827,929	A
	2006	2.73	--	743,392	A
Greater Montréal Region **	2023	2.01	4.44	4,674,080	A
	2018	2.22	4.97	4,474,180	A
	2013	2.30	5.13	4,287,630	A
	2008	2.16	--	3,939,760	A
City of Kingston	2024	2.69	5.66	157,600	A
	2019	2.98	6.43	139,600	A
Regina CMA	2024	2.67	6.11	252,500	A
	2009	3.37	--	203,400	A

19 While the TransLink method may not be entirely comparable to the Burnaby HTS, its method has been consistent in the last two cycles, and can be relied on to reveal trends.

City	Year of survey	Daily person trip rate	Daily household trip rate	Population	Method
City of Saskatoon	2023	2.74	5.60	281,700	A
	2008	3.29	7.42	218,800	A
City of Red Deer	2024	2.48	5.67	94,100	A
	2016	2.83	6.55	91,900	A
City of Coquitlam	2022	2.41	6.04	140,600	A
Capital Regional District (Victoria region)	2022	2.63	5.23	394,000	A
	2017	3.20	6.35	363,300	A
	2011	3.30	6.58	338,000	A
Central Okanagan (Kelowna region)	2018	3.02	6.67	237,250	A
	2013	3.22	7.14	220,470	A
	2007	3.37	7.63	198,870	A
City of Edmonton	2015	3.51	8.54	894,400	D
	2005	3.63	8.57	712,400	D
City of Vancouver ‡	2024	3.17	--	714,600	F
	2023	3.03	--	687,700	F
	2022	2.90	--	674,100	F
	2021	2.85	--	663,900	F
	2020	2.71	--	--	F
	2019	3.73	--	--	F
	2018	3.76	--	--	F
City of Edmonton	2023	3.12	--	200,400	F
	2021	3.13	--	196,360	F
	2019	3.66	--	189,390	F

* Methods:

A = same method as Burnaby HTS: 24-hour recall, address-based sampling for recent cycles, trips captured for persons 5+ years of age. A trip can have multiple modes.

B = 24-hour recall, but slightly different trip definition. TTS asks respondents to exclude short stops of less than 15 minutes along a longer trip, e.g., stopping at a gas station or drive-through restaurant).

C = 24-hour recall, but trips only captured for persons 11+ years of age.

D = trip diary method (recruit respondent, assign travel day, provide diary, report back).

E1 = mix of smart-phone app and online surveys, applies an adjustment factor to boost trip rates for online surveys (TransLink 2023).

F = similar method of sampling and completion but restricting to a single individual in each household (results are for adults 18+ or persons 15+).

G = other / unknown.

Notes:

* In some jurisdictions, the Study Areas varied between surveys.

** Trips per person aged 5+. Sources: *Enquête origine-destination 2023, La mobilité des personnes dans la région métropolitaine de Montréal,* ARTM, 2025, and previous reporting for 2008 to 2018.

*** Transportation Tomorrow Survey (TTS) results are for trips per person aged 11+ unless otherwise noted. The TTS trip definition in all survey cycles does not include incidental stops of less than 15 minutes (such as stopping for gas or a drive-through coffee) on the way to a main destination. In 2016 and earlier cycles, non-commute walk trips were not captured, and the age for trip capture was 11+ years. In 2022, trips for persons 5+ and non-commute walking trips were captured.
Sources: RA Malatest, *TTS 2022: 2016, 2011, 2006, 1996 and 1986 Travel Summaries for the Greater Toronto & Hamilton Area*, MTO. To be published in 2025.

† 2022 TTS 11+ statistic is for comparability to previous TTS survey cycles. It filters the 2022 result to ages 11+ years and filters out non-commute walking trips that would not have been captured in 2016 and earlier cycles.

†† Very small sample. Unweighted results. Source: *COVID-19 influenced Households' Interrupted Travel Schedules (COVHITS) Survey: Fall 2021 Cycle Report*, University of Toronto, December 31, 2021.

‡ Small sample (panel survey) of adults 18+ years of age. Source: 2022 *Vancouver Transportation Fall Survey, Final Report, City of Vancouver*, July 2023. Population listed is total population of all ages.

‡‡ Small sample (panel survey) of persons 15+ years of age in City of North Vancouver, District of North Vancouver, and District of West Vancouver, Source: 2023 North Shore Transportation Survey. Population listed is total population of all ages.

Other sources:

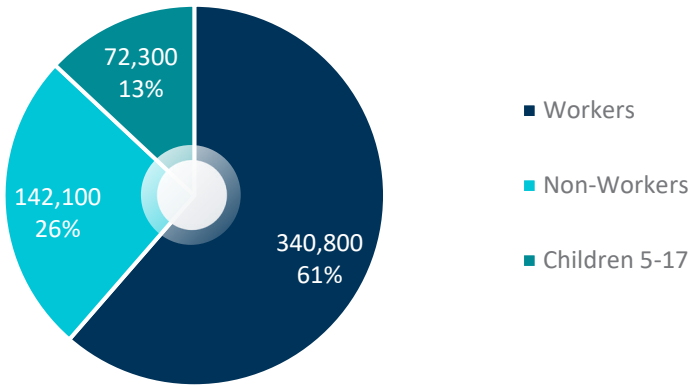
- TransLink Metro Vancouver Regional Trip Diary interactive dashboards for 2023, 201, and 2011, results for City of Burnaby. *(https://www.translink.ca/plans-and-projects/data-and-information/research-and-insights).*
- *Enquête origine-destination 2017, La mobilité des personnes dans la région de Québec-Lévis, Faits saillants,* MTMD, 2019.
- City of Red Deer, City of Regina, and City of Kingston, as-yet unpublished data from household travel surveys, used with permission of the client.
- City of Coquitlam 2022 Coquitlam Household Travel Survey Arc GIS Online results portal (https://experience.arcgis.com/experience/64d3b70b2707497199281c76ec34da0a)
- RA Malatest with David Kriger Consultants Inc., *2015 Edmonton and Region Household Travel Survey, Summary Report,* City of Edmonton, 2018.
- RA Malatest with David Kriger Consultants Inc., *Capital Region District (CRD) Origin Destination Household Travel Survey 2022, Final Report,* September 2023.

19 While the TransLink method may not be entirely comparable to the Burnaby HTS, its method has been consistent in the last two cycles, and can be relied on to reveal trends.

4.3 Trips by Worker Status (Adults 18+ Years)

Figure 24 illustrates the estimated number and proportion of trips made each day by adult workers, adult non-workers, and children 5 to 17 years of age. Overall, 61% of all Burnaby resident trips are made by workers. Non-workers make 26% of the trips and children between the ages of 5 and 17 make 13% of the total resident trips.

Figure 24. Trips by Worker Status



When examining daily trips by hour, workers' travel peaks at 8 am and 5 pm, with a steady volume of trips occurring between these peak times. Children between ages of 5 to 17 peak their trips at 8 am and 3 pm with very few trips in between the peak periods and some trips after 5 pm . Non-workers have trips that are more spread out throughout the day. More details on trip volumes by time of day by work status can be found in Figure 25. The Percentage of trips by time of day by work status is shown in Figure 26.

