Transportation Panel Survey

2015 FINAL REPORT

Prepared for: **CITY OF VANCOUVER**

Prepared by: **ch2m** SM

in Association with **MUSTEL GROUP**

McElhanney

2015 Transportation Panel Survey

Prepared for

City of Vancouver

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Executive Summary

This report summarizes the results of the City of Vancouver's third annual Transportation Panel Survey conducted in 2015. The Panel Survey will help to track progress towards transportation mode share targets and will be a means of assessing the vehicle-kilometres travelled (VKT) by the City's residents. These are the two principal metrics for gauging progress in sustainable transportation, as outlined in the City of Vancouver's Greenest City Action Plan, Transportation 2040, and associated policies. As this survey tracks the travel characteristics of the same group of people[1] from year to year it will also be helpful in determining what transportation investments and policies have been the most effective in helping to provide walk/bike/transit travel options for Vancouver residents.

The primary component of this survey is a travel diary where individuals record the trips that they make on a given weekday. This data was compared to the 2013 and 2014 Panel Surveys, which followed similar design, recruitment, and analysis methodologies. As was the case in 2014, and as part of the evolution of the Panel Survey, there were some changes to the demographic and trip diary components to better reflect the City's priorities. These are explained in more detail within the report but are summarized as follows:

1) In previous years, the survey asked for the usual mode of transportation during the autumn survey period for trips to/from work or school. In 2015, this question was split into two questions (i.e., to work and to school) to help clarify travel patterns for these two distinct purposes.

2) The 2015 survey provides more detail related to cycling frequency in fair versus rainy/cold weather. This data helps to address the year-round viability of active transportation infrastructure

3) The 2015 survey introduces a question asking participants to include the walking/cycling portion of their trip. The data is useful to document the tendency for citizens to transfer between modes. It also has health implications as the data help to quantify the degree to which physical activity is incorporated into regular travel patterns.

4) In 2014, a social interaction question was added to the trip diary. That question has been modified to provide greater detail into the nature of the interaction.

With these slight differences in how the survey was undertaken, and a slightly larger city population, the 2015 Panel Survey results are quite similar to the 2014 results.

In the inaugural year, a higher number of trips were recorded in the Panel Survey compared to TransLink's 2011 Regional Trip Diary Survey, particularly for walking. This is likely due to the survey method where the Panel Survey is based on individual reporting as opposed to household reporting. The household reporting tends to under report discretionary trips. In 2014, following the same methodology, there was an observed drop in trip rate, from 3.9 to 3.7 trips which is likely due to the change in recording recreational trips as described above. In addition, the recruitment and survey period was extended into December/January, when trip rates tend to be lower. In 2015, when a large majority of trip diaries were completed by early November, the trip rates rose as expected, from 3.9 to 4.1.

In 2014, there was a higher than expected rate of attrition amongst 2013 panel members, with only 1,495 of 2,517 (59%) returning to join the 2014 Panel. This trend continued in 2015, with approximately 60% of former panel members returning to join the 2015 Panel. The composition of the 2013-2015 panels is shown in Figure ES-1.

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[1] As opposed to the Regional Trip Diary survey which randomly recruits households every three to five years.
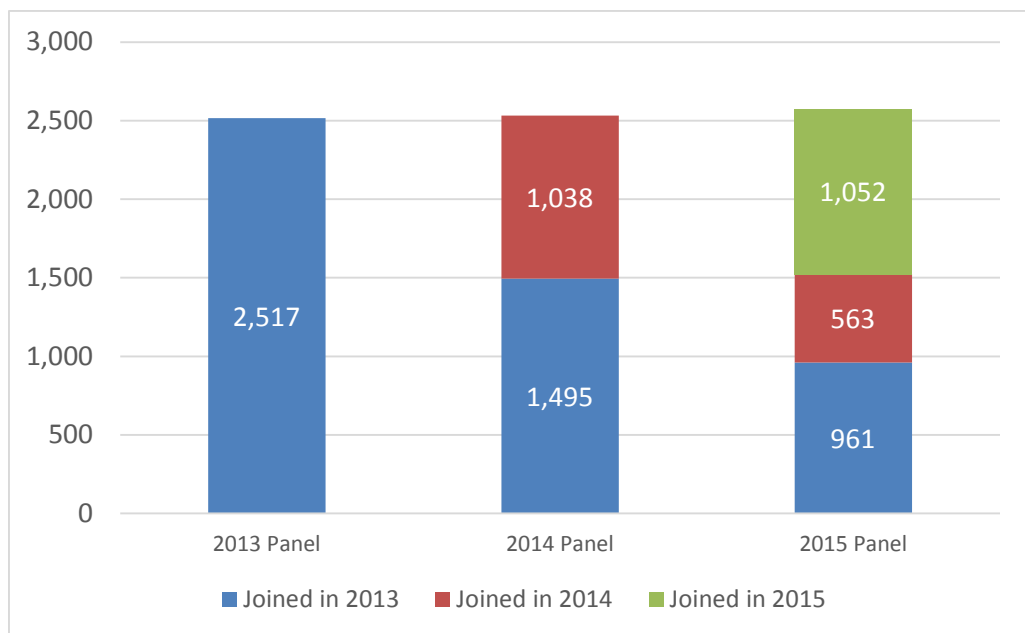
Figure ES-1. Composition of Panel Survey Participants

This rate of attrition is higher than observed for other similar historic surveys, but appears to be the norm for the City. This needs to be kept in mind while reviewing the changes to mode share and VKT. Some key findings from this data include:

1) Percentage of people travelling by walk/bike/transit held steady at just under 50% (49.5% compared to 49.7% in 2014)[2], which is still on track to meet the City's mode share target[3] by 2020.

2) Increases in walking (26% to 27%) and cycling (5% to 7%) mode share were offset by a decrease in transit mode share (18% to 16%). Total trips and mode share are presented in Figure ES-2. Trips and mode share to/from work are consistent with this trend, and are presented in Figure ES-3.

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[2] Note that these values represent the midpoint of the walk/ bike/ transit mode shares based on the 95% confidence interval ranges. These are discussed in more detail in Section 4.2.

[3] The Transportation 2040 plan target is that by 2020 at least half of all trips are by walking, biking or transit.
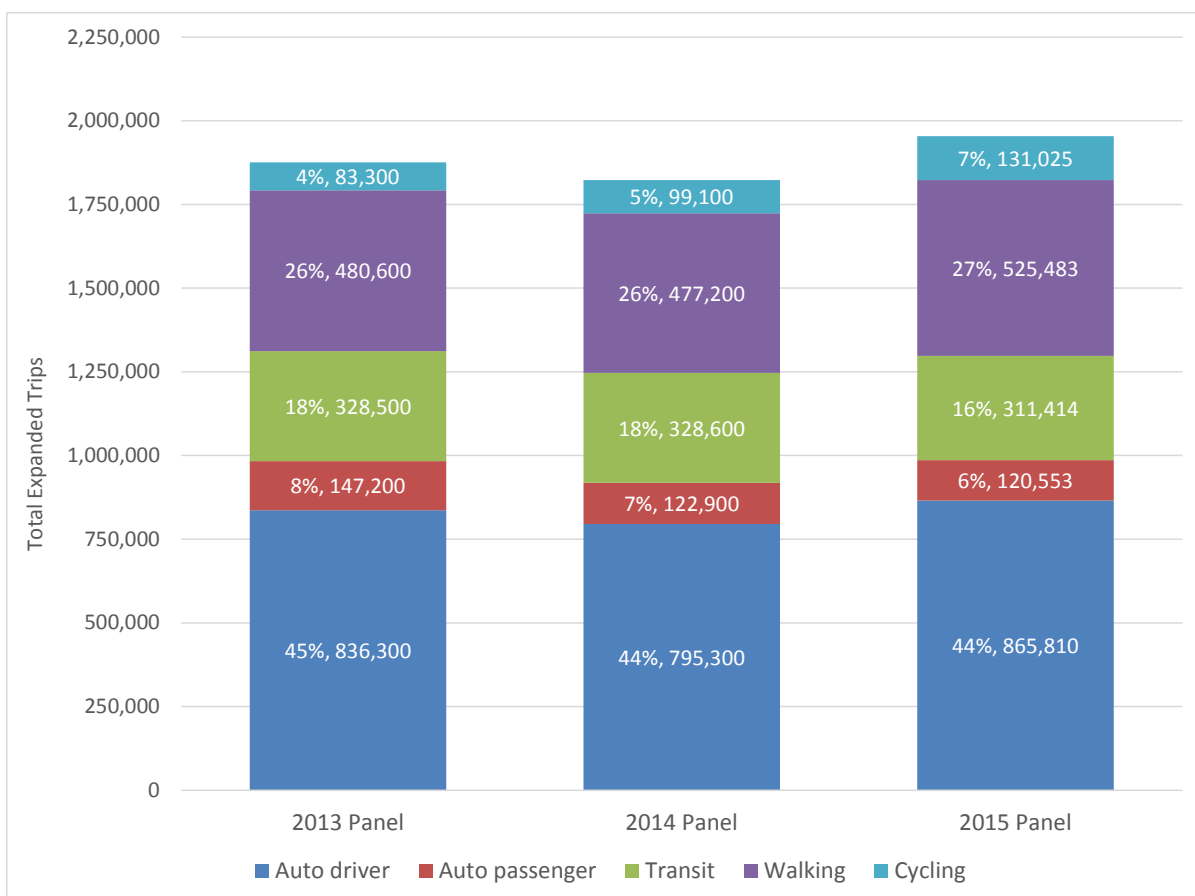
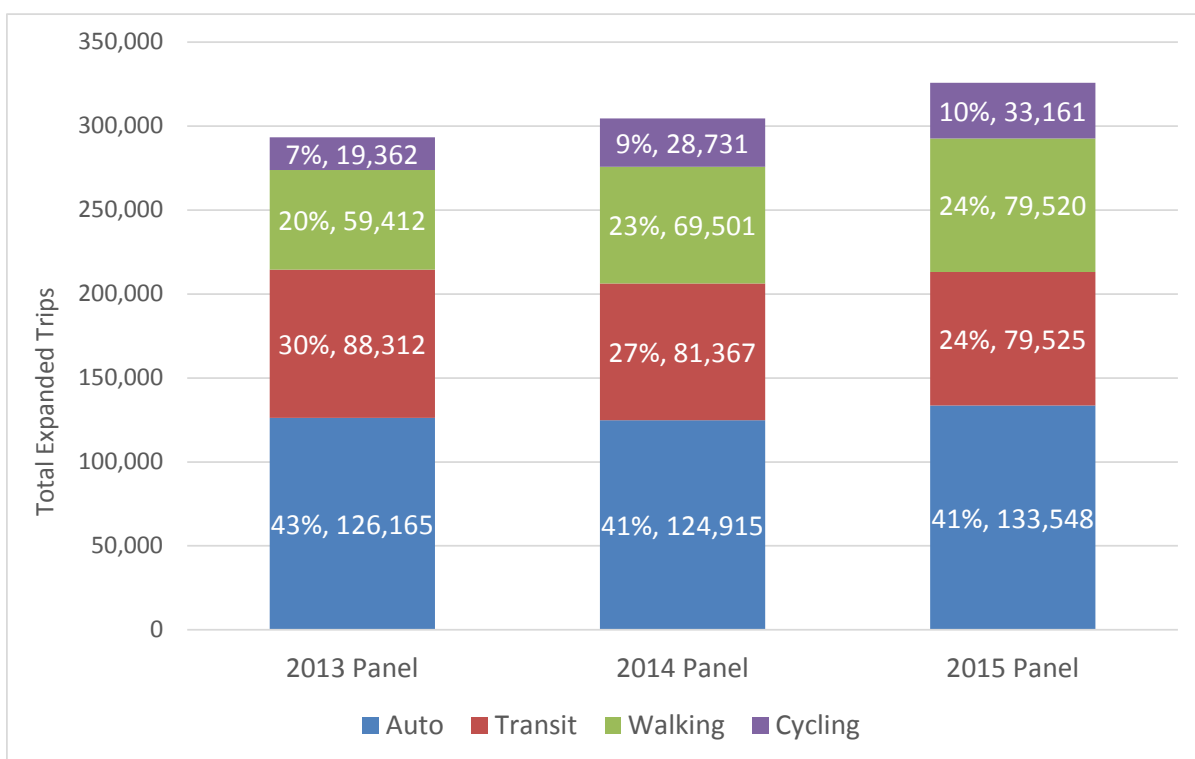Figure ES-2. Total Trips by Mode and Mode Share (2013-2015 Panel Surveys)

Figure ES-3. Comparison of Panel Survey Trips to Work

3) Benchmarking vehicle kilometres travelled per capita using odometer readings from the participants indicates a further reduction in VKT; VKT per capita is 5% less than 2014. VKT estimates are presented in Figure ES-4.

4) Car sharing has significantly increased in 2015 with 26% of residents having a car share membership, up from 20% in 2014 and 13% in 2013. Access to private vehicles has also increased across the City, from 75% to 78%.

5) There are differences between respondents' stated usual mode of travel and their actual travel to work as reported in the trip diary. In particular, walking mode share seems to be underreported. A more detailed comparison is warranted when the next census survey results are published to see if this trend continues.

The next panel survey will be undertaken in the fall of 2016 and at this point more commentary could be included on trends with a fourth year of data with the same methodology.
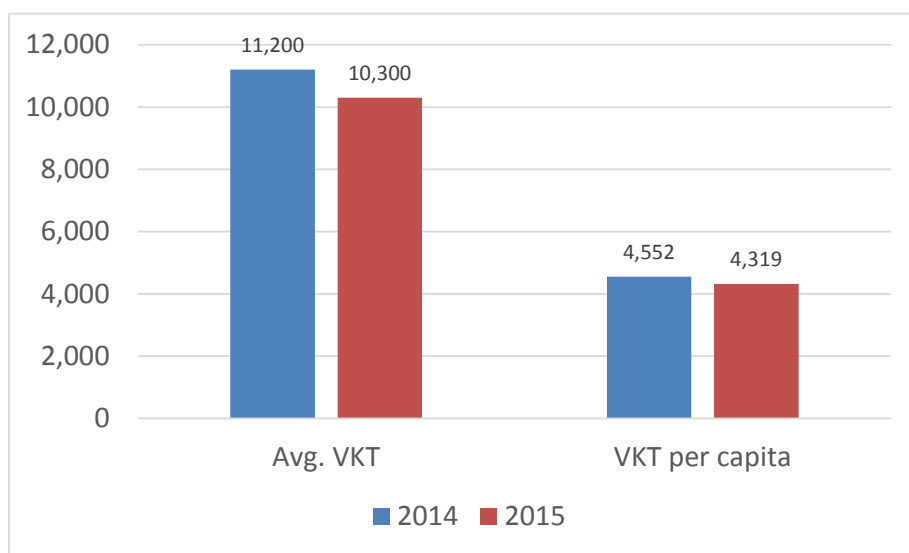

Figure ES-4. Average VKT and VKT per Capita Base On Panel Survey Odometer Readings
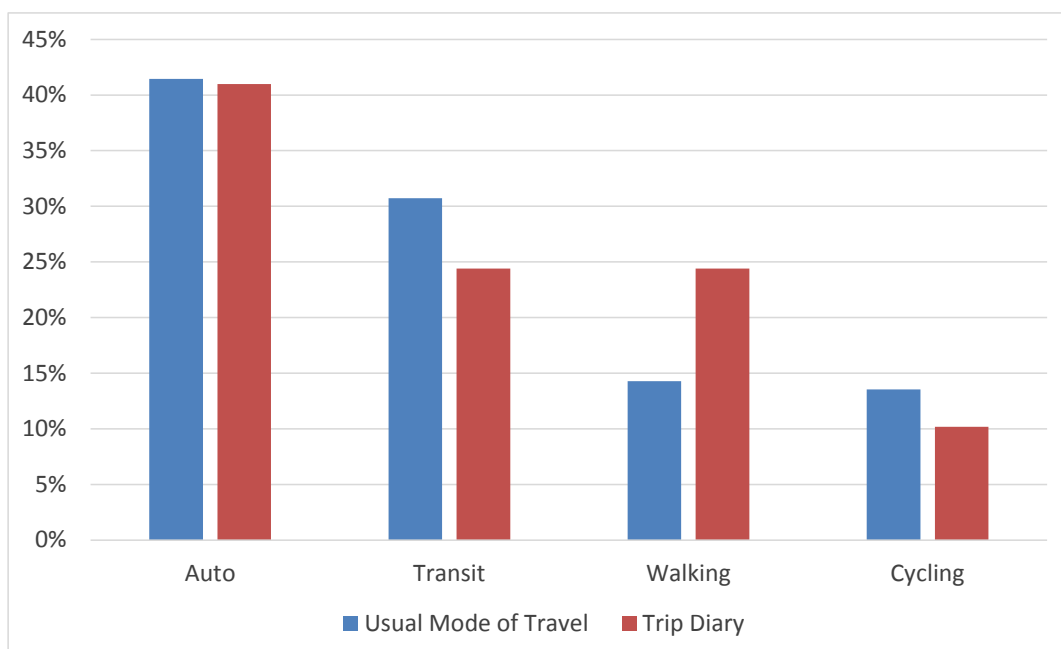

Figure ES-5. Differences Between Stated Usual Mode of Travel and Actual Trip Diary Mode Share

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Introduction

Vancouver is recognized as one of the most livable cities in the world, due in no small part to the way in which the built environment respects and magnifies its natural surroundings. This delicate balance is put under pressure as the City grows to accommodate new residents and businesses. The Greenest City Action Plan and Transportation 2040 offer appealing visions of how the City of Vancouver's (the City's) transportation network plays a key role in shaping the future growth of the City.

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

In many respects, that vision is already taking shape, with the shifting live-work balance on the downtown peninsula supporting a greater number of trips by walking, cycling, and transit. The launch of the Canada Line and the 2010 Winter Olympic Games were a proving ground for demonstrating the latent demand for walk/bike/transit modes of transportation. The City's commitment to protected bike lanes and transit oriented development has also gone a long way to support more walk/bike/transit modes of transport.

In late 2015, the City approved plans to expand the cycling network over the next five years (2016 to 2020) and to initiate a pilot project to allow rollerbladers, skateboarders, and push scooters to use protected bike lanes.[4]

To build off of these successes and to plan infrastructure that can get the largest gains in the percentage of people walking, cycling and taking transit and reductions in vehicle-kilometres travelled (VKT), it is critical to track the effectiveness of different initiatives as well as market conditions on changing travel behaviour. Beyond the City's current data sources including screenline traffic counts, permanent bike counters, and TransLink's Regional Trip Diary Survey, a Panel Survey is one of the best tools to capture such trends on an ongoing basis.

The ability to track changes in mode share and VKT takes on greater significance in light of the Federal commitments to increase infrastructure spending.

This is the third year of the City of Vancouver's annual Panel Survey. This survey is intended to be used to benchmark progress towards Greenest City and Transportation 2040 targets. Each year the survey is being refined to include other metrics related to health, propensity for travel by active transportation modes, and reasons for shifting travel patterns.

1.1   Study Objectives

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

The objectives of the Panel Survey are to:

a)   Assess the travel mode share and number of trips for nine transportation zones in the City;

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

b) Assess the average VKT by City residents; and

c) Determine factors that have contributed to changes in travel behaviour and travel patterns.

The 2013 Panel Survey established a benchmark of travel behaviour in the City, against which the 2014 Panel and current 2015 Panel will be compared, allowing the City to accurately capture trends in the key parameters of total trips, mode share, and VKT. Over time, the City can then be better positioned to determine which of its policies and projects have resulted in the desired changes in travel behaviour. This survey approach is unique to previous regional travel surveys in that this survey aims to measure relative annual change in travel behaviour amongst a group of panel members (i.e., a longitudinal survey) rather than comparing results of a new random sample of households every three to five years such as done in TransLink's Regional Trip Diary Survey. In this, the third year of the Panel Survey, trends can be drawn from Panel data and reasons for changes in mode share and VKT can be postulated.

The Panel Survey will also be benchmarked against regional trip diary surveys and the commute to work Census survey that occur approximately every 5 years.

1.2   Sustainability

Increasing travel by walking, cycling, and transit is not only essential to be able to accommodate the mobility needs of the growing population, it also yields environmental and socio-economic benefits including the following:

- Climate change mitigation through reductions in fossil fuel usage and associated greenhouse gas (GHG) emissions;

- Avoided vehicle operating costs, collision costs, etc.

- Health benefits associated with:

    – Incorporating physical activity into daily routines;
    – Localized reductions in Criteria Air Contaminants (CACs);

- Enhanced community livability when taking into account:

    – Social connectedness – residents more engaged within their own neighbourhoods

    – Improved security – following Crime Prevention Through Environmental Design (CPTED) principles – due to greater use of the public realm;

    – Reduced transportation costs when factored into the housing affordability equation.

- Postponement of investments in roadway infrastructure renewal due to lesser demand, which can be redirected to more pressing City and regional needs.

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

1.3   Structure of the Report

This report is organized into seven main sections as follows:

1. **Introduction** – This section provides the context and outlines the goals of the study.

2. **Survey Methodology** – This section describes the survey instrument and the process used to recruit the panel. It also explains the weighting and expansion of the panel to be statistically representative.

3. **Panel Characteristics** – This section corresponds to the 'Person File' in the survey data, and includes general demographic information on age, gender, and household income of Panel members. This section also provides a summary of vehicle ownership, car-sharing, transit, and cycling tendencies.

4. **Trip Characteristics** – This section corresponds to the 'Trip File' in the survey data and features the bulk of the analytical work in the report: comparing the 2015 Panel Survey results with TransLink's 2011 Regional Trip Diary survey data and previous Panel Survey data.

5. **Comparison of Returning Panelists** – This section provides a comparative analysis of the characteristics and travel behaviour of returning panelists who participated in the 2015 Panel.

6. **Factors Affecting Growth** – This section provides high-level commentary on external and likely contributing factors that affect mode share and VKT.

7. **Lessons Learned and Next Steps** – This section highlights themes from the first three Panel Surveys and lays out the work program over the coming months leading up to the 2016 Panel Survey.

Survey Methodology

2.1 Survey Instrument

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

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

In 2015, additional changes were made to the survey instrument. The main differences include:

- Added Evo car share as an option

- Separated the question regarding usual mode of transportation into work and school purposes to eliminate confusion

- Refined the cycling questions based on weather

- Sought more in-depth understanding of the walking/cycling portion of trips. This question sheds light on health (i.e., integrating physical activity into commuting) as well as tolerance for transferring between modes.

- Clarified the social interaction question

More in-depth questions were contemplated during the process of updating the survey instrument. In the interest of brevity and minimizing participant fatigue, some of these were tabled for possible inclusion in future years. It is expected that this process will be revisited every year, as guided by socio-political and technological changes.

As in previous surveys, 2015 participants were entered into a random draw – winners received passes to City facilities and attractions – to incentivize participation while not biasing outcomes.

In previous years, the City sought to understand differences between the randomly selected panelists and Talk Vancouver, an opt-in online panel that engages on a variety of civic issues including, but not limited to transportation. The intent was to reduce the annual Transportation Panel Survey recruitment effort by integrating trip diaries from the growing Talk Vancouver panel. Following the 2014 survey, it was determined that the Transportation Panel Survey should be analyzed separately owing to self-selection bias in the Talk Vancouver panel.

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

In 2015, residents that completed the required 2014 study components were invited via email to participate in the study. Next, to address the attrition in the 2014 random sample, Mustel Group conducted telephone recruitment by continuing random selection of gender, but focusing on residents 15-34 years of age and in specific transportation zones (demographics that were below target in the 2014 wave).

The survey had two main components a "person component" and a "trip component".

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

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

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

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

The complete survey instrument is included in Appendix A.

2.2 Data Collection and Sampling

The sampling strategy was designed to recruit a longitudinal panel representative of residents across Vancouver's nine transportation zones; the same sampling zones that have also been used in TransLink's Regional Trip Diary Survey. Exhibit 2-1 shows how Vancouver's nine transportation zones relate to the 22 neighbourhood areas within the city.
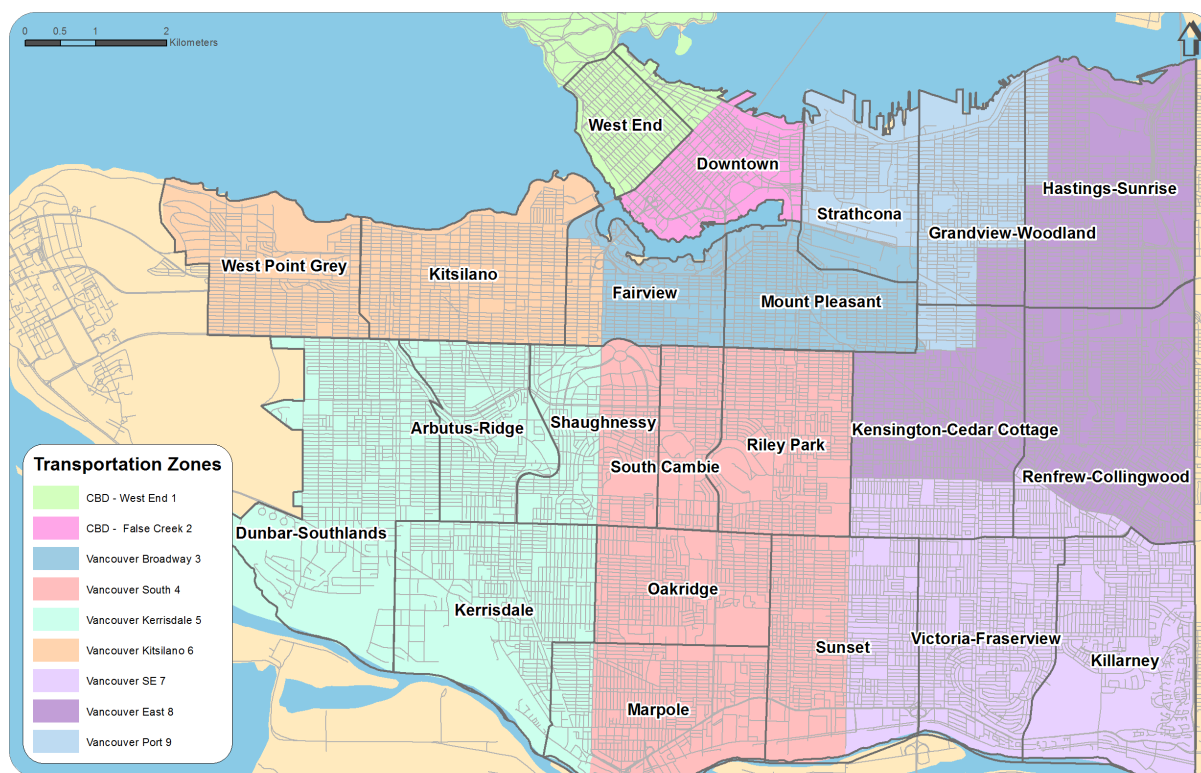
Figure 2-1. Transportation Zones and Neighbourhood Zones in Vancouver

Table 2-1 shows proportionate sampling targets for the estimated 2015 population (based on a projection of 2011 Census data) required to achieve a representative total of 2,500 residents. Similar to the 2014 survey the panel only included people 15 years and above. The total estimated 15+ population from the 2011 Census is approximately 527,400. Of the population 15+, a 0.5% random sample of residents was achieved, similar to the 2014 Panel Survey, and previous trip diary surveys which instead use the household as the sampling unit.

Table 2-1. Trip Diary Targets by Transportation Zone (Population 15+)

Transportation Zone		2015 Projection Based On 2011 Census Data			Proportionate Sample
		Total Population	Population 15+	Proportion 15+	
1	CBD – West End	60,068	57,208	10.8%	271
2	CBD – False Creek	59,773	56,219	10.7%	267
3	Vancouver Broadway	57,719	52,816	10.0%	250
4	Vancouver South	80,913	69,547	13.2%	330
5	Vancouver Kerrisdale	60,853	51,306	9.7%	243
6	Vancouver Kitsilano	60,999	54,691	10.4%	259
7	Vancouver SE	81,844	69,635	13.2%	330
8	Vancouver East	93,852	80,325	15.2%	381
9	Vancouver Port	39,978	35,655	6.8%	169
	City Total	595,999	527,402		2,500

The panel recruitment process, illustrated in the flow chart in Figure 2-2, began the week of September 21, 2015 once fall travel patterns had stabilized. The start date was approximately two weeks earlier than the 2014 start date. The recruitment process continued throughout the fall. The first trip diary completions were made within a week, with a substantial portion (>80%) of completions amongst returning panelists done by early November. The bulk of new recruits completions were done by mid-November. The final trip diary was completed on December 16, 2015. By starting earlier, trip data from late December and January were avoided, when travel patterns are not as stable as during the fall months and trip rates are lower. Further, this helped ensure consistency with previous panel and trip diary surveys.