Figure 25. Volume of Trips by Time of Day by Worker Status

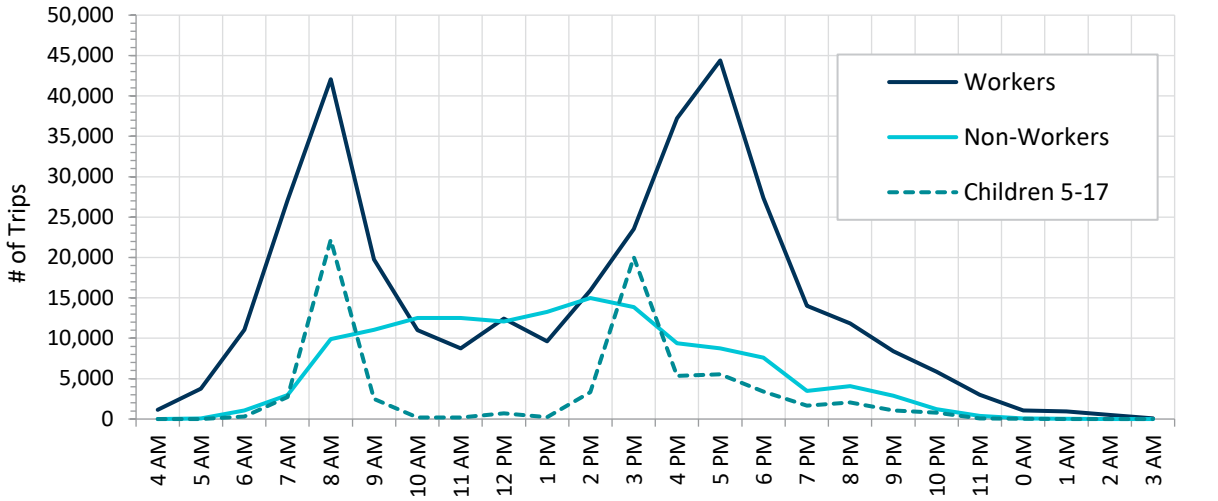
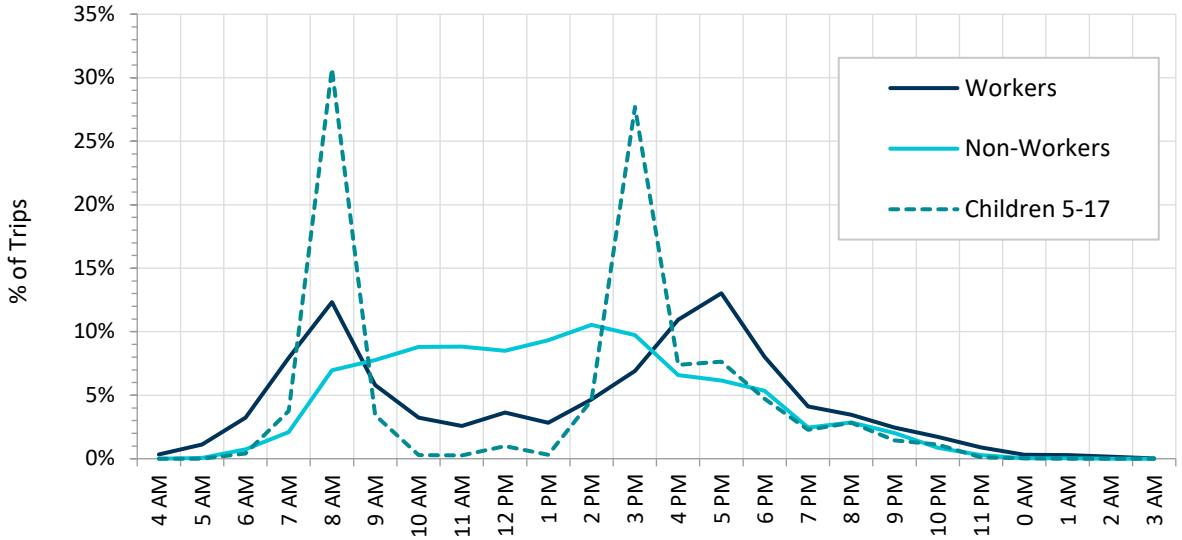


Figure 26. Percent Daily Trips by Time of Day by Worker Status



The denominator for the hourly percentages for each population group is the total daily trips for the given population group.

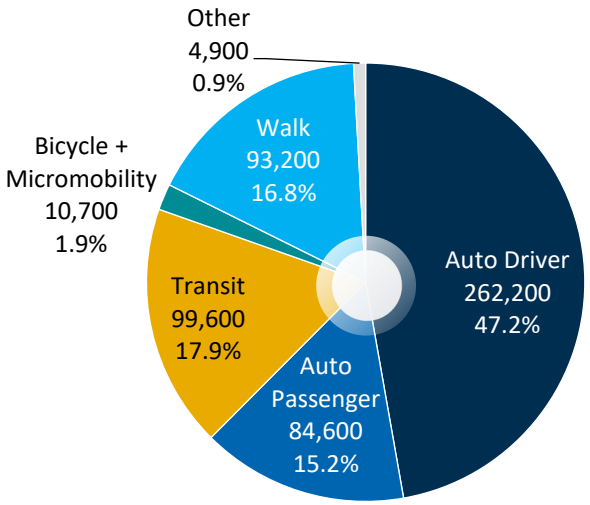
4.4 Primary Mode

This section describes daily mode shares. For analysis, detailed modes collected were grouped as follows below. In instances where more than one mode was used in a trip, the primary mode was assigned to the trip according to a hierarchy of modes based on which modes are most likely to be the longer part of a trip. For example, in a park-and-ride trip (automobile then transit), the primary mode assigned was transit.

Mode group	Modes included
Auto driver	auto driver, car share driver.
Auto passenger	auto passenger, car share passenger.
Transit	transit bus, SkyTrain, SeaBus, West Coast Express
Bicycle + micromobility	bicycle, e-bike (power-assisted bicycle with pedals), e-scooter or other electric micromobility device (e-skateboard, hoverboard, e-unicycle/mono-wheel, throttle e-bike that does not require pedalling), other micromobility (skateboard, kick scooter, longboard, roller blades, unicycle, or other human-powered device)
Walk	walked (including jogging), assisted mobility device (wheelchair, mobility scooter)
Other	motorcycle or motor scooter, taxi or limousine, paid ride hail/non-traditional taxi, HandyDart

Figure 27 presents daily mode shares. Automobile trips dominate, with 47% of all person-trips being made by auto drivers, and 15% as auto passengers. Transit mode share is the second highest, accounting for almost 18% of trips. Bicycles and micromobility mode share are at 2% and walking trips at 17%.

Figure 27. Daily Mode Shares



Examining the disaggregated modes within mode groups revealed the following:

- Of auto driver trips, 0.5% (0.3% of total daily trips) were made as a car-share driver.
- Of transit trips, nearly two-thirds (67%, or 12.0% of total daily trips) involved the Skytrain (many of which also involved transit buses and a few of which also used SeaBus), very few involved the West Coast Express or SeaBus (less than 0.05%), and the remainder of transit trips were via transit bus(es) only (33%, or 5.9% of daily trips).

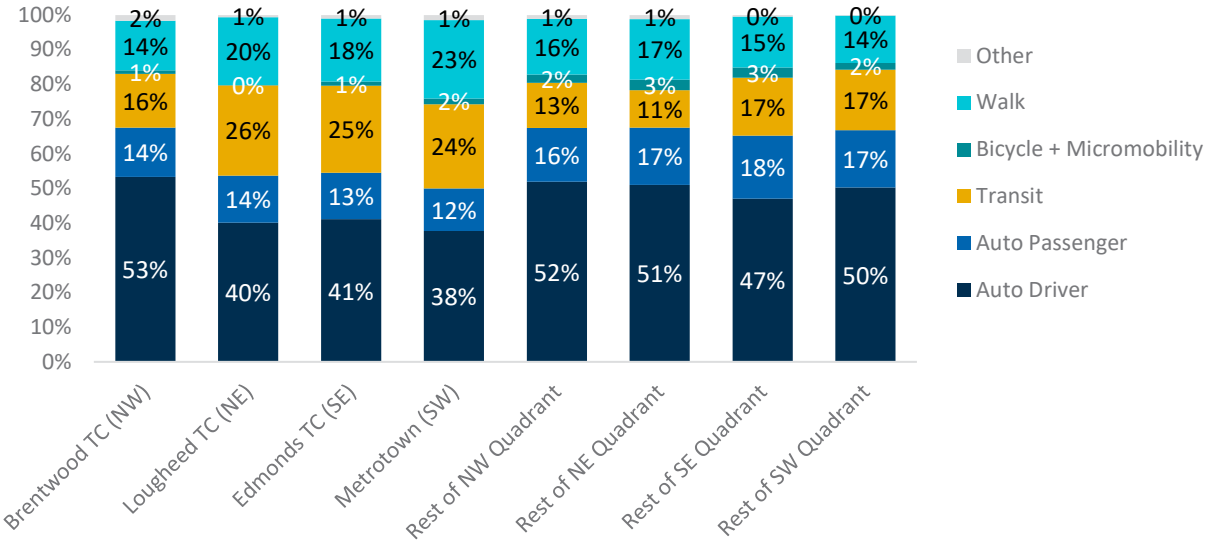
- Of bicycle/micromobility trips, about one-half or 49% (0.9% of total daily trips) were made via conventional bicycle, about one-third or 32% (0.6% of total daily trips) were made via e-bike, 14% (0.3% of total daily trips) were made via e-scooter or other electric mobility device, and 5% (0.1% of daily trips) were made by skateboard, kick scooter or other human-powered device.

4.4.1 Mode Shares by Subquadrant of Residence

Figure 28 presents mode shares for residents of the different subquadrants. For this chart, town centres have been grouped together to better show the difference between residents who live in the town centres compared to those who live in residential areas outside the town centres.

As shown, in Lougheed Town Centre, Edmonds Town Centre, and Metrotown, transit mode shares are highest (ranging from 24% to 26%). The Northwest and Northeast quadrants have the lowest transit shares (13% and 11%, respectively). Walk mode shares are highest in Metrotown, at 23%, which is reflective of the high concentration of shops, services and amenities, and possibly the existence of more places of employment.

Figure 28. Mode Shares by Subquadrant of Residence



4.4.2 Mode Shares by Age Group

The charts in Figure 29 illustrate mode shares by age range. The two tables that follow (Table 28 and Table 29) provide details of the mode shares and mode volumes by age range. For the latter table, readers are reminded that trip volumes presented are estimated volumes based on weighted survey data, not exact counts.
Age groups are organized as follows:

- 5 to 9, children who are usually accompanied by an adult
- 10 to 17, mostly intermediate and high school students who may walk to places like school on their own
- 18 to 24, young adults who are more likely to use transit
- ages 25 and older are grouped into ten-year ranges up to age 84
- ages 85 and more form a single group

The following observations can be made:

- Auto driver shares predominate for age cohorts from 25 onwards, peaking at 70% for the 45-54 cohort. This is commensurate with people joining the workforce, and, for many, starting families. Auto driver mode shares then drop to 35% for ages 85+.

- Auto passenger mode shares are highest among children below the driving age, at 58% for those 5-9 years, and 45% for those 10-17. Auto passenger mode shares are also high for those 85+ years, at just over one-third (35%) of trips made by this cohort.

- Approximately 18% of trips made by children 10-17 years of age are via public transit (noting that school commutes in School District 41 are served by public transit buses rather than yellow school buses). Public transit use rises to 53% among young adults 18-24 years, then declines steadily with age.

- Bicycle mode shares are highest amongst children 5-9 years (although still only 2.9% of all trips), drop for those aged 10-17, and rise again for the 18-24 and 25-34 cohorts (1.6% and 1.7% respectively).

- Walk mode shares are highest for those 5-9 and 10-17 (35% and 34% respectively), and lowest for those 18-24 (8%) and 45-54 (10%), with shares ranging from 16% to 22% for all other age cohorts.

Figure 29. Mode Shares by Age Group

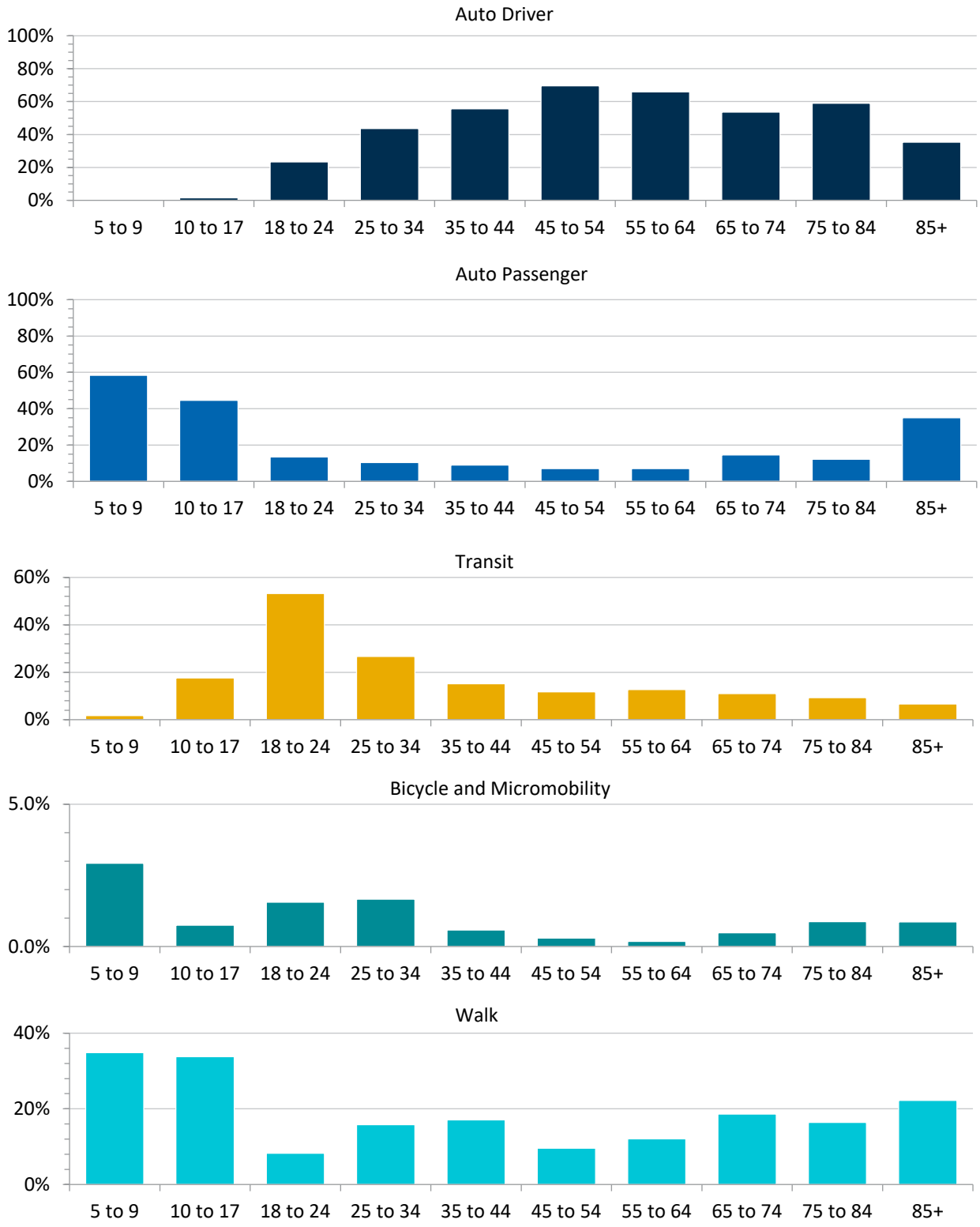


Table 28. Mode Shares by Age Group

Age range	Total trips	Driver	Passenger	Transit	Bicycle +	Walk	Other
Survey Total	555,200	262,200	84,600	99,600	10,700	93,200	4,900
5 to 9	28,200	0.0%	58.4%	1.7%	2.1%	34.8%	2.9%
10 to 17	44,100	1.5%	44.6%	17.6%	1.7%	33.8%	0.7%
18 to 24	41,600	23.4%	13.4%	53.2%	0.2%	8.3%	1.6%
25 to 34	97,200	43.7%	10.4%	26.7%	1.9%	15.8%	1.7%
35 to 44	103,300	55.6%	8.9%	15.1%	2.7%	17.1%	0.6%
45 to 54	85,900	69.7%	7.0%	11.7%	1.7%	9.6%	0.3%
55 to 64	70,600	65.8%	7.0%	12.7%	2.3%	12.1%	0.2%
65 to 74	55,600	53.6%	14.6%	11.0%	1.7%	18.6%	0.5%
75 to 84	24,100	59.0%	12.2%	9.2%	2.3%	16.4%	0.9%
85+	4,600	35.3%	35.0%	6.6%	0.0%	22.2%	0.9%

Table 29. Estimated Daily Volume of Trips by Mode by Age Group

Age Range	Total Trips	Driver	Passenger	Transit	Bicycle +	Walk	Other
Survey Total	555,200	262,200	84,600	99,600	10,700	93,200	4,900
5 to 9	28,200	0	16,500	500	600	9,800	800
10 to 17	44,100	700	19,700	7,800	800	14,900	300
18 to 24	41,600	9,700	5,600	22,200	100	3,400	600
25 to 34	97,200	42,400	10,100	25,900	1,800	15,400	1,600
35 to 44	103,300	57,400	9,200	15,600	2,800	17,600	600
45 to 54	85,900	59,800	6,000	10,100	1,500	8,300	300
55 to 64	70,600	46,500	4,900	9,000	1,600	8,500	100
65 to 74	55,600	29,800	8,100	6,100	1,000	10,300	300
75 to 84	24,100	14,200	2,900	2,200	600	4,000	200
85+	4,600	1,600	1,600	300	0	1,000	0

4.4.3 Mode Shares by Other Characteristics

The charts below provide mode shares for other household and demographic characteristics.

Figure 30 presents mode shares by dwelling type. As indicated, those living in houses have the highest automobile usage (57% auto driver share, 18% auto passenger share) and lowest transit usage (10%). Those living in apartments with fewer than five storeys have the lowest auto shares (with a 39% auto driver share) and the highest transit shares (at 23% of daily trips). Walking trips are more prevalent amongst those living in all forms of multi-unit building, ranging from 17% to 20% shares.