Returning Panelists	Random Recruit
Email with Survey Link	Telephone
Callbacks to Correct Invalid Emails	Callbacks to Participate
Email then Phone Reminders (if provided)	

RECRUIT SCREENER + ENTER PRIZE DRAW

Email then Phone Reminders (if provided) to Complete	Phone Callbacks to Complete (Email then Phone Reminders if Requested Self-Complete Online)

REGISTRATION + GENERAL TRANSPORTATION + DEMOGRAPHICS

Email then Phone Reminders (if provided) to Complete	Phone Callbacks to Complete (Email then Phone Reminders if Requested Self-Complete Online)

DIARY

Day Before/After Diary Day Reminders to Complete (over 2 week period)

Phone Reminder (if provided) to Complete	Phone Reminder to Complete

VEHICLE KILOMETER TRACKING

Final Email Reminder to All Sample Groups

Figure 2-2. Panel Survey Flow Chart

Telephone recruitment to replenish randomly recruited panelists lost to attrition began in mid-October, along with reminder calls to returning panelists in an attempt to offset attrition in the returning panelist sample. In the end, the attrition rate was 42%, consistent with the 2014 Panel.

Continued challenges in recruiting the 18-34 age cohort as well as residents in transportation zones below target necessitated randomly recruiting all age groups in all zones as well as extending recruitment and reminder efforts.

As indicated earlier, Mustel Group recruited panel participants using a random probability sampling method. The panel characteristics (i.e., age, gender) were closely monitored during recruitment. For the random probability sampling, Mustel Group's sample frame consisted of: i) published landlines stratified

by the City's nine transportation zone designations, and ii) random-digit generated cell phone numbers within City of Vancouver rate centres.

Specific methods to reach out to previously underrepresented geographies and age groups included:

Cell Phone Sample

The random-digit cell phone sample enables expanded coverage to include residents without landlines. While the published landline sample was pre-tagged by zone, the cell phone sample can only be tagged by zone after the interview. City residency and the geographic zone was confirmed for all respondents during the interview process. Within selected households, respondents were chosen at random (e.g., next birthday) or targeted by age/gender as required.

Of the total diaries completed by those within the 15-34 age cohort, 48.5% were recruited via cell phone sample, compared to only 51.5% via landline. Cell phone sampling will be an ongoing and increasing requirement, especially in contacting the 15-34 age cohort, and considering the incidence of landlines is expected to decrease over time.

In contrast, for the 35 to 54 age cohort, only 13.1% were recruited by cell phone. This figure drops to 3.9% for the 55+ age cohort.

Incentives

Incentives in general play a role, but while some of the population appreciate the types offered by the City, any given incentive will not necessarily appeal to all. It is difficult to tell how much of a role this has played, as survey length (i.e., number of questions) has increased from 2013 to 2014. Of note, 88% of 2014 participants elected to enter the incentive draw. This increased slightly to 90% in 2015, even though a specific prize type was offered – PNE PlayLand Pass – that was more oriented to younger groups.

Monetary or retail-oriented incentives have proven to be more effective with similar surveys, however the City of Vancouver has a policy of not giving away cash-based incentives.

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

Highlights from the recruiting sample include the following:

- A total of **2,576** respondents completed the trip diary, of which approximately 21 respondents were aged between 15 and 17 (7 respondents declined to provide their age). Exhibit 2-4 presents a breakdown of these respondents by geographic sub-area. The target figures show the number of samples required in order to match the proportions from the census.

- **56%** of respondents were female, **44%** were male, the same distribution as 2014.

- **2,052** respondents had access to a private vehicle in the random sample, though only **1,909 (93%)** entered an odometer reading for their vehicle.

Table 2-2 shows that some of the transportation zones were over sampled and some were under sampled. More samples provide a more statistically reliable dataset and a lower sample can compromise the confidence levels in reported data. Improvements were made in 2015 to address under sampling; however as in 2014, it was difficult to recruit panel members from a few transportation zones. CBD-False Creek results for this area were combined with the CBD-West End to provide combined results for downtown to be consistent with 2014.

Section 4.2 provides a summary of the confidence levels of the reported mode shares by transportation zone which provides an assessment of the reliability of the data for tracking travel patterns.

Table 2-2. Completed Trip Diaries by Transportation Zone

	Transportation Zone	Mustel	Target	Δ Target	% Difference
1	CBD – West End	274	271	3	1%
2	CBD – False Creek	222	267	-45	-17%
3	Vancouver Broadway	291	250	41	16%
4	Vancouver South	343	330	13	4%
5	Vancouver Kerrisdale	264	243	21	9%
6	Vancouver Kitsilano	329	259	70	27%
7	Vancouver SE	280	330	-50	-15%
8	Vancouver East	362	381	-19	-5%
9	Vancouver Port	211	169	42	25%
	Total	**2,576**	**2,500**	**76**	**3%**

Figure 2-3 shows the distribution of participating panel members, categorized by new and returning panelists. There is an even geographic distribution of new and returning panelists throughout each of the transportation zone residential areas. Travel patterns, as further discussed in Section 4, vary significantly depending on which neighbourhood is being sampled.
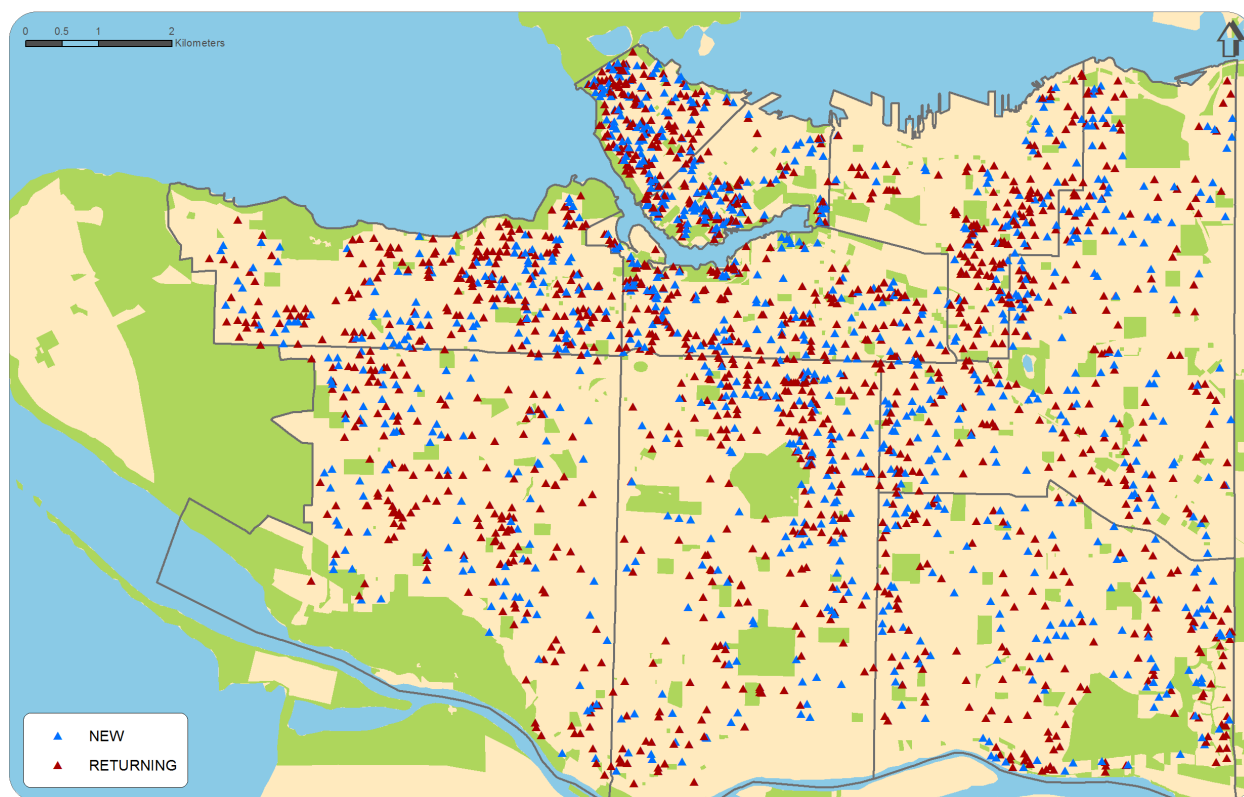

Figure 2-3. Geographic Distribution of Panel Members

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2.3   Survey Weighting and Expansion

The final survey data for the random sample only was expanded to the population of City of Vancouver residents aged 15+.

A firm specializing in sampling, mapping and census information, Environics Analytics (EA), the firm that also provided the sample for survey recruitment, developed demographic projections for 2015 based on 2011 Census Data. Population forecasts were derived from the 2011 Census base population data by projecting change over the period 2011 to 2015 across a number of key demographic factors. The factors taken into account included birth rate, death rate, immigration and emigration for each age cohort within gender and within the City's transportation zones. The factor changes were applied on a year-by-year basis to reach the final projections for 2015.

The travel survey represents 0.49 percent of the study area population (2,576 respondents out of 527,402 City of Vancouver residents over 15 years of age). As the data collected from this benchmark study is intended for transportation planning and forecasting purposes, this information must be expanded to the survey universe, that is, the total number of City of Vancouver residents of the same age group (15+).

To ensure a statistically representative sample, the weighting and expansion factors developed for the person and trip data collected in the COV Panel Survey in 2015 matched known demographic characteristics for City of Vancouver transportation zones as well as age within gender groups.

2.3.1   Person Expansion

For the person data collected, the random survey sample was expanded on the basis of age categories within gender as well as within the City of Vancouver's geographic transportation zones. Note that although there are nine such zones in the City, due to limited sampling in geographic zone 2 (CBD – False Creek), this zone was combined with zone 1 (CBD West End) and treated as one to represent Downtown Vancouver in the expansion process.[5]

A total of 48 weight expansion categories were required to cover the eight transportation zones, three age categories (15 to 34, 35 to 54, and 55 and over), and two genders. Additional expansion cells were included for respondents who refused to provide their age. Records with age refusal were represented as their actual proportion within the corresponding zone and gender. The number of age refusal records is very low at only seven out of a total of 2,576 persons (0.3%). As a result, the age refusal expansion process has little to no overall effect on the age distribution. Table 2-3 shows the actual survey sample age and gender distribution prior to weighting. Compared to 2014, there is a smaller proportion of participants in the 35-54 age cohort, and greater proportion in the 55+ cohort.

Table 2-3. Panel Survey Age and Gender Distribution

Gender	15-34	35-54	55+	Total
Male	4.5%	14.7%	25.1%	44.3%
Female	5.9%	18.3%	31.4%	55.7%
Total	**10.4%**	**33.0%**	**56.6%**	**100.0%**

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[5] It was also decided to show the results of CBD-West End and False Creek in the report's analysis sections both individually and merged (sections 3-5, wherever relevant) to account for the low sampling in CBD-False Creek and to be consistent with 2014 reporting.

Table 2-4 shows the City's 2015 population estimates based on 2011 Census Data.

Table 2-4. 2015 Demographic Projections (based on 2011 Census)

Gender	15-34	35-54	55+	Total
Male	17.6%	17.5%	13.5%	48.6%
Female	18.1%	17.9%	15.3%	51.4%
Total	**35.7%**	**35.4%**	**28.8%**	**100.0%**

Figure 2-4 illustrates the age and gender distribution of the survey sample versus the study area universe. Similar to the 2014 panel survey, there is some over-sampling of older age groups (55-65 and 65+ age cohorts) and under-sampling of younger age groups (15-24 and 25-34 cohorts). The 15-34 age group is difficult to reach in any market research effort. This age group typically does not have a landline and cell phone lists do not contain the home location of cell owners, only the location where the cell phone was purchased. As such, it is expensive and difficult to target geographic transportation zones based on cell phone samples for younger age groups. This does present some challenges for tracking trends in travel behaviour, especially considering that this age group tends to be the most mobile, i.e., no children and not married.
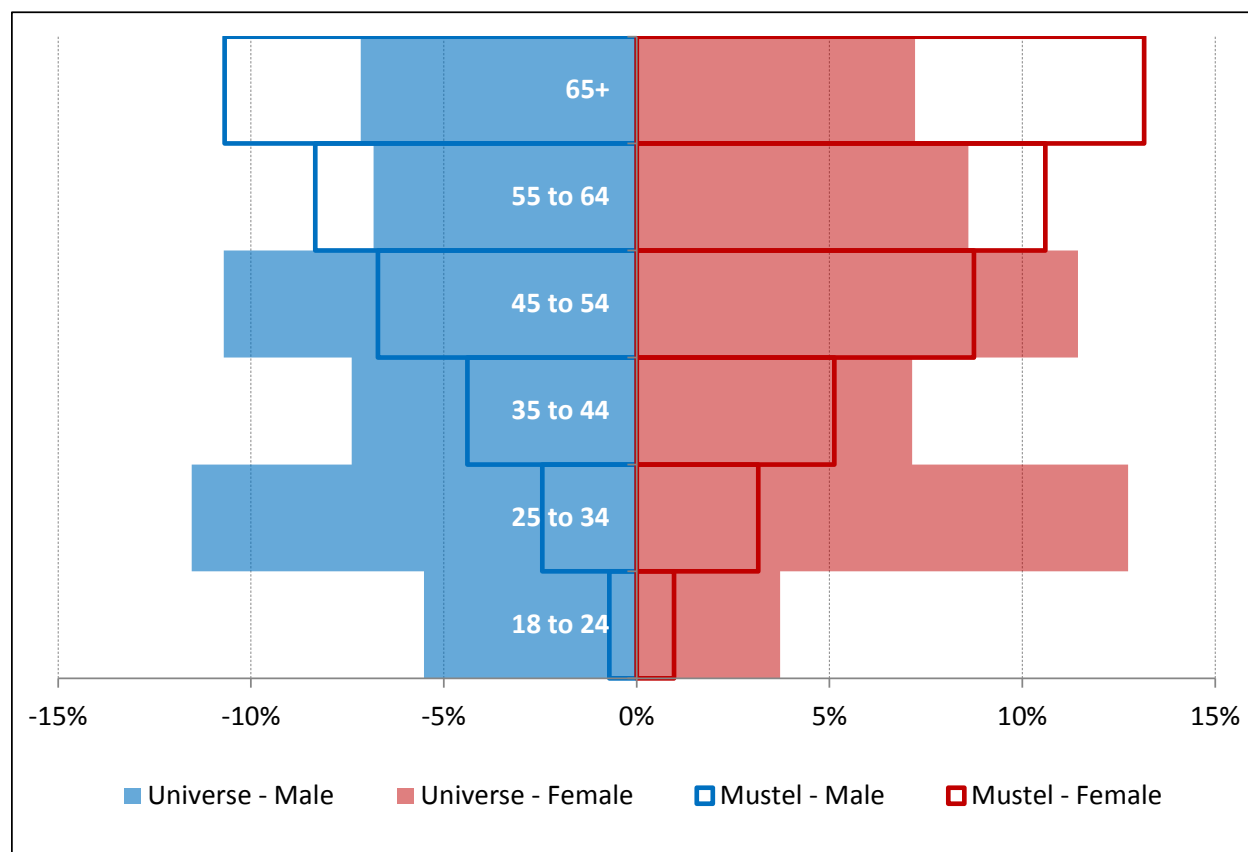
Figure 2-4. Age and Gender Comparison (Unweighted Sample vs. Universe)

The expanded person weight above was then applied to trip data, but also included a weekday equalizer weight to balance out trips by day of week (Monday to Friday). In the end, for the total sample size of 2,576 (for the random sample only) to be reflective of the entire 15+ COV population for this survey (527,402), the average expansion factor applied to the dataset was 204.7. The expanded population includes people who reported 'rather not say' for the age question.

Panel Characteristics

Key characteristics of the transportation panel are presented in the following thematic maps, which show the geographic distribution of these attributes. Only characteristics and trends of people aged 18+ are shown in this section[6].

3.1   Age Distribution

The age distribution for each zone is presented in Figure 3-1. Note that the breakdown shown represents the expansion of the sample to the census control population by age group. The size of the pie chart represents the population size for the respective transportation zone. The CBD-West End, CBD-False Creek, Kitsilano, Port, and Broadway zones have a higher proportion of residents 34 and under. Overall, the age breakdowns by sub-area are very similar to the 2014 Panel Survey. The biggest differences are observed in the 18-24 and 25-34 age categories. This is attributed to the low sampling of those two age groups and the fact that the expansion target for the young population was to the 15-34 cohort. The 2014 and 2015 panel surveys age distribution charts would look more similar if the 18-24 and 25-34 age groups were pooled together into one category.
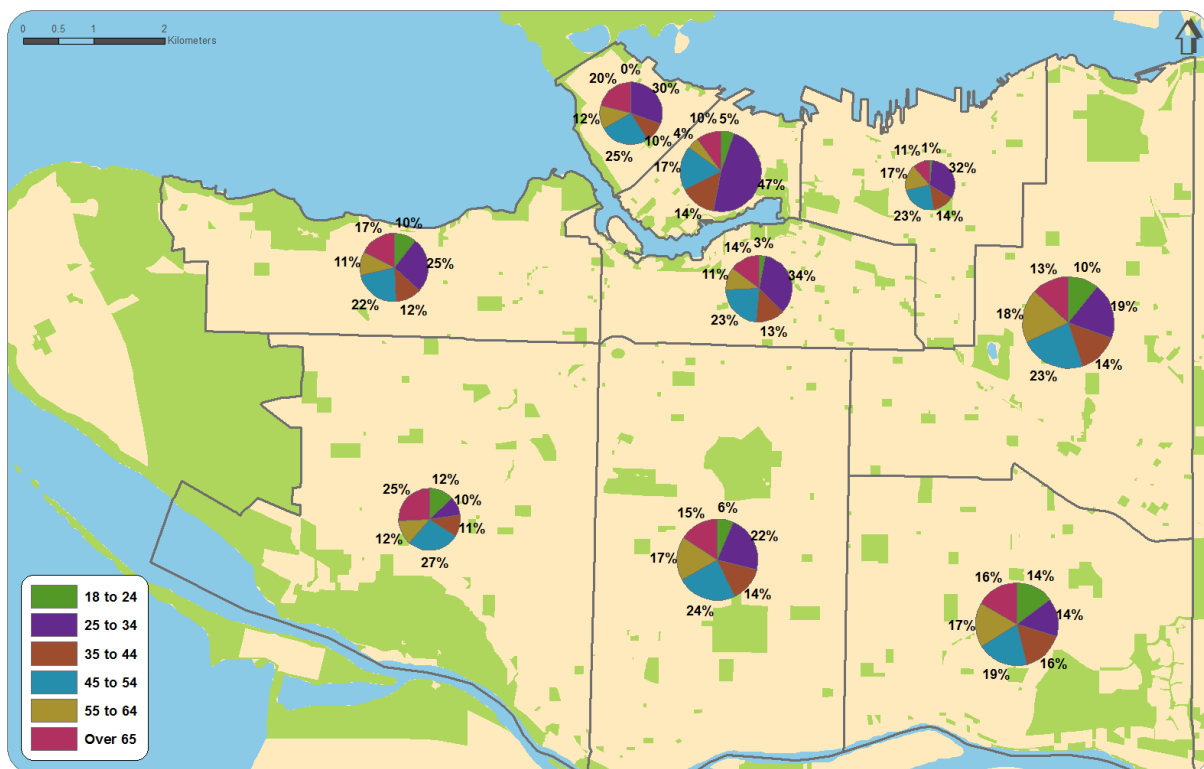
Figure 3-1. Age Distribution – Weighted Population

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[6] TransLink's trip diary surveyed people aged five and above. The trip diary, however, only provided the age attribute by cohort. People aged 15, 16 and 17 were lumped in the 13-17 cohort. As such, while the data sampling and expansion details presented in this section include the 15-17 age cohort, it was decided to use the population 18+ as a basis for the analyses presented in this section as well as sections 4 and 5.

3.2 Income Distribution

Household income can serve as a proxy for the transportation choices available to a panel member.

Panel members' household income distribution is presented in Figure 3-2. Again, the size of the pie chart represents the population size for the respective transportation zone. There are only minor differences in income distribution compared to 2014.
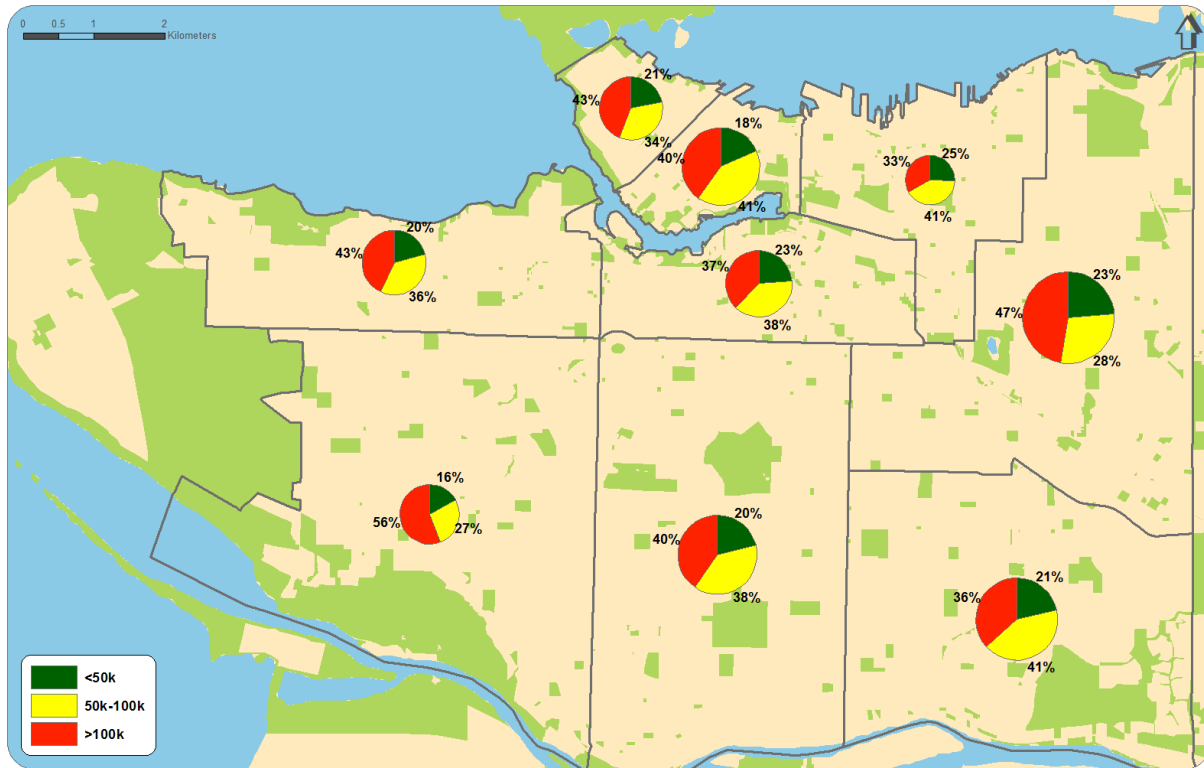
Figure 3-2. Household Income Range - Weighted Population

3.3 Walking

Based on trip diary responses, there were approximately 525,500 walking trips made in 2015. This equates to a 27% walking mode share.

As discussed in Section 2.3 of this report, demographic projections for 2015 were based on 2011 census data. The census journey to work is one of the main data sources upon which to compare travel by various modes on a consistent basis. Since this is only available every five years, a census-like question is included in the Panel Survey which asks respondents to indicate their usual mode of travel to work. When comparing to the trip diary results we see that walking trips to work appear to be under reported (11% versus 27% mode share). Some of the discrepancy may be attributed to atypical travel on the assigned trip diary day, but a more detailed comparison is warranted when the next census survey results are published to see if this trend continues.

Figure 3-2 shows the difference in mode share between respondents' stated usual mode of travel to work, and the actual mode as reported in their trip diaries.
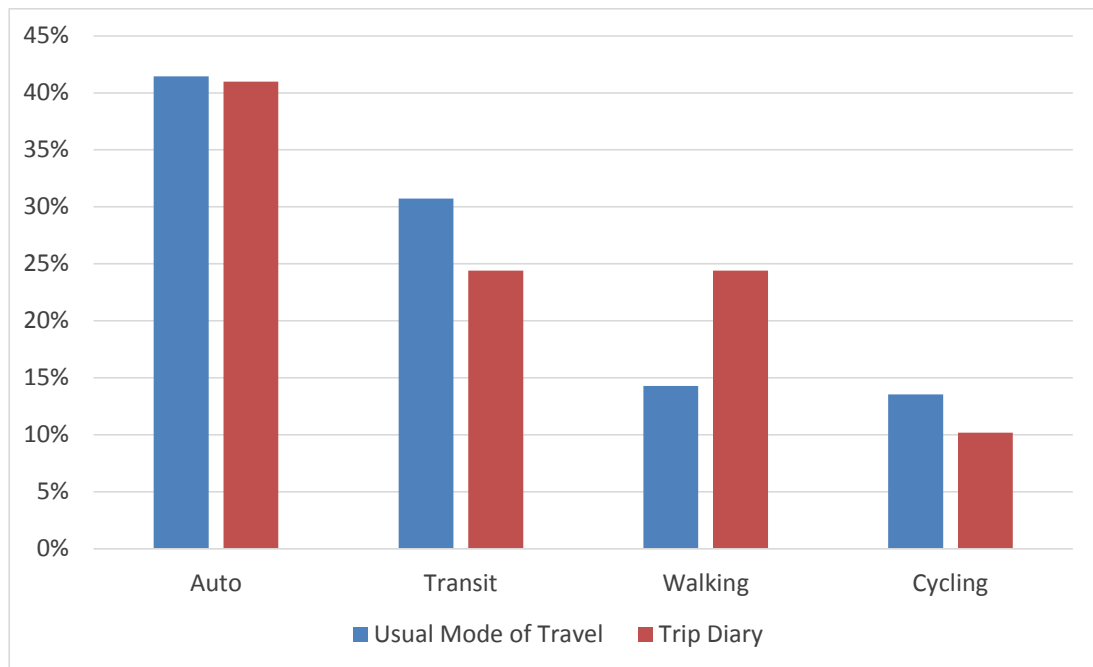
Figure 3-3. Differences Between Stated Usual Mode of Travel and Actual Trip Diary Mode Share

Figure 3-4 shows the geographic distribution of respondents who identified walking as their usual mode of travel to work. It shows a high concentration of walk commuters in downtown. Close proximity of residential and employment centres, and walkability of the downtown core likely contribute to the high walking mode share. It will be interesting to track if walking to work increases over time and expands geographically beyond the downtown core.
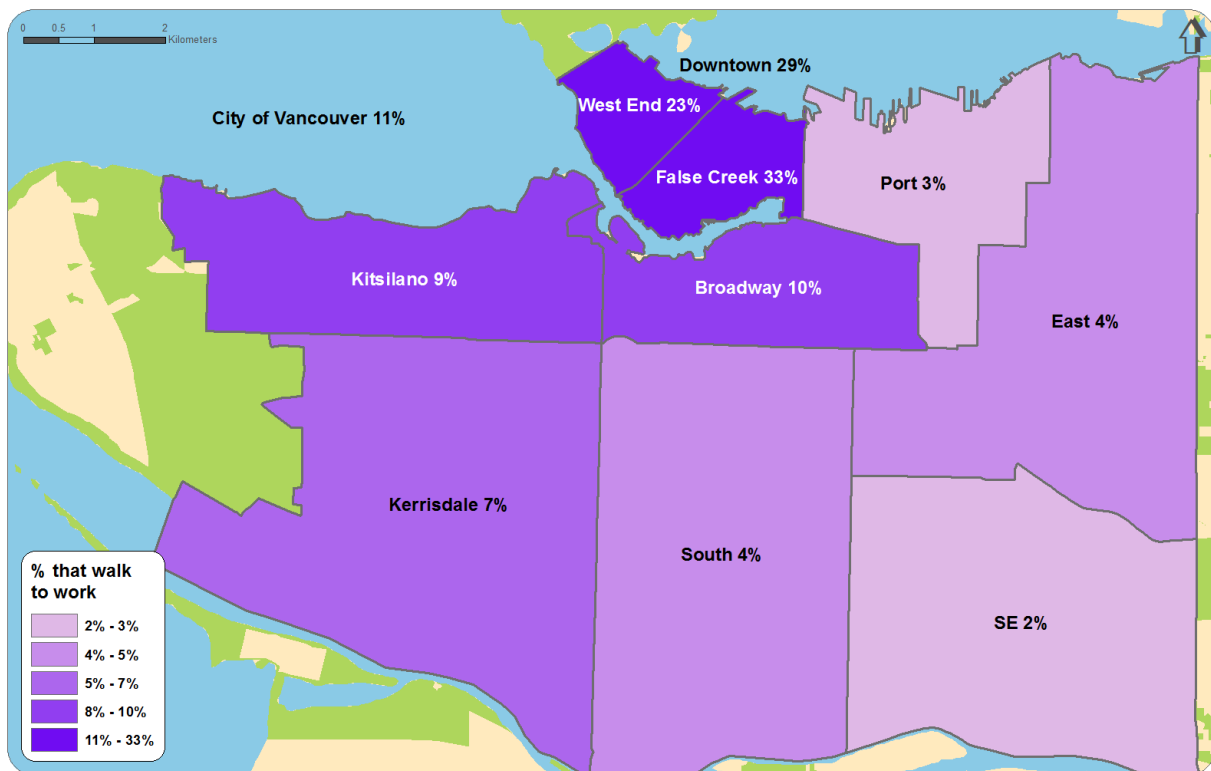
Figure 3-4. People who Identified Walking as Their Usual Mode of Travel to Work

3.4 Cycling

Based on trip diary responses, there were approximately 131,000 cycling trips made in 2015. This equates to a 7% cycling mode share.