Figure 30. Mode Shares by Dwelling Type

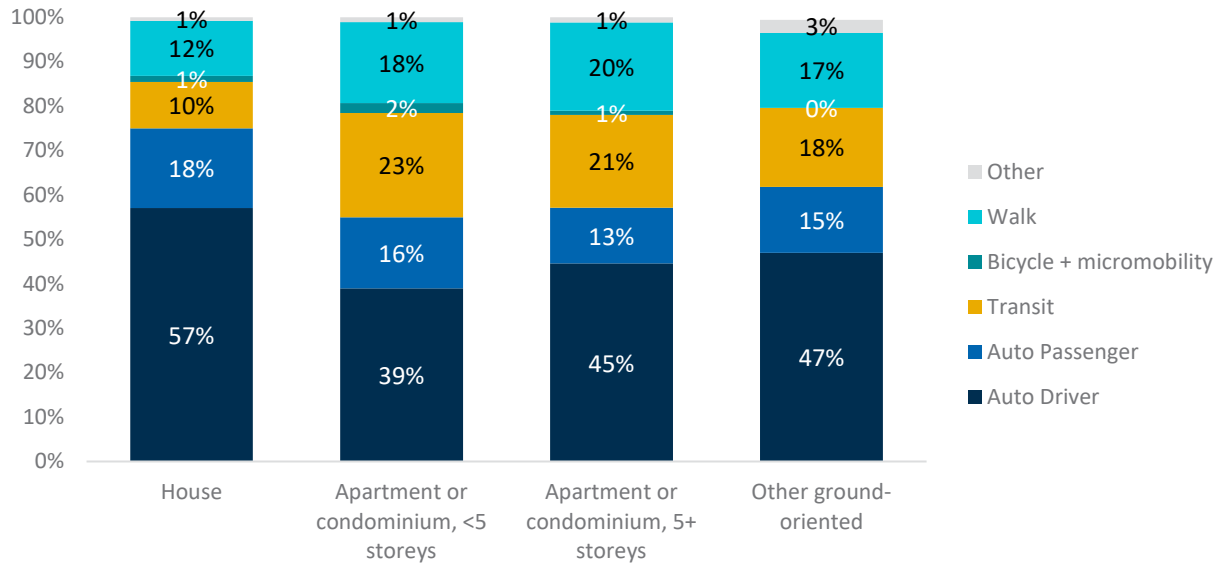


Figure 31 presents mode shares by gender. The survey results reveal that men are more likely than women to drive and to cycle or use micromobility and less likely to be auto passengers. Walk mode shares are the same for most genders. Women are slightly more likely to take transit, balancing the lower cycling mode shares, such that both men and women have the same overall sustainable mode share (combining walk, cycling/micromobility, and transit).

Figure 31. Mode Shares by Gender

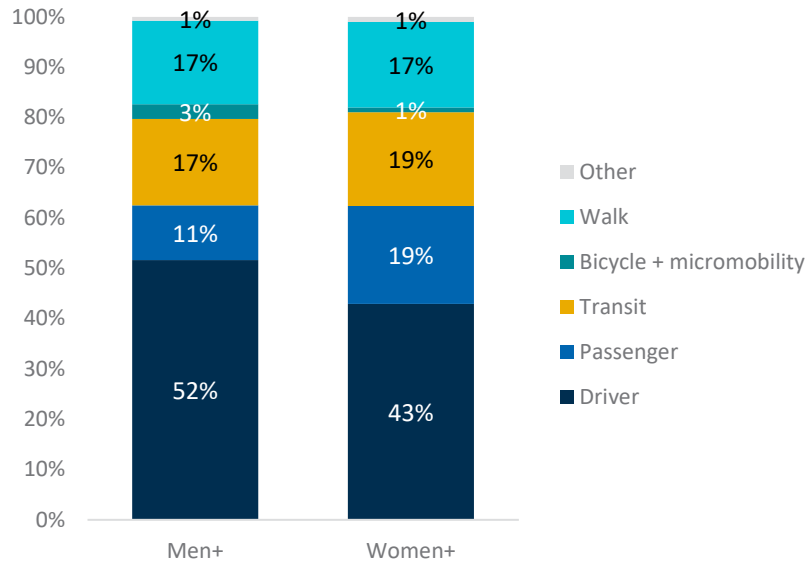
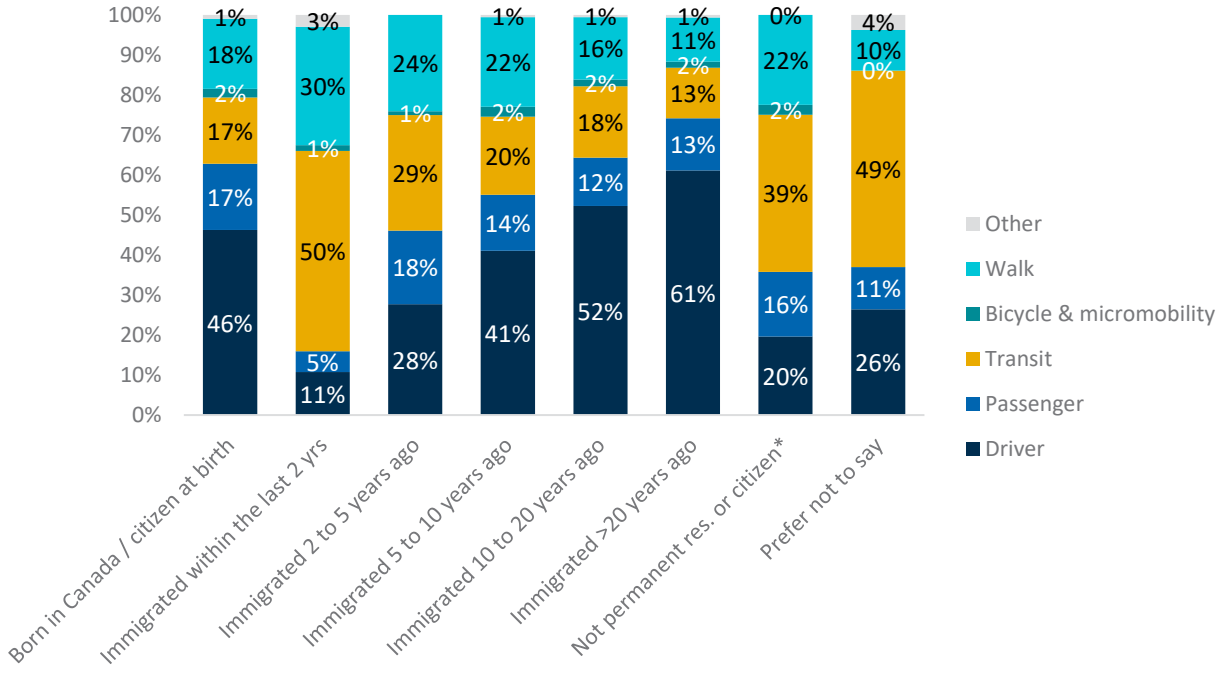


Figure 32 presents mode share by year of immigration. The survey results reveal the importance of transit for recent immigrants, with a 50% mode share for those who immigrated within the last two years and 39% amongst non-permanent residents (student visa, visitors, etc.). Transit mode shares reduce over time after immigration, and auto driver mode shares increase.

Figure 32. Mode Shares by Year of Immigration



*Not a permanent resident or citizen (student visa, visitor, other status)

4.5 Trip Purpose

4.5.1 Trip Purpose Distribution

Figure 33 illustrates the distribution of trips by detailed trip purpose, with Table 30 providing groupings used in other analyses. Trips to work and for work-related reasons account for just over 16% of all trip destinations, followed by social and recreational at 13%. Trips to shopping and personal business destinations account for 12% of trips. Trips to serve passengers account for 9% of all trips and trips to school account for 7%. Of the total, 42% of trips are returning home from these various destinations.