In accordance with the vision set out in successive transportation plans – most recently in Transportation 2040 – the City has taken steps to complete a bicycle network that is designed for people of all ages and abilities. In particular, cycling infrastructure has been expanded within the CBD transportation zones, and on Point Grey Road in Kitsilano.

In 2015, the cycling-related questions in the survey instrument were refined to give planners a clearer understanding of cycling preferences. The main refinement included two questions related to the propensity to bike in fair weather as opposed to cold/rainy weather. As in 2014, the survey asked whether respondents would like to ride a bike more often, and the environments in which they are comfortable riding.

Figure 3-5 maps the distribution of the respondents who indicated that they cycled two or more times per week in fair weather. The highest concentration is within the Port, Kitsilano, and Broadway transportation zones.
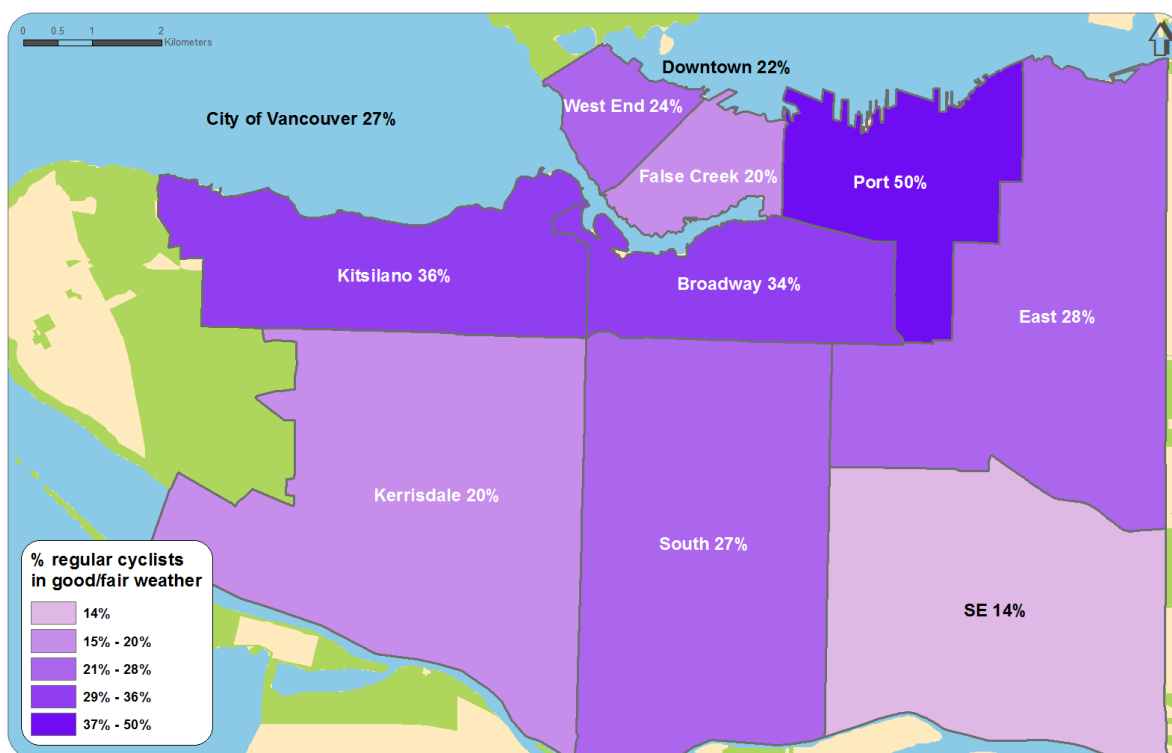
Figure 3-5. Respondents who Generally use a Bicycle Two or More Times per Week in Fair Weather

Table 3-1 shows a breakdown of cycling frequency under fair or rainy/cold weather conditions for those who have indicated that they cycle at some point in a year. As expected, panel members are much more likely to cycle in fair weather (ranging from 40% to more than twice as likely). However, it is worthwhile to note that a core group of more than 32,000 cyclists are expected to bike at least 5 times a week in inclement weather.

Table 3-1. Cycling Frequency in Fair Versus Rainy/Cold Weather (Weighted Population)

	Frequency			
	At least 5 times per week	2-4 times per week	Once per week to once per month	Less than once per month
Fair Weather	68,003	65,533	78,898	65,231
Rainy/Cold Weather	32,300	39,742	42,148	45,505
Ratio (Fair/Poor)	**2.1**	**1.6**	**1.9**	**1.4**

Respondents were also asked if they would like to travel by bicycle more often than they do currently. Figure 3-6 shows a much greater interest in biking more often across all areas of the City.
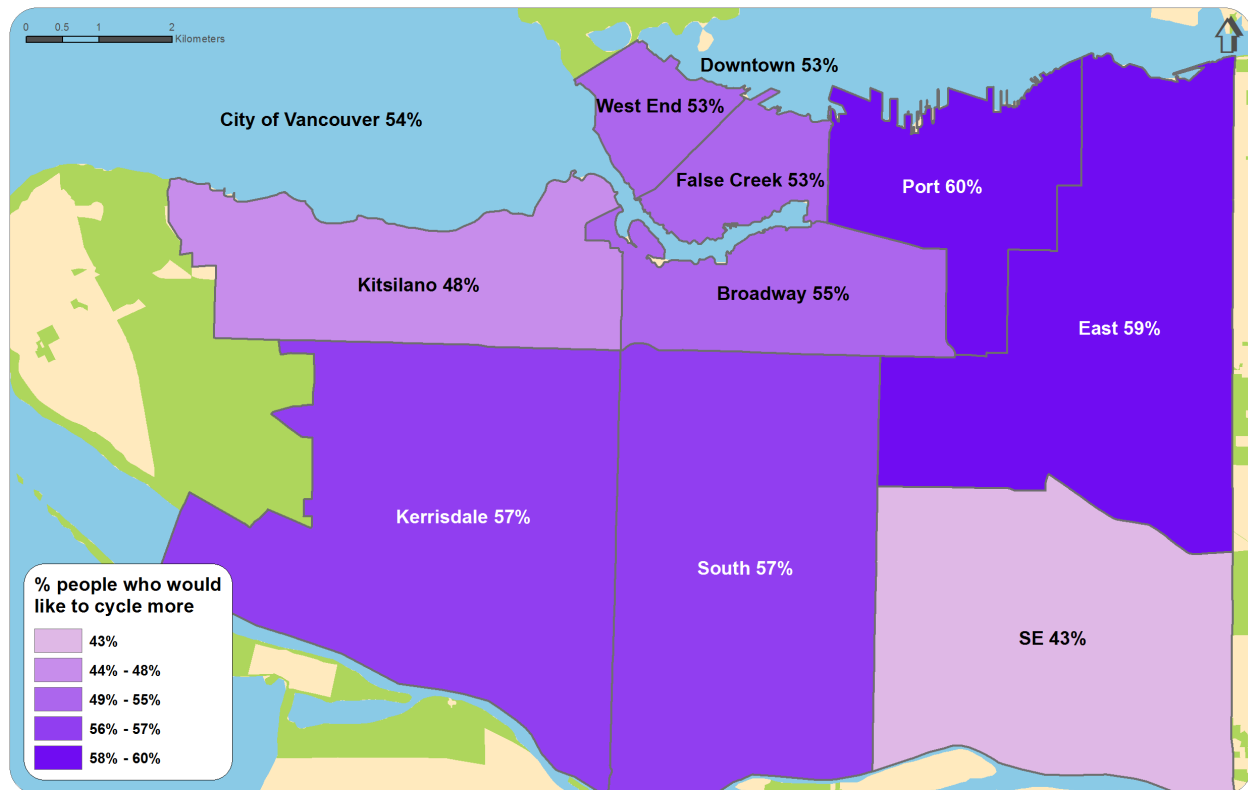
Figure 3-6. Respondents who Would Like to Travel by Bicycle More Often

Figure 3-7 shows panel responses regarding the types of bicycle facilities that participants would feel comfortable using. As expected, there is a strong preference for cycling away from traffic. Results for 2014 and 2015 are very consistent. It will be interesting to track whether the level of comfort on various facility types increases as the number of regular cyclists increases. However, it may be one that could be asked every other year to reduce the questionnaire length.
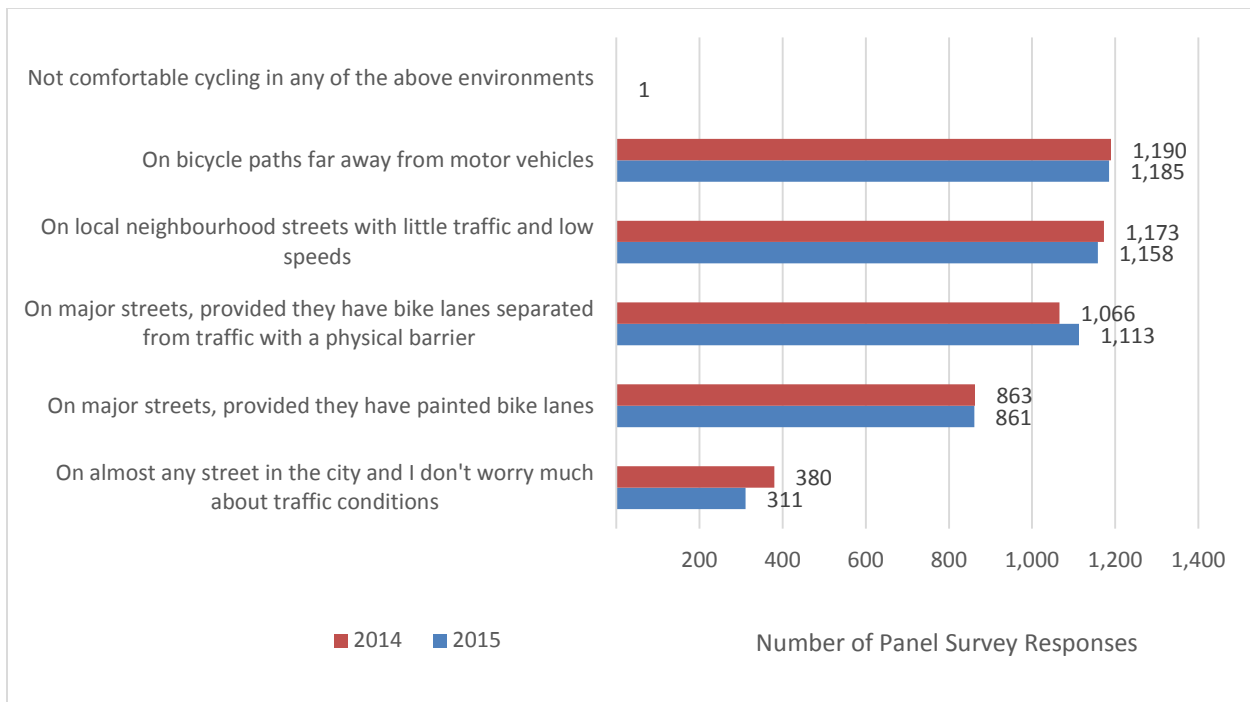
Figure 3-7. Bicycle Facility Preferences

3.5 Transit Usage

Based on trip diary responses, there were approximately 311,400 transit trips made in 2015. This equates to a 16% transit mode share.

Figure 3-8a and 3-8b show the distribution of people who identified transit as their usual mode of travel to work and school, respectively. In previous years, some panel members were confused by the phrasing of the question when selecting a trip purpose.

While TransLink and ultimately the Province have responsibility for transit provision, the City can also take an active role in supporting transit usage by improving walking and cycling connections to bus stops and SkyTrain/SeaBus stations as well as amenities at these locations including shelters, information displays, and good lighting.
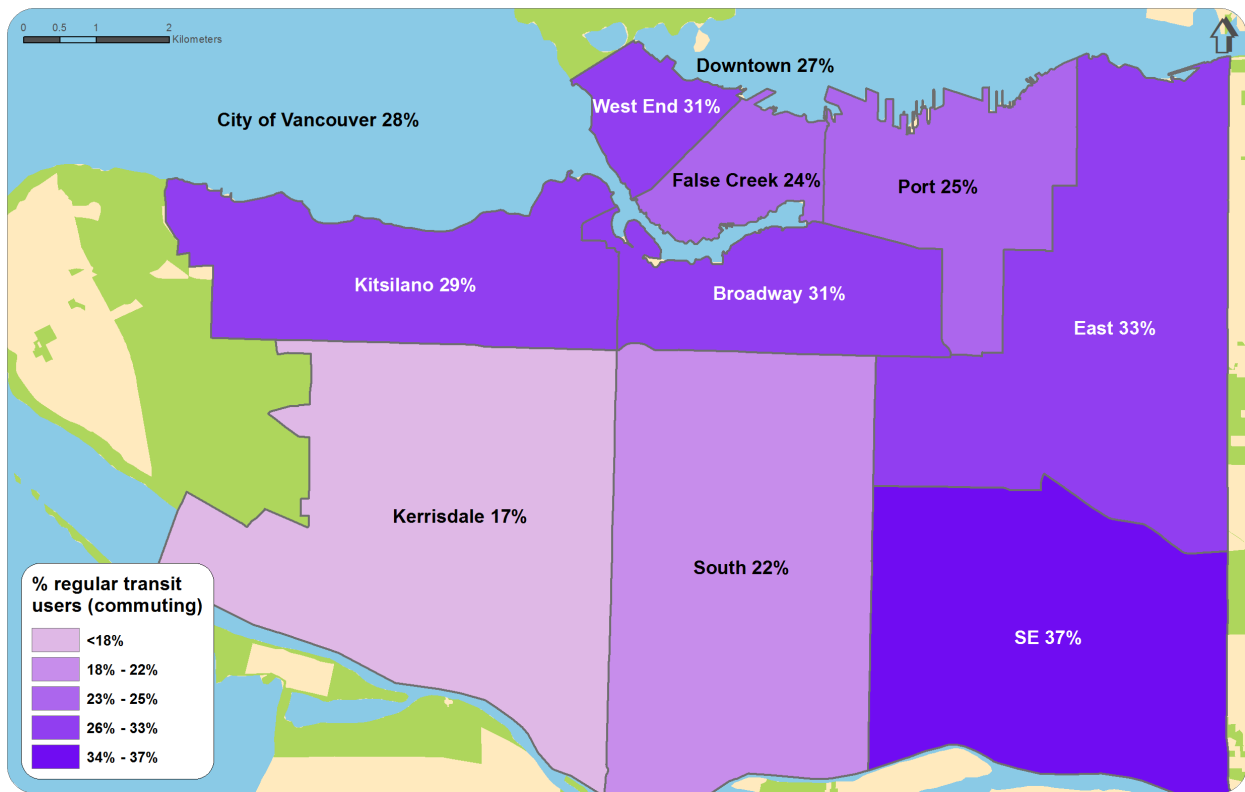
Figure 3-8a. People who Identified Transit as Their Usual Mode of Travel to Work
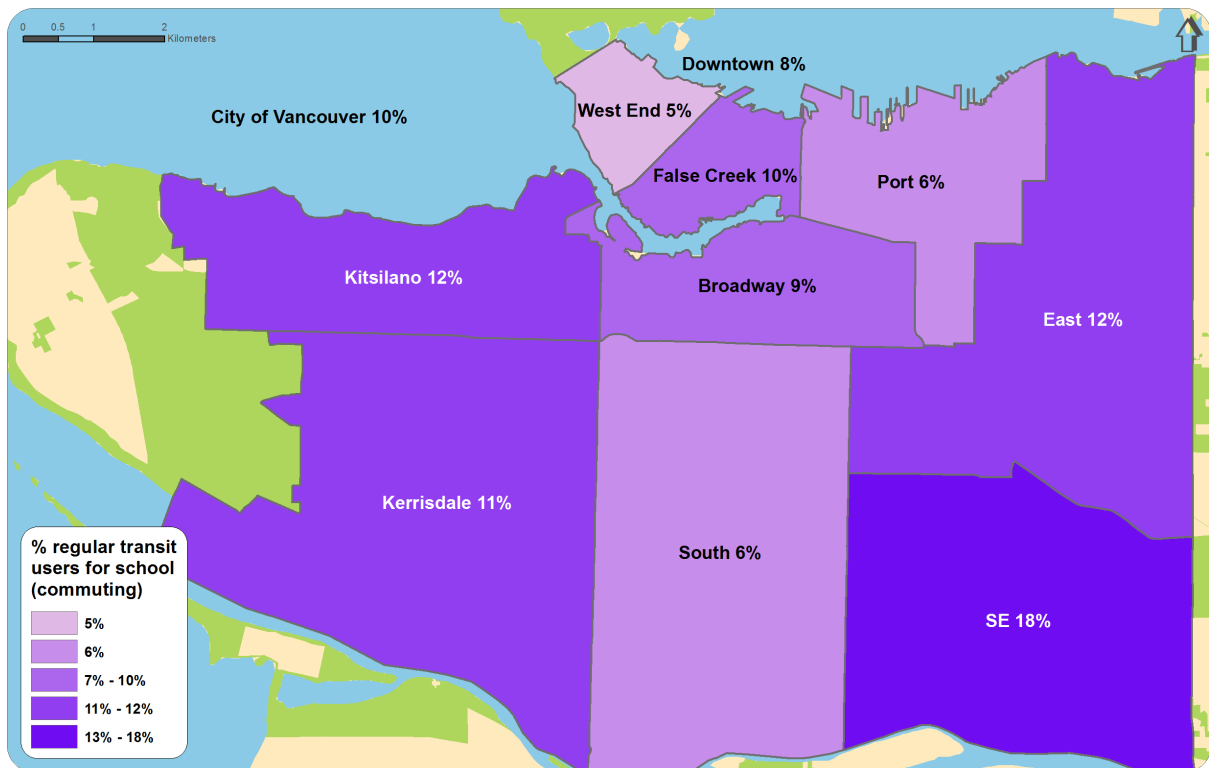
Figure 3-8b. People who Identified Transit as Their Usual Mode of Travel to School

Figure 3-9 shows the proportion of participants who use transit passes. The geographic distribution echoes that of regular transit commuters, which is to be expected.
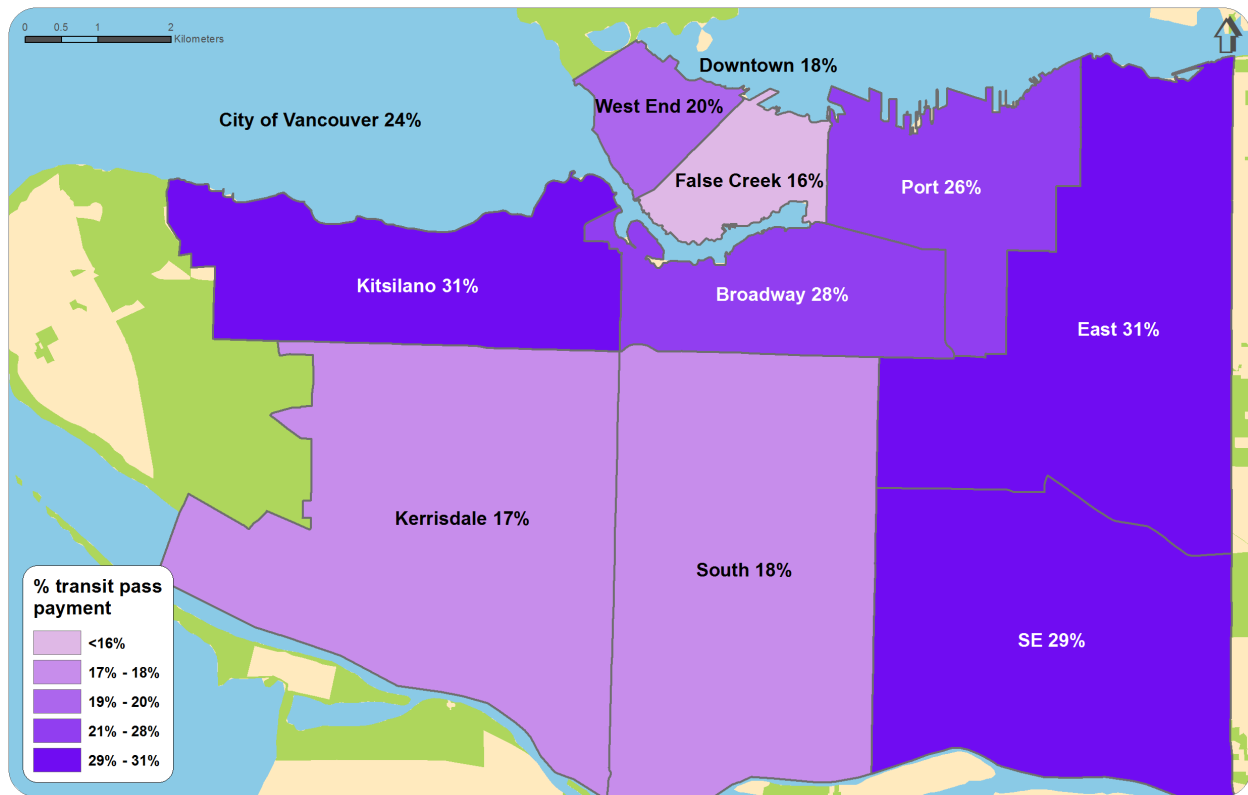
Figure 3-9. People Reporting Transit Passes as Favoured Method of Payment

In 2014, the annual employer pass program was discontinued by TransLink. This changed the way those transit users pay for transit. The other major change was official roll-out of the Compass Card in late 2015. Figure 3-10 illustrates the shift from 2014 to 2015. The payment options are grouped into the following categories: Cash/FareSavers, Monthly FarePass, Annual Pass, Compass Card, and U-Pass. In January 2016, both FareSavers and Monthly FarePasses were discontinued. These payment methods will largely be replaced by Compass Card, though a small segment are expected to switch to cash payments as a result of privacy concerns.
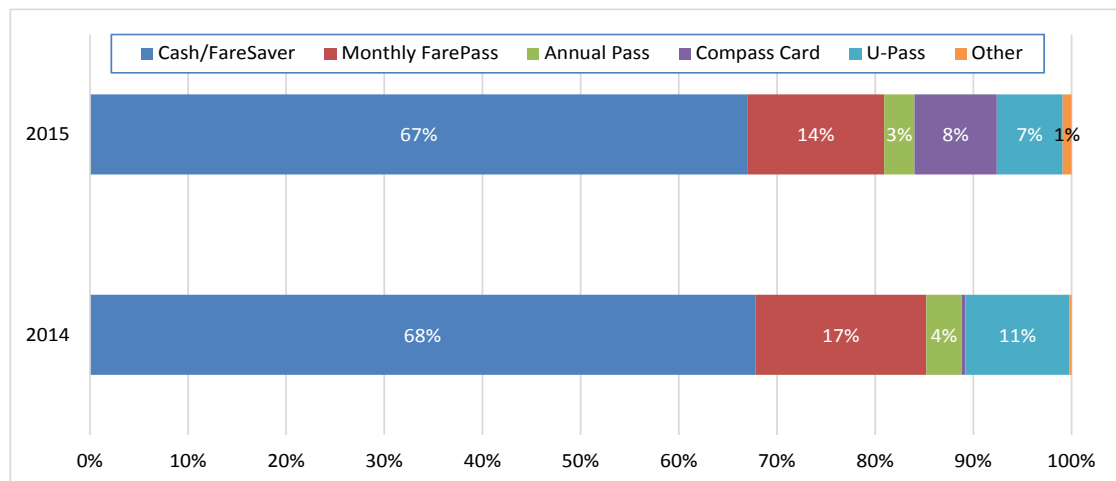
Figure 3-10. Transit Payment Methods (2014 vs. 2015)

3.6   Car Share Access

Car sharing programs such as Modo, Zipcar, and Car2Go have gained patronage in recent years. 2014-15 saw the addition of the Evo program, sponsored by BCAA. The distribution of those with regular access to a car-sharing program is shown in Figure 3-11. Subscription to car sharing programs is up to 26% from 20% in 2014, and double the 13% market share from 2013. CBD-West End, CBD-False Creek, Broadway and Vancouver-South have experienced the greatest percentage increase in car share patronage.
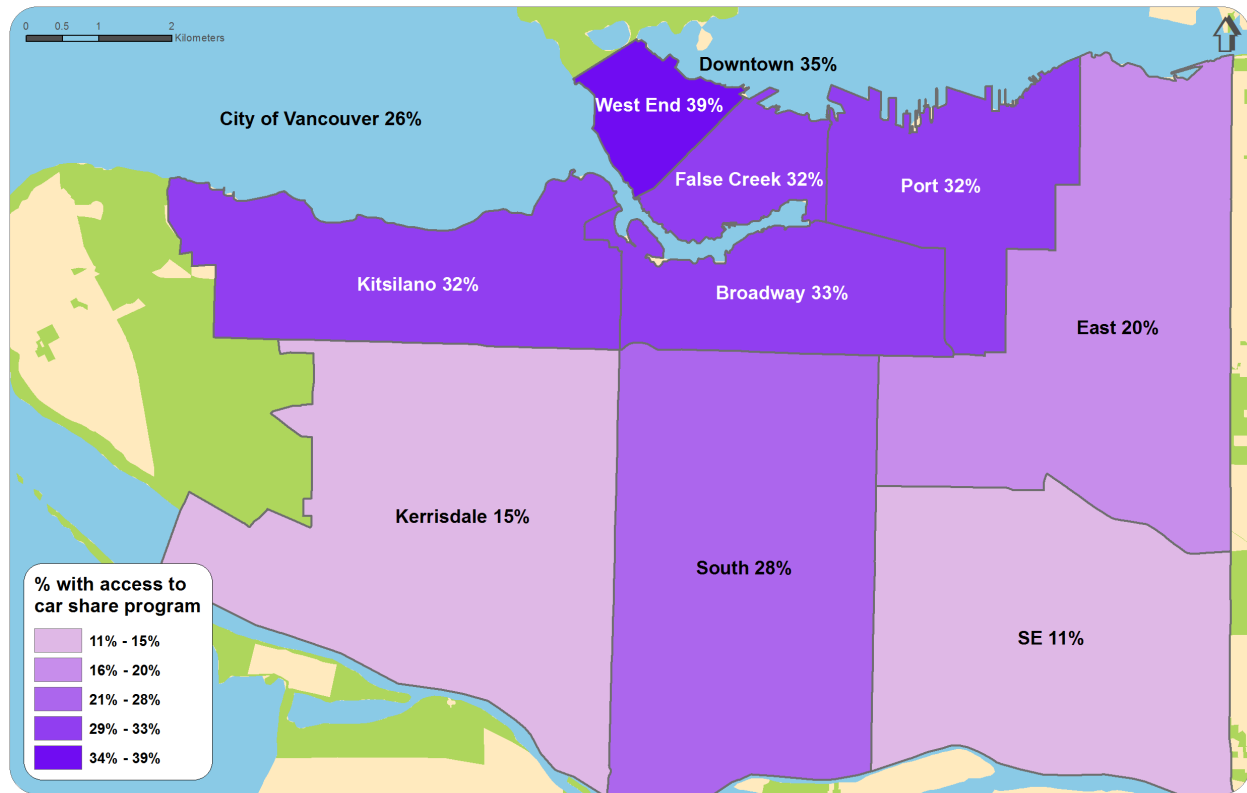
Figure 3-11. Access to Car Sharing Program

3.7   Private Vehicle Access

In 2015, approximately 986,400 trips were made using a private vehicle, 865,800 of which were drivers and 120,600 were passengers. This equates to a roughly 50% auto mode share (44% drivers, 6% passengers).

Figure 3-12 and Figure 3-13 both confirm that people in higher income households have more access to private vehicles. Compared to 2014, a greater proportion of lower income households have access to a private vehicle. However, the mode share by income level has not changed appreciably. In fact, the active mode share has increased by 6% amongst panel members with less than $50,000 in annual income.
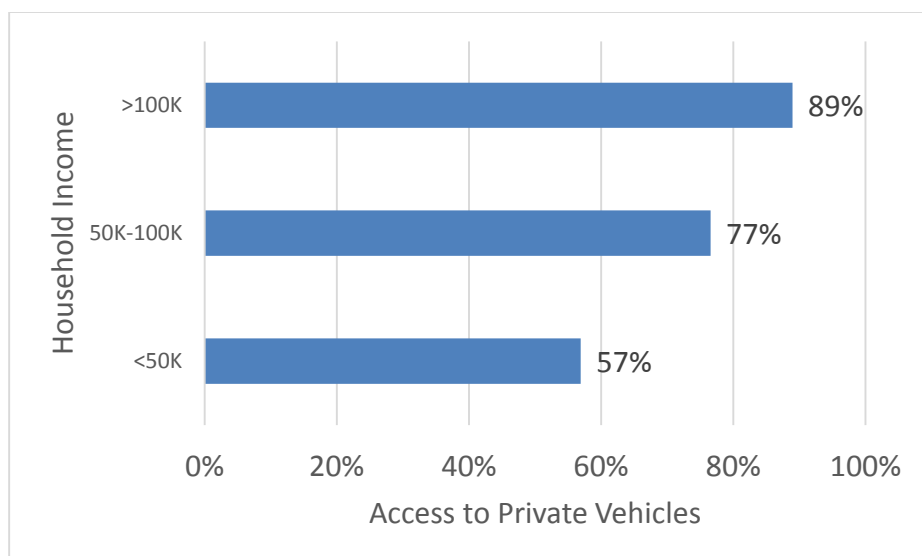
Figure 3-12. Access to Private Vehicle Proportion by Household Income
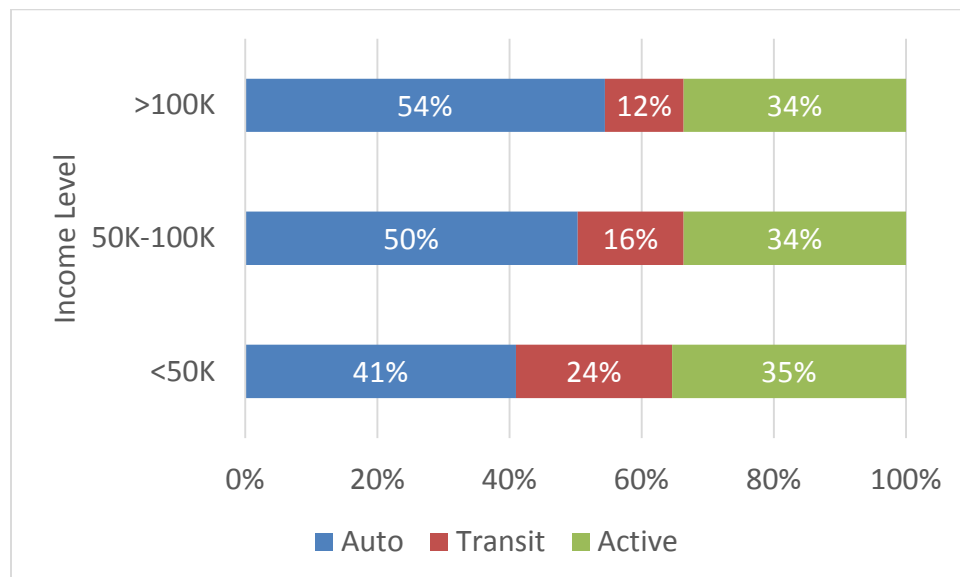
Figure 3-13. Mode Share Distribution by Household Income

Figure 3-14 clearly shows that access to a private vehicle has an impact on mode choice. This is consistent with the findings from the 2014 Panel.
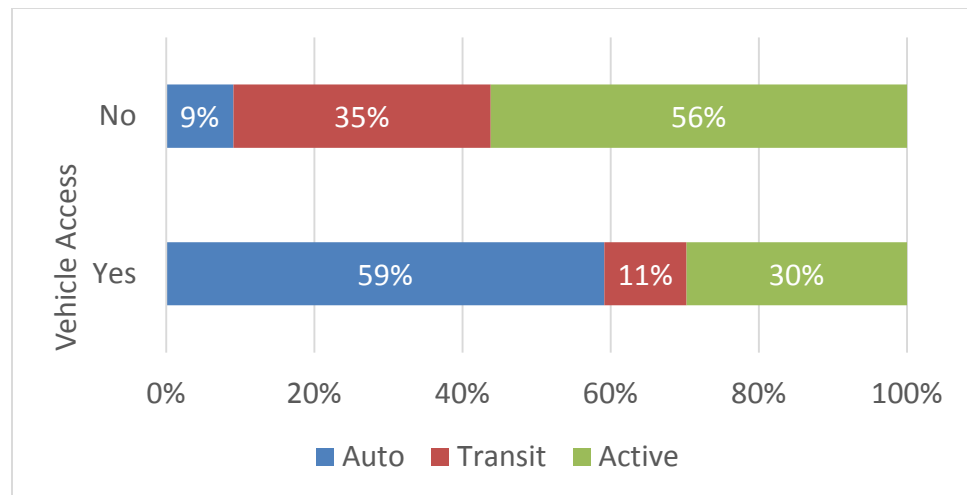
Figure 3-14. Vehicle Accessibility Distribution by Mode Choice

Those who have invested significant upfront costs to lease or own a vehicle are more likely to drive, since the incremental travel costs are relatively low. The geographic distribution of those with access to a private vehicle is shown in Figure 3-15. Generally, outlying areas tend to exhibit higher vehicle ownership patterns compared to areas near the downtown core.

City-wide, the proportion of participants with access to a private vehicle grew from 75% to 78%. The increase is seen in most areas of the City with the exception of the Port and Broadway, where the proportion of vehicle access has held steady. In contrast to 2014, those with access to a private vehicle in downtown increased from 55% to 64%. The high correlation between vehicle access/ownership and mode share/VKT may account for some of the trip behaviour differences highlighted in Section 4.
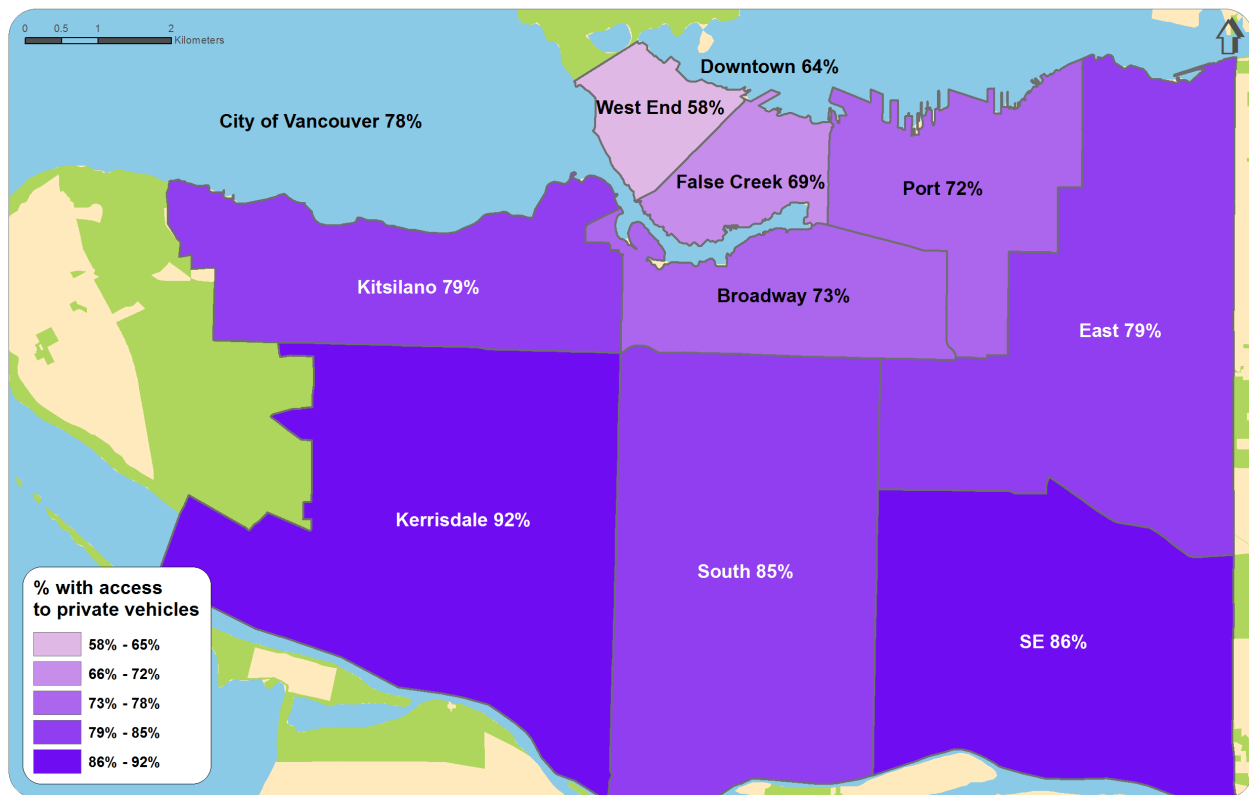
Figure 3-15. Private Vehicle Access

Trip Characteristics

One of the main objectives of the panel survey is to track trends in transportation choices, especially as they relate to specific City initiatives and infrastructure improvements. This analysis section is focused on comparing the 2014 and 2015 panel survey results. Upcoming panel survey reports will include comparisons to past panel surveys and future Trip Diary results as they become available. A comparison of trip characteristics amongst returning panelists is included in Section 5 of this report.

Another objective of the panel survey is to add to the emerging understanding of the relationship between transportation choices and health.

4.1   Mode Share

The City is particularly interested in tracking how walk/bike/transit mode share grows over time. Figure 4-1 compares the overall mode shares of the 2013-2015 Panel Surveys (with and without recreational trips). In this initial snapshot, it is evident that walking and cycling mode share has increased, auto driver/passenger mode share has held relatively constant, and transit mode shares have decreased when compared with the 2014 Panel results. Recreational walking and cycling trips account for approximately 80,000 more trips.

The increase in walking and cycling mode share can be attributed in part to the shift in survey period and weather. The 2014 survey spanned Oct 2014 to Jan 2015. In contrast, the 2015 survey was completed earlier (Sep 2015 to Dec 2015). The bulk of 2015 surveys were completed in October and November. There was approximately 15% less precipitation during this time, compared to 2014.

The decrease in transit mode share may be related to no expansion of transit service in 2015. Reasons for changes in transit mode share are discussed in greater detail in Section 6.
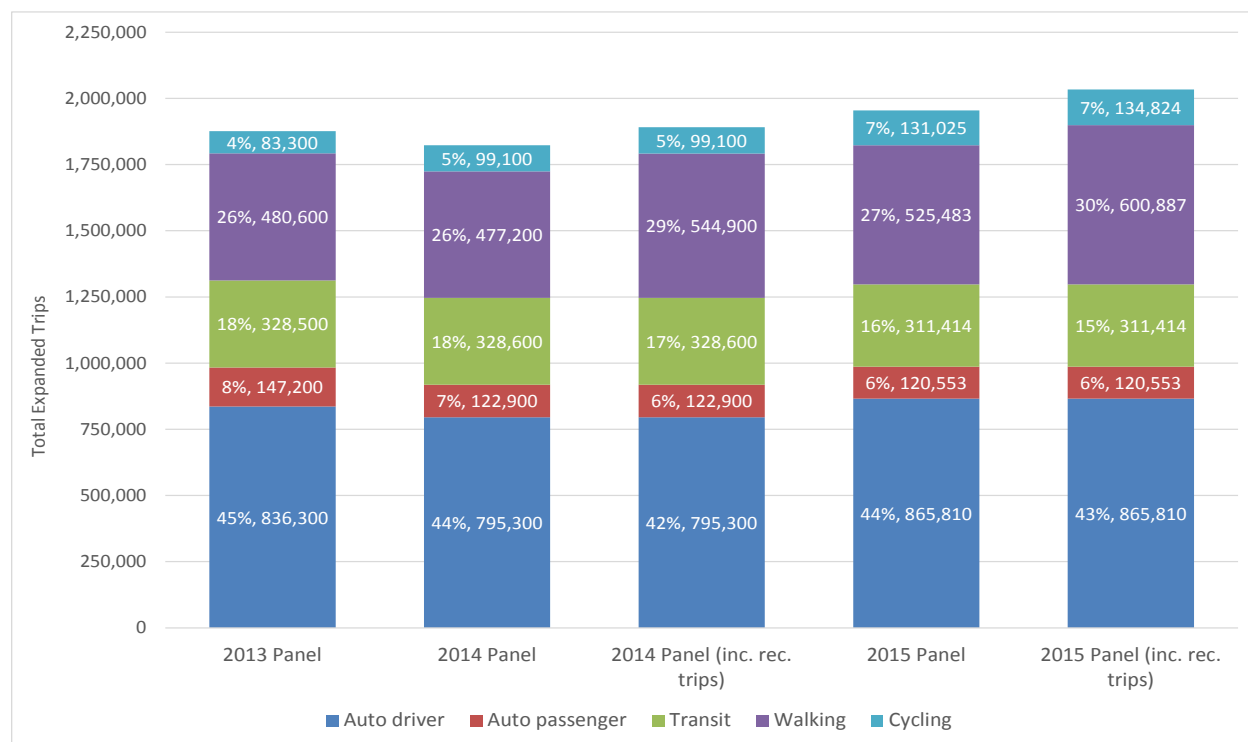
Figure 4-1. Total Trips by Mode and Mode Share (2013-2015 Panel Surveys)

Figure 4-2 compares the Panel Survey mode share for reported trips, broken down by residents' home transportation zone (regardless of the actual location of the trip origins and destinations), for the 2014 and 2015 Panel Surveys. The reported trip mode share distribution by zone is consistent with the patterns observed in 2014. It will be possible to track trends in mode share at the zone level with future survey data, however, some caution should be exercised as disaggregating the data to this level can produce results with wider confidence ranges, especially in cases where the mode shifts are above or below +/- 2%. It is generally more appropriate to compare results between panel surveys at more aggregate levels, for example, by using walk/bike/transit mode share or merged subareas.

2014 Panel

	Auto Driver	Auto Passenger	Transit	Walking	Cycling
Vancouver Port	35%	7%	18%	30%	10%
Vancouver East	47%	7%	22%	19%	5%
Vancouver SE	56%	8%	17%	15%	4%
Vancouver Kitsilano	44%	7%	16%	27%	6%
Vancouver Kerrisdale	57%	8%	16%	16%	4%
Vancouver South	53%	6%	16%	19%	6%
Vancouver Broadway	41%	7%	17%	27%	7%
Downtown (West End & False Creek)	26%	5%	20%	45%	4%
CBD - False Creek	28%	4%	17%	47%	5%
CBD - West End	23%	7%	24%	43%	4%

■ Auto Driver ■ Auto Passenger ■ Transit ■ Walking ■ Cycling

2015 Panel

	Auto Driver	Auto Passenger	Transit	Walking	Cycling
Vancouver Port	35%	6%	17%	26%	17%
Vancouver East	50%	6%	18%	18%	8%
Vancouver SE	58%	7%	18%	14%	3%
Vancouver Kitsilano	40%	7%	18%	27%	9%
Vancouver Kerrisdale	59%	8%	12%	19%	2%
Vancouver South	51%	8%	11%	22%	8%
Vancouver Broadway	39%	7%	18%	29%	7%
Downtown (West End & False Creek)	27%	3%	17%	49%	4%
CBD - False Creek	33%	3%	12%	48%	4%
CBD - West End	19%	3%	23%	51%	4%

■ Auto Driver ■ Auto Passenger ■ Transit ■ Walking ■ Cycling

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

Table 4-1 summarizes the Panel Survey walk/bike/transit mode share for reported trips (transit, walking and cycling) by transportation zone. It also highlights the 95% and 90% confidence intervals of these results as well as the number of samples required to achieve a +/- 5% mode share error range at the 95% confidence level. Table 4-1 also compares the 2014 and 2015 survey results for walk/bike/transit mode share and corresponding confidence intervals. The table highlights the year over year variation when mode share is compared by transportation zone. In all transportation zones, the 2015 walk/bike/transit mode shares still fall within the 2014 confidence intervals which enhances our overall confidence in the reliability of the results. For comparative analysis, it is best to use aggregate statistics such as Downtown or Vancouver mode shares.

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

Transportation Zone	Bike/Walk/Transit Mode Share (%)	95% Confidence Interval	90% Confidence Interval	No. of persons sampled (18+)	Sample size Required at 95% CI for error range +/- 5%
1 CBD - West End	78%	(73%-83%)	(74%-82%)	274	262
2 CBD - False Creek	64%	(58%-70%)	(59%-69%)	222	353
Downtown (West End & False Creek)	**70%**	**(66%-74%)**	**(67%-73%)**	**496**	**323**
3 Vancouver Broadway	54%	(48%-60%)	(49%-59%)	289	381
4 Vancouver South	41%	(36%-46%)	(37%-46%)	338	372
5 Vancouver Kerrisdale	33%	(27%-39%)	(28%-38%)	260	338
6 Vancouver Kitsilano	53%	(48%-59%)	(49%-58%)	328	382
7 Vancouver SE	35%	(29%-41%)	(30%-40%)	277	349
8 Vancouver East	44%	(39%-49%)	(40%-48%)	357	378
9 Vancouver Port	60%	(53%-66%)	(54%-65%)	210	370
City of Vancouver	**50%**	**(48%-51%)**	**(48%-51%)**	**2,555**	**2,893**

| Transportation Zone | 2014 Panel | | 2015 Panel | |
	Bike/Walk/Transit Mode Share (%)	95% Confidence Interval	Bike/Walk/Transit Mode Share (%)	95% Confidence Interval
1 CBD - West End	70%	(64%-76%)	78%	(73%-83%)
2 CBD - False Creek	68%	(61%-75%)	64%	(58%-70%)
Downtown (West End & False Creek)	**69%**	**(65%-73%)**	**70%**	**(66%-74%)**
3 Vancouver Broadway	52%	(46%-58%)	54%	(48%-60%)
4 Vancouver South	41%	(36%-46%)	41%	(36%-46%)
5 Vancouver Kerrisdale	36%	(30%-41%)	33%	(27%-39%)
6 Vancouver Kitsilano	49%	(43%-54%)	53%	(48%-59%)
7 Vancouver SE	36%	(30%-42%)	35%	(29%-41%)
8 Vancouver East	45%	(40%-51%)	44%	(39%-49%)
9 Vancouver Port	58%	(51%-64%)	60%	(53%-66%)
City of Vancouver	**50%**	**(48%-52%)**	**50%**	**(48%-51%)**

Figure 4-3 compares the mode share by age distribution between the 2015 and 2014 Panel Surveys. As expected and observed in previous travel surveys, people in the 18-24 and 25-44 cohorts tend to use transit, walk, and cycle more than the 45+ cohort. The 2015 Panel Survey indicates higher cycling mode shares amongst all age groups. The growth needs to be tempered by recognizing that the small sample size in these age groups could lead to overrepresentation.
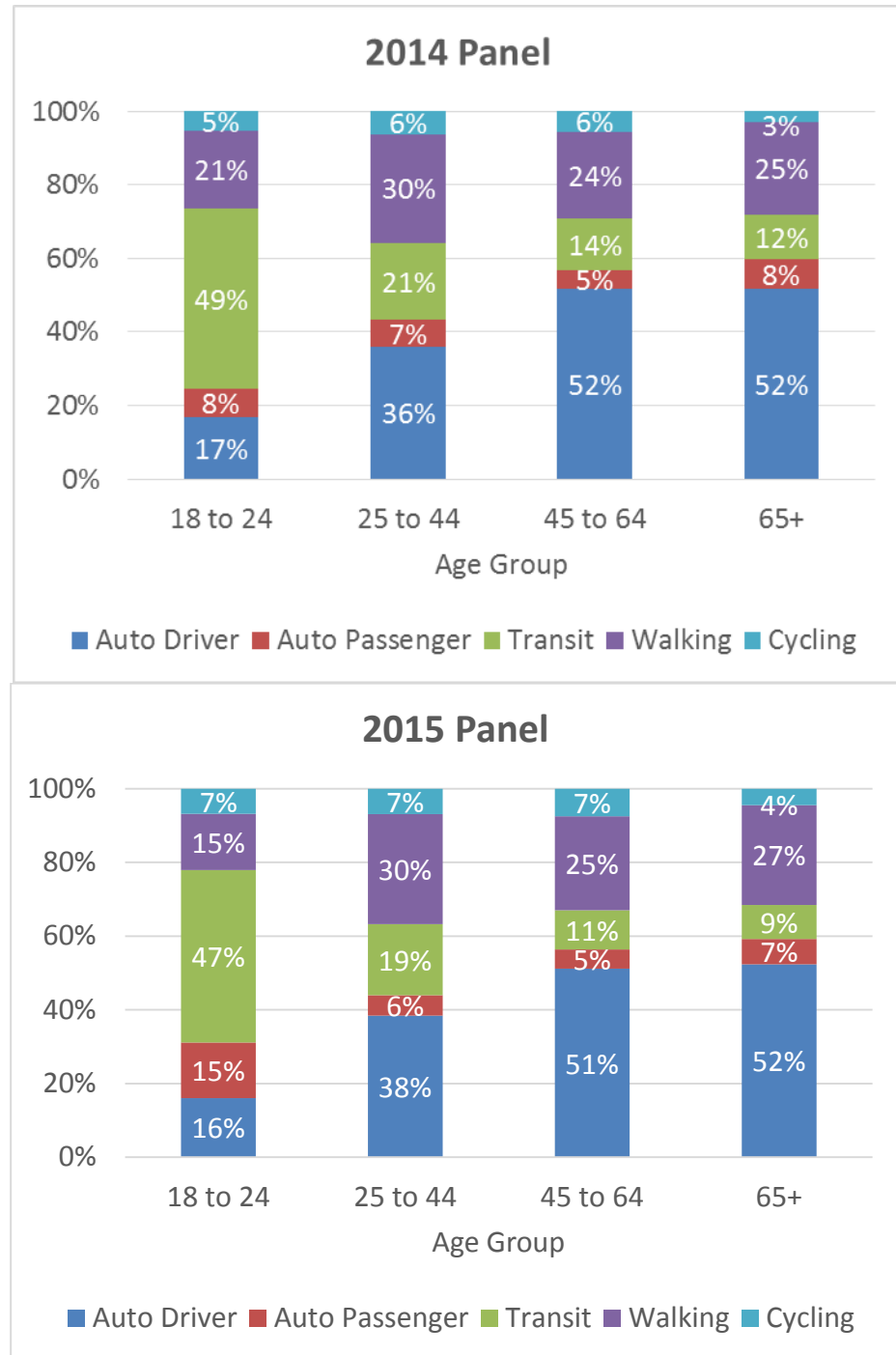
Figure 4-3. Mode Share by Age Distribution[7]

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[7] The Panel survey sample size for the 18 to 24 age cohort is small (i.e. less than 100 records). Caution needs to be undertaken in the interpretation of results from that age group. For example, a 2% bike mode split as per the Trip Diary would have only had 2 trips out of 100 be by bicycle.

4.2   Trip Purpose

Figure 4-4 shows a comparison of trip purposes for the 2014 and 2015 Panel Surveys. The distribution by trip purpose is relatively consistent between the two surveys.
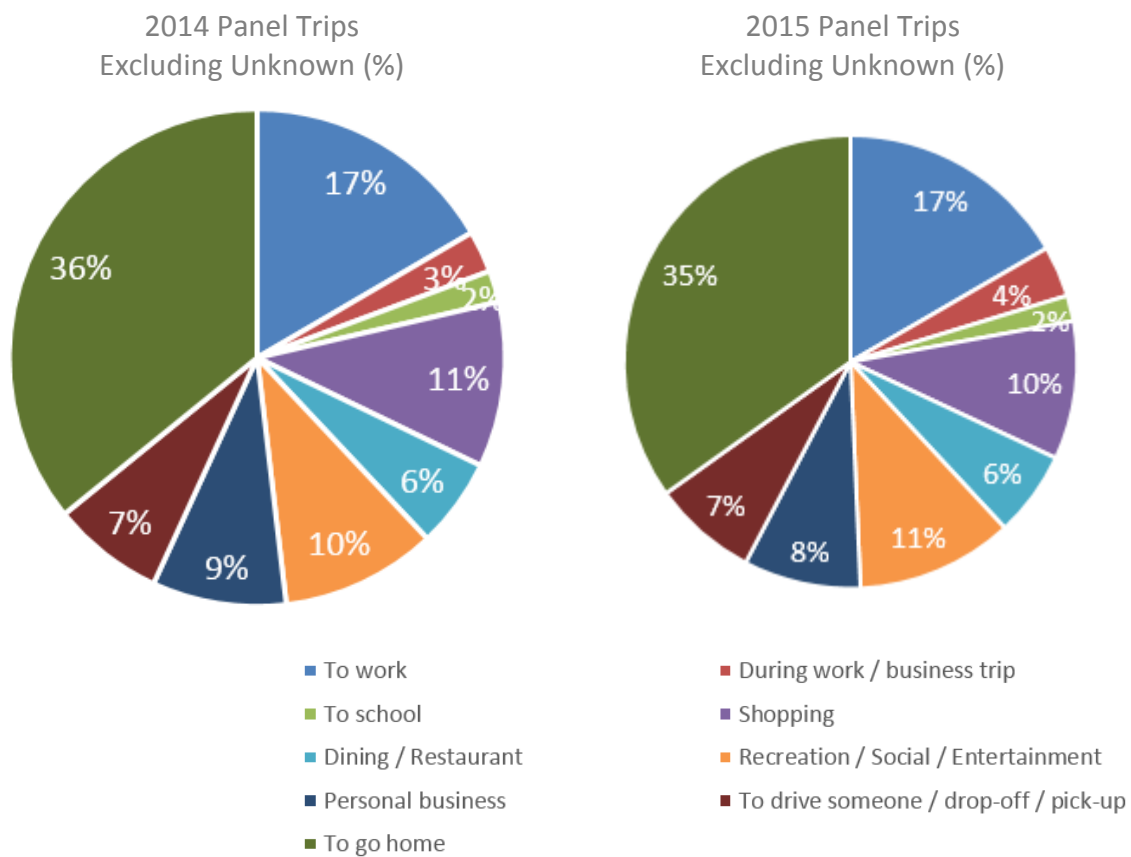
Figure 4-4. Trip Purpose Distribution

Figure 4-5 shows a detailed comparison of the mode share by trip purpose. Walking and cycling mode share exhibits growth in both discretionary trips and regular commuting trips (to work/to school).

Transit mode share appears to have decreased for most purposes, however it experienced an 8% increase in the "To school" journey.