Figure 33. Detailed Trip Purposes

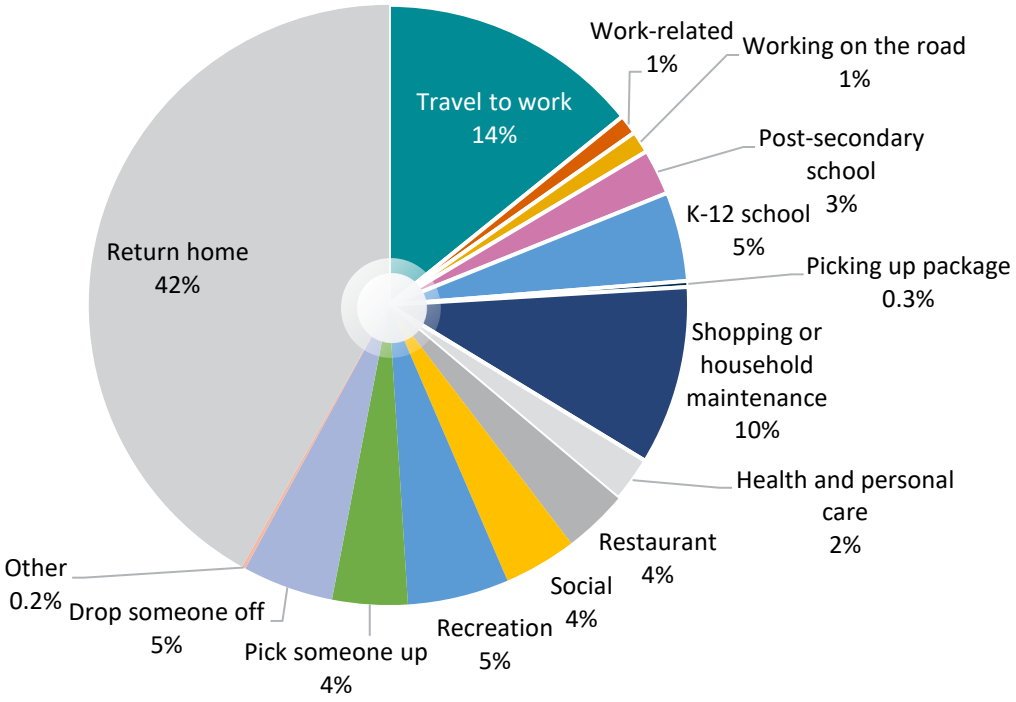


Table 30. Trips by Trip Purpose

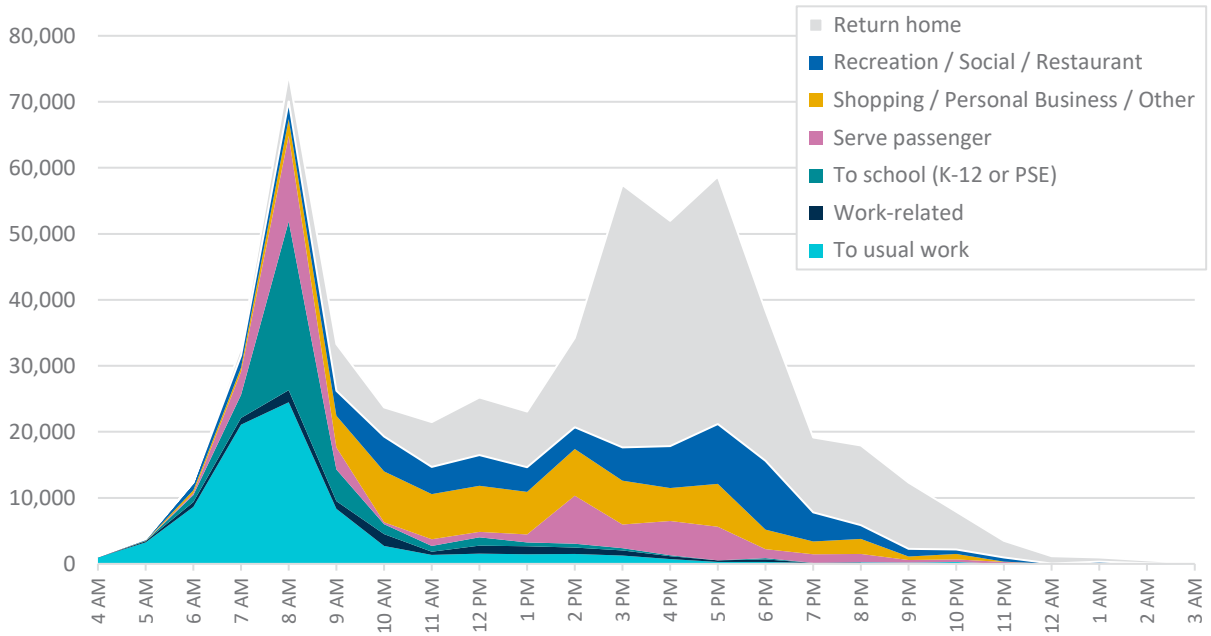
Group	%	Trips by trip purpose	Expanded trips	%
Work/Work Related	16.4%	Travel to work	78,800	14.2%
		Work-related	5,900	1.1%
		Working on the road	6,600	1.2%
School	7.3%	Attend school (PSE)	13,700	2.5%
		Attend school (K-12)	26,700	4.8%
Escort Passenger	9.0%	Pick up a passenger	22,500	4.1%
		Drop off a passenger	27,200	4.9%
Social/Recreation	12.8%	Social	21,800	3.9%
		Recreation	30,300	5.5%
		Dining/restaurant	19,200	3.5%
Shopping/Personal Business	12.4%	Shopping / services	53,600	9.7%
		Health and personal care	13,600	2.4%
		Picking up package	1,800	0.3%
Other	0.2%	Other	1,100	0.2%
Return Home	41.9%	Return home	232,400	41.9%

4.5.2 Trip Purpose by Time of Day

Figure 34 provides another view of daily trips, illustrating the distribution of trip purposes by time of day (by 1-hour interval based on the time of departure).

The distribution shows a classic profile of a concentrated AM peak dominated by commute trips to work and school (including passenger drop-off trips by those serving passengers) ending by 9 am, with other kinds of trip purposes beginning to increase at by 10 am. An extended PM peak begins mid-afternoon (beginning at 3 pm and tapering off by 6 pm). The PM peak is dominated by return-home trips, but with notable proportions of shopping/personal business, social/recreational, pick-up/drop-off, and work-related purposes.

Figure 34. Trips by Purpose by Hour of Departure



4.5.3 Mode Shares by Trip Purpose

Mode shares and volumes by trip purpose are presented in the following two tables, which illustrate the predominance of driving as a travel mode for work commutes (but with transit also accounting for three in ten trips to work), the importance of transit for post-secondary school commutes, and the mix of modes for K-12 school commutes (42% walk, 41% passenger, and 12% transit being the three most common modes).

Table 31. Mode Shares by Purpose

Purpose	Trips	Driver	Passenger	Transit	Bicycle + micro-mobility	Walk	Other
To usual work	78,800	54%	6%	31%	3%	5%	1%
Work-related	12,500	74%	3%	13%	2%	7%	2%
To post-secondary school	13,700	21%	7%	65%	0%	8%	0%
To K-12 school	26,700	1%	41%	12%	2%	42%	2%
Pick up package	1,800	64%	14%	1%	1%	20%	0%
Shopping	53,600	54%	16%	8%	2%	20%	0%
Health and personal care	13,600	52%	14%	9%	2%	21%	2%
Restaurant	19,200	42%	23%	9%	1%	23%	2%
Social	21,800	45%	20%	18%	1%	15%	2%
Recreation	30,300	45%	23%	10%	1%	20%	1%
Serve passenger	49,700	69%	10%	3%	1%	17%	0%
Other	1,100	38%	13%	12%	20%	17%	0%
Return home	232,500	45%	16%	19%	2%	17%	1%

Table 32. Trip Volumes by Primary Mode and Purpose

Purpose	Trips	Driver	Passenger	Transit	Bicycle + micro-mobility	Walk	Other
To usual work	78,800	42,200	4,800	24,800	2,400	4,200	500
Work-related	12,500	9,200	300	1,600	200	900	200
To post-secondary school	13,700	2,900	900	8,900	0	1,000	0
To K-12 school	26,700	300	10,900	3,300	600	11,100	500
Pick up package	1,800	1,100	200	0	0	400	0
Shopping	53,600	29,000	8,400	4,400	1,200	10,600	100
Health and personal care	13,600	7,100	1,900	1,200	300	2,900	200
Restaurant	19,200	8,100	4,500	1,700	200	4,400	300
Social	21,800	9,700	4,300	4,000	200	3,300	400
Recreation	30,300	13,500	7,000	3,100	400	6,000	300
Serve passenger	49,700	34,300	5,000	1,600	300	8,300	0
Other	1,100	400	100	100	200	200	0
Return home	232,500	104,200	36,300	44,800	4,700	39,900	2,500

4.6 Vehicle Occupancy

Figure 35 illustrates the proportion of auto driver trips that are single- and high-occupancy.[20] Table 33 provides more detail, including the number of person-trips when taking into account passengers. The average number of vehicle occupants reported was 1.4 persons per vehicle, with 69% of all trips being single-occupant vehicle (SOV) trips.
Figure 35. Trips by purpose by hour of departure

Figure 35. Trips by purpose by hour of departure

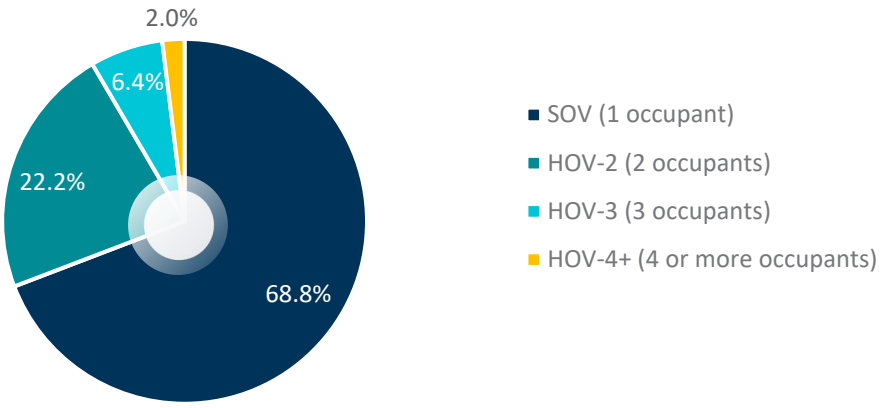


Table 33. Number of Vehicle Occupants

Vehicle Occupants	Expanded Vehicle Trips	% of Vehicle Trips	Person-Trips	% of Person Trips
1 occupant (SOV)	179,400	69%	179,400	48%
2 occupants (HOV-2)	58,000	22%	116,100	31%
3 occupants (HOV-3)	16,800	6%	50,500	14%
4 occupants (HOV-4)	5,100	2%	20,300	5%
5 + occupants (HOV-5+)	1,400	1%	7,600	2%
Total	**260,700**	**100%**	**373,900**	**100%**
Average # of occupants per vehicle	**1.43**			

20 The survey results are based on a question asked for auto-driver trips but not asked for carshare driver drips, which are a relatively small proportion (0.5%) of all vehicle trips.