2014 Panel

Trip Purpose	Auto Driver	Auto Passenger	Transit	Walk	Bike
To go home	43%	7%	20%	24%	6%
To drive someone / drop-off / pick-up	78%	4%	3%	12%	2%
Personal business	46%	8%	17%	26%	3%
Recreation / Social / Entertainment	40%	10%	15%	30%	6%
Dining / Restaurant	29%	11%	9%	49%	2%
Shopping	43%	6%	11%	37%	3%
To school	19%	5%	58%	13%	5%
During work / business trip	57%	4%	13%	21%	4%
To work	37%	4%	27%	23%	9%

2015 Panel

Trip Purpose	Auto Driver	Auto Passenger	Transit	Walk	Bike
To go home	45%	6%	17%	24%	8%
To drive someone / drop-off / pick-up	73%	4%	4%	17%	2%
Personal business	50%	6%	12%	28%	5%
Recreation / Social / Entertainment	40%	9%	14%	30%	7%
Dining / Restaurant	29%	12%	11%	47%	1%
Shopping	43%	6%	8%	37%	6%
To school	16%	4%	64%	10%	7%
During work / business trip	55%	10%	9%	24%	2%
To work	38%	3%	24%	24%	10%

Figure 4-5. Mode Share By Trip Purpose

Figure 4-6 is a comparison between the 2014 and 2015 Panel Survey trips to work. There has been a 7.0% increase in work trips (304,500 to 325,750). The 2015 Panel Survey shows higher shares of active trips (walking and cycling) and lower vehicle passenger mode shares, both proportionately and in absolute terms.[8]
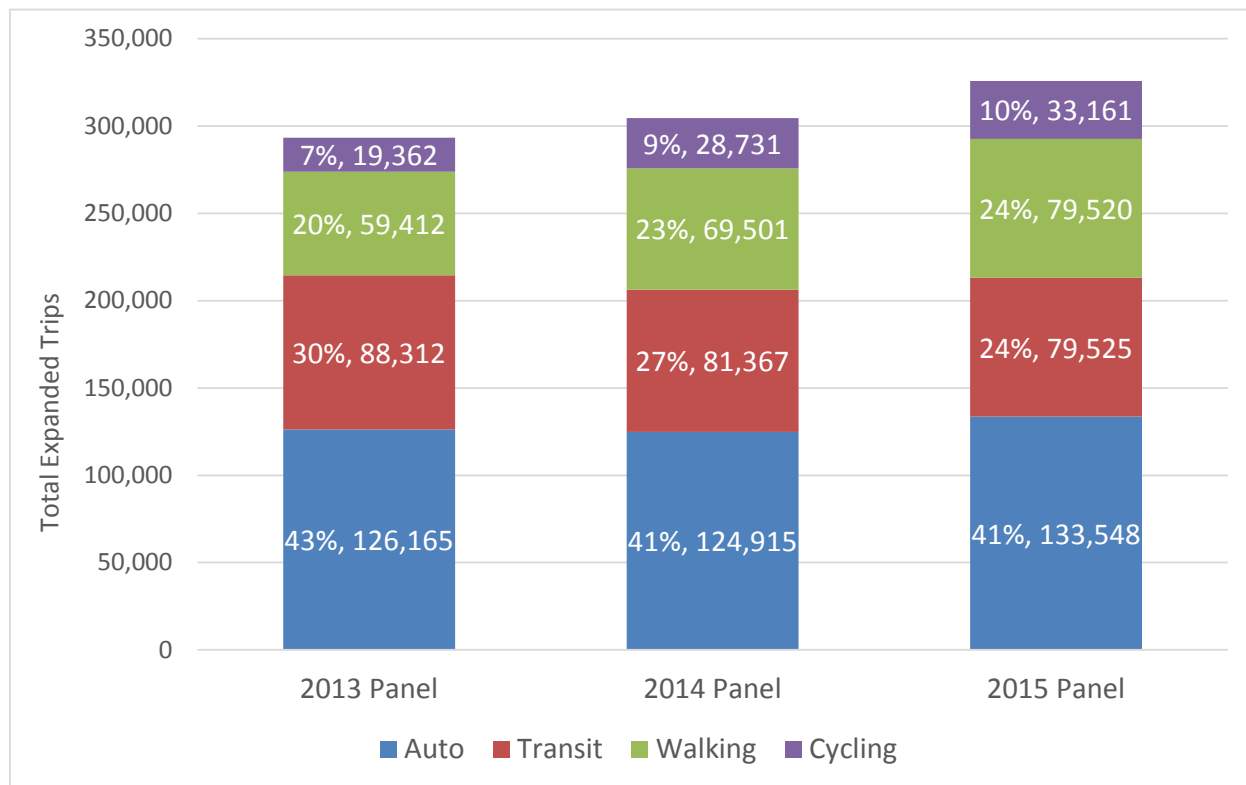
Figure 4-6. Comparison of Panel Survey Trips to Work

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[8] Results should be treated in context of small sample sizes, especially for the bicycle trip to work subset.

Figure 4-7 breaks down the total number of trips by transportation zone. The 2014 and 2015 Panel Surveys are very similar in terms of the trips from each of these zones.
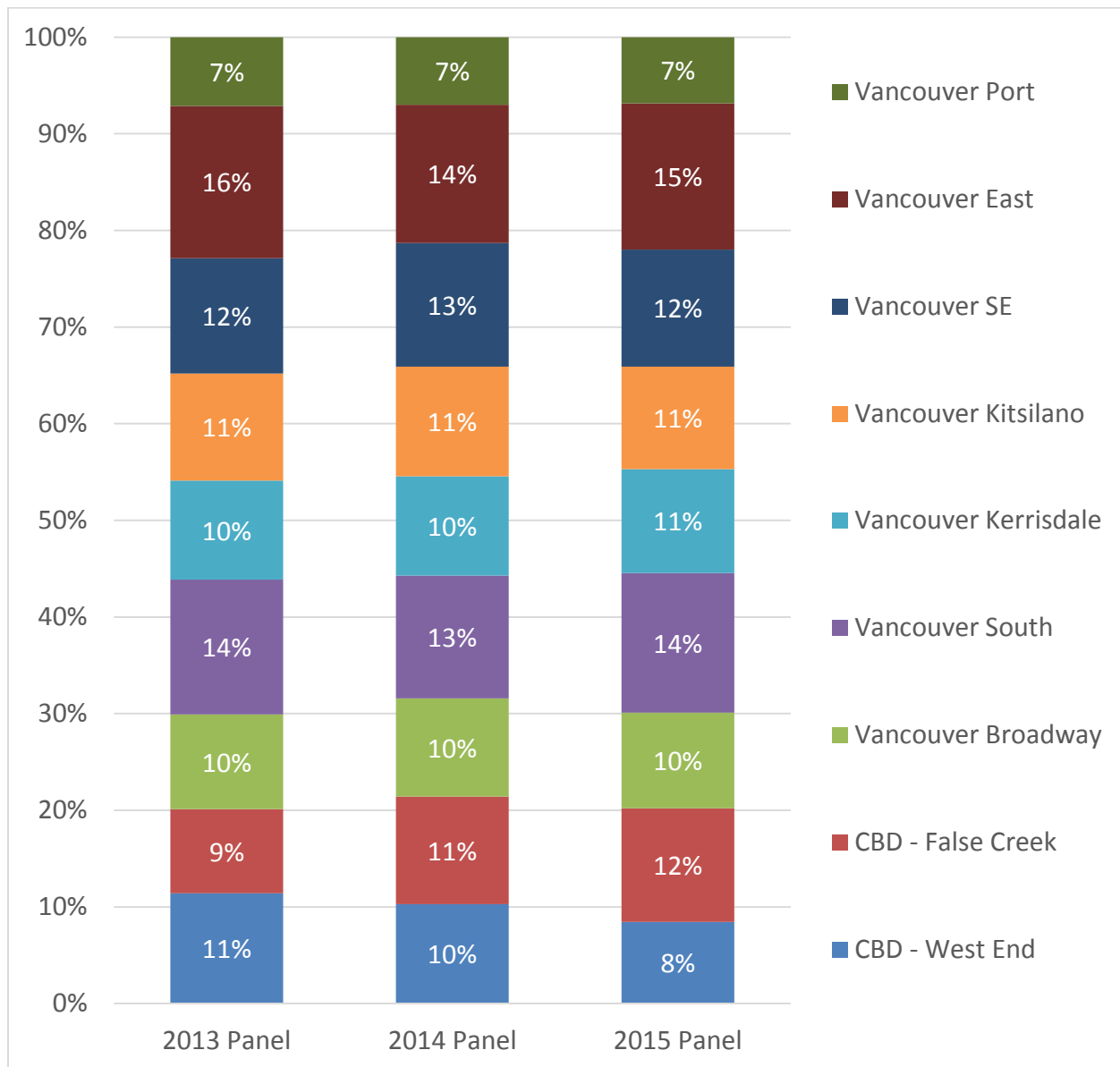
Figure 4-7. Total Trips Breakdown by Transportation Zone

4.3   Time of Day

A comparison of time of day travel is shown in Figure 4-8. The Panel Survey and Trip Diary are quite similar, with marginally more late night trips in the 2014 Panel Survey.

2014 Panel Trips
Excluding Unknown (%)

2015 Panel Trips
Excluding Unknown (%)

- OWL (12:00am to 5:59am)
- AM (6:00am to 8:59am)
- PreLunch (9:00am to 11:59am)
- MD (12:00pm to 2:59pm)
- PM (3:00pm to 5:59pm)
- Evening (6:00pm to 8:59pm)
- Night (9:00pm to 11:59pm)
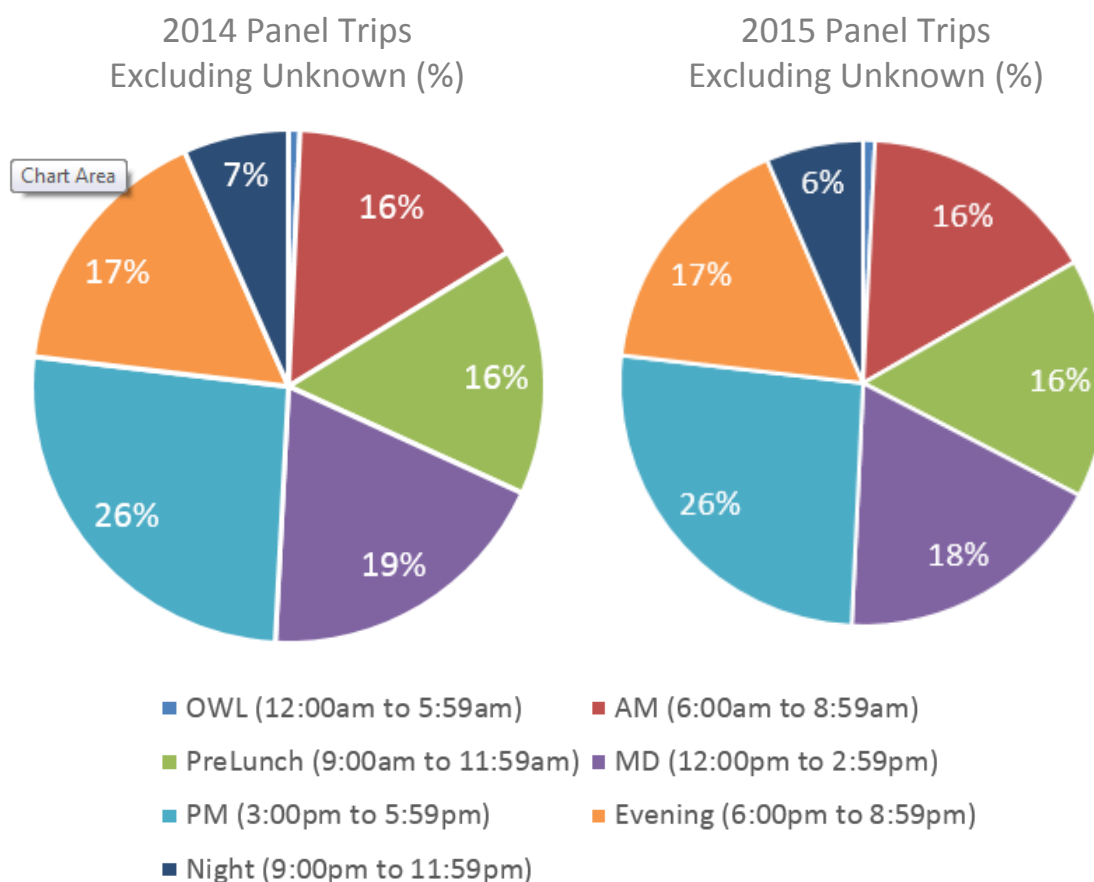
Figure 4-8. Trip Distribution by Time Of Day Shift to Have 2014 first then 2015

Figure 4-9 breaks down mode share by time of day for the 2013 and 2014 Panel Surveys as well as the 2011 Metro Vancouver Trip Diary Survey. The higher walking mode share during the pre-lunch, midday, and early afternoon periods reinforces the conclusion that more discretionary trips are being reported.
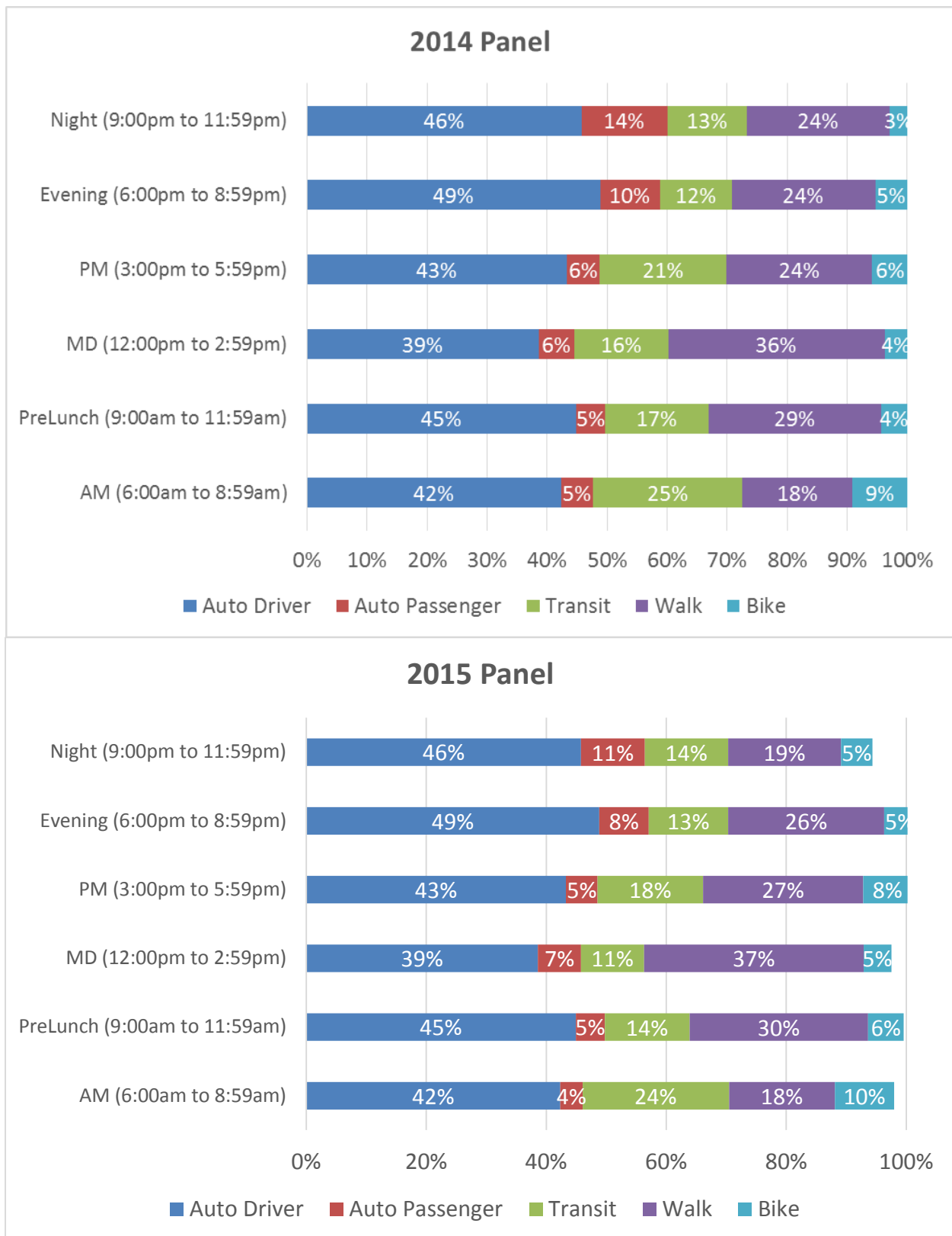
Figure 4-9. Mode Share Distribution by Time of Day

4.4   Trip Rates

Figure 4-10 compares overall trip rates[9] for the 2014 and 2015 Panel Surveys. In 2014, recreational trips with the same start/end points (e.g., walking the dog, jogging) were introduced to the survey instrument as an exclusive type of trip. The 2014 panel respondents made slightly fewer trips, even when including the new recreational trip subset. One possible explanation is the seasonal variation between the two surveys as mentioned previously in Section 2-2. In 2015, the recruitment and trip diary completion was completed in the fall. As expected, the trip rates increased.
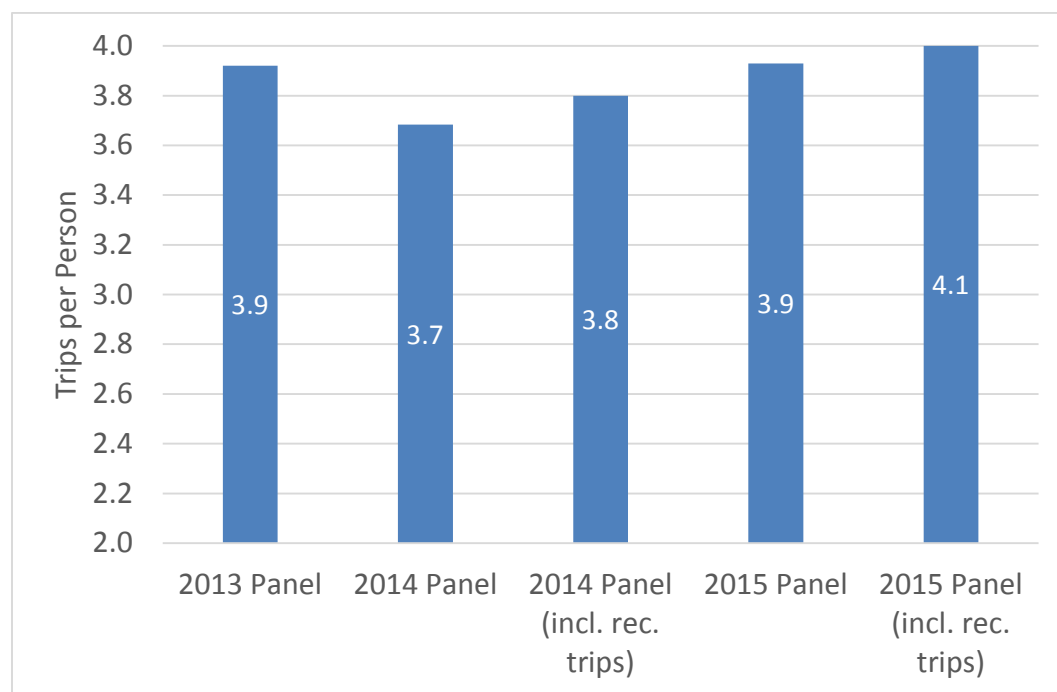
Figure 4-10. Daily Trip Rates (Ages 18+)

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[9] Trip rate is the number of trips that each person makes on a daily basis with a trip is defined as travel from one origin to another destination by a certain mode for a particular purpose.

Other general trip rate trends are quite similar between the two surveys, with females making more trips than males. In 2015, females made significantly more trips as shown in Figure 4-11.
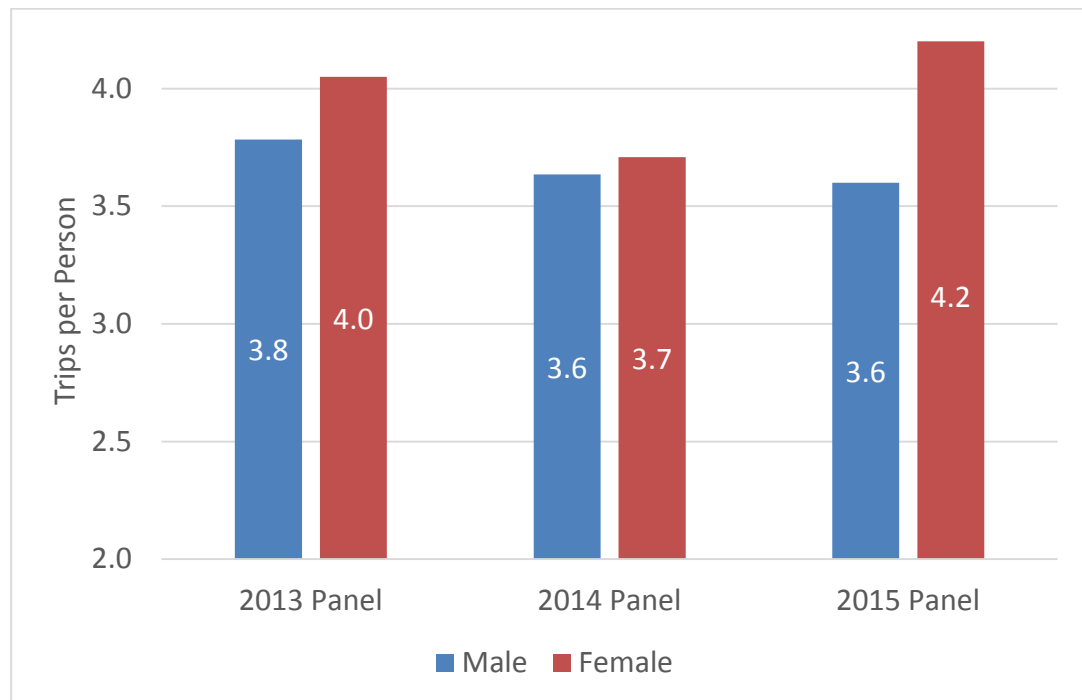
Figure 4-11. Trip Rates by Gender

Figure 4-12 shows trip rate across the four age cohorts with the 25-64 being the most active in all survey years. The shape of the distribution curve for the 2015 Panel is similar to that of 2014, but the trip rate has increased.
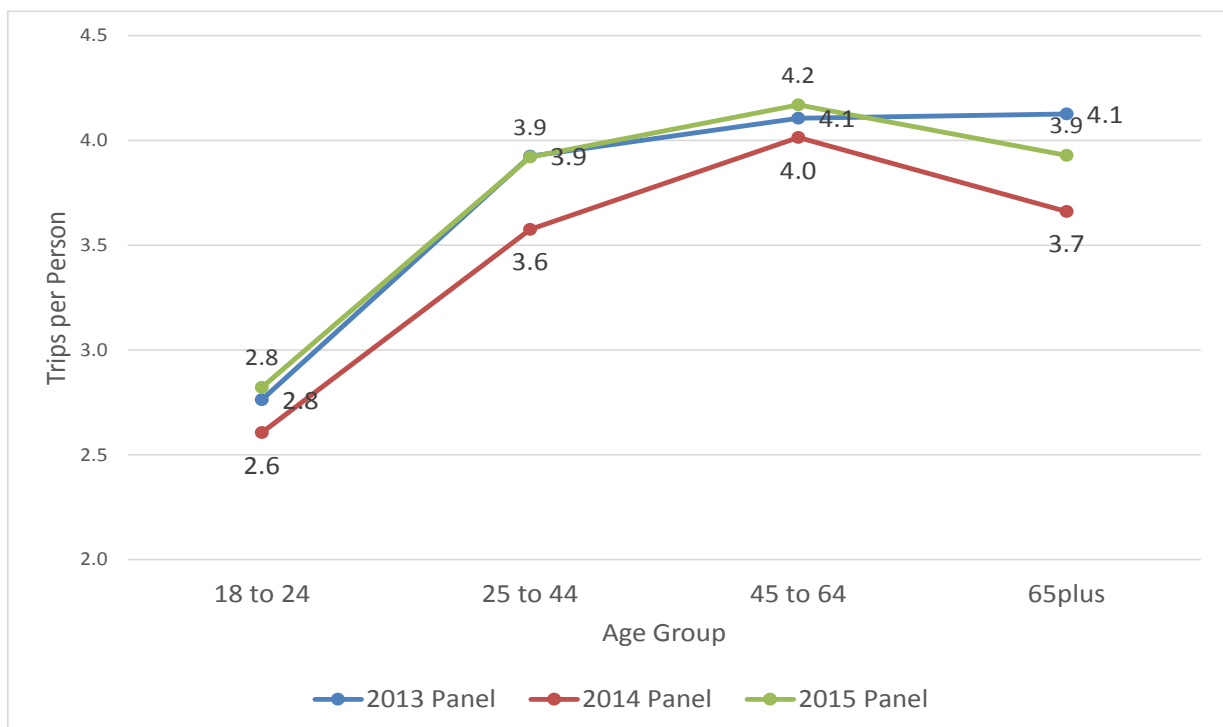
Figure 4-12. Trip Rates by Age Group

Figure 4-13 shows the trips rates by neighbourhood zone which varies significantly showing that some communities seem to make more trips than others.
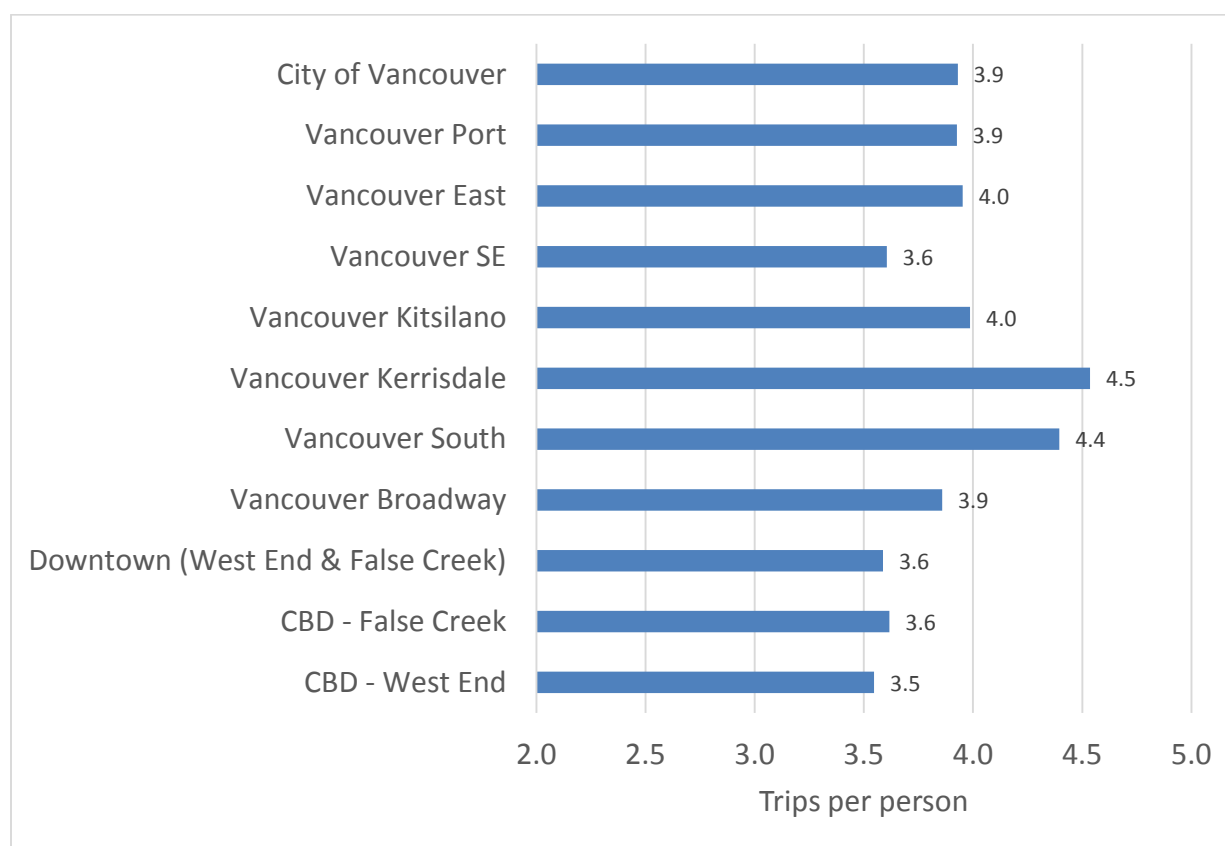
Figure 4-13. Trip Rates by Transportation Zone

4.5 Vehicle-Kilometres Travelled

The Greenest City action plan and Transportation 2040 have set a goal to reduce the average distance driven per resident by 20% compared to 2007 levels. This measurement is referred to as vehicle-kilometres travelled (VKT). It is important to track whether VKT is trending in the right direction to meet this goal.

In 2014, VKT was calculated using a variety of methods and data sources including Air Care, Insurance Corporation of British Columbia (ICBC), EMME transportation model, and Panel Survey odometer data. The Air Care VKT model had been used by various local agencies to estimate Metro Vancouver's VKT and GHG emissions for many years. As this program has been discontinued, it unfortunately cannot be used to track VKT in the future.

Of the remaining methods, the Panel Survey odometer reading was deemed to provide the most reliable method to track VKT for the following reasons:

- The Panel Survey provides an adequate sample size statistically to estimate the average kilometres travelled per vehicle in Vancouver using the odometer readings of returning panel members.

- This method for calculating VKT is dynamic. In other words, the average kilometres travelled will change year over year based on Panel Survey outcomes.

- This method is the closest approximation to the regionally accepted Air Care VKT method, and represents a reliable method with new survey data.

Odometer readings from returning panel members were used to determine the average annual VKT. After some data cleanup, this method provided a sample of approximately 860 odometer readings, similar to 2014. The average was approximately **10,300** vehicle-kilometres travelled per vehicle. The average vehicle age was approximately **10.4 years.**

Multiplying the average distance travelled by the number of actively insured vehicles in ICBC's database yields an annual VKT for 2015 of **2.87 billion**. Based on BC Stats population estimates for 2015, this equates to a 5% decrease in VKT per capita, from 4,552km in 2014 to **4,319km** in 2015.

Figure 4-14 shows the VKT statistics based on Panel Survey odometer readings.
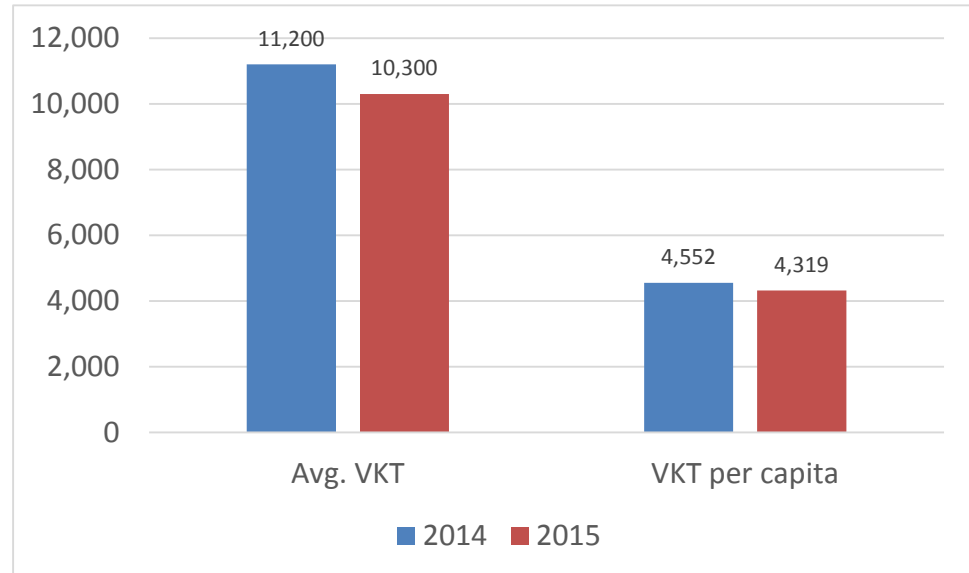
Figure 4-14. Average VKT and VKT per Capita Base On Panel Survey Odometer Readings

4.6 Walk/Bike/Transit Mode Trend Analysis

The Panel Survey has provided a valuable indicator for tracking trends in the percentage of people walking, biking and taking transit. Figure 4-15 shows the trend from 2008 to 2014 for Vancouver residents using information from the 2008 and 2011 Trip Diary Surveys and the 2013-2015 Panel Surveys. This chart clearly shows an upward trend in the use of walking, cycling and transit for Vancouver residents. The sustainable mode share has held steady between 2014 and 2015. As discussed in Section 4.2, this is attributed to an increase in walking and cycling mode share and a decrease in transit mode share. Some caution should be noted in comparing trip diary and panel survey data as the methodologies differ and the sampling unit is different.

Extrapolating the travel survey trends to the future would suggest that this trend should continue with the further densification of Vancouver and the City's walking and cycling initiatives. There is still a strong indication that the City of Vancouver is on track to meet its 2020 mode share target set out in the Greenest City Action Plan and Transportation 2040; however, the provision of local and regional transit services will have a strong bearing on achievement of that goal by the 2020 target date.
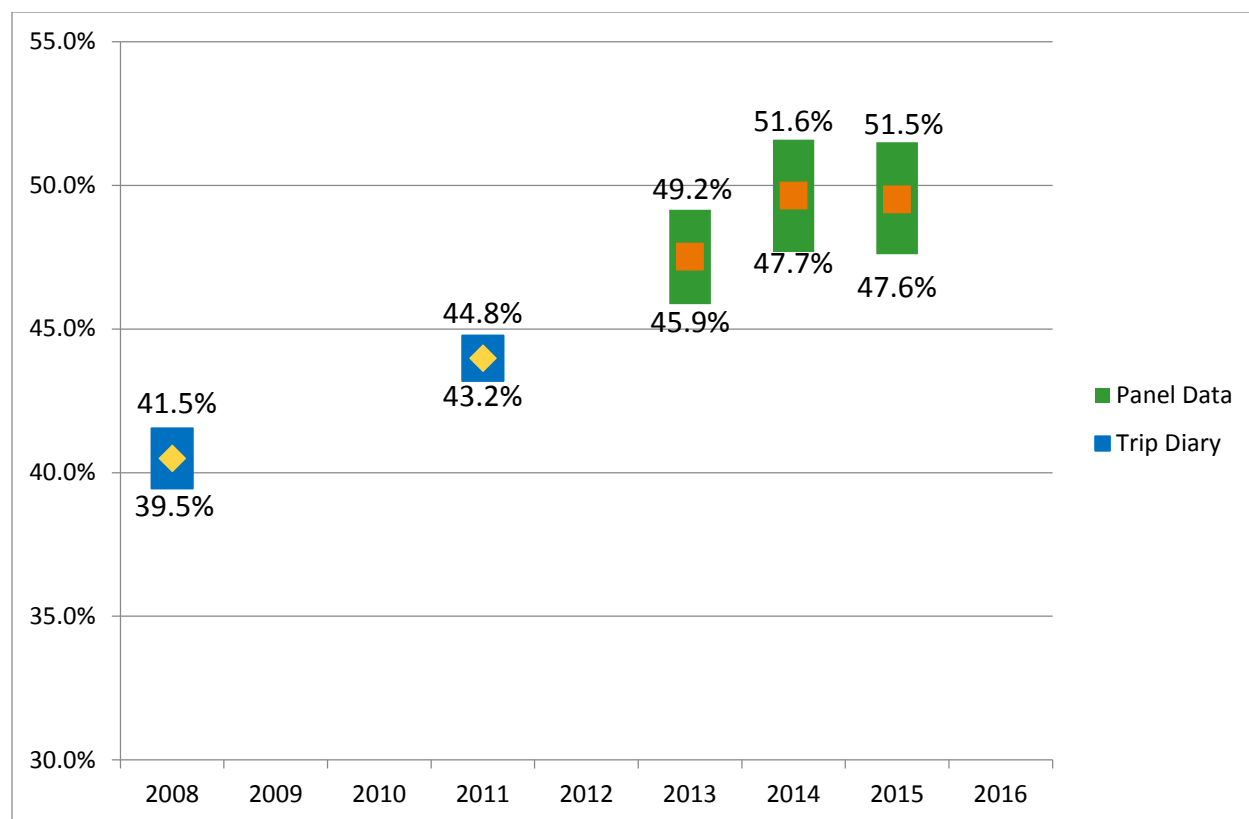
Figure 4-15. Trends in Sustainable Mode Share (High and Low Ranges)[10]

Figure 4-16 presents the mode splits by walking, cycling, and transit modes. Cycling trips grew by 32% and walking mode share grew by 10% from 2014 to 2015. During that period, transit mode shares decreased by 5%.

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[10] The Panel Survey has wider ranges in comparison to the Trip Diary due to the lower number of samples.

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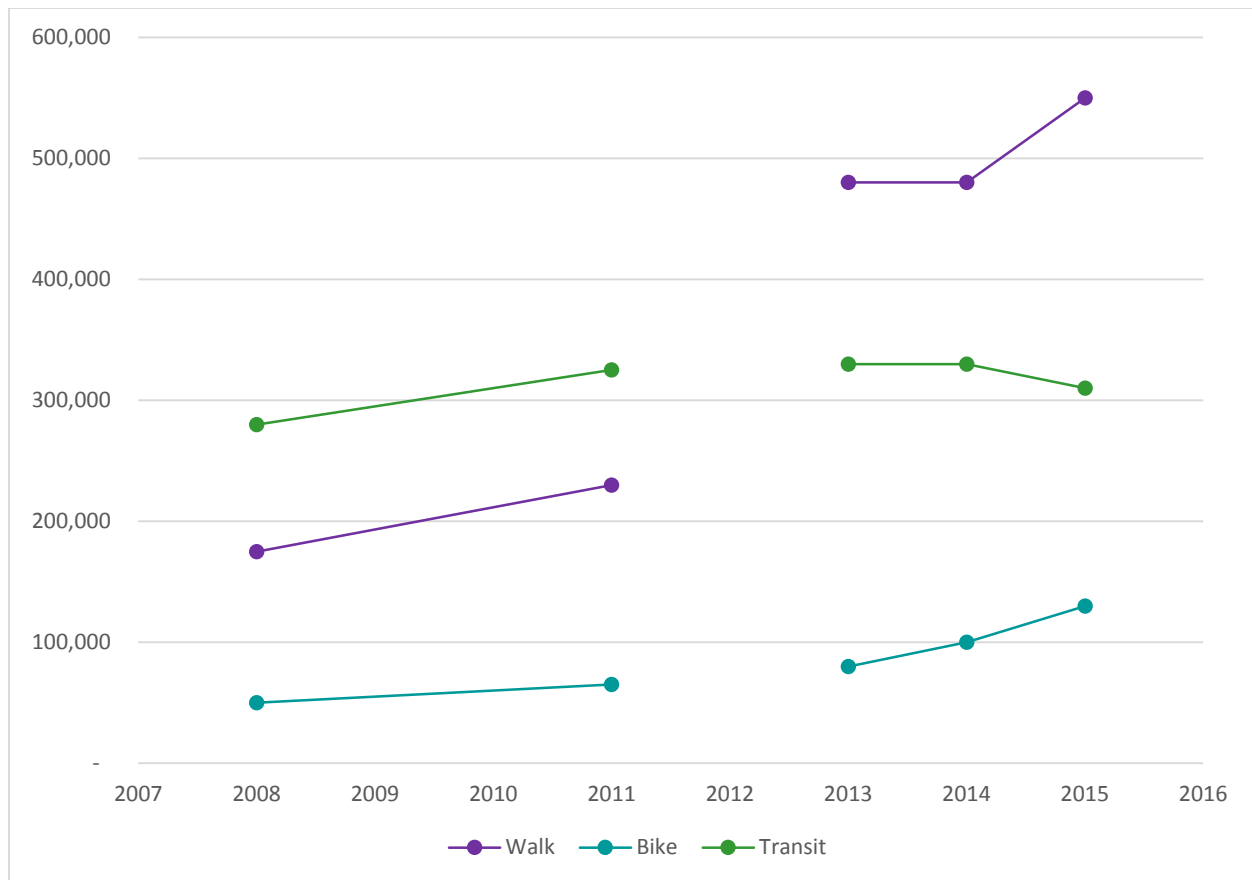
Figure 4-16. Trends in Walk, Bike, Transit Mode Shares from Trip Diary and Panel Survey

The 2015 Panel Survey asked for the approximate duration of walking and/or biking that made up all or part of longer walk/bike/transit trips. The answers to this new question help provide insight into two key areas: the degree to which people are willing to walk/bike as part of transit trips, and the amount of physical activity that is integrated into daily travel.

Figure 4-17 shows the number of expanded trips categorized by duration and mode. 82% of these sustainable mode trips involve a walk/bike component that is 20 minutes or less. Extending that threshold to 30 minutes accounts for 93% of trips.

It is interesting to note that most panel members who commuted by bus were willing to walk/bike up to 10 minutes. Amongst those travelling via rapid transit, most were willing to walk/bike up to 20 minutes. This would translate into an approximately 1km catchment area for bus and a 2km catchment area for rapid transit.
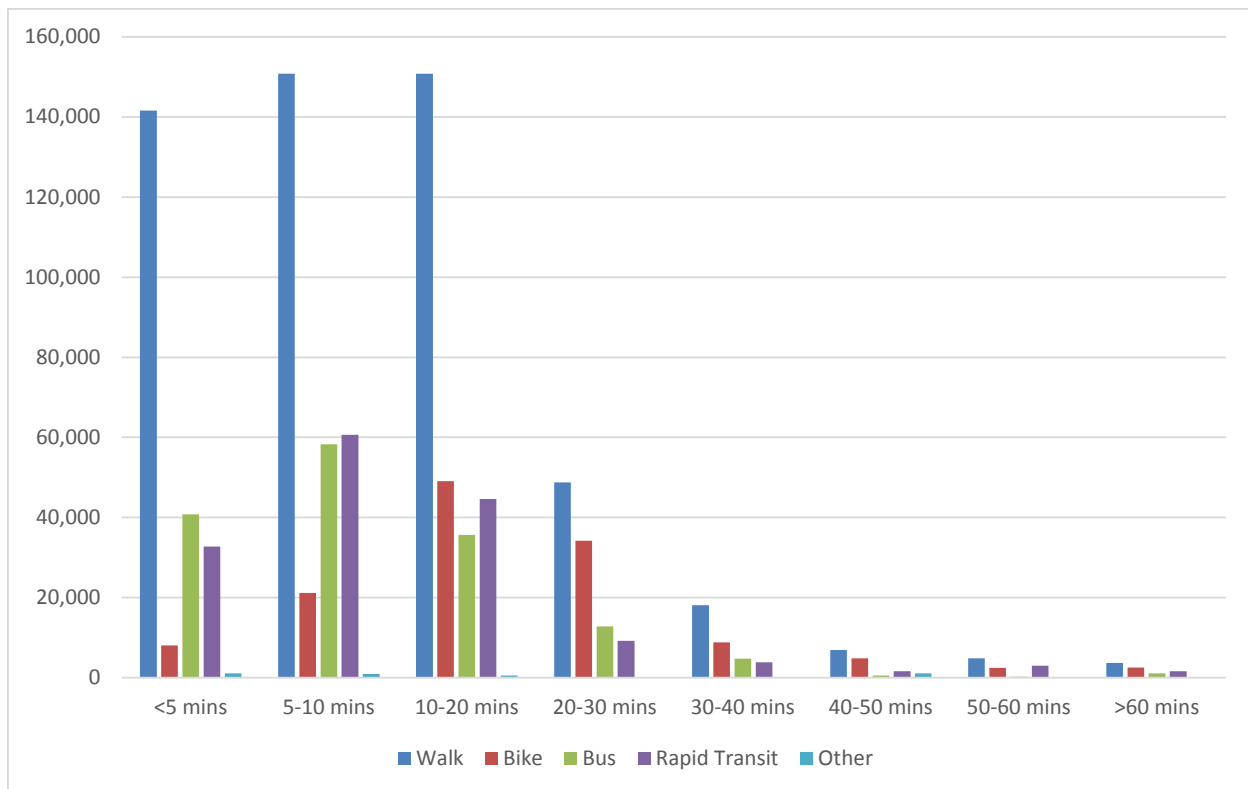
Figure 4-17. Walking/Biking Portion of Trips

4.7   Health Status

The My Health My Community[11] Survey was conducted in 2013-2014 across the Lower Mainland to better understand community health as it related to transportation choices (i.e. commute to work/school). The survey is part of an emerging field of study exploring the ways in which transportation choices impact our lifestyle and health. Evidence from other jurisdictions shows that well-planned and accessible transportation systems can increase physical activity, improve air quality and reduce vehicle-related injuries, leading to better physical and mental health.

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

Figure 4-18 shows a summary of respondents' self-reported health status; 75% of respondents indicated they were in very good or excellent health, slightly greater than reported in 2014. This generally agrees with the findings of the Canadian Community Health Survey (Fraser Health Authority + Vancouver Health Authority subsets).[12]

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

[12] Based on 2009-2013 data from the Canadian Community Health Survey which only includes excellent, very good, fair, and poor health categories.
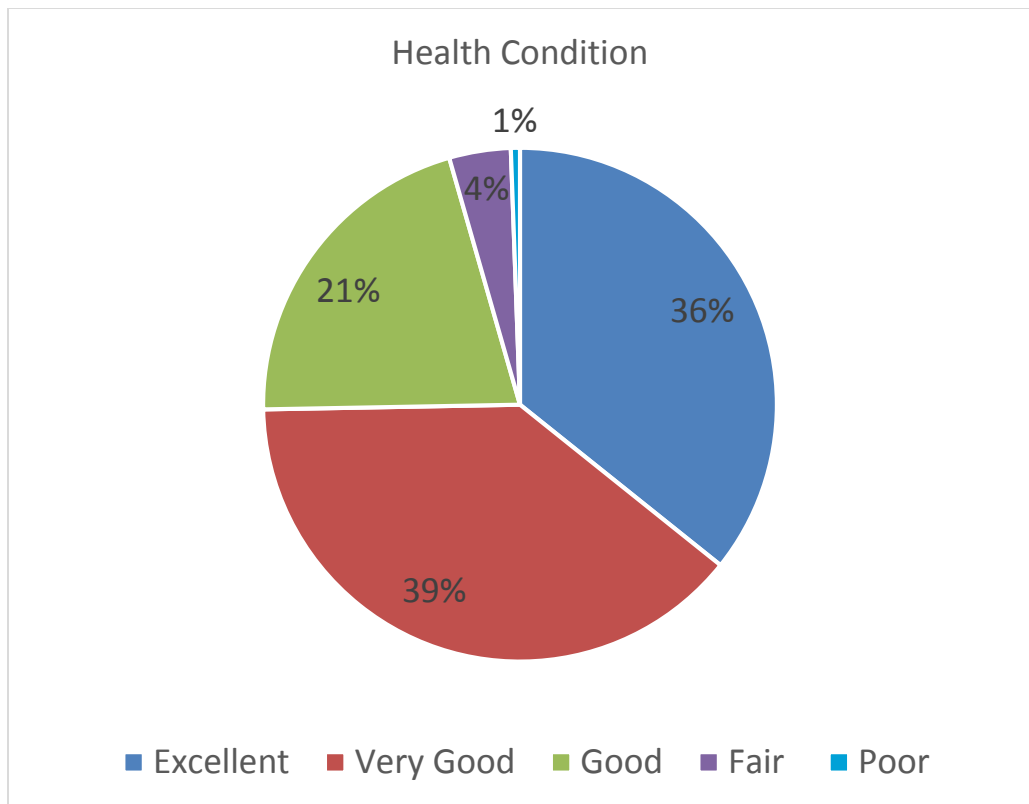
Figure 4-18. Self-reported Health Status of Respondents

4.8   Friendly Interaction

In 2014, the survey instrument was expanded to include a question regarding the nature of social interaction (outside of travel companions) during trip making. The trip diary only recorded whether the participants had engaged in friendly interaction or not. In 2015, the question was refined to include greater detail in the description of the interactions. Figure 4-19 indicates that 69% of panel members had no social interaction. Of those that did, most reported friendly or neutral interactions.
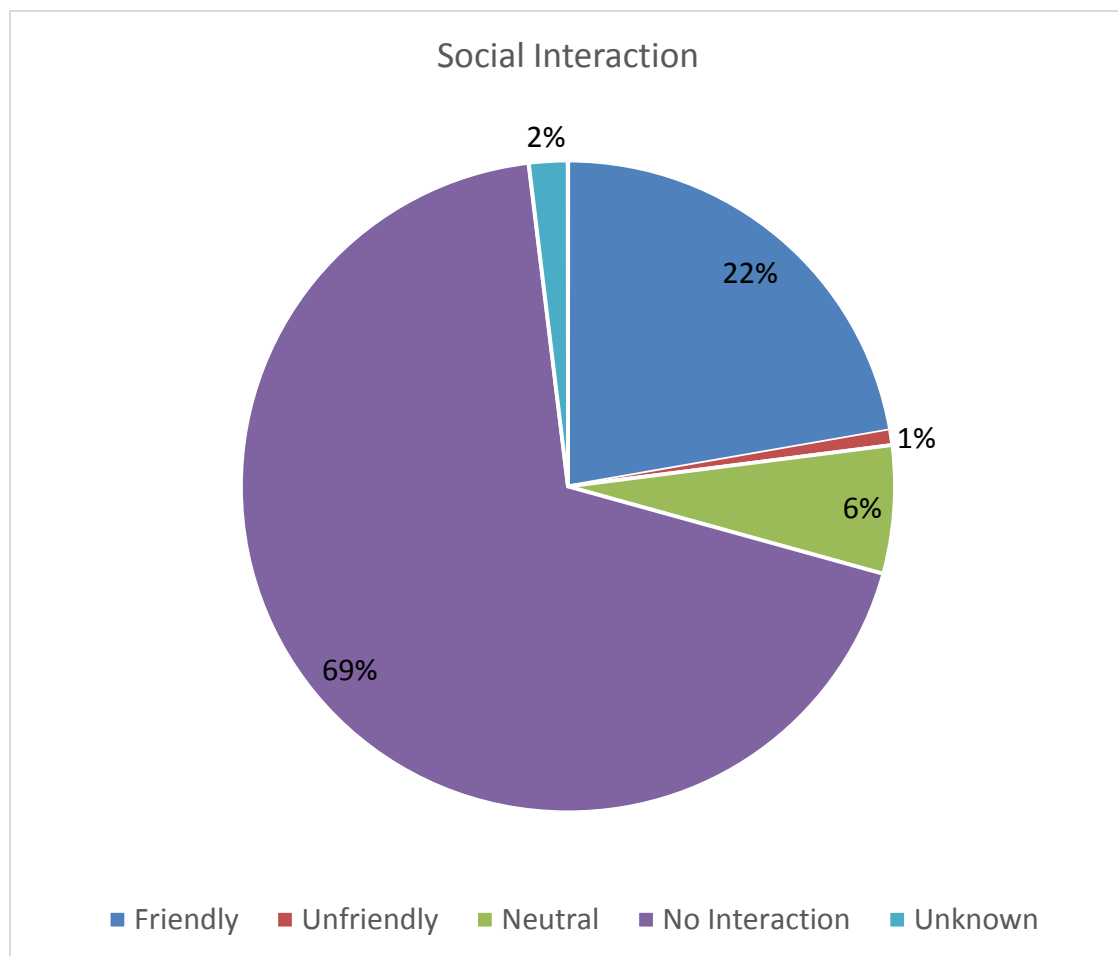
Figure 4-19. Nature of Social Interaction during Trip

The degree of social interaction is cross-referenced against travel modes in Figure 4-20. Panel members travelling via active modes were more likely to engage in friendly interactions.
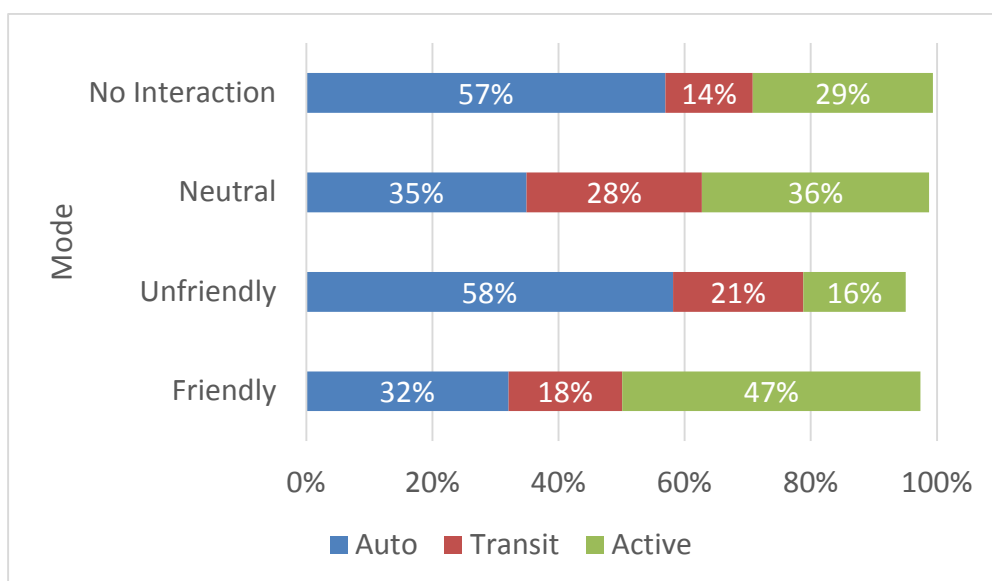
Figure 4-20. Engagement in Friendly Interaction by Trip Mode

4.9   Origins and Destinations

Table 4-2 captures the origins and destinations (O-D) of the Panel Survey respondents based on geocoded trip-end coordinates. Figure 4-21 shows the breakdown of trips within transportation zones, to other zones within the City, and outside of the City.

The Panel Survey covers Vancouver residents only, so does not include trips by people who work in Vancouver but live in other areas of the Lower Mainland. Red text indicates a low number of observations in the Panel Survey. This is to be expected given that a limited sample size is being stratified into transportation zones. While the results may not be statistically representative, patterns do emerge:

- The O-Ds are fairly balanced, as evidenced by the symmetry on either side of the diagonal (cells highlighted in pink).

- Travel is predominantly within Vancouver, with a 28% reduction in trips outside of the City.

- There was significant growth in trips within transportation zones, particularly from CBD-False Creek, Vancouver South, Vancouver East, and Vancouver Port.