4.7 Transit Trip Characteristics

Table 34 provides information on transit trips. The survey results suggest transit ridership of just over 99,600 person-trips, with almost 150,900 boardings in total. About two-fifth of trips (41%) involved transfers (two or more routes used), and only one out of 11 trips having two or more transfers (three or more routes used). Table 35 presents the destinations that attract transit trips made by Burnaby residents. Overall, 62% of non-home transit trips leave Burnaby, with most going to downtown Vancouver (27%) or elsewhere in Vancouver (20%). Metrotown attracts 10% of transit trips and the Rest of Southwest subquadrant attracts 9%. Readers should understand this does not represent all transit activity as it excludes return-home transit trips.

Table 34. Number of Bus Routes Taken

# of routes taken	Trips	% of trips
1 Route	58,500	59%
2 Routes	32,300	32%
3 Routes	7,500	8%
4 Routes	1,400	1%
Total transit trips	99,600	100%
Total boardings	150,900	
Average boardings per trip	1.52	

Table 35. Non-Home Transit Trip Destinations by Subquadrant (Attraction of Transit Trips)

Subquadrant	Non-home transit destinations	%
Total non-home destinations of transit trips	**54,800**	**100%**
Burnaby subtotal	20,900	38%
Outside Burnaby subtotal	33,900	62%
Brentwood Town Centre (NW)	1,300	2%
Rest of NW Quadrant	3,100	6%
Lougheed Town Centre (NE)	700	1%
Rest of NE Quadrant	3,400	6%
Edmonds Town Centre (SE)	1,800	3%
Rest of SE Quadrant	400	1%
Metrotown (SW)	5,500	10%
Rest of SW Quadrant	4,700	9%
Vancouver Downtown	14,900	27%
Rest of Vancouver	10,700	20%
New Westminster	3,300	6%
Richmond	1,600	3%
Surrey / White Rock	1,400	3%
Tri-Cities	900	2%
North Shore	800	1%
Other external	300	1%

As noted in Section 4.4, 67% of transit trips made by Burnaby residents involved use of the SkyTrain, or about 66,900 person-trips. Of trips involving SkyTrain, 76% made use of the Expo Line, 33% Millennium Line, and 7% Canada Line. These percentages add to greater than 100% as 16% of all transit trips involving the SkyTrain used more than one line.

For park-and-ride trips (auto then transit), the first SkyTrain boarding station used was captured by the survey. For all other trips involving SkyTrain, it was possible to impute the closest boarding station to the trip origin, transfer stations, and the closest alighting station to the destination.[21] Table 36 provides a breakdown of the resulting survey estimates for the number of Burnaby residents boarding at each SkyTrain station for all trips involving the SkyTrain. Stations located in Burnaby are shaded in light blue. While not presented here, alighting volumes should be relatively similar to the estimated boardings, given that many people will make a return trip using boarding and alighting stations which mirror the alighting and boarding stations of the original journey. Note that these boarding estimates reflect only SkyTrain usage by Burnaby residents, and do not include boardings by residents of other municipalities. Readers are also reminded that these are estimates based on imputation of lines and stations used using a survey sample expanded to represent the total population of Burnaby.

Table 36. Burnaby Residents' Daily SkyTrain Boardings by Station

SkyTrain Line	Station (city of station)	Est. boardings by Burnaby residents
All	**Total SkyTrain boardings at all stations (includes transfers)**	**69,000**
Expo Line / Canada Line	Waterfront (Vancouver)	1,500
Expo Line	Burrard (Vancouver)	4,900
Expo Line	Granville (Vancouver)	4,700
Expo Line	Stadium-Chinatown (Vancouver)	2,800
Expo Line	Main Street-Science World (Vancouver)	1,100
Expo Line / Millennium Line	Commercial-Broadway (Vancouver)	7,200
Expo Line	Nanaimo (Vancouver)	400
Expo Line	29th Avenue (Vancouver)	300
Expo Line	Joyce-Collingwood (Vancouver)	1,700
Expo Line	Patterson (Burnaby)	3,100
Expo Line	Metrotown (Burnaby)	7,200
Expo Line	Royal Oak (Burnaby)	3,200
Expo Line	Edmonds (Burnaby)	7,600
Expo Line	22nd Street (New Westminster)	2,100
Expo Line	New Westminster (New Westminster)	1,100
Expo Line	Columbia (New Westminster)	300
Expo Line	Sapperton (New Westminster)	200

21 With the algorithm used to determine the likely SkyTrain routes and boarding and alighting station, given that some trips also involve transit bus, or other longer-distance transit access modes like bicycle and auto, it was not always possible to determine the alighting station with certainty. In the dataset, some alighting stations are coded as "unknown". Attempts were not made to fill in missing alighting stations to check against trips made by individuals in the other direction.

SkyTrain Line	Station (city of station)	Est. boardings by Burnaby residents
Expo Line	Braid (New Westminster)	100
Expo Line / Millennium Line	Lougheed Town Centre (Burnaby)	5,200
Expo Line / Millennium Line	Production Way-University (Burnaby)	800
Expo Line	Scott Road (Surrey)	100
Expo Line	King George (Surrey)	400
Expo Line	Surrey Central (Surrey)	700
Millennium Line	VCC-Clark (Vancouver)	1,200
Millennium Line	Renfrew (Vancouver)	500
Millennium Line	Rupert (Vancouver)	100
Millennium Line	Gilmore (Burnaby)	1,300
Millennium Line	Brentwood Town Centre (Burnaby)	2,900
Millennium Line	Holdom (Burnaby)	1,100
Millennium Line	Sperling-Burnaby Lake (Burnaby)	1,000
Millennium Line	Lake City Way (Burnaby)	200
Millennium Line	Burquitlam (Coquitlam)	200
Millennium Line	Moody Centre (Port Moody)	100
Millennium Line	Inlet Centre (Port Moody)	100
Millennium Line	Coquitlam Central (Coquitlam)	100
Millennium Line	Lincoln (Coquitlam)	200
Millennium Line	Lafarge Lake-Douglas (Coquitlam)	300
Canada Line	Vancouver City Centre	600
Canada Line	Yaletown-Roundhouse	0
Canada Line	Olympic Village (Vancouver)	100
Canada Line	Broadway-City Hall (Vancouver)	300
Canada Line	King Edward (Vancouver)	100
Canada Line	Oakridge-41st Avenue	200
Canada Line	Langara-49th Avenue (Vancouver)	200
Canada Line	Bridgeport (Richmond)	400
Canada Line	Aberdeen (Richmond)	300
Canada Line	Lansdowne (Richmond)	100
Canada Line	Richmond-Brighouse (Richmond)	300
Canada Line	YVR-Airport (Richmond/YVR)	400

Rows shaded in green are stations within Burnaby.

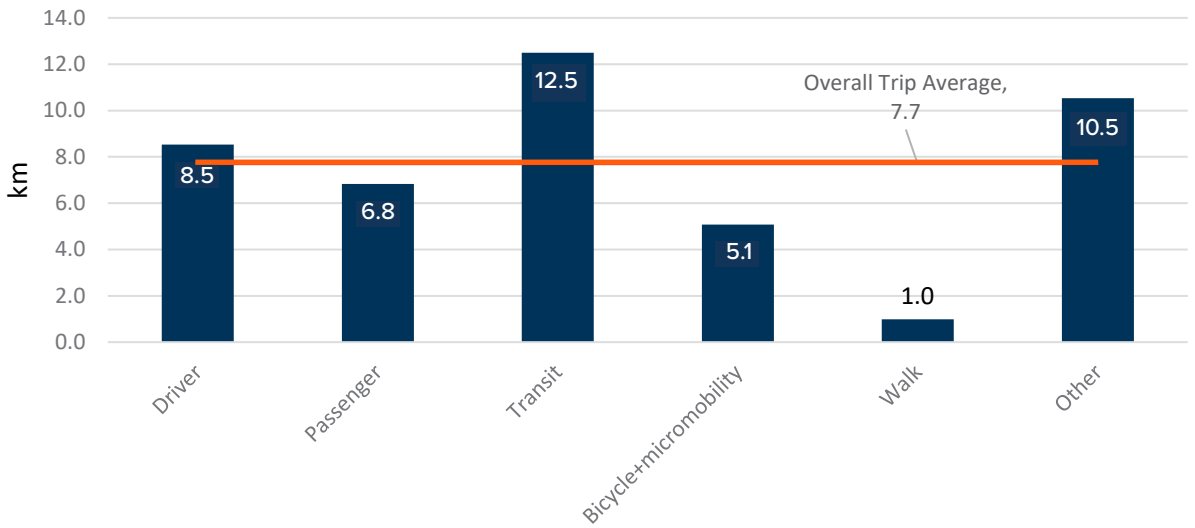
4.8 Estimated Actual Trip Distance and Duration

Trip distances as determined by using the Google map directions API are analyzed in this section. The trip origin, destination, time of day, and mode of travel were sent to the Google map directions API, returning the estimated actual distance travel on the recommended routes using routes available for the given mode (e.g., if automobile, roads; if bicycle, roads and bicycle paths, etc.). Distance and durations reflect conditions at the time the survey was completed and may vary due to factors such as time of day, road closures, or routing updates, which may not be the same as on the travel day. Note that while transit distances and durations take into account walks to and from the transit stop, driving distances and durations do not include time spent driving to parking or walking to and from parking. To ensure data quality, trips with distances greater than 100 km were treated as outliers and excluded from the analysis.