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

Origin/Destination	CBD - West End	CBD - False Creek	Downtown (False Creek & West End)	Vancouver Broadway	Vancouver South	Vancouver Kerrisdale	Vancouver Kitsilano	Vancouver SE	Vancouver East	Vancouver Port	Outside Vancouver
CBD - West End	86,300	33,700		12,100	5,600	1,800	6,700	3,600	7,300	5,400	13,400
CBD - False Creek	28,200	148,900		25,900	17,200	3,900	17,800	7,100	11,900	17,700	21,200
ntown (False Creek & West End)			297,100	38,000	22,800	5,700	24,500	10,700	19,200	23,100	34,600
Vancouver Broadway	12,100	28,600	40,700	92,400	23,400	8,200	19,500	9,400	16,300	7,800	21,100
Vancouver South	5,900	17,000	22,900	22,800	112,700	16,100	15,900	18,400	13,000	5,000	26,300
Vancouver Kerrisdale	3,000	4,800	7,800	7,400	17,600	73,200	23,100	2,500	2,500	3,100	20,200
Vancouver Kitsilano	7,100	15,600	22,700	20,500	15,300	25,900	91,700	1,700	2,900	2,500	24,700
Vancouver SE	3,900	6,000	9,900	9,000	15,900	3,300	2,100	50,700	11,500	3,300	30,300
Vancouver East	6,100	11,000	17,100	18,100	13,500	4,200	4,000	12,400	72,200	22,600	29,800
Vancouver Port	5,600	17,400	23,000	9,800	5,000	700	1,900	2,600	24,900	60,300	13,000
Outside Vancouver	16,700	21,200	37,900	20,700	25,100	17,000	23,800	27,100	33,100	12,400	97,400
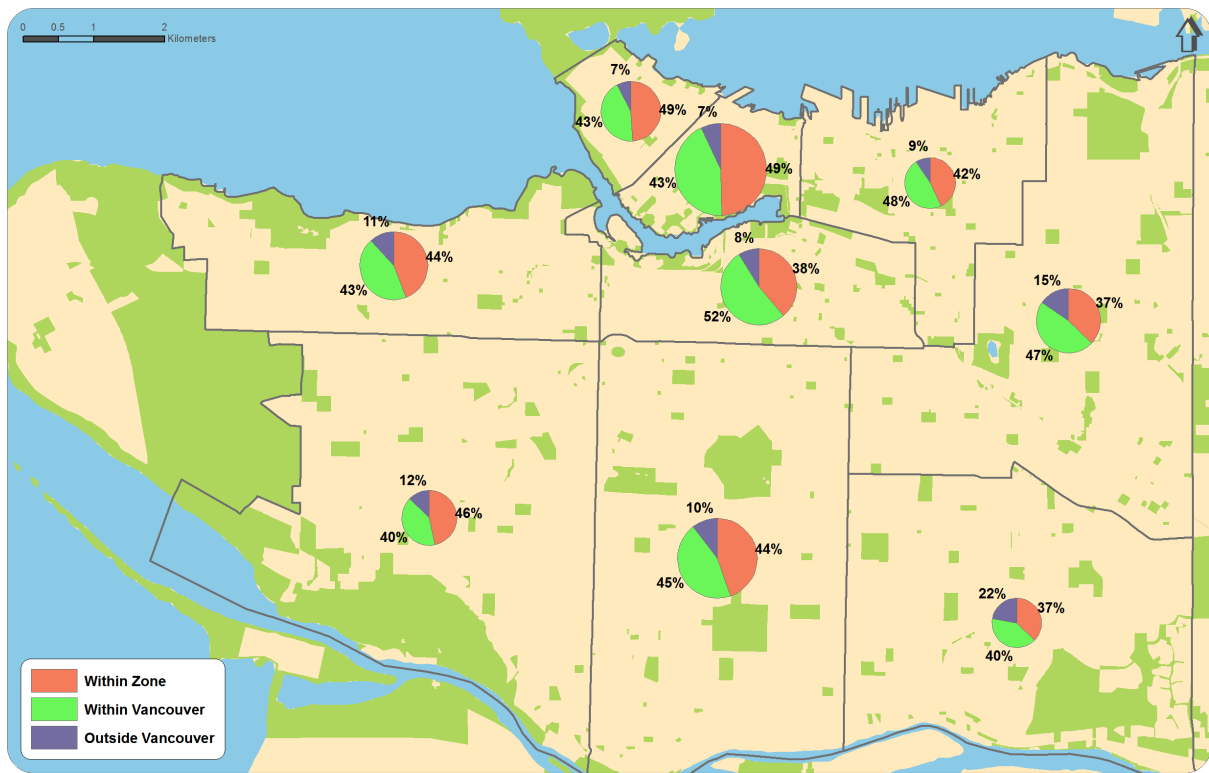
Figure 4-21. Trips by Origin

Comparison of Returning Panel Members

This section provides a high-level comparative analysis of mode shares of previous panel members who also participated in the 2015 panel. The 2015 Panel was made up of the following:

- 944 returnees who have been engaged through all three years of the Panel Survey;

- 17 returnees who were part of the original (2013) panel, but did not participate in 2014;

- 563 returnees who joined the 2014 panel; and

- 1,052 new recruits.

The 2015 Panel experienced a high attrition rate (42%) based on 1,506 returnees out of 2,576 panel members. This attrition is higher than expected based on experience from previous longitudinal panels in other jurisdictions that have had different incentives. However, it is on par with the 2014 Panel Survey attrition rate (41%).

The following comparisons focus on observed patterns in mode share.

Table 5-1 shows a comparison of the mode shares of the 2013-2015 common panelists. Combined auto driver/passenger mode share has decreased, while travel by walking, cycling and transit has increased. While it is still early to derive conclusive trends from the comparison, it is encouraging to see that overall walk/bike/transit mode share is moving in a positive direction. It will be possible to ascertain this increase in the near future as more panel data are collected especially as the survey instrument and return rate become more stable and consistent over time. It is worth noting that the 2014 Panel results, which included more December and some January 2015 records, may be more affected by seasonality and weather factors. This was evident in overall trip rates, as mentioned in Section 4.5.

Table 5-1. Change in Mode Share (2013-2015)

Mode	Returns		
	2013 Panel	2014 Panel	2015 Panel
Auto driver	46.4%	47.1%	46.9%
Auto passenger	7.5%	6.1%	6.0%
Transit	14.1%	15.2%	12.7%
Walking	26.2%	26.1%	27.3%
Cycling	5.8%	5.5%	7.1%

Mode	Returns		
	2013 Panel	2014 Panel	2015 Panel
Auto	53.9%	53.2%	52.9%
Transit/Walk/Bike	46.1%	46.8%	47.1%

Differences in mode share are also not large enough to determine significance at this point when trip purpose is taken into account. Table 5-2 and Table 5-3 compare 2013-2015 mode shares for commuting (to work/school) and non-commuting trips, respectively.

Table 5-2. Mode Share for Commuting Trips (2013-2015)

Mode	Returns		
	2013 Panel	2014 Panel	2015 Panel
Auto	43.7%	43.9%	42.0%
Transit/Walk/Bike	56.3%	56.1%	58.0%

Table 5-3. Mode Share for Non-commuting Trips (2013-2014)

Mode	Returns		
	2013 Panel	2014 Panel	2015 Panel
Auto	55.6%	54.9%	54.5%
Transit/Walk/Bike	44.4%	45.1%	45.5%

Table 5-4 shows growth in vehicular access, both in terms of private vehicles and car share programs. Reasons for the change include wider adoption of car sharing as a primary and supplementary form of transportation.

Table 5-4. Access to Motor Vehicles (2013-2015)

Mode	Returns		
	2013 Panel	2014 Panel	2015 Panel
Private Vehicle Access	76%	81%	89%
Car Share Member	12%	17%	28%
Vehicle Access	81%	86%	94%
Valid License	92%	92%	92%

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Contributing Factors Affecting Change

This section provides a brief discussion of recent (post 2010) trends that have potentially influenced travel behaviour and patterns in Metro-Vancouver in general and the City of Vancouver in particular. These include changes in socio-economic patterns (population and employment), transit supply, transit fares and improvements to the active transportation network. Table 6-1 provides a description of these accounts and their corresponding data sources.

Table 6-1. Socio-Economic Accounts Affecting Travel

Account	Description	Geography	Source
Socio-economic	Population	City of Vancouver	Stats Can
Socio-economic	Employment	Metro-Vancouver	Stats Can
Network Supply	Transit	City of Vancouver	TransLink
Network Supply	Active (Bike Lanes)	City of Vancouver	City of Vancouver
Cost	Transit Fares	Metro-Vancouver	TransLink
Cost	Fuel Price	Metro-Vancouver	Stats Can

TransLink's 2011 Trip Diary revealed that the region's walk/bike/transit mode share, in general, has increased from 25.5% to 26.8% between 2008 and 2011. This could be attributed to the opening of the Canada Line, significant increases in bus service supply and coverage in the region, improvements to the active transportation network and overall changes in travel behaviour. Also, trip rates have generally gone up slightly over the same period, from 2.68 trips/person to 2.77 trips/person. While not conclusive[13], the increase in trip rates can be attributed to recovery from the 2008-2009 economic downturn.

The analysis of the 2013-2015 City of Vancouver Panel Surveys revealed that:

- Walk/bike/transit mode share has increased from approximately 48% to 50%.

- The total number of trips increased from 1.94 million in 2013 to 2.0 million in 2015, with trip rates rising accordingly from 3.9 trips/person to 4.1 trips/person.

- Daily VKT based on odometer readings is decreasing.

Additional Panel Survey data are needed to see if this trend continues. As with the Trip Diary, it is important to be cautious in drawing conclusive trends of shifting travel behavior using only two years' worth of sample data.

Figure 6-1 shows the trends of the accounts described in Table 6-1 and indexed to year 2010. Overall, socio-economic variables, population and employment, have steadily grown in the last four years. Vancouver population grew by approximately 1% from 2013 to 2014, and a further 0.8% to 2015. Metro-Vancouver employment slightly decreased between 2012 and 2013, but rebounded strongly by the end of 2014 (+2.4%). In 2015, employment grew at a more modest rate of 1.5%. Fuel price rose sharply in

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[13] The trip diary's sample size is approximately 2% of all of Metro-Vancouver's households. While this provides an adequate sample size, comparisons between travel surveys must always be treated with caution as subtle changes to the survey instrument or sampling biases can influence the results of any comparative analysis.

2011 and continued to grow at a much slower rate until 2013 after which it decreased by 0.7% in 2014. 2015 saw a sharp increase (8.1%) in fuel price.

On the transportation network accounts, transit service hours in Vancouver increased steadily between 2010 and 2012. Between 2012 and 2013 transit service decreased by approximately 1%. This coincided with an increase of approximately 10% in transit fares (nominal dollars) and the removal of the employer pass, which offered a 15% discount on an annual pass. This can partly explain the reduction in transit ridership over the same period.

Additional insights into transit service can be gleaned upon publication of TransLink's Transit Service Performance Review (TSPR).
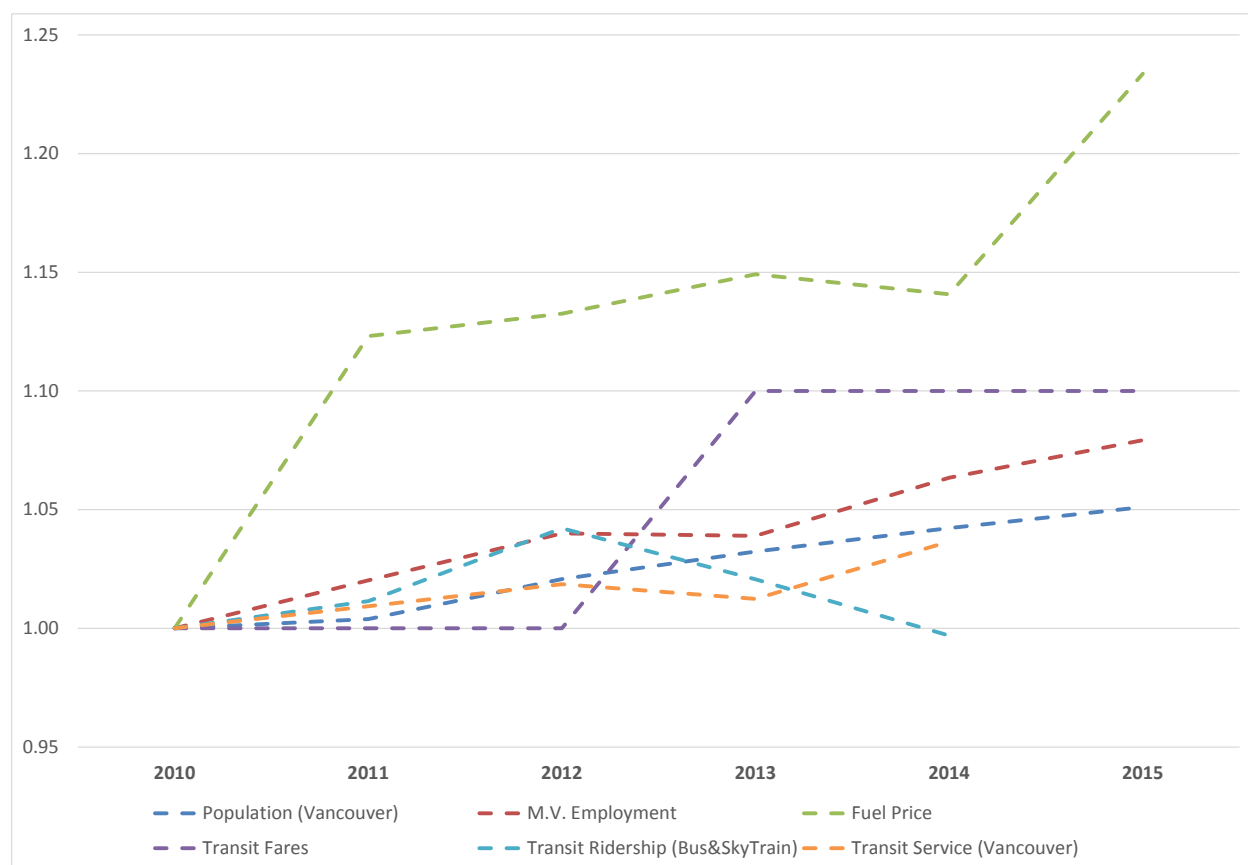
Figure 6-1. Socio-Economic Trends Indexed to 2010

Overall, population and employment have increased between 2013 and 2015. The total number of trips has also increased, though not linearly on account of subtle differences in the survey instrument in 2014 and the fact that some persons were sampled in December, a time of year when people traditionally make fewer trips.

Interestingly, total auto trips and auto mode share decreased in 2014 even though fuel prices have been trending downwards. Fuel's impact on travel behaviour (as well as socio-economic accounts) is latent in nature. In other words, it may take a few years for fuel price changes to affect auto usage.

Data from TransLink's 2014 Bus Service Performance Review was used to update the indices for bus boardings and bus service hours. The decrease in transit mode share is a direct reflection of an increase in bus service hours coupled with a decrease in bus boardings. The past year saw a number of high profile and long duration SkyTrain shutdowns which had cascading impacts to the bus network.

It is important to note that both bike trips and bike mode share have increased substantially in 2015. Bike trips increased by 32%, and walk trips increased by 10%. This outcome highlights the positive impact that the City's design approach for people of all ages and abilities and related investments towards improving biking facilities has had over the last few years. This trend is similar to what can be seen from count data reported by the City's permanent counters, which showed a 16% increase citywide comparing Sep2013-Aug2014 to Sep2014-Aug2015.

Lessons Learned and Next Steps

The 2015 Vancouver Panel Survey builds upon the data collected during the 2013 and 2014 Panel Surveys. Having a panel of residents that are surveyed on an annual basis provides the City with a unique and valuable dataset to track trends in walk/bike/transit mode share and vehicle usage.

Some of the key lessons learned during the 2015 Panel Survey data collection and analysis phases include the following:

- The first year of the Panel Survey incurred the highest recruitment cost in order to establish the panel. Originally anticipated cost savings in future panels were not fully realized due to the high attrition rate which necessitates a higher level of recruitment to replenish the pool of panelists. In 2014 and 2015, the attrition rate was approximately 40%[14]. This is significantly higher than observed in other historic longitudinal surveys from other jurisdictions. The attrition rate could be related to a variety of factors including: survey length, ongoing engagement of the panel members throughout the year, type and value of incentives.

    o To maintain one of the primary goals of consistency with TransLink's Regional Trip Diary Survey, and to reduce the programming effort for the online portion of the survey, it will be important to minimize year-to-year modifications to the survey. Furthermore, should there be an interest in adding questions to the current program it is recommended that a proper review of the instrument be conducted in advance to see which existing questions might be removed so that survey length, attrition rate, and recruitment efforts remain stable.

    o The bulk of panel members complete their trip diaries in October-November, and notification of incentives/final wrap up occurs around March. The panel members are not officially contacted until August for the following Panel Survey. To keep panelists engaged, and to allow for an early assessment of the anticipated attrition, it is recommended that a short questionnaire/notification (not necessarily transportation related and nothing too onerous) be issued to panel members during the intervening months.

    o As previously noted, other travel surveys offer a financial incentive in the order of $10-15 to incentivize participation. If not a cash incentive, then a cash equivalent gift card at a popular retailer may be used. While there are some drawbacks, such as some panel members opting in to the survey to get the cash incentive and not reporting any trips, this can be addressed during the quality checking and data cleaning phase. For example, the incentive is provided only after a completed questionnaire has been submitted and verified.

    o Also offered to increase survey participation are technology related incentives such as an iPad, as well as gift cards to various entertainment and recreational venues (both City and non-City sponsored). Not only do these incentives have broad appeal, they also have potential to attract the 18 to 34 age cohort that are reticent to take part in surveys generally, but particularly so for this Panel Survey which demands more involvement on a yearly basis.

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[14] The level of effort for recruiting the 2015 panel was scaled to reflect the higher attrition rate observed in 2014.

- This transportation panel survey included a significant amount of effort and technical expertise to do logic and error checking, programming, weighting and expansion. This level of logic and error checking should be maintained for future panel surveys to maintain data consistency and to ensure quality analysis and results.

- By starting the survey and recruitment earlier in the year, the goal to capture fall travel patterns was achieved. This is manifest in a more accurate reflection of trip rates.

- Progress was also made in 2015 in getting a more geographically representative distribution of panel members. However, the 15-34 age cohort continues to be underrepresented. It is important in future surveys to develop innovative approaches to capturing this key demographic, as their travel behaviours are most likely to be in flux. Research from other fields (social sciences) may be employed to better understand how to appeal to this age group.

- The travel patterns reported in the 2015 Panel Survey are similar to the 2014 Panel Survey, and show consistent growth in the active transportation mode share. Access to private vehicles and car sharing services has also grown, which could be a factor in a reduction in transit mode share. It is important to track transit mode share in the ensuing years, prior to the influx of any new high-capacity services to the region.

- Future monitoring of travel within zones and elsewhere within the City can serve as a useful metric to gauge the land use integration and live/work choices afforded to Vancouver residents.

- Feedback from a 2015 participant indicated that the survey instrument did not represent her demographic and travel patterns. This was specific to the use of public transport and taxi vouchers, and not being able to work due to being physically disabled. This should feed into a broader discussion by the City to ensure alignment with how underrepresented groups are treated in other City communications.

Appendix A
2015 Panel Survey Instrument

RECRUITMENT SCREENER – NEW TEL RECRUITS

Random sample & Cell sample : City of Vancouver households.

Hello, I'm calling on behalf of the City of Vancouver regarding an important research study. I'm __ of Mustel Group, a professional polling firm. We have been commissioned by the City to recruit a panel of residents to participate in an annual online transportation study. (ONLY IF ASKED: Today's survey will take approximately 10 minutes).

Your household has been randomly selected for this panel and your input will help the City make better decisions regarding future transportation investments for area residents. We would simply email you an invitation to the study.

QS1. Do you have access to email?

1. Yes
2. No → THANK AND END

IF REQUIRED: The travel survey is easy – it is simply a log or diary of the trips you make on a single assigned day. You will be making an important contribution and in appreciation of your participation, each year you would be entered into a prize draw to win passes to City facilities and attractions.

A. **(GENDER)** To randomize our interviews, may I please speak to the male/female in your household who is 15 years of age or older and whose birthday comes next?   1. MALE   2. FEMALE

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

(FLAG EMPLOYEE) EVERYONE- EMPLOYMENT SCREENER: QAA1. First, do you or does anyone in your household work for the City of Vancouver, Mustel Group, CH2M Hill or Vision Critical?

1. Yes   → QAA2. Please note that while we can include your responses for this study, due to standard contest rules you will not be eligible for the Prize Draw. Are you still interested in participating?

    a. Yes → REMOVE FROM PRIZE DRAW AND CONTINUE

    b. No → THANK AND END INTERVIEW

2. No
3. REF   → THANK AND END INTERVIEW Those are all the questions we have for you today. Thank you for your interest.

C. **(YEAR BORN)** And so we can be sure the sample represents all ages of residents can you please tell me the year in which you were born? _____ **IF REFUSED YEAR BORN: (AGE CODE)** C2. So that the study is reflective of all resident age groups, I can read you a short list and you can let me know which one applies to you.

1. 15-17
2. 18-24
3. 25-34
4. 35-44
5. 45-54
6. 65+
7. PREFER NOT TO ANSWER

PERSUADERS—only if needed:
- This is strictly a transportation survey; we are not selling or soliciting anything.
- Your number was selected at random for participation in this research.
- This study is important as it will help the City better understand travel patterns, transportation needs and to help make better decisions regarding transportation investments for area residents.
- City of Vancouver Contact only if requested: Phone 311

INVITATION TO PARTICIPATE

As mentioned, we are conducting this transportation study on behalf of the City of Vancouver and you have been randomly selected to participate **annually** in a short survey over the next few years. The travel survey is easy – it is simply a log or diary of the trips you make on a single assigned day. You will be making an important contribution and in appreciation of your participation, you would be entered into a prize draw to win passes to City facilities and attractions such as:

> a 3 month City of Vancouver Flexipass – providing unlimited admission to any Park Board pool, fitness centre, or rink in the City during the validity period (Value $121)
> or
> a 1-year Premium Membership to the VanDusen Botanical Gardens, providing the member and a guest free entrance year round (Value $112)
> or
> PNE Playland PlayPasses – 2 one-day admission passes providing access to over 30 rides and attractions (Value $43.50).

Chances of winning are approximately 1-in-15!

D.   ASK ALL i) Are you interested in being part of this travel survey?
IF YES, CONTINUE WITH ii) PRIVACY.
ii) PRIVACY: As one of the goals of this study is to understand and track changes in residents' travel patterns over time, your contact information linked with your survey responses would be retained by the City **for this study only**. Note that all information would remain confidential in a secure environment and would not be used on an individual basis for any other purposes.

Do you agree to share your personal contact and linked survey responses with the City of Vancouver for the sole purpose of participating in this travel survey?
Yes → PRIZE DRAW & EMAIL CAPTURE
No → THANK AND END. Those are all the questions for today. Thank you.

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

Do you wish to be entered into the prize draw? **READ IF NECESSARY:**
- a 3 month Flexipass – providing unlimited admission to any Park Board pool, fitness centre, or rink in the City during the validity period (Value $121), or
- a 1-year Premium Membership to the VanDusen Botanical Gardens, providing the member and a guest free entrance year round (Value $112), or
- a PNE PlayLand PlayPass for two – a one day pass providing access to over 30 rides and attractions (Value $43.50).

  In all, approximately a 1-in-15 chance to win.

  1. Yes, please enter me into the draw   2. No, thank you

Upon completing the full survey we will enter you to the prize draw. Note that winners will be contacted within the first quarter of 2016.

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

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

<mark>SEND EMAIL INVITATION – SEE INVITE ON PAGE 8:</mark>

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

Please look for an email from   covtravelsurvey@mustelgroup.com

with the following subject line: City of Vancouver Annual Travel Survey.

If convenient, please check your INBOX now to make sure you have it.

IF NOT RECEIVED: Maybe check your SPAM or JUNK mail folder.

IF STILL NOT RECEIVED, RETURN AND VERIFY EMAIL ADDRESS

IF CHECK LATER: If you do not receive the email, please call us at this number: 778-383-3416

MUSTEL GROUP
MARKET RESEARCH

CITY OF VANCOUVER

REGISTRATION QUESTIONS

Thank you for agreeing to participate!

To make the process easier for you to enter your trip information, we have a few additional questions.

R1. What is your first and last name? If you prefer to provide initials, that works.

FNAME:_____ LNAME:_____

R2. As the trip diary could include trips you make to or from work and home, may I have your home address?

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

DISPLAY MAP WITH HOME LOCATION IDENTIFIED

R3. Is this the correct location?
   1. Yes
   2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

R4. If you are employed, your trip diary may include trips you make to and from work, may I have your work address?
   1. Do not work (unemployed)
   2. No work address (no fixed work address OR only work from home)
   3. Yes – **ENTER WORK ADDRESS**

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

DISPLAY MAP WITH WORK LOCATION IDENTIFIED

Is this the correct location?
   1. Yes
   2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

Do you have more than one work address?
   1. No second work address
   2. Yes – **ENTER 2ⁿᵈ WORK ADDRESS**

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

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

Is this the correct location?
   3. Yes
   4. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

PROFILING & GENERAL TRANSPORTATION QUESTIONS

1. Do you currently have a valid driver's licence?
   1. Yes   2. No → SKIP TO Q5

2. How many vehicles do you own or have regular access to (please include all cars, vans or light trucks that are brought home and parked overnight but not motorcycles / scooters or bicycles; do not include car share vehicles)?
   _____   None

3. What car share services are you a part of, if any? (check all that apply)
   1. Car2go   2. Modo   3. ZipCar   4. Evo
   5. Other___   None___

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

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

   a. Car, truck, or van as a driver
   b. Car, truck, or van as a passenger
   c. Transit bus
   d. SkyTrain
   e. West Coast Express
   f. SeaBus
   g. HandyDART
   h. School bus
   i. Other bus
   j. Bicycle
   k. Walk
   l. Taxi
   m. Motorcycle
   n. Other (specify) _____
   o. DO NOT TRAVEL TO SCHOOL

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

   a. Car, truck, or van as a driver
   b. Car, truck, or van as a passenger
   c. Transit bus
   d. SkyTrain
   e. West Coast Express
   f. SeaBus
   g. HandyDART

h.   School bus
i.   Other bus
j.   Bicycle
k.   Walk
l.   Taxi
m.   Motorcycle
n.   Other (specify) _____
o.   DO NOT TRAVEL TO SCHOOL

6.   In terms of walking, what would you consider a reasonable walking distance for travel purposes (work, school, shopping, etc.) (RECORD FARTHEST DISTANCE): <400m (6 min), 400-800m (6-12 min), 800-1,200m (12-18 min), >1,200m (>18 min).

7.   How often do you typically travel by bicycle in fair weather?
     1.   At least 5 times per week
     2.   2-4 times per week
     3.   Once per week to once per month
     4.   Less than once per month
     5.   I do not ride a bicycle at all **(SKIP TO Q11)**
     6.   I am physically unable to ride a bicycle **(SKIP TO Q11)**

8.   How often do you typically travel by bicycle in rainy or cold weather?
     1.   At least 5 times per week
     2.   2-4 times per week
     3.   Once per week to once per month
     4.   Less than once per month
     5.   I never ride a bicycle in rainy or cold weather

9.   Are you interested in travelling by bicycle more than you do now?
     1.   Yes
     2.   No, I am happy with how much I currently bicycle
     3.   No, I want to travel less by bicycle

10. If you were travelling by bicycle on your own, in which of the following environments would you feel comfortable:
     1.   On almost any street in the city and I don't worry much about traffic conditions.
     2.   On major streets, provided they have painted bicycle lanes.
     3.   On major streets, provided they have bicycle lanes separated from traffic with a physical barrier.
     4.   On local neighbourhood streets with little traffic and low speeds.
     5.   On bicycle paths far away from motor vehicles.
     6.   Not comfortable cycling in any of the above environments **(UNCHECK ANY ABOVE)**

11. Have you traveled by public transit in the past month?

1. YES → **ASK 12**
2. NO

12. IF YES: How do you usually pay for your travel by transit this time of year? (RECORD ALL THAT APPLY)
    1. Cash
    2. FareSaver (tickets)
    3. Monthly FareCard
    4. U-Pass
    5. Employer Pass (Discount or fully paid for by employer)
    6. Annual Pass
    7. Other Specify:_____

DEMOGRAPHICS

Just a few questions to help us classify the survey data.

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

2. In general, would you say that your health is…
    a. Excellent
    b. Very good
    c. Good
    d. Fair
    e. Poor

    READ IF NECESSARY: The City is simply interested in tracking the health of its residents for research purposes.

3. What type of dwelling do you currently live in?
    a. A single detached home (includes basement suites)
    b. An apartment or condo in a low rise (5 levels or less)
    c. An apartment or condo in a high rise (more than 5 levels)
    d. A townhouse/row house
    e. Semi-detached home or a duplex (includes basement suites)
    f. Residential care or long term care facility
    g. A mobile home

4. EMPLOYMENT: Are you: (MULTIPLE RESPONSE EXCEPT CANNOT SELECT *Working full-time* AND *Unemployed*, NOR SELECT *Unemployed* WITH ANY WORK OPTIONS)
    a. Working full-time (30+ hours per week)
    b. Working part-time (less than 30 hours per week)
    c. Self-employed
    d. Volunteer only (not for pay)
    e. Unemployed
    f. Looking after home/family
    g. Retired
    h. Student full-time
    i. Student part-time

5. HOUSEHOLD INCOME: Which of the following best describes your total **household** income (the combined gross income for all household members)?
    a. Less than $25,000
    b. $25,000 to less than $50,000
    c. $50,000 to less than $75,000
    d. $75,000 to less than $100,000
    e. $100,000 to less than $150,000
    f. $150,000 or more

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

7. **ETHNICITY**: Were you born in Canada?
    a. Yes
    b. No

8. Vancouver residents come from many different backgrounds. What is your main ethnic background?
    [ALLOW UP TO TWO OPTIONS TO BE SELECTED]
    01. African
    02. American
    03. Other Asia (Indonesian, Malaysia, Thailand)
    04. Australia
    05. British (English/Scottish/Welsh/Irish)
    06. Canadian (including First Nations, Inuit, Metis)
    07. Chinese
    08. Dutch
    09. East Indian (Punjabi, India, Tamil, Guyana, Pakistani, etc)
    10. East European (Ukranian, Polish, Hungarian, Serb, etc)
    11. Filipino
    12. French
    13. German
    14. Greek
    15. Italian
    16. Japanese
    17. Korean
    18. Latin American (Guatemalan, Nicaraguan, Mexican, etc)
    19. Middle Eastern
    20. Portuguese
    21. South American (Brazilian, Peruvian, Columbian, Chilean, Ecuadorian)
    22. Scandinavian
    23. Spanish
    24. Vietnamese
    OTHER SPECIFY:_____
    99. Prefer not to answer

NEW RECRUITS COV Travel Survey 2015
Study B703

MUSTEL GROUP
MARKET RESEARCH

CITY OF
VANCOUVER

EMAIL INVITATION

Welcome to the City of Vancouver Annual Travel Survey!

Your unique link to the trip diary survey is below.

Note that your assigned travel day is a **(INSERT DAY)**. Please keep track of your trips on this day and then access the survey to complete the online diary.

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

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

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

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

Thank you in advance for your participation!

Mustel Group Study Team (covtravelsurvey@mustelgroup.com)
402-1505 West 2nd Ave,
Vancouver, BC   V5T 1M5

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

To unsubscribe from receiving email reminders, please click here

To unsubscribe from this survey altogether, please click here

City of Vancouver Annual Travel Survey - Your Dashboard (COMPLETED BY RESPONDENT)

This trip diary section is about the trips you make on the single assigned day indicated below.

- Watch our video with key points to remember on your travel day (link Trip Diary Video).

- Your assigned travel day is next **(INSERT DAY)**. If you are unable to record your trips to the online survey for your assigned day, you can do so within a week or two afterwards.

NOTE: Even if you do not make any trips or the trips you take are not typical on your assigned day, we still need you to complete the survey.

Here are some other helpful links containing information on the survey and how to complete it.
Trip Diary Video   Study FAQs   Privacy   Prize Draw/Rules   Contact Info
 View or Print 'Diary TRIP TRACKER'

Note that these links will open in a new browser tab.
To return to the survey, simply close the tab.

TRIP BEHAVIOUR (Monday to Friday only)

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

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

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

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

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

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

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

T1. Did you make any trips that started and ended on [INSERT ASSIGNED DAY], between midnight and 11:59 p.m (a full 24 hour day)?
1. No, stayed home or was out of town for the whole day → SKIP TO VKT SECTION
2. Yes

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CITY OF
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Q1a) What was the **starting location**? If this trip started from home or work, please click "Home" or "Work". Otherwise please enter ONE of the following for your start location:

- a precise address, OR
- nearby cross-streets, OR
- a landmark

Always include the municipality.

Q1b) What was your **end location**? If this trip ended at home or work, please click "Home" or "Work".
If this is a recreational trip where your start and end locations are the same, please select that response. (Examples of recreational trips are dog walking, jogging, etc)

Otherwise please enter ONE of the following: for your end location

- a precise address, OR
- nearby cross-streets, OR
- a landmark

Always include the municipality.

☐ Same as origin (a recreational trip such as walking, dog walking or jogging where you start and end your trip at the same location)

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

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

Q1c) What time of day did you start this trip?
1. 12:00am to 5:59am
2. 6:00am to 8:59am
3. 9:00am to 11:59am
4. 12:00pm to 2:59pm
5. 3:00pm to 5:59pm
6. 6:00pm to 8:59pm
7. 9:00pm to 11:59pm

Q1d) IF RESPONSE "Same as origin" IN b) ask: Approximately how long was this recreational trip?
1. Less than 10 minutes
2. 10 to less than 20
3. 20 to less than 30
4. 30 to less than 40
5. 40 to less than 50
6. 50 to less than 60 minutes
7. 60 minutes or more

Q1e) What was the main **purpose** of this trip? ONE RESPONSE ONLY AUTO CODE AS "Recreation" IF RESPONSE "Same as origin" IN b)
1. To work
2. During work/business trip
3. To school (as a student)
4. Shopping
5. Dining/restaurant
6. Recreation (including dog walking, jogging, etc)/social/entertainment
7. Personal business (e.g. bank, doctor, etc)
8. To drop-off/pick-up someone (via driving, walking, transit, cycling, etc.)
9. To go home

Q1f) How did you travel to this location? Choose all that apply. If more than one, list in order of use.
If you walked and used other modes, select "walked as part of the trip" as well as the other modes.
1. Private car, truck, or van as a driver
2. Private car, truck, or van as a passenger
3. CAR SHARE as a driver (e.g. Modo, Car2go, ZipCar, Evo, etc)
4. CAR SHARE as a passenger (e.g. Modo, Car2go, ZipCar, Evo, etc)
5. Transit bus
6. SkyTrain (Expo, Canada and Millennium Lines)
7. West Coast Express
8. SeaBus
9. HandyDART
10. School bus
11. Other bus
12. Walked/jogged the whole way (CANNOT BE COMBINED WITH OTHER RESPONSES)
13. Walked/jogged as part of the trip
14. Bicycle
15. Taxi
16. Other (specify) _____

IF TRIP.(f) RESPONSE IS "Transit Bus", "SkyTrain", "WestCoast Express", "Seabus", "HandyDART", "School Bus", "Other bus", "Walked/jogged the whole way", "Walked/jogged as part of the trip", or "Bicycle" ASK:

Q1k. Approximately how long was the walking and/or biking portion of this trip?
1. Less than 5 minutes
2. 5 to less than 10
3. 10 to less than 20
4. 20 to less than 30
5. 30 to less than 40
6. 40 to less than 50
7. 50 to less than 60 minutes
8. 60 minutes or more

AUTO CODE AS "No", IF RESPONSE "Same as origin" IN b)

Q1g) Was this trip a stop along the way to your next location? (e.g. a short trip such as a drop off, gas station, coffee shop, etc.)

    1. Yes → Q1g2. Did you pre-plan to make this stop?   1. Yes   2. No
    2. No

Q1h) Excluding any travel companion(s) that may have been with you during this trip, did you interact with anyone else while travelling to your destination (e.g. waving to a neighbour, chatting with another transit rider or bus driver, honking, etc)? **MULTIPLE RESPONSE, EXCEPT OPTION 4**
1) Friendly interaction
2) Unfriendly interaction
3) Neutral interaction
4) No notable interaction with anyone else

Q1h2. TRIP SUMMARY: Please review the information you have provided for this trip.
INSERT
    START LOCATION
    END LOCATION
    TIME OF DAY
    MAIN PURPOSE OF TRIP
    METHODS OF TRAVEL

    Is this information complete?
1. Yes
2. No (RETURNS TO REVIEW AND EDIT THE TRIP)

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

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

Q1j)   Did you return home before 11:59pm on this travel day?
1.   Yes - Please record the details of this trip → NEXT TRIP
2.   No, did not return home on this day → SKIP TO SECTION 2

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

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

AFTER LAST TRIP OF DAY, TOTAL TRIP SUMMARY: Please review your trips below. Are your trips complete?
INSERT TRIP SUMMARIES

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

1.   Yes
2.   No **(RETURNS TO REVIEW AND EDIT THE TRIP)**

VKT SECTION

PROGRAMMER NOTE: IF PRIVATE VEHICLE CHOSEN IN RECRUIT PROFILING AND GENERAL TRANSPORT SECTION (Q2), ASK Q1-2

1.   What type of private vehicle do you typically drive?
INSERT IF COMMERCIAL DRIVER IDENTIFIED IN RECRUIT PROFILING & GENERAL TRANSPORT SECTION (Q3)
This is the vehicle typically driven for your personal trips. If you typically use a commercial vehicle for your personal trips, select that vehicle from the list below.
DROP DOWN MENUS AS PER NRCAN DATASET
AS NRCAN LIST ONLY INCLUDES PASSENGER VEHICLES, ALLOW OVERRIDE
MAKE   MODEL   YEAR

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

Would you like to enter your odometer reading now, or email a link to enter it later? The email link will provide you with a mobile-friendly way to enter the odometer, so you can complete it in your car with your smartphone or tablet, if you choose.
1.   Provide my odometer reading right now
2.   Email a link to enter my odometer reading later (Please specify the email address you would prefer to receive the link to the odometer reading. _____@_____.

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

CLOSING: This completes our survey. Thank you very much for your input and interest in this annual trip diary survey!
If you are eligible for the prize draw, note that we will contact all winners within the first quarter of 2016. As a panelist you are important to this ongoing study and as a small thank you, we will email updates throughout 2016 on the results made possible by your participation.

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

Subject: Trip Day - City of Vancouver Annual Travel Survey

Sender: Mustel Group for City of Vancouver [covtravelsurvey@mustelgroup.com]

Hello and welcome back to the City of Vancouver Annual Travel Survey!

Last year, you completed a travel survey for the City of Vancouver and agreed to be a part of an ongoing panel to help the City in planning and addressing transportation issues for area residents.

Thank you for providing your input to help your community!

As a returning panelist, we again are looking forward to hearing from you on the trips you make and how you travel over a one-day period.

Note that your diary day will be assigned once click your link below.

And, you will also continue to be eligible to enter a prize draw to win passes to City facilities and attractions!

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

YOUR PIN NUMBER: 34232343

You can start your survey now by clicking on YOUR UNIQUE LINK:
http://www.covtravelsurvey.com/dash/Dash?id=covtravel,34232343

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

Thank you in advance for your continued participation!

Mustel Group Study Team (covtravelsurvey@mustelgroup.com)
402-1505 West 2nd Ave,
Vancouver, BC   V5T 1M5

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

To unsubscribe from receiving email reminders, please click here
To unsubscribe from this survey altogether, please click here

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City of Vancouver Annual Travel Survey

Please read this information regarding your one day trip diary.

- Your assigned travel day is next **(INSERT DAY)**. If you are unable to record your trips to the online survey for your assigned day, you can do so within a week or two afterwards.

- Watch this video with key points to remember on your travel day ([Trip Diary Video](#)).

- Before recording and entering your trips, we will first confirm information you provided last year.

NOTE: Even if you do not make any trips or the trips you take are not typical on your assigned day, we still need you to complete the survey.

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

Here are some other helpful links containing information on the survey and how to complete it.
Trip Diary Video   **Study FAQs**   **Privacy**   **Prize Draw/Rules**   **Contact Info**
 View or Print 'Diary TRIP TRACKER'

Note that these links will open in a new browser tab.
To return to the survey, simply close the tab.

A. **GENDER**   1. MALE   2. FEMALE

D. EMAIL ADDRESS
The email address we have on file for you for this Annual Travel Survey is below. If you wish to update to a more frequently used address, or one that is more convenient, please let us know.
Your email address:_____
1. Yes, this information is correct
2. No, I need to update this information

E. UPDATE EMAIL
Please enter the email address you prefer to use:_____
Please confirm your email address:_____
ALERT IF BOTH FIELDS BELOW DO NOT MATCH

B. Please confirm the home postal code you entered last year. If changed, please update so we are sure you still live in the survey area.   AUTO_POPULATE FROM 2014 (6-digit) __ __ __ __ __ __
1. Yes, this information is correct
2. No, I need to update this information

IF DIFFERENT FROM TAGGED COV SUB-AREA, BUT IS ONE OF 8 OTHER VALID SUB-AREAS, ACCEPT.
IF DIFFERENT AND NOT IN ANY COV SUB-AREAS, THANK AND END.   QA.page
Please enter your home postal code. Please enter 6 digit postal code with no spaces or punctuation.
__ __ __ __ __ __
EVERYONE- EMPLOYMENT SCREENER: QAA1. Do you or does anyone in your household work for the City of Vancouver, Mustel Group or CH2M Hill?

1. Yes   → QAA2. Please note that while we can include your responses for this study, due to standard contest rules you will not be eligible for the Prize Draw. Are you still interested in participating?

  a. Yes → REMOVE FROM PRIZE DRAW AND CONTINUE

  b. No → THANK AND END INTERVIEW
2. No   CONTINUE
3. REF   → THANK AND END INTERVIEW Those are all the questions we have for you today. Thank you for your interest.

AUTO-POPULATE - ASK EITHER C OR C2 DEPENDING ON RESPONSE FROM 2014
C. Please confirm the year in which you were born? ____
1. Yes, this information is correct
2. No, I need to update this information UPDATE YEAR OF BIRTH: Please select the year in which you were born. _____

IF REFUSED YEAR BORN: C2. Please confirm this is the age group that applies to you.
1. 15-17
2. 18-24
3. 25-34
4. 35-44
5. 45-54
6. 65+
7. PREFER NOT TO ANSWER

COV Travel Survey 2015
Study B703

MUSTEL GROUP
MARKET RESEARCH

CITY OF
VANCOUVER

PRIZE DRAW

As in previous years, in appreciation of your participation, we will enter you into a draw to win passes to City facilities and attractions such as:

> a 3 month Flexipass – providing unlimited admission to any Park Board pool, fitness centre, or rink in the City during the validity period (Value $121)
> or
> a 1-year Premium Membership to the VanDusen Botanical Gardens, providing the member and a guest free entrance year round (Value $112)
> or
> a PNE PlayLand PlayPass for two – a one day pass providing access to over 30 rides and attractions (Value $43.50).

> In all, approximately a 1-in-15 chance to win.

> 1. Yes, please enter me into the draw   (Upon completing the full survey we will enter you to the prize draw. Note that winners will be contacted within the first quarter of 2016.)

> 2. No, thank you

REGISTRATION QUESTIONS

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

R1.   FNAME:_____LNAME:_____
        SUITE#:_____STREET#:_____STREET:_____STREET TYPE:_____STREET DIRECTION:_____
        CITY:_____PROVINCE:_____POSTAL CODE

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

IF UPDATING INFORMATION (R2=2), OBTAIN NEW ADDRESS AND DISPLAY MAP WITH NEW HOME LOCATION IDENTIFIED [DESCRIBE CROSS-STREETS NEAREST TO PIN-POINT]

R3. Is this the correct location?
1.   Yes
2.   No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

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

STREET#:_____STREET:_____STREET TYPE:_____STREET DIRECTION:_____
CITY:_____PROVINCE:_____POSTAL CODE

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

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

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

Is this the correct location?
1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

If you have more than one work address, please provide your second work address here.

When recording the street number enter the building address only; no apartment or suite number is necessary

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

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

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

Is this the correct location?
1. Yes
2. No → **RETURN TO VERIFY INFORMATION UNTIL CORRECT**

PROFILING, GENERAL TRANSPORT & PARKING QUESTIONS

1. Do you currently have a valid driver's licence?
   - 1. Yes   2. No → SKIP TO Q5

2. How many vehicles do you own or have regular access to (please include all cars, vans or light trucks that are brought home and parked overnight but not motorcycles / scooters or bicycles; do not include car share vehicles)?
   - _____   None

3. What car share services are you a part of, if any? (check all that apply)
   - Car2go___   2. Modo___   3.ZipCar___   4. Evo___
   - 5. Other___   None___

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

5. a) What is your **usual mode of transportation** this time of year for trips to or from **work**? If you use more than one mode, select the one used for **most of the travel distance. CHECK ONE ONLY**
    a. Car, truck, or van **as a driver**
    b. Car, truck, or van **as a passenger**
    c. Transit bus
    d. SkyTrain
    e. West Coast Express
    f. SeaBus
    g. HandyDART
    h. School bus
    i. Other bus
    j. Bicycle
    k. Walk
    l. Taxi
    m. Motorcycle
    n. Other → Please describe other mode of travel _____
    o. DO NOT TRAVEL TO WORK

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

    a. Car, truck, or van as a driver
    b. Car, truck, or van as a passenger
    c. Transit bus
    d. SkyTrain
    e. West Coast Express
    f. SeaBus
    g. HandyDART
    h. School bus
    i. Other bus
    j. Bicycle
    k. Walk
    l. Taxi
    m. Motorcycle
    n. Other (specify) _____
    o. DO NOT TRAVEL TO SCHOOL AS A STUDENT

6. In terms of walking, what would you consider a reasonable walking distance for travel purposes (work, school, shopping, etc.) (RECORD FARTHEST DISTANCE): <400m (6 min), 400-800m (6-12 min), 800-1,200m (12-18 min), >1,200m (>18 min).

IF Q5a OR 5b = "Bicycle", CANNOT SELECT CODES 5-6 BELOW. ERROR MESSAGE: *You mentioned earlier that you use a bicycle as your main mode of travel for trips to work and/or school. Please correct your answer here or click the previous button to correct your travel modes to work and/or school.*

7. How often do you typically travel by bicycle in fair weather?
    1. At least 5 times per week
    2. 2-4 times per week
    3. Once per week to once per month
    4. Less than once per month
    5. I do not ride a bicycle at all **(SKIP TO Q11)**
    6. I am physically unable to ride a bicycle **(SKIP TO Q11)**

8. How often do you typically travel by bicycle in rainy or cold weather?
    1. At least 5 times per week
    2. 2-4 times per week
    3. Once per week to once per month
    4. Less than once per month
    5. I never ride a bicycle in rainy or cold weather

9. Are you interested in travelling by bicycle more than you do now?
    1. Yes
    2. No, I am happy with how much I currently bicycle
    3. No, I want to travel less by bicycle

10. If you were travelling by bicycle on your own, in which of the following environments would you feel comfortable:
    1. On almost any street in the city and I don't worry much about traffic conditions.
    2. On major streets, provided they have painted bicycle lanes.
    3. On major streets, provided they have bicycle lanes separated from traffic with a physical barrier.
    4. On local neighbourhood streets with little traffic and low speeds.
    5. On bicycle paths far away from motor vehicles.
    6. Not comfortable cycling in any of the above environments **(UNCHECK ANY ABOVE)**

11. Have you traveled by public transit in the past month?
    1. YES → **ASK 12**
    2. NO

12. IF YES: How do you usually pay for your travel by transit this time of year? (RECORD ALL THAT APPLY)

    1. Cash
    2. FareSaver (tickets)
    3. Monthly FareCard
    4. U-Pass
    5. Employer Pass (Discount or fully paid for by employer)
    6. Annual Pass
    7. Compass Card
    8. Other Specify:_____

DEMOGRAPHICS

Just a few questions to help us classify the survey data.

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

2. The City is interested in tracking the health of its residents.In general, would you say that your health is...

    a. Excellent
    b. Very good
    c. Good
    d. Fair
    e. Poor

3. What type of dwelling do you currently live in?
    a. A single detached home (includes basement suites)
    b. An apartment or condo in a low rise (5 levels or less)
    c. An apartment or condo in a high rise (more than 5 levels)
    d. A townhouse/row house
    e. Semi-detached home or a duplex (includes basement suites)
    f. Residential care or long term care facility
    g. A mobile home

4. EMPLOYMENT: Are you:
    a. Working full-time (30+ hours per week)
    b. Working part-time (less than 30 hours per week)
    c. Self-employed
    d. Volunteer only (not for pay)
    e. Unemployed
    f. Looking after home/family
    g. Retired
    h. Student full-time
    i. Student part-time

5. HOUSEHOLD INCOME: Which of the following best describes your total **household** income (the combined gross income for all household members)?
    a. Less than $25,000
    b. $25,000 to less than $50,000
    c. $50,000 to less than $75,000
    d. $75,000 to less than $100,000
    e. $100,000 to less than $150,000
    f. $150,000 or more

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

7. **ETHNICITY**: Were you born in Canada?
    a. Yes
    b. No

8. Vancouver residents come from many different backgrounds. What is your main ethnic background?
    [ALLOW UP TO TWO OPTIONS TO BE SELECTED]
    01. African
    02. American
    03. Other Asia (Indonesian, Malaysia, Thailand)
    04. Australia
    05. British (English/Scottish/Welsh/Irish)
    06. Canadian (including First Nations, Inuit, Metis)
    07. Chinese
    08. Dutch
    09. East Indian (Punjabi, India, Tamil, Guyana, Pakistani, etc)
    10. East European (Ukranian, Polish, Hungarian, Serb, etc)
    11. Filipino
    12. French
    13. German
    14. Greek
    15. Italian
    16. Japanese
    17. Korean
    18. Latin American (Guatemalan, Nicaraguan, Mexican, etc)
    19. Middle Eastern
    20. Portuguese
    21. South American (Brazilian, Peruvian, Columbian, Chilean, Ecuadorian)
    22. Scandinavian
    23. Spanish
    24. Vietnamese
    OTHER SPECIFY:_____

City of Vancouver Annual Travel Survey

Please read this information regarding your one day trip diary:

- The trip diary section will ask about the trips you make on your single assigned day indicated below.
- Watch this video with key points to remember on your travel day (Trip Diary Video)
- Your assigned travel day is a Wednesday. If you are unable to record your trips to the online survey for your assigned day, you can do so within a week or two afterwards.

NOTE: Even if you do not make any trips or the trips you take are not typical on your assigned day, we still need you to complete the survey.

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

TRIP BEHAVIOUR (Monday to Friday only)

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

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

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

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

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

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

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

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

---

1. Trip 1

Q1a)   What was the **starting location**? If this trip started from home or work, please click "Home" or "Work". Otherwise please enter ONE of the following for your start location:
- a precise address, OR
- nearby cross-streets, OR
- a landmark

Always include the municipality.

Q1b)   What was your **end location**? If this trip ended at home or work, please click "Home" or "Work".
If this is a recreational trip where your start and end locations are the same, please select that response. (Examples of recreational trips are dog walking, jogging, etc)

Otherwise please enter ONE of the following: for your end location
- a precise address, OR
- nearby cross-streets, OR
- a landmark

Always include the municipality.

☐ Same as origin (a recreational trip such as walking, dog walking or jogging where you start and end your trip at the same location)

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

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

Q1c) What time of day did you start this trip?
1. 12:00am to 5:59am
2. 6:00am to 8:59am
3. 9:00am to 11:59am
4. 12:00pm to 2:59pm
5. 3:00pm to 5:59pm
6. 6:00pm to 8:59pm
7. 9:00pm to 11:59pm

Q1d) IF RESPONSE "Same as origin" IN b) ask: Approximately how long was this recreational trip?
1. Less than 10 minutes
2. 10 to less than 20
3. 20 to less than 30
4. 30 to less than 40
5. 40 to less than 50
6. 50 to less than 60 minutes
7. 60 minutes or more

Q1e) What was the main **purpose** of this trip? ONE RESPONSE ONLY AUTO CODE AS "Recreation" IF RESPONSE "Same as origin" IN b)
1. To work
2. During work/business trip
3. To school (as student)
4. Shopping
5. Dining/restaurant
6. Recreation (including dog walking, jogging, etc)/social/entertainment)
7. Personal business (e.g. bank, doctor, etc)
8. To drop-off/pick-up someone (via driving, walking, transit, cycling, etc.)
9. To go home

Q1f) How did you travel to this location? Choose all that apply. If more than one, list in order of use.
If you walked and used other modes, select "walked as part of the trip" as well as the other modes.
1. Private car, truck, or van as a driver
2. Private car, truck, or van as a passenger
3. CAR SHARE as a driver (ex Modo, Car2go, ZipCar, Evo, etc)
4. CAR SHARE as a passenger (ex Modo, Car2go, ZipCar, Evo, etc)
5. Transit bus
6. SkyTrain (Expo, Canada and Millennium Lines)
7. West Coast Express
8. SeaBus
9. HandyDART
10. School bus
11. Other bus
12. Walked/jogged the whole way (CANNOT BE COMBINED WITH OTHER RESPONSES)
13. Walked/jogged as part of the trip
14. Bicycle
15. Taxi
16. Other (specify) _____

IF TRIP.(f) RESPONSE IS "Transit Bus", "SkyTrain", "WestCoast Express", "Seabus", "HandyDART", "School Bus", "Other bus", "Walked/jogged the whole way", "Walked/jogged as part of the trip", or "Bicycle" ASK:

Q1k. Approximately how long was the walking and/or biking portion of this trip?
1. Less than 5 minutes
2. 5 to less than 10
3. 10 to less than 20
4. 20 to less than 30
5. 30 to less than 40
6. 40 to less than 50
7. 50 to less than 60 minutes
8. 60 minutes or more

AUTO CODE AS "No", IF RESPONSE "Same as origin" IN b)

Q1g) Was this trip a stop along the way to your next location? (e.g. a short trip such as a drop off, gas station, coffee shop, etc.)

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

Q1h) Excluding any travel companion(s) that may have been with you during this trip, did you interact with anyone else while travelling to your destination (e.g. waving to a neighbour, chatting with another transit rider or bus driver, honking, etc)? **MULTIPLE RESPONSE, EXCEPT OPTION 4**
1. Yes, it was friendly
2. Yes, it was unfriendly
3. Yes, it was neutral
4. No notable interaction with anyone else

Q1h2. TRIP SUMMARY: Please review the information you have provided for this trip.
INSERT
     START LOCATION
     END LOCATION
     TIME OF DAY
     MAIN PURPOSE OF TRIP
     METHODS OF TRAVEL

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

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

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

Q1j) Did you return home before 11:59pm on this travel day?
1. Yes - Please record the details of this trip
2. No - Did not return home on this day → SKIP TO SECTION 2

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

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

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

j) Are your trips complete?

INSERT TRIP SUMMARIES

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

1. Yes
2. No

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

1. Yes
2. No

VKT SECTION

PROGRAMMER NOTE: IF PRIVATE VEHICLE CHOSEN IN RECRUIT PROFILING AND GENERAL TRANSPORT SECTION (Q2), ASK Q1-2

QS1 Return. Below is the make**,** model and year of the private vehicle you provided to us in the 2014 survey (the one you typically used for your personal trips). If this has changed please let us know.

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

1. Yes, this is the private vehicle I typically use for my personal trips → **ASK Q SEND ODOMETER**
2. No, the private vehicle I typically use for my personal trips has changed → **ASK QS1 BELOW**

QS1-1a. What type of private vehicle do you typically drive? Please choose the make, model and year of your vehicle.

INSERT IF COMMERCIAL DRIVER IDENTIFIED IN RECRUIT PROFILING & GENERAL TRANSPORT SECTION (Q3)

This is the vehicle typically driven for your personal trips. If you typically use a commercial vehicle for your personal trips, select that vehicle from the list below.

DROP DOWN MENUS AS PER NRCAN DATASET -AS NRCAN LIST ONLY INCLUDES PASSENGER VEHICLES, ALLOW OVERRIDE   **MAKE**   **MODEL**   **YEAR**

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

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

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

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

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

As a small thank you, once all trip diaries have been collected and analyzed, we will email you key results and a link to the full report from this year's survey made possible by your participation. If you are eligible for the prize draw, all winners will be contacted within the first quarter of 2016.

Thank you once more and we'll be in touch in 2016!

Please click the button below to submit the survey.

COV Travel Survey 2015
Study B703

MUSTEL GROUP
MARKET RESEARCH

CITY OF
VANCOUVER

OTHER PAGES IN SURVEY

EXIT CLICKED IN SURVEY

Are you sure you want to leave the survey now? If you arrived here by mistake and wish to continue the survey now, click "Previous" to return.

If you would like to leave the survey now, how would you like to re-access your survey?

○ Please send me an email with my unique link (IF CLICKED)

○ I will re-access from the original email invitation I received

Please try to complete the survey and diary in the next week. Note that we are interested in all types of travel even your assigned day is not typical for you.
Please specify your email address so we can send you a link to resume the survey. And press EXIT to leave the survey and send the email to yourself.

For questions or technical help, please email Mustel Group: covtravelsurvey@mustelgroup.com.

ONCE EXITED

Thank you for your participation so far!
Please complete the survey and diary in the next week. Note that we are interested in all types of travel even if one of your assigned days is not typical for you.
You may now close this window.

EMAIL SENT
Subject: RE: Trip Day - City of Vancouver Annual Travel Survey
Sender: Mustel Group for City of Vancouver [covtravelsurvey@mustelgroup.com**]**

Hello City of Vancouver Travel Survey Panelist.

Here is your unique link to re-access the survey when you are ready:
http://www.covtravelsurvey.com/dash/Dash?id=covtravel,34232343

Thank you for your participation so far and we look forward to your completed survey!

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

Mustel Group Study Team (covtravelsurvey@mustelgroup.com)
402-1505 West 2nd Ave,
Vancouver, BC   V5T 1M5

Need Help?
Reply to this email or call us at: **778-383-3416**

Please have your PIN Number handy when you do.
PIN NUMBER: 34232343

To unsubscribe from receiving email reminders, please click here
To unsubscribe from this survey altogether, please click here
RESUMING survey (click link in email reminder)

RESUME INTERVIEW

Please click Next below to return to the point where you left off.

Here are some helpful links containing information on the survey.

(LINKS)

Please note that these links will open in a new tab or window. To return to the survey, simply close the tab or window.