Figure 36 presents the average trip distance by mode of travel. The longest trips are via transit, averaging 12.5 km. Driving trips average 8.5 km per day, bicycle and micromobility trips average 5.1 km, and walk trips average 1.0 km.

Figure 37 and Figure 38 present the average trip distance and average trip duration by trip purpose. Commute purposes to work or post-secondary school have the longest distances, at just over 12 km on average.Post-secondary trips have the longest duration (at almost 38 minutes on average), which reflect the high proportion of post-secondary transit trips made by transit. K-12 school commutes on the other hand, average only 2.8 km.

Figure 36. Mean Trip Distance (Average Google Distance) by Mode of Travel



Interpret results for Other mode (taxi, ride hail, HandyDart, etc.) with caution due to small sample size.

Figure 37. Mean Trip Distance (Average Google Distance) by Purpose of Travel

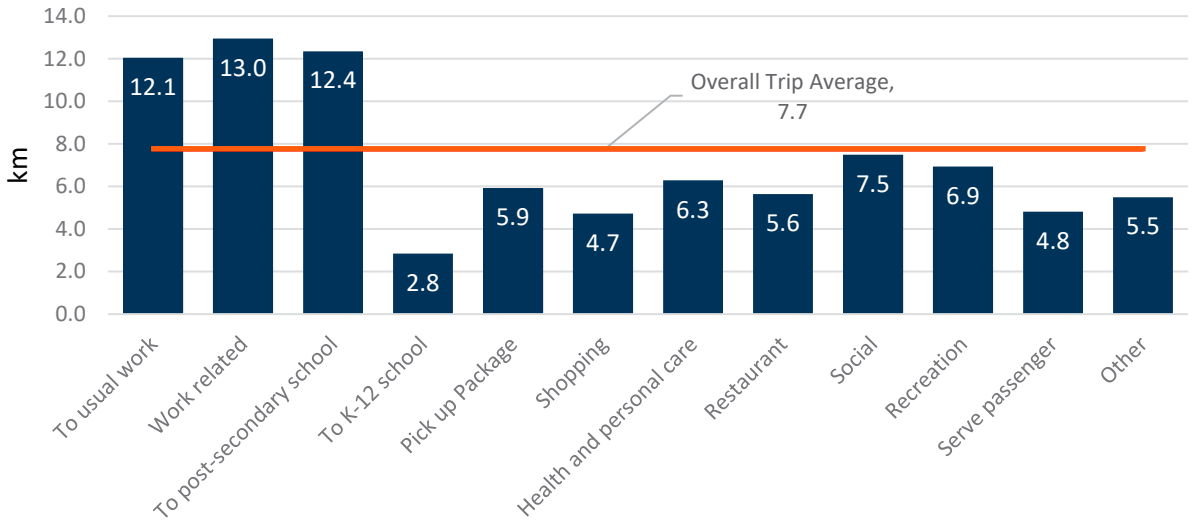
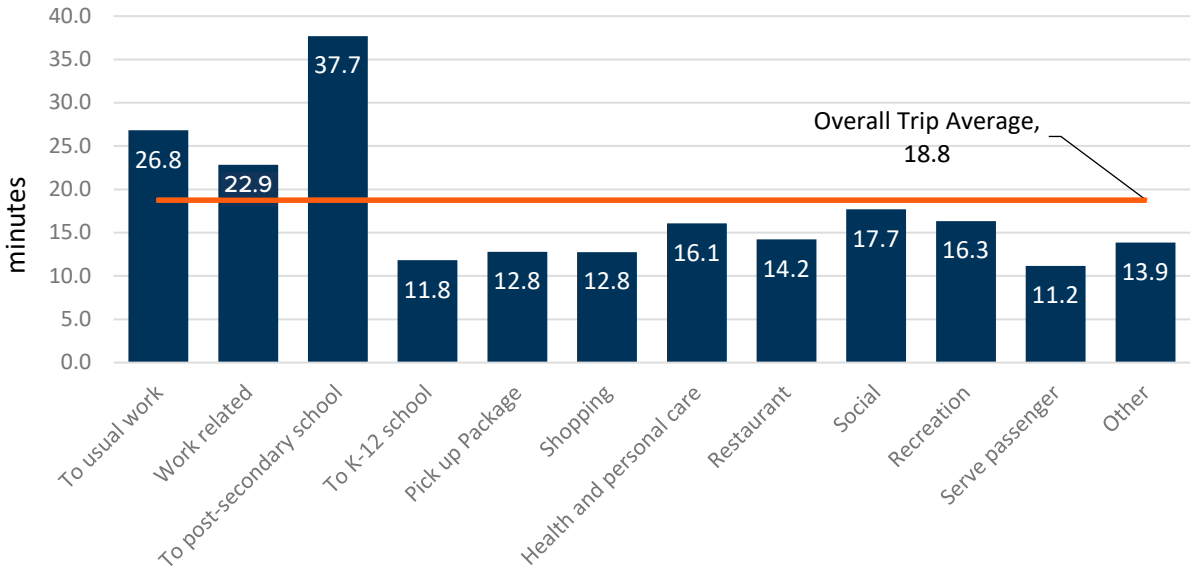


Figure 38. Mean Trip Duration by Purpose of Travel



4.9 Daily VKT (Weekdays)

This section examines daily Vehicle Kilometers Travelled (VKT), i.e., the total kilometers travelled for personal auto driver trips reported on the survey, as derived from Google distances for trips reported as being made as an auto driver. Note that the survey did not capture trips made by commercial drivers while at work. Readers are also reminded that this is for an average weekday and does not represent travel on weekends, which may differ considerably. As shown in Table 37, the survey results suggest that the total VKT for the City of Burnaby residents is 2.23 million kilometers with a VKT per capita of 8.8 km. Residents of the Rest of Northeast subquadrant have the highest VKT per capita, at 11.4 km, while those in Metrotown average the lowest, at 6.8 km per capita.

Table 37. VKT by Quadrant and Subquadrant of Residence

Geography	Total VKT	VKT per capita
Brentwood Town Centre (NW)	215,400	9.6
Rest of NW Quadrant	315,600	9.7
Lougheed Town Centre (NE)	161,500	8.7
Rest of NE Quadrant	374,200	11.4
Edmonds Town Centre (SE)	204,000	7.4
Rest of SE Quadrant	236,600	7.5
Metrotown (SW)	239,000	6.8
Rest of SW Quadrant	484,700	9.1
Quadrant Subtotals		
Northwest (Brentwood)	530,900	9.6
Northeast (Lougheed)	535,700	10.4
Southeast (Edmonds)	440,600	7.5
Southwest (Metrotown)	723,700	8.2
Burnaby total	**2,230,900**	**8.8**

Note: Excludes trips outside Fraser Valley/Lower mainland.

4.10 Origins and Destinations

The table below highlights the estimated volumes of trips to, from and entirely within each subquadrant. Internalized trips (those entirely within a given subquadrant) are shaded grey.

The largest numbers of internalized trips are within the Rest of Northwest, at 36,100 daily trips, Rest of Southwest, at 26,900, and Metrotown, at 26,900. The largest flows are between Metrotown and Rest of Southwest (from 15,400 to 16,100, depending on the direction), followed by Brentwood Town Centre and Rest of Northwest (from 8,600 to 9,500, depending on direction).

The matrix also highlights the considerable intra-regional flows, with 223,100 of the 555,200 trips made by Burnaby residents being to or from other municipalities or entirely external to Burnaby.

4.11 Walkable and Bikeable Trips

This section examines the extent to which trips made by auto or transit could feasibly have been made on foot or by bicycle instead. The analysis uses distance to assess "walkability" and "bikeability." The distance was based on the trip length for each mode. Bikeable trips were determined as those within a 5.5 km range based on about 20 minutes travel time at average speeds being a reasonable threshold.[22] The distance threshold for walkable trips was set 1.6 km range, also based on 20 minutes being a reasonable threshold.[23] For trips made via auto or transit the trip origin, destination and time of day were processed via the Google API to determine the auto trips whose lengths fell within the eligible bicycle and walk thresholds.

Figure 39 presents the findings and Table 39 details the potential shifts in auto driver trips. In the table and the discussion below," mode shift potential" refers to the potential percentage-points of the current mode share (the percentage of all trips by all modes) that could be shifted to walking or biking based on distance alone. Note that walkable trips are also bikeable, while some bikeable trips may be too long to be walkable.

The analysis suggests the following:

- Slightly less than half (46%) of auto driver trips could easily be made by bicycle. In terms of mode share, there is a 22% auto mode share that could be bikeable and an 6% auto mode share that could be walkable. These potential proportions are highest for residents of the Rest of NW quadrant.

- About half (57%) of auto passenger trips are bikeable, while 13% are walkable. These proportions correspond to a potential mode shift of 8% to bicycle and a potential mode shift of 3% to walking trips.

- Nearly one-quarter of transit trips are bikeable (24%), while 3% of transit trips are walkable. These proportions correspond to a potential mode shift of 4% to bicycle and a potential mode shift of 0.6% to walking trips, the latter reflecting that very few transit trips are made for very short distances.

Figure 39. Walkable or Bikeable Trips by Existing Mode

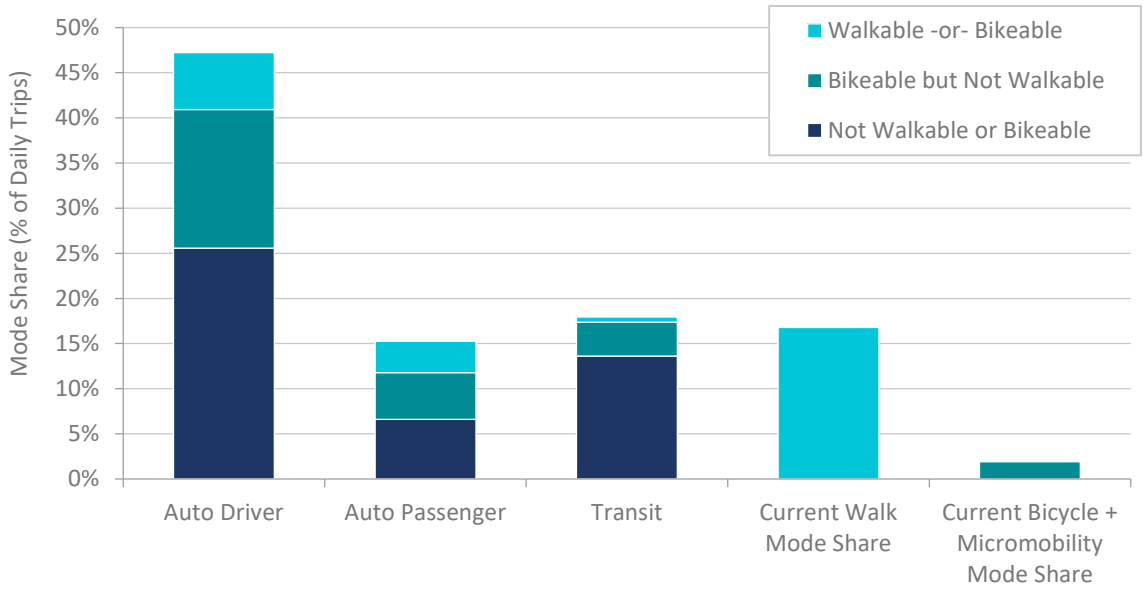


Table 38. Origin-Destination Matrix by Subquadrant (24-Hour Trips)

Destination: Origin	Brentwood Town Centre (NW)	Rest of NW Quad.	Lougheed Town Centre (NE)	Rest of NE Quad.	Edmonds Town Centre (SE)	Rest of SE Quad.	Metrotown (SW)	Rest of SW Quad.	North S
Brentwood TC (NW)	8,000	9,500	300	2,600	900	100	1,000	4,200	500
Rest of NW Quad.	8,600	36,100	1,100	8,300	1,600	1,400	2,800	6,100	1,600
Lougheed TC (NE)	300	1,100	9,500	3,900	200	1,100	200	1,200	500
Rest of NE Quad.	3,200	8,300	4,000	20,100	800	1,400	1,800	4,400	400
Edmonds TC (SE)	1,000	1,400	200	1,100	15,100	4,000	3,200	6,100	800
Rest of SE Quad.	100	1,500	1,000	1,200	4,500	11,500	3,100	5,100	200
Metrotown (SW)	1,100	2,200	700	1,500	3,500	4,600	19,900	15,400	500
Rest of SW Quad.	3,900	6,400	1,300	4,300	5,500	4,400	16,100	26,900	1,400
North Shore	500	1,600	400	400	900	200	600	1,100	700
New Westminster	300	600	600	1,100	1,700	3,300	1,200	1,500	0
Van. Downtown	2,300	2,900	1,200	1,700	2,000	1,700	4,400	3,800	100
Rest of Vancouver	4,100	6,500	1,900	4,000	2,800	2,600	7,300	8,100	100
Tri-Cities	700	1,000	1,900	2,200	500	900	800	500	100
Richmond	400	1,100	400	300	1,300	700	2,000	2,100	
Delta / Tsawwassen	0	0	100	0	200	600	0	500	
Langleys		200	100	200	100	100	100	500	
Surrey / White Rock	500	500	700	900	700	400	300	1,300	
Other	300	400	100	300	0	100	300	300	
Total Destinations	**35,200**	**81,400**	**25,600**	**54,200**	**42,400**	**39,000**	**64,900**	**89,100**	**6,900**

Internalized trips (trips within the same sub-quadrant) are shaded in grey.
Green shading is used to highlight origin-destination pairs with higher volumes of trips, with the intensity of the shading increasing to the highest value of non-internalized trips.
Zeros may occur due to rounding and may be less than 50 trips
Other = Pitt Meadows/Maple Ridge, Fraser Valley, and External Outside Fraser Valley/Lower Mainland

Shore	New West.	Downtown Vancouver	Rest of Van.	Tri-Cities	Richmond	Delta / Tsawwassen	Langleys	Surrey / White Rock	Other	Total Origins
	500	2,100	4,300	500	500	0		400	100	35,500
	800	2,800	6,300	1,200	1,000	0	200	600	100	80,700
	900	1,300	1,900	1,900	400	100	100	900	100	25,700
	1,100	1,600	3,700	1,800	300	0	200	800	300	54,200
	1,800	2,100	2,900	400	1,400	400	200	700	0	42,700
	3,000	1,400	3,400	1,300	800	400	100	300	200	39,200
	1,100	3,100	7,400	700	2,400	200	100	500	200	65,100
	1,600	4,500	7,900	900	1,900	300	300	1,300	400	89,400
	0	100	100	100						6,600
	700	500	200	0		100	0	200		12,000
	100	3,800	500	100	0			100	0	24,800
	0	1,200	6,400	100	300		200	300	0	45,900
	400	200	200	1,500			0	100	0	11,000
	100	300	300	0	1,400				0	10,500
	100		0			100				1,700
			100	100			300			1,600
	300	100	300	100	0		0	700		6,800
		0	0			0		100	100	1,800
	12,500	**25,000**	**45,800**	**10,900**	**10,300**	**1,700**	**1,700**	**6,900**	**1,700**	**555,200**

These results should be interpreted with caution, as they examine only distance. Many of the auto or transit trips that are of walkable or bikeable distance may be impractical. For example, these trips may be part of a trip chain that requires a vehicle, an auto that is needed to carry heavy items not easily carried while walking or biking, the traveller might have a disability or health condition that limits ability to walk or bike, some cyclists will use only separated pathways rather than travelling on the road, etc. There may also be a need to ensure that the "supply" of bicycle and pedestrian facilities is available to meet traveller needs and itineraries.

Table 39. Walkable or Bikeable Auto Driver Trips by Subquadrant of Residence

	Burnaby Total	Brentwood Town Centre (NW)	Rest of NW Quadrant	Lougheed Town Centre (NE)	Rest of NE Quadrant	Edmonds Town Centre (SE)	Rest of SE Quadrant	Metrotown (SW)	Rest of SW Quadrant
Auto Driver	262,200	29,100	43,500	15,400	36,700	22,500	29,700	29,100	56,200
Auto Driver Mode Share	47%	53%	52%	40%	51%	41%	47%	38%	50%
Bikeable Trips	120,100	13,900	22,600	5,400	13,600	10,700	13,600	14,300	26,100
% of Auto Driver Trips	46%	48%	52%	35%	37%	48%	46%	49%	46%
Mode shift potential	22%	25%	27%	14%	19%	20%	22%	19%	23%
Walkable Trips	34,900	4,300	6,700	2,000	2,800	4,500	4,300	5,400	4,800
% of Auto Driver Trips	13%	15%	15%	13%	8%	20%	15%	19%	9%
Mode shift potential	6%	8%	8%	5%	4%	8%	7%	7%	4%

'Mode shift potential' refers to the potential mode share (% of total trips) that could shift from auto driver to walking or biking based on the trip distance being short enough to be walkable or bikeable. This does not take into account age, ability, or other factors that could influence mode choice.

City of Burnaby